

The Verbicide of Clive Thompson; Dawkins Darwinism; Fred Adams on Darwin's Little Pond; Biblical Creationism: Universe, Man; Black Amends the Constitution

Thompson, Clive. "Why Science Will Triumph Only When Theory Becomes Law." (Los Angeles: Richard Dawkins.net, November 14, 2007), reposted from: http://www.wired.com/techbiz/people/magazine/15-11/st_thompson

Creationists and intelligent-design boosters have a guerrilla tactic to undermine textbooks that don't jibe with their beliefs. They slap a sticker on the cover that reads, EVOLUTION IS A THEORY, NOT A FACT, REGARDING THE ORIGIN OF LIVING THINGS.

This is the central argument of evolution deniers: Evolution is an unproven "theory." For science-savvy people, this is an incredibly annoying ploy. While it's true that scientists refer to evolution as a *theory*, in science the word theory means an explanation of how the world works that has stood up to repeated, rigorous testing. It's hardly a term of disparagement.

But for most people, *theory* means a haphazard guess you've pulled out of your, uh, hat. It's an insult, really, a glib way to dismiss a point of view: "Ah, well, that's just your theory." Scientists use *theory* in one specific way, the public another — and opponents of evolution have expertly exploited this disconnect.

Turns out, the real culture war in science isn't about science at all — it's about language. And to fight this war, we need to change the way we talk about scientific knowledge.

Scientists are already pondering this. Last summer, physicist Helen Quinn sparked a lively debate among her colleagues with an essay for *Physics Today* arguing that scientists are too tentative when they discuss scientific knowledge. They're an inherently cautious bunch, she points out. Even when they're 99 percent certain of a theory, they know there's always the chance that a new discovery could overturn or modify it.

So when scientists talk about well-established bodies of knowledge — particularly in areas like evolution or relativity — they hedge their bets. They say they "believe" something to be true, as in, "We believe that the Jurassic period was characterized by humid tropical weather."

This deliberately nuanced language gets horribly misunderstood and often twisted in public discourse. When the average person hears phrases like "scientists believe," they read it as, "Scientists can't really prove this stuff, but they take it on faith." ("That's just what you believe" is another nifty way to dismiss someone out of hand.)

Of course, antievolution crusaders have figured out that language is the ammunition of culture wars. That's why they use those stickers. They take the intellectual strengths of scientific language — its precision, its carefulness — and wield them as weapons against science itself.

The defense against this: a revamped scientific lexicon. If the antievolutionists insist on exploiting the public's misunderstanding of words like *theory* and *believe*, then we shouldn't fight it. "We need to be a bit less cautious in public when we're talking about scientific conclusions that are generally agreed upon," Quinn says.

What does she suggest? For truly solid-gold, well-established science, let's stop using the word theory entirely. Instead, let's revive much more venerable language and refer to such knowledge as "law." As with Newton's law of gravity, people intuitively understand that a law is a rule that holds true and must be obeyed. The word law conveys precisely the same sense of authority with the public as theory does with scientists, but without the linguistic baggage.

Evolution is supersolid. We even base the vaccine industry on it: When we troop into the doctor's office each winter to get a flu shot — an inoculation against the latest evolved strains of the disease — we're treating evolution as a law. So why not just say "the law of evolution"?

Best of all, it performs a neat bit of linguistic jujitsu. If someone says, "I don't believe in the theory of evolution," they may sound fairly reasonable. But if someone announces, "I don't believe in the law of evolution," they sound insane. It's tantamount to saying, "I don't believe in the law of gravity."

It's time to realize that we're simply never going to school enough of the public in the precise scientific meaning of particular words. We're never going to fully communicate what's beautiful and noble about scientific caution and rigor. Public discourse is inevitably political, so we need to talk about science in a way that wins the political battle — in no uncertain terms.

At least, that's my theory.

“Richard Dawkins.” (Wikipedia Foundation, http://en.wikipedia.org/wiki/Richard_Dawkins):

Clinton Richard Dawkins, a British ethologist, evolutionary biologist and popular science writer ... is a professorial fellow of New College, Oxford.

Dawkins is well-known for his views on atheism, evolution, creationism, intelligent design, and religion. He is a prominent critic of creationism and intelligent design.

