

What's Really Wrong with the Argument from Design?

by Mark F. Sharlow

This document is an edited transcript of an impromptu talk by Mark F. Sharlow. In this talk, Dr. Sharlow examines one of the common arguments for God's existence. He suggests that this argument is wrong, but not for the reason that skeptics usually cite. Instead, he points out a deeper error — and shows that by understanding this mistake, we can gain new insights into evolution and design.

There's a familiar argument for the existence of God that goes something like this: "Objects in nature, especially living organisms, are so complicated and intricately put together that they couldn't possibly be products of chance. Therefore, there must be a supernatural designer." This argument for the existence of a supernatural God is called the "argument from design."

This argument takes various forms, simple and complex. Some versions of the argument from design are quite sophisticated. But the simple way in which I just stated it gives you the gist of the argument — the central idea.

William Paley, back in 1802, published a book titled *Natural Theology* containing a version of this argument. He gave a famous argument about a pocket watch. The essence of his argument is that if you find a pocket watch out in a field, you can safely assume that somebody made it. You don't assume that it just formed there spontaneously.

Paley's version of the argument for design captures the essential idea of the argument. The argument from design is one of the main traditional arguments for the existence of a supernatural creator.

Modern thinkers tend to reject the argument from design on the grounds that natural selection — part of the basic mechanism of evolution — can produce complex structures that only *appear* to be designed. According to this modern line of thought, if you find something in the biological world that's as complex as a watch (and certainly a squirrel or an oak tree is much more complex than any watch), you don't have to assume that it's designed. You can assume instead that it's a product of natural selection. This seems utterly reasonable in the light of our scientific knowledge of evolution. Science has shown clearly that plants and animals are products of evolution through natural selection. Scientists also believe that the inanimate structures in nature, from the galactic scale down to the microscopic scale, can be explained as products of natural causes, although not of natural selection in the case of inanimate things. Science has found ways in which these instances of so-called "design" can arise from natural processes, without the intervention of a supernatural designer.

Some people interested in evolution are fond of calling the apparent design in nature an "illusion of design." One often hears, especially in arguments by atheists, that there's an "illusion of design" in the universe.

According to this rebuttal to the argument from design, the problem with the argument is simply this: what appears to be designed doesn't have to be designed. Apparent designs can be produced by evolutionary processes going on within the physical universe. To explain the existence of these apparent designs, there's no need to assume a designer outside the physical universe. That's the standard counterargument to the argument for design. One sometimes hears people say that the argument from design was no longer believable after Darwin.

Now let me tell you what's *really* wrong with the argument from design. The argument is wrong, but not for the reason that skeptics usually give. Let me explain what I mean by that.

First of all, think about the meaning of the word “designer.” What is a designer?

Humans are the best known examples of designers. When a human being thinks of how to build a watch and then builds one, we say that the watch is a designed object. If a human being somehow managed to think up and build a squirrel, we would say that the squirrel is a designed object too.

Stop and think about this. What are the processes that actually cause humanly designed objects to come into existence? They are processes in the human body, and mainly in the brain. And what is the human brain? It's a physical organ. The processes in the brain are complex, but are divisible into very simple physical processes. Brain tissue is made up of cells, of which the neurons are the most significant to mental processes. The neurons are physical objects. They are fairly complex objects, with fairly complex responses, but they certainly aren't “intelligent” in the same sense in which a whole human being is “intelligent.” If you look even deeper than the neurons, and look at the molecular structure of matter, you find that the processes in the human brain boil down to the interactions among atoms, molecules and electrons.

When we look into the human brain to find how it designs things, we find a bunch of little mechanistic processes subject to the laws of physics — little natural processes with no supernatural intervention. (At least I'm going to assume, for the sake of argument, that there is no supernatural intervention in the brain. Science strongly suggests that this is the case, and I believe it for reasons I've explained elsewhere.)

A design-creating process in the human brain is a combination of tiny physical processes, each one of which is without design, purpose, meaning, or intelligence. These processes, through an

incredibly complex set of circumstances (because the brain is an incredibly complex system), add up to behavior that leads to the production of a *designed* object — let's say a pocket watch.

