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Science, then, may never replace religion in the lives of most people and in any society that hopes to survive for very long. But neither can religion replace science if humankind hopes to unlock nature's material secrets. And parodies of science, like the so-called "theory" of intelligent design, only cripple science education.

UNINTELLIGENT DESIGN [8.30.05]

by Scott Atran



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UNINTELLIGENT DESIGN

(SCOTT ATRAN:) In recent days President Bush has echoed conservative religious calls to give belief in intelligent design equal time with evolutionary theory in public schools. If heeded, this would debase both religion and science by muddling and weakening their different missions.

Science is not particularly well-suited to deal with problems of human existence that have no enduring logical and or factual solution, such as avoiding death, preventing deception, anticipating catastrophes, overcoming loneliness, finding love or ensuring justice. Science cannot tell us what we ought to do or what should be, only what we can do and what is. Religion endures and thrives because it addresses people's deepest emotional yearnings and society's foundational moral needs. No society has ever endured more than a few generations without an unquestioningly true, but rationally inscrutable moral foundation.

In the competition for moral allegiance, secular ideologies are at a disadvantage. For if some better ideology is likely to be available down the line, then reasoning by backward induction, there is no more justified reason to accept the current ideology than convenience. And if people come to believe that all apparent commitment is self-interested convenience or worse, manipulation for the interest of others, then commitment withers and dies. Especially in times of vulnerability and stress, social deception and defection in pursuit of self-preservation is therefore more likely to occur, as the great Arab historian Ibn Khaldun noted centuries ago. Religion passionately rouses hearts and minds to break out of this viciously rational cycle of self-interest, and to adopt group interests that can benefit individuals in the long run. In the narrowest case, a couple bound in devotion more easily overcomes personal ups and downs. In the broadest case, mutual faith in an omniscient and omnipotent agent (the supreme deity of Abrahamic religions) mitigates cheating and the mentality of "every man for himself."

Science, then, may never replace religion in the lives of most people and in any society that hopes to survive for very long. But neither can religion replace science if humankind hopes to unlock nature's material secrets. And parodies of science, like the so-called "theory" of intelligent design, only cripple science education.

No scientific theory, including evolutionary theory, can ever be proven true, though any theory worth its salt can show competing theories to be false (at least over a common set of referents and measures). Evolutionary theory provides a logical and factual framework for testing intelligent design, which is either false or so hopelessly vague and open to interpretation as to be

scientifically meaningless.

The founders of evolutionary theory imagined adaptations — like the bullet shapes of fish and sea mammals, the wings of birds and bats, and the human being's opposable thumb and reasoning capacity — as well-crafted designs. Charles Darwin marveled at how adaptations were functionally "perfected for any given habitat" and Alfred Wallace saw in them "very much the appearance of design by an intelligent designer on which the well being and very existence of the organism depends." Nevertheless, such designs are actually far from optimal in any engineering sense. This is because there never can be a natural selection of tools and materials from scratch. Natural selection is always bound by historically antecedent compromises between organic structures and environments. On a more abstract level, the causal processes (genetic base-pair substitution) that produce new designs in the history of life on earth are largely random with respect to any functions that those novelties might assume.

In land animals, for example, the mouth does double duty as an opening to take in food and air. As creatures evolved from water onto land, the opening to the respiratory system was jerry-rigged to share the pre-existing digestive tract's anterior structure, including the mouth and pharynx (throat). In terrestrial vertebrates, the pharynx became a short passage linking the mouth to the esophagus and the windpipe. Any mistiming of the swallowing mechanism, which blocks off the air passage in routing food to the esophagus, causes choking. For humans, the problem is even worse because the mouth and throat do triple duty, serving also the function of speech. Both in swallowing food and in articulating speech sounds, respiration is temporarily inhibited as the larynx rises to close (in swallowing) or constrict (in speaking) the opening to the air passage (glottis). Humans are more liable than other animals to choke, as they attempt to simultaneously coordinate eating, breathing and speaking. In the bargain, the swallowing capacity of humans has become much weaker than that of other animals.

Or consider the procrustean fit of the reproductive, urinary and excretory tracts to the same anatomical region. In men, the urethra serves both as a urinary canal and a genital duct. This results in dysfunctions and diseases that pass from one system to the other. In women, these two functional passages are anatomically separated, but are sufficiently close to one another, and to the anus, to facilitate the spread of infection from each of the three systems to the others, especially during pregnancy.

But the most imperfect design affecting the child bearer's health and life, results from evolution's jamming together the outlets of all of three major expulsive functions into the same narrow basin: the expulsion of the large-headed human fetus through this narrow region at childbirth occurs at considerable cost. The "design flaw" of human childbirth has had cascading

effects: human offspring profit from having big brains, but only at substantial cost-to-fitness of relatively high fatality rates for child and mother, long periods of postnatal care, reduction in fertility rates, decrease in resource procurement, and so forth. Many aspects of social life, in turn, may have emerged under natural selection, and subsequent cultural selection, as compromises to such design problems. Modern societies are still trying to work out these compromises for "the working mother."

Creationists, and proponents of "intelligent design," often point to human adaptations as evidence of God's plan, or "intelligent design," and good disposition towards His creatures. A closer look reveals that God may never been wholly pleased with His most preferred creations in granting them the parts they have. Why did He invert the retina and give humans (but not the octopus) a blind spot? Why, in making us upright, did He render us so liable to back problems? Why did He give us just one head, heart and liver instead of two?

After all, having two lungs and kidneys is surely better than having one of each: if you have only one and it fails, you die; if you have two and only one fails, you live. But any such mutations would be catastrophically disruptive for other adapted functions so that the individuals that bear such mutations cannot survive on their own. This is because adaptations can only develop under mutual constraint with other preexisting structures (but which genetic engineering is beginning to trump).

As Americans rose against England, inspired by Benjamin Franklin's credo that "rebellion to tyrants is obedience to God," English historian Edward Gibbon wrote *Decline and Fall of the Roman Empire*, attributing Rome's collapse to religious infection by Christianity. Ever since, most politicians and ordinary people have continued to praise God whereas most scientists and secularly-minded scholars have continued to bemoan religion's influence and predict its demise. If anything, religious fervor is increasing across the world, including in the United States, the world's most economically powerful and scientifically advanced society. An underlying reason is that science treats humans and their intentions only as incidental elements in the universe, whereas in religion — as for people generally — they are central. Personal gods speak to people's problems. But in purging intentional causes from science, including supernatural agents, great progress has been made in understanding nature and helping people, as with modern medicine. Those who preach intelligent design would reintroduce intention into science and so reduce science's capacity to serve. For society, that is an unintelligent design.

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