Some Evolutionary Considerations Concerning The Establishment Clause and Article IV, Section 4 of the Constitution

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In the preface to *But is it Science? : The Philosophical Question in the Creation/Evolution Controversy* edited by Robert T. Pennock and Michael Ruse, the two editors indicate that while the U.S. Constitution prohibits the teaching of religion – since doing so gives expression to a form of establishing a system of religious belief and, thereby, contravenes the 1st Amendment – nevertheless, that same fundamental document does not prohibit the teaching of science, even if the quality of the latter should be bad. Over a period of several decades, at least three cases wormed their way through various facets of the legal system and each of those cases led to judicial decisions that, apparently, verified the perspective that was being advanced by Pennock and Ruse.

Among the cases that seem to confirm the foregoing claim of Pennock and Ruse are: *McLean v. Arkansas,* 1982, as well as the 1987 *Edwards v. Aguillard* decision that took place in Louisiana and, eventually, went to the U.S. Supreme Court. In addition, the *Kitzmiller et al v. Dover Area School Board* judgment was rendered in Pennsylvania around 2005.

However, upon examination, the idea that science does not violate provisions of the U.S. Constitution seems fraught with difficulties. Indeed, the title of the book of readings edited by Pennock and Ruse might be focusing on the wrong philosophical question.

More specifically, instead of asking whether or not creationist science or the doctrine of intelligent design qualify as science – even bad science – perhaps the philosophical question that needs to be asked is: 'But is it true?' In this instance, the "it" that is being questioned with respect to some degree of truth could either be, on the one hand, creation science and the thesis of intelligent design, or, on the other hand, evolution … or, perhaps, both sides of that controversy need to be engaged in a critically reflective manner.

Let us suppose that one accepts the collective conclusions of the aforementioned three legal proceedings. In other words, let us assume that creation science and the thesis of intelligent design do not qualify as science but give expression – each in its own way -- to the teaching of religion and, as well, that the theory of evolution does qualify as being scientific in nature. Does this end the matter?

Not necessarily! The theory of evolution might satisfy the conditions of being scientific, but if essential features of that theory cannot be shown

to be true, then one might wonder why students should be required to learn its details.

Of course, an obvious response to the foregoing issue would be to point out that science is a methodological process that historically can be shown to have assisted human beings to establish better and better understandings concerning the nature of certain aspects of reality. Consequently, a student should be exposed to scientific methods, together with the results arising from those methods, so that an individual can gain facility and competence with respect to being able to critically engage both scientific methods and results, thereby, enhancing a person's chances of being able to deal with various facets of life in a constructive, rational, informed, and insightful fashion.

Nonetheless, even though there is plenty of historical evidence to indicate that a great many truths have been established through the process of science, there is also considerable historical evidence to demonstrate that an array of false ideas have populated the annals of science. Among the false theories that were accepted by a majority of the scientific community – sometimes for substantial periods of time – were: Ptolemaic astronomy; phlogiston theory; Caloric theory of chemistry; spontaneous generation; Lamarckian evolution; the blank slate (tabula rasa) model of mind; Phrenology; steady state theory of the universe (or, possibly, the Big Bang … depending on which cosmological version of the universe turns out to be correct); and various editions of string theory.

Moreover, even if we leave aside issues concerning the manner in which certain false theories have dominated the practice of science from time to time, and even though scientific methodology offers a means through which to constantly seek to improve one's understanding of some given phenomenon, the fact of the matter is that scientists tend to be wrong more often than they are right. Indeed, the history of science provides an account of how researchers – both individually and collectively – struggle to escape from a condition of ignorance concerning various physical phenomena and work their way through resolving an array of problems that – hopefully – eventually puts them in a position to fashion a tenable understanding concerning such phenomena that, in time, gets modified or overthrown to better reflect empirical observations, both old and new.

Over the years, human understanding concerning quantum physics, chemistry, gravitation, thermodynamics, materials science, biology, astrophysics, mathematics and a host of other disciplines have all gone through a series of changes – some small and some quite considerable. Our current grasp of the foregoing areas – and many others -- is built on a multiplicity of mistaken ideas that were reshaped or replaced by a series of insights and discoveries that appeared to bring us closer to certain truths than previous ways of understanding were able to do that were, in turn, replaced and reshaped by an array of subsequent insights, discoveries, and observations.

An essential part of science revolves about becoming involved in a rigorous process of discernment in which that which is true or truer must be differentiated from that which is false. This is accomplished through observation, measurement, experimentation, analysis, critical reflection and so on.

Given the foregoing considerations, one might ask: Is evolutionary theory an example of a science that leads to a true or a false understanding of reality? Although the vast majority of scientists in the world today accept one version, or another, of a neo-Darwinian evolutionary model, I believe that enough problematic features have been put forth in my book: *Evolution Unredacted* to, at the very least, call into question the tenability of many facets of evolutionary theory, and, as a result, lend some degree of legitimacy to the idea that a student might have a right to resist, and not be subjected to, the doctrinaire teachings of evolutionary theory.

Among other things, the theory of evolution cannot provide a step-by-step account concerning: The emergence of the first protocell; the origins of the genetic code; the transition from: Chemotrophs to cyanobacteria and/or Archaea organisms (many of the latter life forms are extremophiles) – or vice versa; the transition from: Anaerobic to aerobic organisms; the transition from: Prokaryotic to Eukaryotic life forms; the origins of metabolic systems specializing in, for example, respiration, endocrine activity, immune responses, nervous functioning, sexual reproduction, consciousness, memory, reason, intelligence, language, and creativity.

Does the theory of evolution offer accounts that purport to explain all of the above sorts of transitions? Yes, it does.

However, none of those accounts has been proven to be true. All of those accounts are missing key pieces of evidence that are capable of substantiating that those models, hypotheses, and ideas are unquestionably true.

On the one hand, evidence exists that supports the possibility that in certain cases, species might have been formed through a process of, say, isolating different portions of a population that, over time, leads to the appearance of new variations that are no longer able to produce viable offspring with members of the original population. Nonetheless, one cannot demonstrate with real scientific rigor that the sorts of processes be alluded to above are responsible for the origins of all species.

The theory of evolution encompasses a great many factual observations and discoveries. Yet, at the same time, it gives expression to a model in which speculation and assumption continue to play a major role, and, as a result, despite all of the propaganda being issued by various evolutionary scientists, many facets of the theory of evolution are a long way from having been verified and, quite frankly, might never be capable of being verified.

Moreover, even if one puts aside all of the scientific inadequacies of the theory of evolution, there are a variety of constitutional issues that need to be explored. In other words, although evolutionary theory might be classified as a science, nevertheless, there might be a partisan quality to its framework that could be at odds with the requirements of Article IV, Section 4 of the United States Constitution (more on this shortly). In addition, one could raise the possibility that there also is a religious dimension to the theory of evolution (more on this shortly) and, if so, then, science, or not, such a theory might well be in contravention of the establishment clause of the 1st Amendment.

Article IV, Section 4 of the U.S. Constitution indicates that the federal government "shall guarantee to every state a republican form of government, and shall protect each of them against invasion;" Republicanism is a moral philosophy of the Enlightenment that generated a great deal of interest within colonial America and helped shape the fabric of the Constitutional process.

In order to qualify as being republican in nature, judgments and actions had to exhibit a variety of qualities. More specifically, to be considered republican in nature, actions and judgments had to exhibit:

Integrity, objectivity, independence, non-partisanship, equitability, fairness, disinterestedness, nobility, and be devoid of elements that served the individual interests of the person performing a given action or making a particular judgment rather than serving the collective interests of society.