The original inventor of the pocket watch, and the inventors of different kinds of clocks that came before that, invented those timepieces out of the imaginings of their brains. The design processes that led up to those inventions were sum totals of a lot of different little natural processes. If you look at any stage in the processing that goes on in the brain, and restrict attention to any little step at the molecular level that makes up that processing, you don't find anything like thought, meaning, or planning. You find only matter, along with some electromagnetic fields, in motion. But the whole brain has properties that the parts don't have. The whole can think; the smallest parts cannot. And the whole can design things.

Now I have made my first major point: *you can be made of stupid parts and still design things*. This seems too obvious to mention, but it bears stating for reasons that will become clearer later. An entity doesn't have to be unanalyzable to be a designer. It's possible for a real design to come into being as the result of a natural process — a process whose smallest subprocesses contain nothing suggesting design, or even intelligence.

A natural process consisting entirely of small, mechanistic events can produce a real design. It happens all the time. The human brain does it. There is nothing illogical or self-contradictory about a natural process, made up of stupid little mechanistic steps, creating a design.

If we truly take this fact to heart, evolution begins to look a little different. After all, what is the main reason for thinking that the products of natural selection are not designed? The most obvious reason is that the apparent design in nature is merely a product of natural processes made up of tiny mechanistic steps with no one in charge. No one external to nature engineered those steps. They're just natural, spontaneous little events that add up to the process we call evolution — the grand, magnificent process that produces these things that appear to be designed.

Critics of the argument from design sometimes say that because things came into being that way — by purely mechanistic processes internal to nature instead of by someone’s supernatural oversight — the things produced by those evolutionary processes couldn’t really be designed. However, if we applied this standard to our mental processes instead of to the evolutionary process, we would find that nothing that the human brain creates is really designed! The objects that people design are produced by natural processes that are combinations of small, mechanistic events. The complex objects in nature are produced by natural processes that are combinations of small, mechanistic events. Living beings and other complex natural structures arise from such processes without outside intervention — but this does *not* automatically imply that these structures are not real designs! If it did imply this, then we could also conclude that the structures produced by human brains are not real designs — so people never design anything!

Clearly, this particular way of attacking the design argument just doesn’t work. If we take this attack seriously, then we also have to believe falsehoods about the human brain.

Critics of the design argument also like to point out that evolution is able to go from the simple to the complex without outside help. The complexity produced by evolution is not there at the beginning of evolution, but evolution is perfectly capable of creating this complexity. So, why bother to assume a designer at all? Isn’t it much simpler just to assume that evolution creates the complexity in nature, without the involvement of a designer?

This standard rebuttal seems plausible in view of what we know about human design activities. In humanly performed acts of design, there’s an external creator (a human) who creates the designed object. This is the sort of design we automatically picture when we think of a “designer.” In nature as portrayed by evolutionary theory, there is no such external creator. There is only an evolutionary process which starts with simplicity and produces greater and greater levels of complexity. The complexity is generated from simplicity. It comes about through evolution. Why postulate a designer at all, instead of just assuming that evolution builds

the complexity?

There's one thing wrong with this rebuttal: it assumes that if there is a designer, then the designer has to be *different* from the designed object. This assumption is true in obvious instances of human design (like someone designing and building a watch), but there is no strictly logical reason to think it has to be true in all possible cases of design. What if the complexity of the designer were simply the complexity in the designed system itself? What if the designer were not something external to the system of nature, but were *the system itself*? Can we rule out the possibility that a physical system designs itself?

This speculation — that a physical system might design itself — may sound shocking at first. It sounds like I'm proposing a bootstrap process in which a designer pulls itself full-grown out of a magician's hat. But this is not what I am proposing. We already know, from evolutionary theory, that a physical system can be the source of its own growing complexity. I am only suggesting that this internal origination of complexity might (without logical contradiction) be regarded as a *real process of design*. Then the system under design also would be the designer. There is nothing magical about this. There even are scientific precedents for this idea; I'll mention some of them later. [1]

The idea of a self-designing system may be distasteful to some, but there is nothing illogical or supernatural about it. In fact, scientists already know of a self-designing system! We know of a physical object that *really does design things*, and that, in certain instances, *designs parts of itself*. That system is the human brain. Let me explain what I mean by this last remark — the remark about designing parts of itself.

