

A Word About Intelligent Design

By Burt Humburg

Religious scientists try to understand both the theological and scientific aspects of the natural world. One recent integrating approach has come to be called Intelligent Design. But is Intelligent Design science and should it be taught in science classrooms?

This flyer examines Intelligent Design and shows why it can be dangerous to science.

Evolution and natural selection state that all species formed through descent with modification. That is, a common ancestor gave rise to different species, which gave rise to still other species, and so on over the course of eons. Evolution has been shown to elegantly explain and predict findings that relate to speciation. Further, evolutionary concepts, when broadly applied, have proved useful in explaining and predicting observations in geology, anthropology, and other fields unrelated to speciation. For this reason, many call evolution the integrating theory of science.

Scientists are gathering evidence for natural selection and evolution every day. While there are creationists that dispute the legitimacy of this evidence, this document will not attempt to argue against them. Intelligent Design advocates agree that natural selection and evolution occur, but disagree with scientists about whether they are sufficient to explain speciation. Natural theology, the effort to extract evidences for God from the natural world, has also had a long history. Intelligent Design has recently appeared as the latest approach to developing a natural theology.

So what is Intelligent Design?

Intelligent Design, unlike creationism, does not attempt to say how creation or speciation occurred. Instead, it simply says that whatever happened must have been done by a creative being and was done by “design” or by an intelligence. (Virtually all Intelligent Design advocates believe that God is the creative, intelligent being that caused evolution to occur, though for political reasons many avoid naming God specifically as that creative being.) Evolution is therefore free to advance and develop as a science. Intelligent Design allows this freedom because whatever is eventually found to “be true” must have been what God did.

Understandably, Intelligent Design becomes a very flexible philosophical concept. Despite the fact that Christians have many different interpretations of God, Intelligent Design can accommodate them all. Some envision God as intervening at various times in the history of life through creative acts that violate natural law. Such a God could have artificially selected species to adapt in special ways to eventually make humans the way they appear today. Others believe that God acts continually in and through natural processes. Still others see God as having established the specific conditions in the beginning that would result in the evolution of intelligent life. Clearly, Intelligent Design is a philosophical concept that can fit almost all interpretations, beliefs, and facts.

So what’s wrong with Intelligent Design?

There is nothing wrong with Intelligent Design as a strictly religious or philosophical concept. However, it simply fails as a scientific theory.

The problem is that the same flexibility that is Intelligent Design’s strength is also its weakness. Because Intelligent Design never says what happened or how something did happen, it can never be disproved, which means that it is untestable. Since scientific theories must be testable, to change the definitions of science to make Intelligent Design relevant to science would be to destroy the fundamental properties that make science a valuable study. Even more damaging is that Intelligent Design is not predictive, since explaining some natural event only in terms of an action of God (or any untestable intelligent designer) gives scientists no idea of what the Designer may do in the future.

Because Intelligent Design cannot be disproved and because it is not predictive, it cannot be science. Because Intelligent Design is not science, it is inappropriate to teach it in the public school science classroom. Many Christian and religious scientists hold philosophical views of Intelligent Design that are not in conflict with science because they do not deny the natural principles involved. Most Christians and religious scientists see little benefit to Intelligent Design as a scientific proposition, and many see philosophical and theological weaknesses as well.

What about irreducible complexity? Isn’t that evidence for a God that intervenes in evolution?

Irreducible complexity is a concept advanced by those who advocate the use of Intelligent Design in scientific theories. They believe that irreducible complexity is a line of natural evidence that demonstrates certain complex structures or biochemical systems which, in principle, could not have been constructed through a series of functional intermediate steps. To clarify the argument of irreducible complexity and the danger it poses to natural science, an example of one of the arguments by such an Intelligent Design advocate and a treatment of that argument follows.

The process of blood clotting is controlled by many proteins called enzymes which work together in a delicate balance to keep blood from being too ready to clot and too soon to dissolve those clots. A lack of any of these enzymes effectively stops the clot-forming or clot-dissolving process. Therefore, the clotting cascade can be thought of as an all-or-nothing system.

But evolution theory requires gradual change to create new species based on older ones. Given that natural selection works over small, gradual changes over time, and given that the vital blood clotting cascade works only when it is complete, evolution alone seems unable to explain the development of this and other complex systems. If evolution occurred, then, irreducible complexity advocates would conclude that evolution must have occurred under the control of some intelligent designer.

The problem with irreducible complexity is two-fold. First, irreducible complexity is an argument from ignorance. Anyone who knows much about debate knows that an argument like, "I don't know how X could have made Y; therefore, X could not have made Y," is a very weak line of evidence. Indeed, the blood clotting cascade may someday be explained using only evolution and natural selection, and an argument from ignorance can offer no opposition to that explanation.

Second, there is another reason to avoid using irreducible complexity as evidence for Intelligent Design as a scientific concept. In fact, there is a reason to avoid working Intelligent Design into science altogether. The problem is that Intelligent Design, when applied as a scientific concept, can sabotage inquiry in science.

How can Intelligent Design sabotage science?