The collective interests of society are summed up in the Preamble to the Constitution. Those collective interests include: Forming a more perfect union; establishing justice; insuring domestic tranquility; providing for the common defense, promoting the general welfare, and securing the blessings of liberty for ourselves and our posterity.

The theory of evolution fails to be objective, independent, and non-partisan in a variety of ways. More specifically, that theory is being advanced as a true account concerning the random, material origins of species despite the fact that: (1) no one has been able to prove that all species (as opposed to some species) are the result of neo-Darwinian dynamics; (2) no one has been able to demonstrate that reality is inherently random, and (3) no one has been able to prove that consciousness, reason, memory, logic, intelligence, understanding, language, creativity, talent (e.g., musical, artistic, mathematical, etc.), and spirituality are purely material phenomena.

Furthermore, the theory of evolution is replete with elements having to do with notions of randomness and the material basis of reality that might be serving the hermeneutical and political interests of those who are propagating the theory of evolution rather than the collective interests of society, and, therefore, are not necessarily promoting the general welfare of the country … especially if the aforementioned elements involving randomness turn out to be wrong. While such ideational elements have not, yet, been proven to be incorrect, they also have not, yet, been demonstrated to be a correct description of reality, and, therefore, requiring students to learn the theory of evolution would appear to undermine principles of equitability and fairness that constitute integral dimensions of the principle of republicanism that has been guaranteed to each state of the union, and, therefore, under the provisions of the 9th and 10th Amendments, to all the people of those states.

As noted previously, Article IV, Section 4 of the Constitution not only guarantees a republican form of government to every state but, as well,

promises to "… protect each of" the states from invasion. Presumably, the protections to which the Constitution might be alluding do not involve just physical threats but could also be extended to protections against certain kinds of philosophical, hermeneutical, and conceptual systems that seek to invade the minds and hearts of the people of the United States through institutions of learning and, thereby, acquire political and legal control of the citizenry and, in the process, undermine the guarantee of a republican form of government.

Notwithstanding the foregoing considerations, teaching the theory of evolution in public schools might also be in contravention of the establishment clause of the 1st Amendment. After all, some individuals have traced the etymological roots of the word religion back to a Latin word – re-li-gare -- that conveys a process of binding or tying.

Any conceptual system constitutes a way of binding or tying a person's understanding to one, or another, understanding of reality. Consequently, the theory of evolution is a conceptual system that tends to tie and bind a person's understanding to various kinds of assumptions, ideas, beliefs, and values in an organized fashion.

Other individuals feel that the notion of religion might also be etymologically linked to another Latin word: "re-li-gi-o-nem". This latter term gives expression to a sense of reverence toward whatever might be considered to be sacred in nature – E.g., the truth, or qualities of compassion, love, forgiveness, meaning, purpose, and so on.

The sacred need not be tied to the notion of Divinity. For instance, Buddhism is considered to be a religion, yet that spiritual tradition often is understood to be based on teachings that tend not to be God-centric in character but, instead, embrace an array of methods, principles, and values that are engaged in a reverential, and, therefore, sacred fashion.

Those who are proponents of evolutionary theory tend to defend their perspective as being inviolable, true, sacrosanct, as well as being worthy of commitment and deep respect. Moreover, such individuals tend to treat the principles, values, and ideas of evolution with attitudes and behaviors that appear to be indistinguishable from individuals who have reverence toward certain religious ideas, principles, or values and consider those themes to be sacred and inviolable.

Referring to the theory of evolution in terms of science does not extinguish the qualities of: Reverence, sacredness, commitment, binding, and tying that are present in the understanding of many of those who are advocates for that theory. Placing the theory of evolution under the rubric of science does not remove the properties of assumption, speculation, belief, interpretation, faith (sometimes referred to as a degree of confidence), and philosophy that tend to flow through that theory.

Given the foregoing considerations, then, surely, teaching the theory of evolution would seem to qualify as an attempt to establish a religious-like belief system. All of the elements of religion – namely, a sense of: Reverence, sacredness, faith, interpretation, inviolability, the sacrosanct, commitment, binding, universality, essentialness, and so on – are present in those who are proponents of, and advocates for, the theory of evolution.

There are several other possible etymological dimensions in the notion of religion that potentially tie that word to the theory of evolution. One of these dimensions is linked to Cicero's way of using the term 're-le-gere', while another etymological derivation of religion gives emphasis to an Old French sense in which the notion of religion refers to a process through which a community exhibits collective devotion to certain ideas.

Cicero's aforementioned manner of engaging the idea of "re-le-gere" involves a methodology through which an individual goes over a given text on a number of different occasions. Presumably, the process of reading and re-reading a given text is a way of exercising due diligence with respect to trying to determine, among other things, the truth concerning the meaning of that text.

Similarly, proponents of evolutionary theory also tend to go over, again and again, the observations, measurements, experiments, and so on associated with that theory in order to try to determine the meaning and truth that might be entailed by those activities. Whether the text being studied is a book or the language of nature seems irrelevant.

Furthermore, Cicero's manner of approaching the process of "re-le-gere" tends to imply that the process of critically reflecting on the meaning of a given text – whether written or having to do with the nature of reality -- is intended to serve as a way of providing one with an opportunity to work toward distinguishing between, on the one hand, the actual meaning of something and, on the other hand, meanings that

might be arbitrarily imposed on a text by the individual engaging that material. If so, then, this also reflects the tendency of science to go over something again and again in order to try to discern the difference between, on the one hand, the actual truth of something and, on the other hand, false beliefs concerning the nature of some aspect of experience and, consequently, appears to bind the theory of evolution to religion in, yet, another way.

Moreover, just as religious communities tend to be devoted to the principles, values, and practices which bind the members of that community together in relation to what they believe constitutes the truth of Being, so too, the members of those communities that accept the theory of evolution reflect many of the qualities that characterize the Old French etymological derivation of the term religion. In other words, members of a community of believers involving evolutionary theory are tied together by a common sense of purpose, meaning, valuation, understanding, belief, and truth concerning the principles, ideas, values, and practices entailed by the theory of evolution in ways that parallel what goes on within so-called religious communities.

Therefore, one cannot automatically assume that just because the theory of evolution is referred to as being, or categorized as being, scientific, then, this kind of classification prevents that theory from also giving expression to a variety of religious-like qualities. To whatever extent the theory of evolution entails the foregoing sorts of religious elements, then, that theory also would appear to contravene the establishment clause of the 1st Amendment.

Thus, there seems to be a conflict between the theory of evolution and the U.S. Constitution not only in relation to the 1st Amendment, but, as well, in relation to Article IV, Section 4 of that document. As a result, the editors of: *But Is It Science? -- The Philosophical Question In the Creation/Evolution Controversy* – have put things in a misleading manner since the issue is not whether one can consider the theory of evolution to be scientific in nature – which, in certain ways, it might be – but, instead, the issue is whether, or not, a person recognizes the religious and non-republican elements that are present in the theory of evolution and, as a result, one is prepared to remain consistent by seeking to ensure that such a theory – along with other religious-like systems of thought – are

prevented from being taught in public schools because that theory is in contravention of various provisions of the U.S. Constitution.

The previously mentioned *McLean v. Arkansas Board of Education* legal proceeding arose in conjunction with Act 590 that the governor of Arkansas had signed into law on March 19, 1981. The title of that act was: "Balanced Treatment for Creation Science and Evolution Science," and as the act's name suggests, the law required public schools in Arkansas to offer programs that provided balanced treatments of creation science and evolutionary science.