A person can begin with a certain amount of knowledge, and then, by reflecting upon that knowledge and drawing conclusions from it, end up with more knowledge than before. When this happens, the brain becomes more complex by virtue of its own activity. This is especially

clear in the case of creative mathematical thinking. When a mathematician invents a complex and beautiful new mathematical theory, clearly he is *designing something* — but he is not increasing the complexity of anything external to himself. Instead, he is increasing his own complexity — the complexity of his own brain. He is designing something, a structure of information, entirely within his own brain. This is accompanied by, and perhaps is identical to, the reorganization of the brain tissue, especially of the connections among neurons in the brain. Thus, the brain itself is redesigned to some extent.

This can even happen without the creation of a whole new theory. Consider what happens when you study a bunch of instances of a mathematical theorem, and then suddenly say “Aha! Now I see a general relationship.” All instances of the “Eureka phenomenon” are like that. We start out with a certain amount of complexity in us, and we develop more complexity. This new complexity isn’t pounded into us from outside, by some supernatural being. The brain can do it all by itself. The physical system can make itself more complex. And if the creative process involves the creation of a *design consisting solely of thoughts* (like a new mathematical theory), then the brain is designing something inside itself.

When we think of designing, we don’t normally think of designing ourselves. Instead, we think of designing an external piece of work, such as a machine or a sculpture. But what if a person is designing a system of thought — a philosophical system, or better yet, a mathematical theory? Some part of the brain must be getting redesigned and made more complex. There’s information in the brain after you prove a theorem, or “see” the truth of the theorem, that wasn’t there before. Isn’t the proving of a theorem a process that leads to a complexification of oneself? Isn’t it a process of design?

You could call that a *self-design process*. The brain is designing parts of itself — designing patterns of information or organization within itself. The design of a new mathematical system is a partial redesign of oneself. Any kind of reflective thought is a partial redesign of oneself —

although mathematical creativity offers perhaps the clearest example, because the design that is created is a system, complete in itself, consisting solely of ideas.

Now let's go back to evolution. The evolution of life on Earth is a process. It is a big, distributed, internally interconnected process, consisting of many subprocesses such as the evolution of particular species. The sum total of these processes is one overall global process. The possibility that some parts are only weakly connected to the rest does not change this fact. The evolution of life on Earth is a process that takes place in a material medium (the matter near Earth's surface). We can think of this evolutionary process as a single, overall process taking place in Earth's biosphere. This process is not inexplicable or unanalyzable. It consists of a bunch of little mechanistic natural events. The end result of the evolutionary process is the complexification of matter. This leads to the complexification of the evolutionary process itself. The evolutionary process on Earth can become more complex with time. That process complexifies the medium in which it occurs (the matter near Earth's surface).

Now think of the design process that goes on in a designing human brain. This is a process that takes place in a material medium (the matter of the brain). It has many subprocesses at the neuronal level, which collectively form one overall process extending over fairly large regions of the brain. The overall design process, taking place in the brain, is not inexplicable or unanalyzable. It consists of a bunch of little mechanistic natural events. The end result of this design process is the complexification of matter. The design process complexifies the medium in which it occurs (the matter of the brain). If it is a self-design process (like theory-building), that is all it does — but any design process in the brain does at least this much.

In view of these parallels between evolution and human design, the idea of self-design in nature does not look so silly anymore. This idea of self-design in nature is not new. One sometimes hears people say that nature “designed itself,” although I'm not sure how literally they take this expression. A kindred idea, long discussed by scientists, is that evolution and learning have a lot

in common. Jonathan Schull has pointed out the history of this idea, and has argued that a species, taken as a whole system, can have a kind of intelligence [2]. V. Csányi has asked whether Gaia (a whole system consisting of Earth's organisms and their surroundings) might be intelligent, and whether species might be the thoughts of this system. [3] In his work on species intelligence, Schull also used the word "design" to describe the apparent design in species [4], but it is not clear to me how literally he takes this word.

Nature as a self-designing system is at least an interesting metaphor for evolution. But is it really just a metaphor?