Another more insidious problem with Intelligent Design as a scientific concept is that it can sabotage science. Science is, fundamentally, a system of discovery. When scientists see something they cannot explain, they formulate a theory that explains what they saw and then they test that theory. The danger of improperly used Intelligent Design is that it can substitute a supernatural explanation which can never be tested or which does not predict other findings in place of a natural theory that can be tested by science and is predictive of other findings. A direct intervention of God or similar "unknown" is not an explanation that can be tested, nor does it predict other findings.

As a fanciful example, take two scientists who travel to St. Louis, neither of whom knows much about construction. One of these scientists uses Intelligent Design in science, and the other one uses Intelligent Design only as a philosophical concept. As the two scientists gaze upon the St. Louis arch, both are reverently astonished and both attempt to explain how the arch could have been constructed. As neither of our two scientists knows about the use of scaffolding to support an eventually self-sustaining monument while it is being constructed, our scientists are left without natural explanations. The person who uses Intelligent Design in science might conclude that, since humans clearly cannot create such structures as a whole, the St. Louis arch must have been built by God, extra-terrestrials, or some other untestable "unknown."

Of course, this conclusion would seem silly to most readers, since most readers know about scaffolding and all would know that humans constructed the arch. But to understand the example and its relation to speciation, the reader must enter the mindset of a person encountering a new, poorly understood phenomenon.

Clearly, our scientist reached an inappropriate conclusion by using Intelligent Design in his explanation. Easily, then, one danger of Intelligent Design is that it can support bad theories with untestable "evidence." However, incorrect theories are advanced and corrected often in science. The real threat is that the question of the construction of the arch has now been answered (God did it) in a way that sabotages further learning. After all, explaining the creation of the St. Louis arch by a one-time act of God does not predict other natural findings and has no application to other natural problems.

The scientist who uses Intelligent Design only as a philosophical concept, however, would attack his problem differently. When this person exhausts his ability to explain the arch's creation, this scientist simply says, "I don't know how the arch was created."

The difference between the explanations advanced by these two scientists is a subtle but vital one. Neither scientist knows how the arch was constructed. However, the first scientist fills the void of ignorance with a theory that conveniently explains everything. The other scientist does not substitute an unfalsifiable theory for his ignorance, but accepts his inability to answer the question of the arch's construction. Fact is, good scientists often must deal with not being able to answer a question. They are not satisfied by it (by any means), but they accept it for the time being. Poor scientists are those who must fill all voids of ignorance by whatever concepts are available on hand, however inappropriate. Intelligent Design, as an explanation that cannot be tested by natural science, is an example of an inappropriate answer to a natural, scientific problem.

What about this commitment to "Naturalistic Methodology?" Isn't that atheism in disguise?

Naturalistic methodology is a big phrase that simply means scientists should keep supernatural explanations out of their work. In other words, a scientist using a naturalistic methodology only uses evidence that was gathered by observing the natural world. A scientist who follows a naturalistic methodology also uses theories to explain and predict that evidence only if those theories can be disproved by observation and experimentation in the natural world. Checking scientific findings by either observation or experiment in the natural world is of paramount importance to the continuing success of science. When scientists experiment and produce data they were not expecting, they look for possible natural explanations. That is, good scientists practice a naturalistic methodology in science.

Some opponents of evolution have criticized this commitment to naturalistic methodology as being atheism in disguise. They mistakenly state that science is based on "philosophical naturalism" or "metaphysical naturalism" rather than "methodological naturalism." In other words, they feel that the removal of God from natural explanations represents an attack on God in the spiritual realm. They confuse a commitment to a naturalistic methodology in science with a strict adherence to a naturalistic philosophy as a worldview.

Science does not deny the existence or actions of a creator but instead remains silent regarding them. Science restricts itself to explaining natural causes, and the confirmation or denial of supernatural causes is beyond its capacity. Methodological naturalism places boundaries around what science can and cannot say, and what explanations or descriptions can be accepted as part of the scientific enterprise. In other words, methodological naturalism describes how empirical inquiry is to be done and is certainly not a statement of the nature of cosmic reality. Science pursues truth within narrow limits, and within those limits, it has proven to be very successful. But science cannot be used to answer all questions and, as described above, confusing theological and scientific explanations results in poor conclusions and sabotages inquiry.

When engineers design planes, they do so knowing that the key to flight is in the shape of the wing, and not that a controlled miracle of God will keep the plane aloft. Quite simply, planes fly because scientific theories were suggested and verified using naturalistic, and not supernatural, methodologies. In turn, there are also valid reasons to keep explanations that involve God out of evolution or natural selection (as stated above, to do otherwise can sabotage scientific inquiry).

Acknowledging that science is best done when committed to a naturalistic methodology, Christian scientists are still free to revere God in their work and recognize scientific explanations as expressions of God's creative power. Science studies naturalistic relationships. Religion, on the other hand, studies ultimate creation and relationships to the Creator.

What can I do to keep science education strong in Kansas?

If you are concerned about the education of children in Kansas, join KCFS by pointing your web browser to [<http://www.kcfs.org>] and following the appropriate links. More information about Intelligent Design can also be found at that website, along with links and information about evolution, science education, and the decision to de-emphasize evolution in Kansas public school education.

KCFS is a growing group of educators, parents, students, scientists, and other Kansans who are concerned with raising the quality of science education in Kansas. This document was prepared by Burt Humburg, currently a second-year medical student at the University of Kansas School of Medicine. [bhumburg@kumc.edu]