Dawkins is an atheist; a freethinker, secular humanist, sceptic, scientific rationalist, and supporter of the [Brights movement](#) [promotes the naturalistic worldview].

Richard Dawkins was born on March 26, 1941, in Nairobi, Kenya. His father, Clinton John Dawkins, was a soldier who moved to Kenya from England during the Second World War to join the Allied Forces. Both of his parents were interested in natural sciences, and they answered Dawkins' questions in scientific terms.

Dawkins describes his childhood as "a normal Anglican upbringing", but reveals that he began doubting the existence of God when he was about nine years old. He later reconverted because he was persuaded by the argument from design, an argument for the existence of God or a creator based on perceived evidence of order, purpose, design or direction—or some combination of these—in nature. However, he began to feel that the customs of the Church of England were absurd, and had more to do with dictating morals than with God. Later, when he better understood the process of evolution, his religious position again changed, because he felt that natural selection could account for the complexity of life in purely material terms, rendering a supernatural designer unnecessary.

In a December 2004 interview with American journalist Bill Moyers, Dawkins said that "among the things that science does know, evolution is about as certain as anything we know". When Moyers questioned him on the use of the word theory, Dawkins stated that "evolution has been observed. It's just that it hasn't been observed while it's happening." He added that "it is rather like a detective coming on a murder after the scene... the detective hasn't actually seen the murder take place, of course. But what you do see is a massive clue ... Huge quantities of circumstantial evidence. It might as well be spelled out in words of English."

Merriam-Webster's Collegiate Dictionary, 11th ed., s.v.:

Hypothesis. An assumption made for the sake of argument. It implies insufficient evidence to provide more than a tentative explanation.

Theory. A plausible or scientifically acceptable general principle offered to explain phenomena. An unproved assumption; conjecture. Implies a greater range of evidence and greater likelihood of truth (the *theory* of evolution).

Law. A statement of an order or relation of phenomena that so far as is known is invariable under given conditions. Implies a statement of order and relation in nature that has been found to be invariable under the same conditions (the *law* of gravitation).

Adams, Fred. *Origins of Existence: How Life Emerged in the Universe.* (New York: The Free Press, 2002), 170-71:

Darwin's Warm Little Pond. In considering the origin of life, the first environments under the microscope are the "warm little ponds" that have been discussed ever since Darwin. The **theory** of biological evolution, as put forth by Charles Darwin in his *Origin of Species*, was a major scientific revolution of the nineteenth century. A key element of evolutionary theory is the **idea** that natural selection accounts for the continual changes of organisms. The twin **concepts** of naturally occurring variations (mutations) and a viable selection procedure (survival of the fittest) provides an explanation for the gradual changes in organisms observed over aeons of time.

But evolution per se does not account for the initial emergence of life. Instead, it helps focus the question: If species gradually change, and if complex species can evolve from simpler ones, then something must get the process going in the first place. The chemical uniformity of all known life-forms argues that all species had a common starting point. But how did this genesis event actually occur? Our task is to run the tape of life backward, from our present diversity and complexity back to the simplest beginnings.

Darwin **envisioned** the origin of life as taking place in a warm little pond, which **conveniently** contained all the necessary ingredients. In the nineteenth century these necessary ingredients were **not known**, so Darwin **conjectured** that the pond must contain ammonia and phosphorus salts, heat, and light. These chemicals were **assumed** to synthesize protein compounds, which interact with one another to synthesize even more complex chemical structures. One important aspect of this process, however **vaguely** defined, is that the basic raw materials are ordinary physical entities—elements of the periodic table and sources of energy. From these simple beginnings, physical systems of increasing complexity emerge. **At some point** in the procedure, the complexity of a physical system increases sufficiently so that the organism becomes alive. Life arises from lifeless chemistry, albeit in natural states of increasing complexity. (p. 170)

The origin of life is becoming a viable experimental science, and some of these ideas have already been tested. In the 1950s Stanley Miller conducted a landmark experiment that led to an industry of follow-up studies. Miller constructed an atmosphere of methane, ammonia, hydrogen, and water. This primeval soup was **supposed** to represent the chemical mix of prehistoric Earth and included the most abundant elements in the universe. Electrical sparks passed through the mixture, and a variety of different chemical compounds were constructed. The reaction products included a large fraction of various organic compounds, including amino acids, the building blocks of present-day life forms. This classic experiment, now included in almost every discussion of life's origins, clearly demonstrated that amino acids can be readily synthesized from basic chemicals with a suitable energy source. (pp. 170-71)