So far I have not argued that the products of natural selection really are designed. Instead, I have tried to show that it is *not* obvious that they are *not* designed. There are two seemingly obvious reasons to believe that evolution is not a design process. I have discussed these two reasons above. One reason is that the evolutionary process is only a composite of undirected, dumb natural events. The other is that the evolutionary process generates its own complexity without external assistance. Either of these facts can be turned into a counterargument to argue that evolution is not really a design process. But these two counterarguments don't work. As I have shown, it's easy to debunk both of them by thinking about how the human brain works. Many skeptical rebuttals to the argument from design make use of these two counterarguments. Thus, these skeptical rebuttals are much weaker than they seem.

There is a third possible reason to claim that evolution is not a design process. This is that evolution, in its earliest stages, exhibits very little complexity. In a humanly created design process (even self-design), there already is a lot of complexity to begin with. The brain is terrifically complex to begin with; it can become more complex, but it was highly complex to start with. Evolution starts with almost no complexity. In evolution, there was no "designer" to begin with — not even the evolving physical system itself, which was not complex enough at the start to be considered a designer in any sense.

This counterargument, like the first two, does not hold water. It is silly to say that nature was devoid of complexity when biological evolution began. After a replicating living organism came into being, there clearly was a lot of complexity within that organism. But even before the beginning of life, nature was fairly complex. The inanimate world contains many different natural forces and processes, some of them quite complex. Think of weather systems. Think of the rotation of the Earth, causing alternate light and darkness, with all that this entails for the atmosphere and the oceans. Think of the deep currents of the sea, or of volcanoes, or of continental drift. Think of the intricacies of inorganic chemistry, or of prebiotic organic chemistry. These complex inanimate phenomena are subject to natural laws which ultimately can be captured only in deep and sophisticated equations. Evidently, nature was rather complex even before life began. After life began, the complexity built up, and up, and up. But in the beginning there already was significant complexity. Later it built up to tremendous complexity, but there was some complexity even at the beginning. With the human brain, we have a lot of complexity to start with; then acts of self-design make the brain incrementally more complex. But the difference between this complexity increase and the evolutionary one is largely just a matter of degree. The brain may have a starting advantage in complexity (with this initial complexity itself being the result of evolution) — but evolution had some complexity to work with at all stages in its history, and even at the beginning. We can't claim that Earth's biosphere started out utterly simple. It was complex and intricate from the start.

What is stopping us from thinking of evolution as a process of self-design? Why can't we think of Earth's biosphere (the material medium in which evolution occurs) as a self-designing physical system? Why can't we say that nature, or a part of nature, literally designs itself? I haven't shown that we can say this, but I have cast doubt upon the three main intuitive reasons to deny that we can. These three reasons are: (1) that evolution is purely natural and is made up of mechanistic steps, (2) that evolution involves no external source of complexity, and (3) that evolution begins with very little complexity. We have shown that none of these three reasons rules out a natural system designing itself. We rebutted these three counterarguments mostly by

using the example of the human brain. These three intuitive reasons for drawing a line between evolution and design are not very convincing anymore. They have been shown to be without much force.

Before going on, I should mention two other possible arguments against regarding evolution as a design process. The first argument uses the fact that evolution does not create things for a purpose.

Contrary to some popular interpretations, evolution does not aim for a goal. It simply rumbles along, generating new forms. There is no preordained outcome to the process. Someone might want to argue that evolution cannot be a design process, on the grounds that a design process has a purpose. Human designers usually aim for something when they design. But do they have to?

It's easy to imagine an artist creating a sculpture — say, a strange abstract sculpture — just for no purpose at all; “just for the heck of it,” as we say. We might argue that there's still a purpose in this case, because the artist is still aiming to create a work of art. But what about children's art, where the child is drawing or sculpting with no such aim in mind? The resulting designs may be simpler than most adult art, but they still are designs. And what about psychotic art? It's possible to imagine a mentally ill person creating an object that turns out to be quite artistic, in a creative act driven by inner forces without any purpose in mind. We should not want to call that object non-designed just because the motivation for creating it did not involve a normal sense of purpose. Even a non-psychotic artist driven by strong creative impulses might create objects “off the cuff” without first having a purpose in mind. This might be especially likely for an amateur artist, who isn't strongly constrained by the ulterior motive of creating marketable objects.

