

## **Are Humans Becoming More Intelligent? (Part Four)**

### **Biomimicry**

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God created the world in a way that reflects the divine wisdom, the pattern of which is discernible for those who vigorously seek after it. But since the source of that wisdom is God Himself, wisdom must begin with an appropriate acknowledgment of and reverence for God. This wisdom is so thoroughly imprinted on the Creation that in Romans 1:18-21 the apostle Paul declares that all those who refuse to acknowledge this testimony of God's existence and power are without excuse. Therefore, the Bible describes the Creation with images of knowledge and wisdom.

For example, in Job 38 the voice from the whirlwind presents the order and power of the Creation as evidence of God's superior knowledge and power. From beginning to end, only the God who created the creatures of the earth can truly sustain and control them.

The creation itself declares knowledge. Therefore, humans since Adam and Eve have had access to unlimited knowledge and wisdom found in God's creation. Often mankind's designs and inventions are inspired by His Creation. We find examples of "biomimicry" based on animal and human biology capitalizing on the unparalleled efficiency of nature.

Continuing in the same vein as my last three commentaries, I am going to wrap this up today with biomimicry.

Take for example, robotics, which have always been bound by the limitations of the computers of their time. But as computer technology continues to evolve, more complex calculations for a wider range of movements become possible. The capability of flexible, pliable movement has given way to more advanced designs like a new 'bio-mech-a-tronic' handling system based on an elephant's trunk. The Bionic Handling

Assistant smoothly transports heavy loads, expanding and contracting by inflating or deflating air sacs within each 'vertebrae'. They go the idea from an elephant's trunk.

Another solution was found in the bone-crushingly strong antlers of a deer. Scientists at the University of York in the UK studied the effect of how the moisture level in deer antlers affects their strength. They studied antlers that were cut just before the stage when stags start dueling, when they need their antlers to be at their strongest, and discovered that during this period, the antlers dry out. Dry, stiff materials are usually brittle and easily breakable, but deer antlers proved to be 2.4 times stronger than wet bone. This revelation seems to have solved the puzzling problem for engineers of making a material that is both stiff and tough. The structure of deer antlers will likely become the basis of incredibly durable industrial materials.

The next example I have for you is that geckos can walk along walls and ceilings because their feet contain dense clumps of projections, each thinner than a human hair, that end in tufts of tiny fibers called "spatulae." A new adhesive is under development that mimics how gecko feet stick to and release from a surface. Gecko feet can help answer the question, how can a robot climb a smooth surface like glass without using suction cups, which are slow and inefficient? The secret lies in the intricate design of a gecko's toes.

Mark Cutkosky, a professor of mechanical engineering at Stanford University, developed the 'Stickybot' with the same type of dry adhesive that lets those lizards cling to the most improbable of surfaces. This 'directional adhesive' relies on millions of hairs on the ridges of a gecko's foot with split ends that interact with the molecules of the climbing surface. Cutkosky told *ScienceDaily*:

Other adhesives are sort of like walking around with chewing gum on your feet: You have to press it into the surface and then you have to work to pull it off. But with directional adhesion, it's almost like you can hook and unhook yourself from the surface.

That's what geckos do when they climb those smooth surfaces.

Another solution, this time from a gecko's eyes: Scientists have discovered that geckos have a series of distinct concentric zones in their eyes that make it possible for them to see colors at night, an ability few other creatures have. These zones have different refractive powers, giving geckos a multifocal optical system that allows light of different wavelengths to focus on the retina at the same time. This makes their eyes 350 times more sensitive than humans' and lets them focus on objects at different distances. The discovery may allow engineers to develop more effective cameras and possibly even multi-focal contact lenses.

Speaking of eyes and cameras, the curved surface of the human eye facilitates a wider field of view than has ever been possible using a camera. The challenge for engineers was to transfer micro-electronic components onto a curved surface without breaking them.

Yongang Huang of Northwestern University and John Rogers of the University of Illinois built a digital camera of the same size, shape and layout as the human eye, and developed a mesh-like material that holds electronic components on the curved surface. This technology would enable photographs that are entirely clear and focused, unlike today's cameras which can focus only on certain areas. It may even enable the development of an artificial retina or bionic eye.

How about a radio chip that mimics the human ear? Faster than any human-designed radio-frequency spectrum analyzer, this radio chip also needs very little power to operate. MIT researchers looked at the way the cochlea in the inner ear converts sound waves into electrical signals sent to the brain. The sound waves create mechanical waves in the fluid of the inner ear, which activate tiny hair cells that facilitate electrical signals. It sounds complicated, but all we know is that we hear, and hear well. But as we get older, those things wear out.

Rahul Sarpeshkar used the same design principles in his artificial cochlear radio chip, which would make possible wireless devices that can receive cell phone, internet, radio and television signals. Sarpeshkar said, "The more I started to look at the ear, the more I realized it's like a super radio with 3,500 parallel channels." God's design of humans and animals, with all the intricacies in them, is just absolutely mind-boggling.

As today's culture moves away from a biblical understanding of the world, so also does wisdom—the proper use of knowledge—abandon them. If what we invent as we mimic God's creation is not used to glorify God, its result will be the destruction of mankind because human invention usually leads to more efficient ways to kill other human beings.

The inspired, written Word of God makes sense of the world and makes sense of science and technology. Even so, we are in a world where the Bible comes under increasing attack, and secular scientists try to divorce science from God and the Bible. There is no reason to suppress this knowledge other than to rebel against their own Creator.

**Romans 1:18-22** (*English Standard Version*) For the wrath of God is revealed from heaven against all ungodliness and unrighteousness of men, who by their unrighteousness suppress the truth. For what can be known about God is plain to them, because God has shown it to them. For his invisible attributes, namely, his eternal power and divine nature, have been clearly perceived, ever since the creation of the world, in the things that have been made. So, they are without excuse. For although they knew God, they did not honor him as God or give thanks to him, but they became futile in their thinking, and their foolish hearts were darkened. Claiming to be wise, they became fools,

According to the Bible, man has always been intelligent—both in the past and in the present, thanks to God's awesome creation of human beings. The difference today is that we have more accumulated knowledge and technologies whose origins began in the mind of God. Sadly, mankind will eventually almost destroy himself with the wrong use of scientific knowledge. But God has promised that He will intervene:

**Matthew 24:21-22** For then there will be great tribulation, such as has not been since the beginning of the world until this time, no, nor ever shall be. And unless those days were shortened, no flesh would be saved [alive]; but for the elect's sake those days will be shortened.