A number of individuals and organizations joined together to bring suit against: (1) the Arkansas Board of Education, (2) the director for the Arkansas Department of Education, and (3) the State Textbooks and Instructional Materials Selecting Committee that, collectively, were responsible for translating Act 590 into active educational policy. Among the individuals and organizations that are being represented through the plaintiff side of the case were: The National Association of Biology Teachers, the Arkansas Education Association, the American Jewish Congress, various churches in Arkansas from different denominational backgrounds, as well as a biology teacher from Arkansas and an array of individuals who were parents or friends of students in Arkansas public schools.

The *McLean v. Arkansas Board of Education* trial took place from December 7, 1981 to December 17, 1981. Judge William R. Overton presided over the proceedings and issued his decision on January 5, 1982.

The suit was first filed on May 27, 1981. The complaint maintained that Act 590 was in contravention of the U.S. Constitution because, among other things, that law violated the establishment clause of the First Amendment – which, according to Judge Overton, is made applicable to the states by the way of the 14th Amendment, but, one should point out that the Amendments extend to the people of any given state independently of the 14th Amendment due to the guarantee of a republican form of government in Article IV, Section 4 of the Constitution.

The aforementioned complaint filed by the plaintiffs contained two other charges as well. More specifically, Act 590 denies teachers and students their right to academic freedom by undermining the Free Speech Clause of the 1st Amendment and, in addition, Act 590 is excessively vague and, therefore, violates the Due Process Clause of the 14th Amendment.

In his January 5, 1982 decision, Judge Overton provides a certain amount of legal background to help frame some of the issues in the *McLean v. Arkansas Board of Education dispute*. For instance, he quotes from Justice Black's 1947 decision concerning the *Everson v. Board of Education* case:

"The 'establishment of religion' clause of the First Amendment means at least this: Neither a state nor the Federal Government can set up a church. Neither can pass laws which aid one religion, aid all religions, or prefer one religion over another. Neither can force nor influence a person to go to or to remain away from church against his will or force him to profess a belief or disbelief in any religion … No tax, large or small, can be levied to support any religious activities or institutions, whatever they may be called, or whatever form they may adapt to teach or practice religion."

The notion of "church" in Justice Black's foregoing statement is used as a representative term that applies to a wide variety of religious institutions that, presumably, is intended to include (despite not being specifically mentioned): Temples, synagogues, mosques, abbeys, cathedrals, meeting halls, houses of worship, spiritual sanctuaries, and the like. The foregoing presumption is strengthened when Justice Black subsequently indicates that the underlying principle extends to: "… religious activities or institutions, whatever they may be called, or whatever form they may adapt to teach or practice religion."

However, although Justice Black seems to assume that everyone will understand what is meant by the idea of a religion or church (including its extended sense noted above), nonetheless, there is considerable vagueness that surrounds and permeates his foregoing statement. As pointed out earlier, the notion of religion might be applicable to almost any conceptual system that involves qualities of: Tying or binding someone to a set of values, teachings, ideas, values, practices, purposes, meanings, methods, understandings, theories, and/or attitudes that are engaged repetitively because they generate a sense of reverence, sacredness, and commitment that orients individuals and/or communities concerning the nature of the truth about an individual's or a community's relation with Being.

Therefore, if a church – irrespective of whatever it might be called or whatever form it might assume – revolves around, in part or in whole, the

foregoing set of qualities, properties, and activities, then, Justice Black – possibly without fully understanding the implications of his words -- might be referring to a great deal more than he – or Judge Overton – believes is being claimed in the *Everson v. Board of Education* case. Indeed, any set of practices, ideas, beliefs, values, theories, principles, methods, and so on that one considers to be inviolable, sacrosanct, sacred, and worthy of reverence -- but which cannot necessarily be demonstrated to be true – begins to be indistinguishable from the usual senses associated with terms such as "church" or "religion".

Thomas Jefferson maintained that the "Establishment Clause" of the First Amendment erected a wall of separation between church and State. Yet, depending on what the State holds to be true, one might contend that the policies of the State could give expression to a set of values, ideas, beliefs, principles, methods, and practices that are difficult, if not impossible, to distinguish from religious activities when construed in the broader sense outlined above. If so, then, the so-called wall of separation that, supposedly, was put in place through the "Establishment Clause" of the First Amendment and which was intended to differentiate between church and state tends to dissolve before our eyes.

Judge Overton's decision in *McLean v. Arkansas Board of Education* also cites the words of Justice Felix Frankfurter with respect to the latter's 1948 judgment concerning *McCollum v. Board of Education*. According to Justice Frankfurter:

"Designed to serve as perhaps the most powerful agency for promoting cohesion among a heterogeneous democratic people, the public school must keep scrupulously free from entanglements in the strife of sects. The preservation of the community from divisive conflicts, of Government from irreconcilable pressures by religious groups, of religion from censorship and coercion however subtly exercised, requires strict confinement of the State to instructions other than religious …"

The idea that public schools should be an agency "for promoting cohesion among heterogeneous democratic people" is put forward as a truism in the foregoing decision. Consequently, Justice Frankfurter does not explore whether, or not, public schools should be an agency "for promoting cohesion", nor does he critically reflect on what might be meant by the notion of cohesion.

Justice Frankfurter wants the instruction that takes place in public schools to be "other than religious," but he doesn't explain precisely what he means by this allusion. Furthermore, although he is clear that public schools should remove themselves "from entanglements in the strife of sects," and although Justice Frankfurter is clear that he is referring to the strife that tends to arise in conjunction with religious sects, he, apparently, fails to consider the possibility that strife also arises in conjunction with all manner of philosophical, scientific, and political sectarian thought and activity, and, as a result, one is thrown deeper into uncertainty concerning the manner of the instruction that is "other than religious" and, therefore, should be adopted by public schools to promote the sort of cohesion he seems to have in mind (at least in a vague sense) for "a heterogeneous democratic people."

During the course of rendering his decision for *McLean v. Arkansas School Board*, Judge Overton makes reference to the opinion of Justice Clark that was issued in conjunction with the 1963 case of *Abbington School District v. Schempp*. In the latter case, Justice Clark maintained that in order to be able to comply with the requirements of the Establishment Clause of the First Amendment, "… there must be a secular legislative purposed and a primary effect that neither advances nor inhibits religion."

The secular constraint upon legislative activity was again affirmed in the 1973 decision concerning *Lemon v. Kurtzman*. In that case, a tripartite set of conditions was established to serve as guidance for trying to parse such matters – namely, (1) the legislation must serve a secular purpose; (2) the primary effect of the legislation must be to neither inhibit nor advance religion, and, finally, (3) such legislation should not encourage or generate excessive government entanglement in religious matters.

Notwithstanding the rather amorphous cloud of meaning in which condition (3) tends to be enveloped as a result of the presence of the term "excessive" (and, therefore, becomes a possible focus for future objections under the Due Process provisions of the 14th Amendment), one might question the requirement that legislation must serve a secular purpose since those purposes not only are fraught with all manner of strife (and, according to Justice Frankfurter, isn't one of the reasons for pursuing secular rather than religious systems of thought is to be able to avoid sectarian strife?) but, perhaps, more importantly, despite the lack of religious vocabulary associated with various notions of secularism,

nonetheless, that sort of approach to governance tends to promote views of reality that cannot be proven to be true – anymore than religious models can be proven to be true to everyone's satisfaction – and secular approaches to governance also require citizens to treat legislation as being: Inviolable, sacrosanct, sacred, deserving of reverence, and capable of binding or tying individuals and the community to sectarian theories (of a philosophical kind) concerning the nature of reality?

Is secularism really any less sectarian than overtly religious systems of thought are? Is secularism really any less entangled in issues of strife than are religious sects with respect to disputes about what values, beliefs, ideas, practices, principles, and so on should be treated reverentially and considered to be inviolable, sacrosanct, or sacred and, therefore, worthy of obligating individuals and the community in one way rather than another?