It's entirely possible to imagine a person designing something without having a purpose in mind, and without even knowing what the final product will be. Purpose is not a prerequisite for design. Thus, there is no basis for the intuition that evolution can't be a design process because

it's purposeless. Evolution may be free of purpose, but so are some forms of real design.

There is a fifth possible reason to regard evolution as something less than a design process. This is the apparent fact that the evolutionary process, unlike some processes in human brains, is not a *conscious* process. But is this really an argument against evolution being a design process? [5] After all, when humans design things, most of the design process is unconscious. People often pop up with ideas, including ideas for new inventions and other designs, that they did not consciously formulate. There even is a standard name for this occurrence: it's called the "Eureka phenomenon." Thus, the unconscious nature of the evolutionary process should not rule out our calling the final products "designed." (By the way, do we really know that the evolutionary process is not conscious? Do we know enough about the physical basis of consciousness to make such a judgment? I won't pursue this brazen question here.)

Now that we have disposed of the main reasons for denying that evolution is self-design, we can turn to the positive part of the question. Is there any positive reason for thinking that evolution is a design process?

Before I continue, I should emphasize again that the "design process" I am talking about is a *natural* process. It is the same evolutionary process that Darwin discovered — the same one that mainstream scientists believe in today. By using the word "design," I am not hinting at creationism, or so-called "intelligent design theory," or anything to do with a supernatural creator. I'm talking about a naturalistic view of evolution — the same view that Darwin used, and that scientists use today. The question I'm exploring is not "Should we assume there is a designer outside nature?" The question is "Can the evolutionary process itself — the entirely natural process that Darwin discovered — be regarded as a process of design?"

So far, I have undermined the main reasons for refusing to see evolution as a design process. Now let's look at some positive reasons for thinking of evolution (without supernatural

intervention) as a design process.

How do you tell when a person has designed something? You tell by looking at the product. Take the following science fiction scenario as an example.

Suppose that someone designed and built a brilliant invention, and then you looked inside the inventor's brain. What you found there was not a human brain. Instead, it was some kind of incredibly complex organ (or device) of unknown origin. Suppose you were able to determine that this device was not being controlled by signals from somewhere else — it wasn't simply someone's robot, but was creating magnificent designs through its own internal activity.

Would you then say, "Darn! That magnificent invention isn't really an invention after all! It can't be an invention, because an invention is a designed object, and there has to be a human brain (or at least a higher animal brain) for there to be a design. This device isn't a higher animal brain at all — we don't know what the heck it is. So the so-called invention isn't really an invention after all!"

If you had any sense at all, you would *not* say that! The so-called invention really is an invention — and the details of the inventor's thinking apparatus do not change that fact. Perhaps this invention was made by something not quite human — but it is an invention nonetheless. When we label an object as an "invention," what matters is not the detailed structure of the system that created the object, but the fact that the object was a novel creation — well-fitted to its function, and too complex to plausibly have been created by chance.

If we had to know the details of a person's inner workings before we called that person a "designer," then we could not be certain that anyone was a designer until we physically inspected their brains. However, we do not do this. We do not need to run a brain scan to tell us that an artist really is a designer, or that an engineer really is a designer. We decide that a person is a

designer on the basis of what he or she *does* — on the basis of the *output*. [6]

If we had to know about a person's internal workings before deciding that the person really is designing, then people a few centuries back wouldn't have been able to claim correctly that anyone designed anything! Humans knew that people were designing things long before they knew how the brain worked. The idea of design, and words denoting design, were developed long before science understood how the brain worked. If the judgment that a person is designing depended on knowledge of that person's inner mechanisms, then no one before 1800 (or later) would have had grounds for judging that anyone was designing. In those days they didn't understand the brain well enough to know what was going on inside of a human designer. That would have left Michelangelo, Leonardo and Archimedes in quite a fix — they couldn't justifiably claim to have designed anything! What is more, we might not even be able to make these claims confidently today — since we still don't know many of the details of how the brain designs things. Nevertheless, through all the centuries, there has been an activity that people called “design” (or pointed out with other words in other languages). The criteria for deeming an activity to be “design” must depend on what comes out at the end — not on the mechanistic details of how the activity occurs.

