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Six Myths About the Evolution Debate

By Discovery Institute Staff
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The debate over how evolution should be taught in public schools is reaching a fevered pitch across the United States. Newspapers report daily on different aspects of the question—whether to teach evolution, whether to teach criticisms of evolution, or even whether to teach alternatives such as the theory of intelligent design.

In the midst of all the media coverage, several misconceptions have caught on and continue to be perpetuated with little regard for truth or accuracy. Here are five of the most stubborn myths debunked.

MYTH #1: Discovery Institute is part of an orchestrated national campaign to require public school science classes to teach the theory of intelligent design (ID). This movement is currently active in 20 states (or 19, or 40, or 33, etc).

FACT: Not only are both claims false, but they distract from the real issue: whether science classes should be required to *expand* their teaching of Darwinian evolution to include the theory's scientific criticisms. Our policy position is that they should, and a growing number of states agree: The teach-the-controversy approach is now part of the science standards in Ohio, Minnesota, New Mexico, and is currently under discussion in Kansas.

Rather than seeking to mandate intelligent design, Discovery Institute supports the right of teachers to voluntarily discuss the scientific debate over intelligent design free from persecution or intimidation. Rather than trying to mandate an idea or restrict the flow of information, our position defends the right of students to hear different scientific views about evolution.

While it is true that ID-related legislation has been proposed in a handful of states, we are not aware of any state where such a proposal has a serious chance of becoming law. Darwin-only proponents have falsely claimed that many states are pushing to require ID in their schools; this assertion has been reported without verification by many in the media. Only in Dover, Pennsylvania, has an ID-related proposal been put into place—and this by a local district, not a state board of education.

MYTH #2: Questioning or criticizing Darwinism is the same as advocating intelligent design.

FACT: Darwinian evolution and intelligent design do not make up a simple dichotomy; they are only two of the competing theories that seek to explain the complexity of life. Other major theories backed by prominent scientists include self-organization theory (proposed by the well-known theoretical biologist Stuart Kauffman) and natural teleology (proposed by the eminent paleobiologist Simon Conway Morris).

Indeed, many scientists critical of Darwinian evolution are also critical of intelligent design. If all the ID theorists in the world fell off the earth tonight, scientists tomorrow would still be pointing out weaknesses in Darwin's theory.

The following is a handful of those weak points: the validity of Haeckel's embryo drawings; the widespread lack of transitional forms in the fossil record; whether observable micro-evolution can be extrapolated to explain unobserved and unobservable macro-evolution; and how best to explain the widespread phenomenon of "convergent evolution"—in which the same kinds of morphological structures seem to have evolved again and again in different species when that structure was not present in the putative common ancestor.

One does not have to be an ID proponent to be skeptical of Darwinian evolution's claim that natural selection working by random mutation can explain the diversity of life we see around us. Do not confuse criticism of Darwin with advocacy for intelligent design.

MYTH #3: Intelligent design is just a new form of creationism, and therefore religious.

FACT: Intelligent design is not creationism. Unlike biblically-based creationism, ID stands only on scientific evidence, observation and analysis.

Intelligent design theorists argue that some highly-ordered complex features of the natural world—such as the molecular machines in cells or the finely-tuned laws of physics—are best explained as products of an intelligent cause rather than an unguided process. Creationism, on the other hand, is based on religious beliefs and premises.

This debate is not about religion versus science, or creation versus evolution. It's about scientific evidence and how best to interpret it. That's it.

MYTH #4: Anyone who criticizes Darwinian evolution is religiously motivated.

FACT: Critics of Darwinism come in all different stripes—some are religious, some are not. Discovery Senior Fellow David Berlinski, for example, is a prominent critic who, as an outspoken agnostic Jew, is certainly not motivated by religious beliefs. This is science—a realm in which motivations are disregarded and evidence alone matters.

MYTH #5: There is no scientific controversy over the "fact" of evolution.

FACT: This claim turns on a profound ambiguity. What does "evolution" mean when asserted to be a "fact"? If it simply means changes in species over long periods of time, there seems to be little doubt the claim is true. If it means universal common ancestry (UCA), the claim is more controversial; reasonable scientific evidence exists both in favor of and against it.

But, if "evolution" means UCA *plus* the Darwinian mechanism of unguided natural selection acting on random mutation—together giving rise to all the complexity and diversity of the living world—then "evolution" is certainly not a "fact." There is very limited scientific evidence supporting this view, and powerful evidence against it.

Over 400 scientists have signed the "Dissent from Darwinism" statement that challenges the core tenet of Darwin's theory. Outside of the biological sciences—including such fields as cosmology, physics and astronomy—there exists increasing evidence for intelligent design, giving rise to an even more robust debate over the idea of purpose and design in nature.

MYTH #6: The design inference is an argument from ignorance, something lazy scientists do when they don't understand how something arose naturally. Reporters often describe ID with something like: "some biological systems are too complex to be explained by natural selection alone."

FACT: Such descriptions of intelligent design are far off the mark. Design theorists argue for intelligent design not only because natural selection and other materialistic mechanisms are incapable of explaining, for example, the origin of digital information and complex machines in cells, but also because we know from experience that systems possessing such features do invariably arise from intelligent causes.

As the pioneering information theorist Henry Quastler observed, "Information habitually arises from conscious activity." A computer user who traces the information on a screen back to its source invariably comes to a mind, that of a software engineer or programmer. Similarly, the information in a book or newspaper column ultimately derives from a writer—from a mental, rather than a strictly material, cause. Thus, what we know about the present cause and effect structure of the world suggests intelligent design as an obvious explanation for the information necessary to build living systems.

There are also strong positive reasons for inferring design from the intricate machines and circuits now found in cells. Michael Behe has shown that these systems are irreducibly complex, that is, they need all of their parts in just the right place to function at all. This is significant, not only because (as Behe shows) natural selection cannot produce irreducibly complex structures such as the bacterial flagellar motor, but also because we know that irreducible complexity is a property of systems that are known to be intelligently designed. In fact, every time we know the causal history of an irreducibly complex system (like a car engine or an electronic circuit), it always turn out to have been the product of an intelligent cause.

<u>Thus, the inference to design in biology is not based upon ignorance or religion, but instead upon our knowledge of the cause and effect structure of the world</u>. In particular, it is based on our knowledge of what it takes to build information rich and irreducibly complex systems. Cells contain miniature machines, complex circuits and sophisticated information processing systems, exquisite nanotechnology that in any other realm of experience would immediately, and properly, trigger recognition of prior intelligent activity.