The foregoing considerations are not an attempt to put forth some post-modernist, relativistic deconstruction of the legal system. Rather, an attempt is being made to indicate that there is considerable amorphousness at the heart of the U.S. Constitution as well as in many subsequent judicial decisions concerning the supposed nature of that document.

For instance, if the republican form of government that is guaranteed in Article IV, Section 4 of the U.S. Constitution requires federal government officials – including justices -- to act and make decisions in accordance with republican qualities of: Objectivity, integrity, impartiality, equitability, fairness, independence, disinterestedness, and not being judges in their own affairs, then, why are secular theories of reality being given preference to religious theories of reality? Moreover, displaying a differential preference for secular ideas very likely will not only serve to inhibit the observance, practice, and pursuit of religious values, ideas, practices and so on, but, as well, encourages and promotes secular ideas as if they were religious in nature … that is, the sort of ultimate views of reality that should be taught in schools and toward which students should develop the requisite reverence and learn how to treat such ideas as being sacred, inviolable, and sacrosanct in nature?

After running through a few relevant aspects of legal history (noted previously in this chapter) in order to provide a context for his decision, Judge Overton's ruling in *McLean v. Arkansas Board of Education*

proceeds to offer an extended historical analysis of religious fundamentalism and its decades-long conflict with the theory of evolution. However, Judge Overton does not make any comparable effort to put forth a critical review concerning the theory of evolution and whether, or not, there is a form of fundamentalism to which the theory of evolution might give expression.

Judge Overton does indicate – with a hint of approval -- that the Biological Sciences Curriculum Study (BSCS), which is a non-profit organization that works with scientists and teachers, has developed a series of biology texts that give emphasis to the theory of evolution. He also notes that those texts are being used by 50 percent of the children in American public school systems.

However, Judge Overton, apparently, has nothing to say about whether, or not, requiring school children to use the BSCS books might constitute a contravention of either the Establishment Clause of the First Amendment or the Guarantee Clause of Article IV, Section 4 in the Constitution. After all, the sectarian nature of the theory of evolution and its claim to constitute a scientific portrait concerning the nature of reality has not been proven to be true and, perhaps, can never be shown to be true.

Judge Overton's ruling also makes reference to the history of fundamentalist opposition toward the theory of evolution when he notes that such a history is documented in Justice Fortas' Supreme Court opinion in *Epperson v. Arkansas*. This latter legal decision rescinded the Arkansas legislative Act 1 of 1929 that prohibited the teaching of evolution in public schools.

In each of the foregoing decisions, reasons are given about why fundamentalist views concerning the issue of origins should not be taught in public schools. However, none of those legal decisions explores whether, or not, there might be reasons why the theory of evolution also should not be taught to public school children, and one can't help but wonder whether any of the jurists who were (or are) making decisions concerning the teaching of evolution know much, if anything, about what they are advocating … or whether their rulings are in compliance with the republican qualities of impartiality, objectivity, integrity, independence, equitability, disinterestedness, and fairness that are guaranteed through Article IV, Section 4 of the Constitution.

After providing an overview of religious fundamentalism and its history of conflict with the theory of evolution, Judge Overton's decision in *McLean v. Arkansas Board of Education* cites some of the evidence that he feels demonstrates the religious intent underlying Act 590 that, supposedly, calls for a balanced treatment of Creation Science and the theory of evolution in the classrooms of public schools. While one is inclined to agree with Judge Overton's assessment of the foregoing evidence, nonetheless, one should keep in mind that there doesn't seem to be any comparable effort on the part of Judge Overton to critically reflect on the possibility that many facets of the theory of evolution also give expression to a religious-like, fundamentalist orientation.

A distinction is made in Judge Overton's decision between, on the one hand, some of the scientific elements that are present in the theory of evolution and, on the other hand, the relative absence of – or the presence of problematic facets of -- scientific rigor in creation science. However, such a distinction tends to obscure the issue that should have been at the heart of the *McLean v. Arkansas Board of Education* case.

In other words, rather than drawing a distinction between what is science and what is not science, Judge Overton should have better delineated the full nature of the Establishment Clause as well as explored the relevance of Article IV, Section 4 to the matter before his court. As a result, Judge Overton does not appear to issue a ruling that complies with the requirements that are entailed by the guarantee of a republican form of government that is given in the U.S. Constitution.

On the one hand, there is nothing in the Constitution that is functionally dependent on being able to make a distinction between science and non-science. On the other hand, there is a great deal – constitutionally speaking -- that rests on the issue of what constitutes a religion and that rests on the issue of what constitutes establishing a religion.

When the pursuit of scientific methodology leads to the rise of a hermeneutical system like the theory of evolution that has not – and, perhaps, cannot -- be proven to be true (i.e., that the origin of <u>all</u> species is a function of neo-Darwinian dynamics) and which claims that the ultimate nature of reality is both random and material in nature (again, neither of which has been proven to be true, and, perhaps, cannot be proven to be true), then, such a system of hermeneutics becomes

indistinguishable from religious systems that seek to impose a sectarian way of thinking on citizens. Consequently, the presence of the foregoing elements in the theory of evolution contravenes both the Establishment Clause of the 1st Amendment, as well as the requirements of Article IV, Section 4 of the Constitution.

According to Judge Overton – and he is basing the following criteria on the testimony of witnesses who participated in the *McLean v. Arkansas Board of Education* trial proceedings – science has five essential properties. (1) Science seeks to discover the nature of the natural laws that govern phenomena; (2) the explanations offered by science are couched in terms of natural laws; (3) the tenets of science can be empirically tested; (4) its conclusions are provisional and, as a result, might change over time; and, (5) the principles of science are capable of being falsified.

Shortly after stating the foregoing characteristics of science, Judge Overton proceeds to point out that Section 4(a) of Act 590 fails to qualify as being scientific because that section depends on the idea that the origin of life arose as a sudden creation "from nothing." Judge Overton claims that such a contention is not scientific because it requires some form of "supernatural intervention that is not guided by natural law", and, consequently, entails an explanation that is not an expression of natural laws, and, in addition, such a thesis is not testable, and cannot be falsified.

In 2012, Lawrence M. Krauss released a book entitled: *A Universe from Nothing*. The author is an atheist, and, therefore, he is not trying to sneak the realm of the supernatural into the discussion by introducing the possibility of something arising from nothing.

The foregoing book is considered to be a book of science. The contents of his book weave together elements from quantum physics, particle physics, astrophysics, thermodynamics, and cosmology to support the idea that the singularity out of which our universe might have arisen could have been an unstable quantum state that spontaneously gave expression to the universe we have inherited and which made life possible.

Of course, whether the foregoing ideas of Lawrence Krauss are correct, or not, is a separate issue. Nonetheless, irrespective of whether his thesis is, or is not, true, the fact that such ideas are considered to be scientific indicates that, contrary to the claim of Judge Overton, the

possibility that something might arise out of nothing does not necessarily depend on supernatural intervention.

In any event, insisting on a distinction between natural and supernatural might be something of a snipe hunt. There is nothing that we know of that precludes the possibility that the so-called natural laws of the universe give expression to God's presence in the operations and dynamics that govern that universe, and, as such, God is free to maintain or make exceptions with respect to how those laws unfold in any given case.

If God maintains (or conserves) natural law, this is not supernatural intervention in a natural phenomenon, but, rather, natural law merely becomes a way of marking God's presence in the process of directing physical phenomena. If God makes an exception in the manner in which natural laws are manifested in any given set of circumstances, then, this also would not constitute a supernatural intervention in a natural process but, instead, would merely reflect that God, by virtue of Divine Presence, was modulating the way in which natural law was being manifested in such events.