Why do we judge something to be a “design”? I don't want to try to frame an exact criterion for labeling an object as a “design”; such a criterion would likely be artificially precise at best. However, there are certain consciously created objects, distinguished by their complexity and novelty, that we regard as “designed.” We call these objects “designed” because they are too complex to plausibly have been produced by chance, and they are novel — not just copies or random variations of existing designs. We call these objects “designed” even if we can't presently fathom how or why the person made the object — and even if there is no “why.” It would be arbitrary to restrict “design” to objects made by humans. What if ETs did it? Chimpanzees? Androids? We can imagine nonhuman beings designing things too. In this case, the crucial facts are: first, that an object is produced which we would regard as designed if it

were produced by humans; and second, that there is a process (human mind, android mind, or the like) that produces the object and generates the complexity found in the object.

The most important fact about design, for our present purposes, is that *when we judge whether an object is designed, we do not have to know the exact inner mechanisms of the process that creates the object*. When we declare a sculpture to be “designed,” we do not first have to check that the sculptor’s brain is reasonably normal. Even a very odd brain might produce designs; what is important is the *output*. We look at the output; decide that it is complex and novel enough to qualify as a design; take note of the fact that the object’s complexity arose from the inner processes of some physical system; and then decide that the output is, in fact, designed.

If we had to know the details of the object-making process before deciding whether an object was designed, then before people knew how the human brain worked, they would not have been able to tell whether people designed anything! People in the Middle Ages didn’t have the foggiest idea of how the brain worked. But they still could tell that human artworks and tools were *designed*.

Some of these remarks are applicable to intelligence as well as to design. When we label a person intelligent, we don’t have to know the exact structure of their brain. We deem them intelligent because of what they can do. We do not even have to see their brain. If a highly intelligent person turned out to have an overly simple brain, we might say “That’s an interesting fact — a person with an overly simple brain turned out to be highly intelligent anyway.” That fact might be a mystery for neuroscientists to explain, but it could not be used to argue that the person really wasn’t intelligent after all.

This example shows that we shouldn’t judge a person to be intelligent or unintelligent on the basis of the details of their inner physical goings-on. Instead, we must make this judgment based on *what they can do*. By similar reasoning, we shouldn’t judge a person to be a designer or not,

simply because of the details of what goes on inside them. We can make this decision only on the basis of *what they can do*. They can produce objects that we ordinarily would call designed.

If we apply this standard to evolution, instead of to the complexity-producing processes in human brains, we are forced toward the conclusion that the products of evolution are designed. The evolutionary process itself designed them. **I must emphasize again that this has nothing to do with supernatural tinkering, creationism, “intelligent design,” or any other such antics. The evolutionary process itself — purely natural, just as Darwin found it — produces real designs.** It does this naturally, according to physical law, and without supernatural intervention.

The evolutionary process on Earth and the design process in a human brain differ greatly in their physical structure. However, these processes have two crucial features in common: they produce objects that, if produced by humans, would be regarded as designs; and they do this by generating complexity under their own power. Why should we say that evolution isn't a design process just because it's physically different from human brain processes? Remember what I said earlier about odd devices and non-human beings that design things?

In both cases — evolution and humanly created design — there is a process occurring in a physical medium. In both cases, that process creates complex objects that chance could not, for all practical purposes, produce. Evolution and human design are not purely random processes, but are processes in which the effects of random variations are modified by the process itself and by the medium in which it occurs. For the human mind, the medium is the brain. For evolution on Earth, it is Earth's evolving biosphere.