One piece of the biogenesis puzzle is thus in place: The building blocks—amino acids—can be constructed from prebiotic materials, as long as the atmosphere has the proper chemical mix. Although amino acids are readily constructed from nonbiological chemicals in the proper setting, other biological compounds are less cooperative. Nucleotides ["Organic chemical compounds which make up the genetic material responsible for storage and replication of hereditary information in living cells" (*Encyclopaedia Britannica: Micropaedia*, 7:434).] are another class of molecules that help run the machinery of modern life-forms. A host of experiments have ventured to build nucleotides in the same way that the Miller experiment makes amino acids. But all attempts at the prebiotic synthesis of nucleotides have been unsuccessful. So far. The meaning of this **failure** is not yet clear. The jury remains out. (p. 171)

NOTE: Having now given this “testimony” an overview, what noun best defines Darwin’s idea: (1) hypothesis, (2) theory, or (3) law?

30. The idea that life originated in a “warm little pond” through the happenstance procedure described by Dr. Adams takes more faith than to believe the Genesis account of the Lord’s creation of Adam.
31. What Stanley Miller discovered by electrocuting his faux “primeval soup” is that the chemicals of the earth contain the building blocks of life. This is clearly taught in:

Genesis 2:7 - The Lord God **formed** [יָצַר *yasar*: to form as a potter molds clay] the man from the **soil** [עָפָר □ *aphar*: Adam was created out of preexisting chemical elements] of the ground and **breathed into his nostrils the breath of lives, and man became a living being.**
32. The “soil of the ground” provided the “basic chemicals” and the omnipotence of the Lord provided the “suitable energy source” to construct the prototype of the species. However, life did not occur for Adam until the Lord “breathed into his nostrils the breath of lives.”
33. For example, at the time of a child’s physical birth his biological life exits the mother’s womb but he does not become a living being until he takes his first breath. If a child does not inhale then he is not alive and is pronounced dead.
34. The combination of biological life plus soul life is what results in human life. His biological life is made up of elements in the soil of the earth but soul life imputed by God Who selects the person for human life.
35. Evolutionists have the idea that human life evolved from the building blocks of amino acids. This is partially true in the sense that amino acids are common among all of God’s created beings. But there are hundreds of amino acids and their variations determine the differences among the creatures.
36. Of all the creatures, only mankind is said to have a soul. The soul is immortal while the body is mortal. The soul goes on forever while the body is said to return to the soil:

Genesis 3:19 - “By the sweat of your brow you will eat food until you return to the ground, for out of it you were taken; for you are **soil** and to **soil** [עָפָר □ *aphar*] you will return.”
37. Thus for mankind there is more to life than the body. Physical life is doomed to return to the soil of the ground but the soul never dies. The question each individual must resolve is where his postmortem soul life will be spent, eternally with God or everlastingly in the lake of fire?
38. Science observes that amino acids are common to all living things but ignores the soul. There is a difference in the flesh of the various categories of God’s created beings. Paul comments on this in:

1 Corinthians 15:39 - All flesh is not the same: people have one flesh, animals have another, birds and fish another.
39. This verse by itself is sufficient to disprove evolution! The Darwinists’ contention is that man evolved from the lower species of animals and so forth all the way back to the amoeba. Paul, having received completely opposite information from the Holy Spirit, completely disagrees.
40. The problem with teaching Big Bang cosmology as an explanation of the origin of the universe and macroevolution as the origin of life is that both ignore the revelation of Scripture.

41. Critics insist that religion has no place in the public schools. But prior to the 1947 Supreme Court decision in *Everson v. Board of Education of the Township of Ewing* [See **Justice Hugo Black's majority opinion:** http://www.law.cornell.edu/supct/html/historics/USSC_CR_0330_0001_ZO.html] quite the opposite was true as the Bible was referenced in the teaching of all subject matter.
42. However, with the subsequent advent of government-run schools there has also been a simultaneous departure of biblical insight in the classroom. The rationale is that religion should not be taught in tax supported institutions because it violates the "separation of church and state" doctrine, a spurious idea that has no Constitutional basis.