Judge Overton's perspective concerning the foregoing issues suggests he believes that supernatural events are neither testable nor falsifiable. Notwithstanding the potentially false dichotomy between the natural and the supernatural that is present in Judge Overton's perspective, for thousands of years, mystics from a variety of spiritual traditions have indicated otherwise.

One can elect to dismiss, out of hand, the foregoing claims of the mystics, but doing so seems to exhibit a considerable resonance with the actions of religious clerics who refused to look through Galileo's telescope when given the opportunity to do so. After all, the mystics contend that mysticism is an empirical science in which one is constantly engaged in a process of testing and falsifying various ideas concerning the nature of the mystical path.

One might also point out in passing that, at the present time, the heart of Lawrence Krauss's perspective concerning the possibility of a universe arising from nothing is neither testable nor falsifiable. Yet, he is considered to be a scientist and his ideas are considered to be scientific even as his colleagues understand that the ideas of Lawrence Krauss

concerning the possibility of the universe arising from nothing might not be correct.

Also, one might want to keep in mind that like many claims in science, the statements of mystics (as opposed to theologians) also often tend to be tentative in nature. For example, the dissertation that my spiritual guide wrote to satisfy one of the conditions of his doctorate program was considered by A.J. Arberry – an eminent scholar of Islam and the Sufi mystical tradition – to be one of the best treatises on the Sufi path to have been written in the English language.

Early on in his academic career, my spiritual guide would update the foregoing dissertation so that it would better reflect what he experienced and discovered during one, or another, of his 40-day periods of seclusion. However, after a while, he gave up on the idea of modifying the contents of his dissertation because the lived experience generated through his many periods of seclusion were constantly outstripping the written words of his dissertation in too dynamic, rigorous, and ineffable a manner.

The foregoing considerations tend to muddy the waters a little as far as the issue of distinguishing between science and religion is concerned (especially in conjunction with religion's mystical dimension). However, irrespective of whether, or not, one accepts Judge Overton's manner of bringing specific criteria to bear on the problem of distinguishing between science and non-science, none of this is germane to the real issue at the center of *McLean v. Arkansas Board of Education* – namely, whether creation science and the theory of evolution (each in its own way) are, among other things, in contravention of the Establishment Clause of the First Amendment, or the Guarantee Clause of Article IV, Section 4 of the basic Constitution.

Judge Overton provided evidence in his ruling (for example, among, other things, he quoted a statement to this effect from the writing of Duane Gish, a prominent proponent of creation science) that the judge was aware of the claim that the theory of evolution was religious in nature. Yet, he did not seem to pursue this issue and, instead, appeared to accept, at face value, the idea that the theory of evolution was scientific in nature while creation science was not scientific in character.

Conceivably, defense counsel might have done an inadequate job of inducing various witnesses to develop, and elaborate on, the religious-like features that are present in the theory of evolution. Nevertheless, there

was enough evidence presented in the *McLean v. Arkansas Board of Education* case to indicate that Judge Overton might not have exercised due diligence with respect to pursuing this facet of the proceedings – especially given that the foregoing issue is far more relevant to the central legal themes of the case (e.g., the Establishment Clause of the First Amendment and Article I, Section 4 of the Constitution) than is the process of trying to differentiate between what is science and what is not science.

Judge Overton was justified in striking down Act 590 of the Arkansas legal code because that piece of legislation clearly violates the prohibitions inherent in the Establishment Clause of the First Amendment, as well as being in contravention of the provisions inherent in Article IV, Section 4 of the Constitution. However, Judge Overton's ruling missed the opportunity to truly deliver a balanced decision (and, therefore, one done in accordance with republican principles) when he failed to overturn the 1968 Supreme Court decision in *Epperson v. Arkansas* that vitiated the Initiated Act of 1929 prohibiting the theory of evolution from being taught in public schools because irrespective of however scientific the theory of evolution might be considered to be, nonetheless, that theory contains an array of elements that render it sectarian in a manner that is indistinguishable from religious theories and, therefore, constitutes a violation of the Establishment Clause of the First Amendment and, in addition, is in contravention of Article IV, Section 4.

Finally, toward the end of his ruling for *McLean v. Arkansas Board of Education*, Judge Overton states:

"Implementation of Act 590 will have serious and untoward consequences for students, particularly those planning to attend college. Evolution is the cornerstone of modern biology … Any student who is deprived of instruction as to the prevailing scientific thought on these topics will be denied a significant part of science education."

The foregoing warning sounds an awful lot like it is alluding to some sort of a religious-like litmus test for higher education. In other words, Judge Overton's foregoing words seem to be suggesting that unless a person can demonstrate that one is a true believer in the theory of evolution and, as a result, has been thorough indoctrinated into the catechism of evolutionary principles concerning the nature of reality, then that individual risks being thrown into the higher education equivalent of

hell or purgatory where such an individual will have to endure boiling in mental anguish for an eternity or, at least, for the duration of one's college career … and, possibly, longer.

I remember reading Theodosius Dobzhansky's 1973 essay from the *American Biology Teacher* entitled: "Nothing in Biology Makes Sense Except in the Light of Evolution." I thought at the time when I read the foregoing essay that it was an exercise in hyperbole since a great deal of – if not most of – the material in biology makes considerable sense independently of the theory of evolution.

To be sure, the theory of evolution does provide one with a hermeneutical way to tie the phenomena of biology together in a tidy little package that lends more sense to those phenomena than they might have if the theory of evolution is not true. Nevertheless, one can easily jettison the theory of evolution (but not population genetics) and still understand a great deal about the marvelous phenomena to which the study of biology gives expression.

Contrary to what Judge Overton claims in the foregoing quote, evolution is not the cornerstone of biology. The cornerstone of biology is biology.

One doesn't need evolution to understand the principles of photosynthesis, the Krebs cycle, nervous functioning, metabolic pathways, cellular physiology, membrane dynamics, motility, molecular genetics, or a litany of other biological functions and principles. The theory of evolution might tell one – correctly or incorrectly – what purposes and functions are served through various biological processes, but that theory contributes little, or nothing, toward the process of revealing the nuts and bolts of how cells and organisms operate.

At best, the theory of evolution enables biologists to speculate about why cells and organisms might operate in the way they do or why, in certain limited cases, new species might form due to factors such as isolation. But, if someone were to wave a wand that erased the ideas of evolutionary theory from our collective memory banks, human beings would still have discovered a great deal that makes sense with respect to biological processes under a variety of different circumstances.

Nearly a quarter century later, many of the foregoing issues resurfaced again in the 2004-2005 legal proceedings known as *Tammy*

Kitzmiller, Et Al. v. Dover Area School District Et Al. The basis for the Pennsylvania case was rooted in an October 18, 2004 memorandum issued by the Dover Area School Board of Directors which announced that students would be required to not only learn about various problems that were entailed by Darwin's theory of evolution, but, as well, students would be required to learn about "other theories of evolution including, but not limited to, intelligent design."

The forgoing resolution was followed a month later by a November 19, 2004 press release from the Dover Area School District stipulating that teachers at Dover High School would be required to read a statement to 9th grade biology students that identified a number of principles. Included in the press release were statements claiming that: There were gaps in the theory of evolution; the theory of evolution was not a fact; the idea of intelligent design provides an account for the origin of life that is different from the theory of evolution, and the book – *Of Pandas and People* – was a resource that students might use in order to learn more about the intelligent design perspective.

A little less than a month later, a suit was filed in U.S. District Court on December 14, 2004. The suit alleged that both the October 18, 2004 resolution of the Dover Area School Board of Directors as well as the November 19, 2004 press release of the Dover Area School District contravened the Establishment Clause of the First Amendment.