After all this discussion, what can we say about evolution? Simply this: there really isn't anything to stop us from calling evolution a process of design. In fact, if we apply the notion of design fairly, instead of applying it unfairly by arbitrarily excluding nonhuman systems, we should call evolution a design process. Evolution is a natural, physical process that produces

complexity far more efficiently than could random chance. Evolution produces objects which, if produced by human thought, clearly would be designs. In the case of evolution, the design process is not purposeful and perhaps is not conscious — but some human designs aren't purposeful or consciously created either. And although the evolutionary process is not purposeful, you could say it is well-fitted to the realities of its surroundings. The evolutionary process is very sensitive to the real world. It is sensitive to the physical conditions on Earth, and to the products of its own activity — the biological species. It often produces things that are well-fitted to their functions. The creation of new species is sensitive to many factors, and responds to those factors. So, although the products of evolution are not purpose-built, they are formed in such a way that they fulfill certain functional needs.

Now, what have I gotten to here? What's the punch line?

The punch line is this: Once we understand why we regard certain structures as designs, and once we understand what features of a process *don't* count against its being a design process, we can see that it's quite reasonable to regard living organisms and other products of evolution as designed. They are designed, not by a supernatural creator, but by the evolutionary process itself, which is a genuine process of design.

Now before the skeptics start writing, I should repeat two points that I made earlier. First, I am not claiming that the evolutionary process has a purpose. A real design process doesn't have to have one. Second, I am not claiming that the evolutionary process is a conscious process. A real design process doesn't have to be conscious. I don't know whether the evolutionary process involves anything closely analogous to human consciousness. It might, but I'm not claiming that it does. However, as I pointed out earlier, many design processes carried out by humans are mostly or entirely unconscious. The evolutionary process might not be much like a conscious designer. It might be more like your unconscious mind, rumbling about and dreaming up new ideas! I don't know how far this analogy can be pushed — these are huge questions. But the

important point is this: if we apply the same standards of “design” to the evolutionary process that we apply to processes in the human brain, we find that the evolutionary process is a process of design. The fact that the process is natural, and is reducible to small, dumb, mechanistic physical events, does not rule out the process being a real design process. (The human design process is reducible in this way too.) The fact that the process generates its own complexity, or “designs itself,” does not rule this out either (the human design process can do that too). The fact that the process is non-purposeful and perhaps unconscious does not rule it out (some human design processes have one or the other of these negative features). There seems to be no compelling reason to refuse the “design” label to the evolutionary process. In view of what we have learned about the process of design, it seems more correct to call the products of evolution designed than to call them not designed.

Another point I must emphasize is that this view of evolution as self-design is not a scientific hypothesis. Instead, it is a philosophical interpretation of evolution — a new understanding of the meaning of an existing scientific theory. No scientific test could tell the difference between evolution regarded as self-design, and evolution not regarded as self-design. Like all philosophical positions, this view of evolution as self-design is not *empirically* testable — but there may still be very good *rational* reasons for believing it. Here I have argued that the view of evolution as self-design is more rationally acceptable than the alternative. To deny that evolution is a design process is to commit an abuse of language — to use different standards when applying the word “design” to the brain and to the biosphere. Scientific evidence cannot debunk an abuse of language, but philosophical analysis can.

If evolution is a design process, then who, or what, does the designing? The answer is: the evolutionary process itself. Evolution, like the human mind, is a process. I’m not saying that the evolutionary process is a mind, but certainly it is a mindlike process. It is like a mind in some of its salient features. At very least, it’s like a mind in the sense that it can design things.

The evolutionary process isn't much like the human mind in certain other respects. However, this is no argument against evolution's mindlike character. We shouldn't expect a real design process on the scale of the Earth or larger to be much like a human mind at all. I've already made this point in my book *God, Son of Quark*. If real mental or design processes occurred on the scale of the Earth or larger, then these processes would not be much like human mental processes, simply because of the different physical forces that organize things on large scales. These forces, including gravity and large-scale movements of matter, are not much like the electrical and chemical forces acting inside the human skull. Thus, evolution could not closely resemble the human mind in most respects. But in some key respects, evolution *is* like the human mind. I have called it "mindlike." The question of whether it's actually a mind might be a misleading question, for reasons that I stated in *God, Son of Quark* — namely, that if a mind were built on the Earth's scale or even the cosmic scale, it wouldn't be much like a human or animal mind to begin with. It might be hard or impossible to say whether such a "mind" really is a mind, or is just a mindlike process. But in any case, evolution is mindlike enough to design things. We find this out if we apply our ideas of design consistently.