The trial began on September 26, 2005. It concluded a little over a month later on November 4, 2005.

The judge presiding over the case was John E. Jones II. He concluded that it was: "…unconstitutional to teach ID [i.e., Intelligent Design] as an alternative to evolution in a public school science classroom."

Like the legal decision in the McLean v. Arkansas Board of Education that was handed down in the 1980s, Judge Jones' judicial decision in the *Kitzmiller, et al v. Dover Area School District et al* case engages in a lengthy discussion that explores a variety of both legal and scientific issues concerning the attempt of Christian fundamentalists to oppose the teaching of the theory of evolution. Such opposition assumed the form of either trying to ban the teaching of the theory of evolution or seeking to have creationist or intelligent design alternatives to the theory of evolution be given equal time in public school classrooms.

During his historical review, Judge Jones II refers to the 1975 Tennessee case of *Daniel v. Waters*. In that dispute, the Sixth Circuit Court of Appeals concluded the legislation at issue gave a "…preferential position for the Biblical version of creation 'over' any account of the development of man based on scientific research and reasoning " and, therefore, was in contravention of the Establishment Clause of the First Amendment.

Although the Sixth Circuit Court of Appeals rightly pointed out that the Tennessee statute that was being explored in the *Daniel v. Waters* case violated the Establishment Clause, the Court failed to indicate that the Tennessee statute also constituted a violation of Article IV, Section 4 of the Constitution because the disputed legislation undermined the principle of republican government that had been guaranteed to each of the states. Extending a preferred position to a Biblical version of creation relative to other non-Biblical accounts concerning the development of human beings that were based on scientific research and reasoning demonstrates that the Tennessee statute was not drawn up in an: Objective, impartial, disinterested, non-partisan, equitable, or fair manner, and, as a result, is inconsistent with the qualities of republicanism.

The Sixth Circuit Court of Appeals does not raise questions in its judicial decision about whether, or not, the theory of evolution should be given a preferred position in public schools. Although the members of the Sixth Circuit Court of Appeals might have felt – if they even considered the matter – that such issues were irrelevant to determining the Constitutional status of the Tennessee statute that was being called into question, the case offered an opportunity for the Court to explore the nature of the Establishment Clause, the Preamble to the Constitution, and Article IV, Section 4 of the Constitution in an equitable, fair, non-partisan, independent, and disinterested fashion, but they failed to do so.

If it is unconstitutional to assign a preferred position to the teaching in public schools of a Biblical account concerning the origins of life or the development of human beings, is it also unconstitutional to assign a preferred position to the teaching of a scientific researched and reasoned theory concerning the evolution of life or the evolution of human beings? Identifying the theory of evolution as being a function of science does not

automatically serve to justify why such a theory should be considered to be incumbent on students to learn.

Naturally, those who consider the theory of evolution to be a true account concerning the origins of species believe it is in the best interests of students to be exposed to the research and reasoning that they feel substantiates their evolutionary perspective. However, those who consider the Biblical account concerning the origins of life and the nature of human development also believe the best interests of students are served by exposing students to the research and reasoning that the advocates of creationism feel substantiate their Biblical perspective.

Both the theory of evolution and the creationist approach to origins and human development are sectarian in nature. Why should one suppose that a sectarian position that is claimed to be scientific will be any less likely to violate the Establishment Clause of the First Amendment or to be in contravention of Article IV, Section 4 than is a Biblical approach to those same issues?

By failing to raise the foregoing sort of questions, the Sixth Circuit Court of Appeals is, itself, not only guilty of violating the requirements of Article IV, Section 4 of the Constitution, but, as well, the Court is helping to establish a sectarian framework. As pointed out earlier in this chapter -- and notwithstanding the fact that the theory of evolution does not employ an overtly religious lexicon -- one encounters considerable difficulty avoiding the conclusion that the theory of evolution is, in many ways, virtually indistinguishable from a religious-like framework because the "facts" that it cites are not capable of demonstrating that the theory of evolution is a correct explanation for the origin of all species.

While stating his judicial opinion in the *Kitzmiller et al v. Dover Area School District et al* case, Judge Jones II cites the findings of Judge Overton in *McLean v. Arkansas Board of Education*. More specifically, Judge Jones II summarizes the legal opinion of the earlier case by stating:

"… the United States District Court of Arkansas deemed creation science as merely biblical creationism in a new guise and held that Arkansas's balanced-treatment statute could have no valid secular purpose or effect, served only to advance religion, and violated the First Amendment."

How does one determine what constitutes a "valid secular purpose"? What are the criteria that determine what constitutes a "valid secular purpose"?

More importantly, perhaps, one wonders why secular ideas should be accorded preferential consideration to non-secular ideas in the legal opinion of Judge Jones II. Even if one were to ignore all of the considerations explored earlier in this chapter concerning the religious-like nature of the theory of evolution, as well as ignore the possibility that the theory of evolution might violate the Establishment Cause of the First Amendment when considered from the perspective of a deeper analysis involving a more inclusive notion of religion, nonetheless, the theory of evolution tends to violate the principles inherent in Article IV, Section 4 of the Constitution because that theory cannot necessarily be shown to be true in an objective, impartial, non-partisan, disinterested, equitable, and fair manner by individuals who are not already committed to that theory.

In addition, the District Court of Arkansas seemed to be immune to the irony inherent in their previous quoted words since the theory of evolution serves only to advance the philosophy of evolutionism. This might constitute a secular purpose, but it is not a valid secular purpose because the sectarian nature of the theory of evolution tends to violate the Establishment Clause of the First Amendment as well as contravene the requirements of Article IV, Section 4.

If a person would like to ask whether, or not, the theory of evolution is a scientific theory, then, by all means, ask scientists – and such questions were asked in both *McLean v. Arkansas Board of Education* as well as in *Kitzmiller et al v. Dover School District et al*. However, scientists are not necessarily the people who should be consulted if one is trying to determine the extent to which the theory of evolution constitutes an objective, equitable, fair, independent, impartial, non-partisan, disinterested account of the nature of reality or our relationship to Being and, thereby, is capable of serving a "valid secular purpose" … that is, one that is capable of satisfying the degrees of freedom and constraints that are set forth in the Constitution (including: The Preamble; the Establishment Clause of the First Amendment; the 9th and 10th Amendment, as well as Article IV, Section 4 of the Constitution).

Judge Jones II commits the same error in his decision concerning *Kitzmiller et al v. Dover Area School District* legal proceedings that Judge

Overton committed in the latter's judgment in the *McLean v. Arkansas Board of Education* case. More specifically, each of the foregoing justices spends a great deal of time in their respective decisions making distinctions between science and non-science but spend relatively little time on exploring the nature of the Establishment Clause of the First Amendment, or on analyzing the nature of Article IV, Section 4 of the Constitution, or reflecting on whether, or not -- under the 9th and 10th Amendment -- either secular or non-secular agencies (or neither) should have control of the educational process, or whether, or not, either Federal or State agencies (or neither) should assume control of the educational process.

Both Judge Overton and Judge Jones II make the same point in their respective legal proceedings – namely, that finding fault with the theory of evolution does not necessarily constitute evidence in favor of some edition of creation science or intelligent design. Consequently, each of those judges should have understand that there is a similar logical error present when the two jurists find fault with creationist science or intelligent design and, then proceed to conclude that some form of a secular conceptual system – such as the theory of evolution or science – must, necessarily, constitute the de facto default system that should govern citizens or be taught in public schools.

If Judge Jones II is going to spend an extended period of time pointing out the many problems that permeate the notion of intelligent design and how that notion gives expression to a religious point of view, then, Article IV, Section of the Constitution demands that Judge Jones II also spend an extended period of time exploring the many problems that permeate the theory of evolution and how that theory tends to violate the Establishment Clause of the First Amendment, as well as tends to be in contravention of the 9th and 10th Amendments along with Article IV, Section 4 of the Constitution. By failing to pursue the foregoing sorts of issues in his judicial decision, Judge Jones II was not exhibiting the necessary qualities of: Objectivity, disinterestedness, impartiality, independence, equitability, and fairness that are required by Article IV, Section 4 of the Constitution and which, supposedly, are guaranteed to the people of each of the states.

Judge Jones II describes how five years after the *McLean v. Arkansas Board of Education* decision vacated Act 590 in Arkansas, the Supreme

Court of the United States struck down a similar law in Louisiana. The majority opinion in the 1987 decision for *Edwards v. Aguillard* stipulated that Louisiana's Creationism Act" contravened the Establishment Clause of the First Amendment because the aforementioned Act amounted to "…restructuring the science curriculum to conform with a particular religious viewpoint."

Yet, if one were to retain the logic inherent in the foregoing way of describing the conflict between creationism and evolutionism in *Edwards v. Aguillard*, a person could easily – and justifiably – argue in parallel fashion that the theory of evolution constitutes a restructuring of the science curriculum to conform with a particular sectarian – if not religious-like – viewpoint that seeks to promote an evolutionary philosophy that is dressed up in scientific language. Referring to the theory of evolution as being scientific does not make it any less sectarian, or religious-like in the manner in which it seeks to impose a certain way of thinking on students and, in the process, attempts to induce the latter individuals to consider such a theory to be inviolable, sacrosanct, sacred, and deserving of a reverential-like commitment that should shape a person's understanding and engagement of reality.

Both Judge Overton in *McLean v. Arkansas Board of Education*, as well as Judge Jones II in *Kitzmiller et al v. Dover Area School District et al* seem to be oblivious to the manner in which they each tend to filter the information in their respective cases through the presumptive lenses of science and the theory of evolution rather than filter information through a process of reflecting on that information in a truly objective, impartial, independent, non-partisan, fair, and equitable fashion that tends to lead to the conclusion that, on the one hand, neither creation science or its update counterpart, intelligent design should be taught in public schools, nor, on the other hand, should the theory of evolution be taught in public schools. In fact, the extent to which each of the aforementioned judges seems to be blind to the conceptual dynamic through which their respective cases are being framed and filtered in a manner that give unquestioned priority to science and the theory of evolution indicates just how problematic the issue of establishing a "valid secular purpose" can be if one is going to, simultaneously, try to reconcile such purposes with, say, the requirements of Article IV, Section 4.

Secular purposes are not necessarily the de facto solution for avoiding violations of the Establishment Clause of the First Amendment or transgressions against the requirements of Article IV, Section 4 of the Constitution. Purposes that are neither secular nor non-secular should be sought … purposes that require an on-going process of critical reflection intended to ascertain that neither secular nor non-secular perspectives that have sectarian, religious-like features are permitted to be imposed on citizens, and, in addition, to ascertain that the actions and decisions of government officials are in compliance with the requirements of a republican form of government.

During his decision for *Kitzmiller et al v. Dover Area School District et al*, Judge Jones II states:

"We are in agreement with plaintiff's lead expert, Dr. Miller, that from a practical perspective, attributing unsolved problems about nature to causes and forces that lie outside the natural world is a 'science stopper'. As Dr. Miller explained, once you attribute a cause to an untestable supernatural force, a proposition that cannot be disproven, there is no reason to continue seeking natural explanations as we have our answer."

Although the term "natural world" is used in the foregoing excerpt from the legal decision of Judge Jones II, no definition is given for that phrase.

How does one determine what forces and causes lay within, or beyond, the purview of the natural world? How does one prove what forces and causes lay within the boundaries of the natural world?

Just because one has methods at one's disposal that are capable of detecting certain kinds of forces or causal relations in observed phenomena does not mean that other kinds of forces and causes aren't also present that fall beyond the capacity of one's methods for detecting phenomena, forces, and causes. Moreover, forces and causes that cannot be engaged or measured by our current methodology are not necessarily supernatural.

The neutrino is calculated to measure 10^{-24} meters (.000000000000000000000001) or 10 yoctometers. The Planck length is 10^{-35} meters or in the vicinity of .0000000001 yoctometers.

The Planck length tends to mark a boundary for classical ideas concerning the nature of space-time and gravity. Consequently, we have

no idea what, if anything, lies on the other side of that boundary marker or how what transpires in that realm of the Universe affects what transpires on the level of the Planck length or larger.

For example, we don't know why constants -- e.g., the mass of an electron which is $9.10938356 \times 10^{-31}$ kilograms -- have the values they do. The Higgs field might have something to do with the mass value of an electron, but if so, at the present time, we do not know what the nature of the dynamics are between the structural properties of the electron and the structural properties of the Higgs field that would result in electrons having such a constant value.

We know that the Higgs field exists because CERN has been able to detect that field through the presence of the Higgs boson. However, we do not know what -- if anything -- makes the Higgs field possible, but irrespective of whatever might make the Higgs field possible and even though we do not, yet, fully understand the properties of that field, we assume that those dynamics are natural in character.

Natural forces and causes are whatever makes observable phenomena possible irrespective of whether, or not, we can detect them, measure them, or understand them. Advances in methodology, measurement, and instrumentation often expand the horizons of the observable and detectible, but, currently, we do not know whether, or not, we will reach a point in the future when we might encounter some sort of inherent limitation to what can be observed or measured through our physical methods and instruments.

If such a limit should be reached, this does not mean that we have exhausted what the natural world has to offer. Instead, what it means is that we will have reached a terminal point for what our methods and instruments can reveal about the character of the natural world.

Conceivably, God operates in the interstitial spaces that cannot be accessed by our methods and instruments. This would not make such dynamics supernatural but, rather, those dynamics would merely give expression to a species of natural phenomena that are beyond our ability to observe, detect, or measure.

Judge Jones II – as well as Dr. Miller, the lead witness for the plaintiff – maintains that: "once you attribute a cause to an untestable supernatural force, a proposition that cannot be disproven, there is no

reason to continue seeking natural explanations as we have our answer." Yet, the theory of evolution constantly makes reference to the idea of random, chance events that cannot be proven to be truly – that is, ontologically, rather than just methodologically -- random, chance phenomena, and, as a result, the foregoing perspective has tended to stop scientists from looking for natural explanations that transcend the idea of randomness but still fall within the realm of the natural world even though the properties and characteristics of that natural world might fall beyond the capacity of our present (and, possibly, future) methods, measurements, and instruments to be able to detect.

Neither Judge Jones II nor Dr. Kenneth Miller (the lead witness for the plaintiff) – nor anyone else -- knows how the first protocells came into existence or how the genetic code came into existence. Neither of those individuals knows how consciousness, intelligence, memory, reason, language, or creativity came into being or what made them possible.

They assume that the aforementioned sorts of phenomena are part and parcel of the natural world. Nonetheless, they know almost nothing about the underlying dynamics or causal forces that give expression to those sorts of qualities or properties and, quite possibly, they will never be able to prove or test what, ultimately, is responsible for those phenomena.

In short, neither Judge Jones II nor Dr. Kenneth Miller have defensible grounds for claiming that the natural world is a realm that necessarily excludes the presence of God. Indeed, the nature of God's activity in the natural world might just be among those phenomena that are beyond the capacity of our physical methods and instruments to be able to detect or measure.