Now skeptics, again take note: this philosophical view of evolution is *not* an example of supernaturalism, or of a return to a prescientific era, or of snuffed candles, or of any of that other stuff you like to write against. What I am proposing boils down to this: the scientific theory of evolution is true, with no supernatural intervention — but instead of saying there's an "illusion of design" in nature, we should say that there *really is* design; that nature itself (or specifically, the evolutionary process itself) is a designer. Nature itself might not have a "mind" of the sort that humans and other higher animals possess. However, nature has a mindlike process going on in it. This process is just the evolutionary process. No "intelligent design," no creationism — just Darwinian evolution, which qualifies as mindlike enough to have its results called "design."

This brings us back to our original topic, the argument from design. What's really wrong with the argument from design?

The argument from design implicitly consists of two steps. First, the argument takes note of the appearance of design in nature, and concludes that real design exists in nature. Second, it uses this preliminary conclusion, the existence of design in nature, to infer that there is a supernatural designer. People often think that the mistake is in the first step: that the appearance of design cannot be used to infer the reality of design. As the skeptics often say, nature contains only an illusion of design. I am proposing that the error actually lies in the argument's *second* step. The first step, from apparent design to real design, is correct. Some things in nature should indeed be regarded as designs; some of them cannot be anything other than designs. The mistake in the argument is in the second step: the existence of design in the universe does not imply the existence of a *supernatural* creator. It is possible for the evolutionary process itself to be a designer, with no supernatural intervention at all.

Why is this mistake so persistent and so hard for people to notice? The reason, I think, is that we humans have trouble conceiving of a self-designing system. When we try to think about design, we automatically think of human design of objects external to the brain. We picture the designing of tools, artifacts and artworks by human beings. We picture the designer as external to the piece of work that the designer is working on. Evolution is a design process that is startlingly different from that picture. Evolution is a design process that designs both itself and the medium in which it occurs. The evolving biosphere produces a design which is itself. It designs itself incrementally. It keeps adding more complexity and different complexity to itself — and incidentally, also destroying certain kinds of complexity along the way.

That's what I have to say about the argument from design. The problem with the argument from design is not that it takes natural objects to be designed, but that it assumes, without any warrant whatsoever, that the designer has to be external to the system being designed. The people who originally invented this argument did not have the imagination to conceive of a self-designing system. That's how they fell into the trap of assuming a supernatural designer.

This idea that the universe is a self-designing system is not new. As I pointed out earlier, others have discussed it, though I'm not sure how literally most of them took it. The idea of a self-designing system is central to my conclusion here. What is really wrong with the argument from design is not the inference that natural objects are designed. What is wrong is the assumption that the designer is something other than nature itself. Nature might not have a mind in the same way that humans and other animals have minds. However, nature contains processes that are mindlike enough to be regarded as genuine processes of design. The design in nature is not merely an appearance or an illusion of design. It is real design. However, nature itself, without supernatural intervention, is quite capable of producing this design.



Notes and Addenda

1. Schull 1, Schull 2, Csányi. These articles are about intelligence instead of design. However, see Schull 1, p. 63, and Schull 2, p. 97, for instances of the word “design” that could be read literally if one wished to read them that way.
2. Schull 1, Schull 2.
3. Csányi
4. Schull 1, p. 63; Schull 2, p. 97.
5. Schull gives an argument, somewhat similar to mine, that intelligence does not require consciousness (Schull 2, p. 96). Intelligence and design are two different concepts, but obviously they are related to each other.
6. Note to philosophers: What I am proposing here is consistent with functionalist accounts and operational characterizations of intelligence. However, my argument does not depend on such views of intelligence. It could go through without them.

References

[Schull 1] Jonathan Schull, “Are species intelligent?” *Behavioral and Brain Sciences* (1990) 13:1, pp. 63-75.

[Schull 2] Jonathan Schull, “Are species intelligent?: Not a yes or no question”. *Behavioral and Brain Sciences* (1990) 13:1, pp. 94-108.

[Csányi] V. Csányi, “Are species Gaia’s thoughts?” *Behavioral and Brain Sciences* (1990) 13:1, pp. 76-77.

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