When Judge Jones II and Dr. Miller refer to the idea of the supernatural as being a "science stopper", they seem to be blind to the parallel possibility that approaching reality in the way they do could be something of a "soul or spirit stopper". By insisting that: Public schools, their teachers, and their students must adopt a scientific approach to reality that promotes the theory of evolution, they are advocating a policy that, in many respects, cannot be tested or proven to be true, and, therefore, is as much a sectarian system as any religion and, as such, becomes an oppressive force that interferes with the opportunity of

individuals to freely seek natural explanations for phenomena – such as life – that fall beyond the limitations of the theory of evolution.

Judge Jones II indicated in his decision that during Dr. Miller's testimony the professor maintained that just because researchers cannot explain all the details of evolutionary theory, this, in an of itself, does not necessarily invalidate the theory of evolution. Perhaps this is true, but, nonetheless, such a claim does tend to lead to the emergence of questions about where and how one should draw the line that enables one to differentiate between problematic speculations and substantiated theories.

The foregoing contention takes place during a section in the judicial decision of Judge Jones II that critically analyzes some of the ideas of Professor Michael Behe concerning the issue of 'irreducible complexity'. Dr. Behe is of the opinion that there are many processes within organisms involving phenomena such as motility, blood clotting, and the immune response that exhibit structural properties of sufficient complexity whose origins, or way of coming together, cannot be explained adequately by the theory of evolution.

Taking issue with the foregoing position of Professor Behe, Judge Jones II cites the testimony of Dr. Miller and Dr. Padian indicating that Dr. Behe's perspective fails to take into consideration well known mechanisms of evolutionary dynamics. For example, Judge Jones II states:

"In fact, the theory of evolution proffers exaptation as a well-recognized, well-documented explanation for how systems with multiple parts could have evolved through natural means."

Exaptation is a process in which biological systems acquire functions that those systems did not originally possess. To illustrate the foregoing issue, Judge Jones II refers to an example provided by Dr. Padian during the latter's testimony indicating that the middle ear bones of mammals arose, over time, from the mammalian jawbone.

Judge Jones II proceeds to claim that the foregoing evidence demonstrates that Professor Behe's notion of 'irreducible complexity' excludes such data from consideration and, therefore, refutes the professor's argument. Yet, Judge Jones II fails to indicate what the set of step-by-step processes was that led the middle ear bones of mammals to arise from and become differentiated from mammalian jawbones.

Consequently, neither Judge Jones II nor Dr. Padian have provided a step-by-step map that plots out how one goes from mammalian jawbones to the emergence of mammalian middle ear bones. Apparently, this is one of the evolutionary details that – according to Judge Jones II and Dr. Kenneth Miller – evolutionary theory is not required to explain but which – quite incredibly -- does not cause the theory of evolution to lose any sense of validity.

Yet, if one were to say that God were responsible for the transition from mammalian jawbones to mammalian middle ear bones, evolutionary scientists would demand that the proponents of that kind of a theory to provide a step-by-step account of how God made such a transition possible. However, if the proponents of that kind of a theory could not provide evidence capable of substantiating their claim, then, evolutionary scientists would very likely argue that the absence of such evidence undermines the validity of a creationist theory of origins.

None of the examples of exaptation that Judge Jones II mentioned in his decision or that Dr. Miller ran through during his testimony provide the step-by-step evidence that is needed to demonstrate that their claims are warranted. They both allude to the possibility of exaptation with respect to the emergence of complex systems of motility, blood clotting, and the immune system, but, apparently, those possibilities are supposed to be accepted without having to present any detailed evidence capable of demonstrating that exaptation correctly (and not just possibly or theoretically) accounts for the emergence of complex systems over time.

Judge Jones writes in his decision that:

"… Dr. Miller presented peer-reviewed studies refuting Professor Behe's claim that the immune system was irreducibly complex. Between 1996 and 2002, various studies confirmed each element of the evolutionary hypothesis explaining the origin of the immune system"

Moreover, on cross-examination Dr. Behe was presented with 58 publications that had been peer-reviewed, along with nine books and a number of chapters from several textbooks on immunology that explored the evolution of the immune system.

To begin with, one might ask if any of the people who were among the peers who reviewed the aforementioned studies on the evolution of the immune system were, or were not, individuals who accepted the

theory of evolution. If all of them were proponents of the theory of evolution, then, perhaps, one should not be too surprised that the studies being alluded to might have been acceptable to the peers who reviewed them as long as those studies exhibited the sort of characteristics that would have resonated – to varying degrees -- with the sensibilities of the individuals who were reviewing that material.

Consequently, the foregoing alliance of studies and peers might only indicate that the peers, along with the people who conducted the studies, operated out of a similar world-view. If so, then, the evidence being cited by Judge Jones II or Dr. Miller does not necessarily constitute evidence that the theory of evolution has been shown to be true in some independent fashion.

Secondly, what does it mean to say that a study confirms a given theory? What are the criteria of confirmation? What justifies such criteria?

Since none of the individuals who wrote: Those 58 studies, or nine books, or several textbooks on immunology were present when immune systems began to emerge in various organisms and also were not present when new wrinkles might have been introduced to those systems, I can pretty much guarantee that none of the individuals to whom Judge Jones II or Professor Miller are referring would be able to specify the precise set of steps that led to the appearance of those systems or to their development. Unfortunately, Judge Jones II seems to exhibit little common sense and ask: How do either the authors of those studies and books or the peers who are reviewing that material know that things happened in the way that is being claimed in their studies.

Judge Jones II seems to be treating informed speculation concerning the possible emergence of immune systems as if it were established truth. Furthermore, rather inexplicably, he appears to be claiming that such informed speculation is capable of disproving Dr. Behe's ideas concerning irreducible complexity.

Professor Behe's notion of irreducible complexity might, or might not, be true. However, speculation about what could have happened in the past is not necessarily the same thing as being able to produce step-by-step, verifiable evidence indicating what actually did happen in the past. Therefore, even if all of those 58 studies, 9 books, and assorted chapters that allegedly were considered to confirm the theory of evolution's

account concerning the development of immune systems, nevertheless, until one closely and critically examines what is meant by the notion of 'confirmation' and reflects on the criteria that are being used to establish that supposed confirmation (and whether such criteria are justified), one can't really be sure what, if anything, has been demonstrated by the studies and books to which Judge Jones II is alluding.

I'm pretty sure that Judge Jones II did not review the 58 studies, nine books, and chapters in several textbooks of immunology that are being referred to in his legal decision. Instead, he seemed to merely accept, at face value, the testimony of Dr. Miller and several other witnesses for the plaintiff that the foregoing material proved what they claimed it did.

Throughout his decision, Judge Jones II seems to exhibit the same sort of inclination that is being noted above with respect to appearing to be positively deposed toward the idea of the theory of evolution without exhibiting any sort of countering critical reservation concerning that theory. As such, he seems to be in contravention of Article IV, Section 4 of the Constitution because he has failed to act in an: Objective, impartial, non-partisan, independent, equitable, and fair fashion, and, as a result, he is helping to establish the theory of evolution as a sectarian system that is difficult, if not impossible, to differentiate from religious-like systems and, as such, violates the Establishment Clause of the First Amendment.

The way to resolve the issues that arise in *McLean v. Arkansas Board of Education* or in *Kitzmiller et al v. Dover Area School District et al* (or any of the other legal proceedings that have dealt with those issues) is neither to accept the theory of evolution while rejecting some variation on creationist theory, nor should one attempt to resolve the foregoing matters by accepting creation science or intelligent design while rejecting the theory of evolution, nor should one try to resolve those problems by trying to provide a balanced treatment of the two competing visions. Rather, one should proceed with the understanding that creation science, intelligent design, and the theory of evolution all violate the Establishment Clause of the First Amendment, as well as Article IV, Section 4 of the Constitution, and, therefore, should not be permitted to shape educational policy in the public school system.