

Article

Part I: A Critique of River Out of Eden: On Winning by Cheating

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ABSTRACT

Dawkins attacks the idea that evidence against the Darwinian paradigm implies that unusual features in nature must be perfect from the outset in order for them to work. The example that a specific wasp is attracted to an orchid the shape and smell of a female wasp can be explained by gradual steps, since appearance can vary with distance and angle and so could converge to the size and shape of a female wasp over time. However a wasp cannot mate from a distance so there could be no selection pressure and the orchid would somehow have to strike upon just the right smell from an unlimited variety of odors in a single mutation together with mutations in concert to achieve the right shape and size. Similar arguments about honey bees and the evolutions of eyes would require multiple mutations in concert to produce selection pressure. All of this argues strongly against rare random mutations and natural selection as the sole evolutionary mechanism.

Key Words: Charles Darwin, Theory of Evolution, Cosmic Order, intellegent direction, spirituality, atheist, Richard Dawkins.

River Out Of Eden – Ch. 3 - Do Good By Stealth:

Double speak even creeps into the title of this chapter of Dawkins' book [3]. Values, good and bad, are touted as both the motive and the modus operandi of a mindless creative process.

The title refers to a discussion of how the orchid has evolved to imitate both the appearance and smell of the sex organ of the female wasp, thus attracting male wasps to copulate, philandering creatures that they are, and promoting its own pollination. Dawkins gets into his discussion by quoting at length from a personal letter from an American minister who read of the phenomena in National Geographic. The man was so impressed that he came to believe "...that some kind of God in some kind of fashion must exist, and have an ongoing relationship with the processes by which things come into being." The man consequently abandoned atheism and embraced the church.

This letter has apparently disturbed Dawkins, for he responds publicly to the minister's private letter at length: "...How, I want to ask the minister, can you be so *sure* that the wasp mimicking orchid (or eye, or whatever) wouldn't work unless every part of it was perfect and in place? Have you in fact given the matter a split second's thought? Do you actually know the first thing about orchids, or wasps, or the eyes with which wasps look at females and orchids? What emboldens you to assert that wasps are so hard to fool that the orchid's resemblance would have to be perfect in

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Note: The articles presented in this issue are based on my book "Downsizing Darwin: An Intelligent Face for Evolution" self-published in 1996 [1]. More information is available at my website [2].

all dimensions in order to work” [3]. What follows from the pen of an eminent biologist obviously seeking converts to his mindless position is good cause to be disturbed, for he himself has no basis on which to be so *sure* of blind accident as the sole creative agent. His own logic is riddled with holes.

Dawkins states that “The purpose of this chapter is to destroy the argument that complicated contrivances have to be perfect if they are to work at all.” Now despite what Dawkins says, this really isn’t the purpose of the chapter. Dawkins’ purpose is clearly to destroy any impression of intelligence at work in the creative order. Since the minister linked an intelligent agent of some kind to perfection, Dawkins wants to exploit this statement and erode any suggestion that complicated contrivances must be perfect from the outset, then maybe he can float this to triumph over any suggestion of intelligence at work at all in the evolutionary process. In other words, he hopes to succeed by stealth, which he feels would be good. He has contrived the approach to exploit the minister’s sentiments.

Although this is clearly his hope, the two things are not synonymous. Intelligence does not imply perfection in all things from the outset. We know from experience that if we exercise a little intelligence that we can learn by degrees and adjust our course of action accordingly toward a satisfactory result. But the Darwinian position does not allow of intelligent feedback or assessment of alternatives prior to selecting a course of action. Evolutionary mutations are seen as rare random accidents that just happen to have a survival advantage that becomes established after the fact. There is no intelligent anticipation allowed in the process, no intelligent feedback, no prior value judgments to direct the evolutionary process toward a needed result.

Having created a straw man, Dawkins sets out to destroy him by first running through many examples of creatures being fooled, from insect to human. Male stickleback fish are excited to mating behavior by any pear shaped object. An oystercatcher bird will try to incubate an egg as big as an ostrich egg. Some ground-nesting birds will roll anything remotely resembling an egg back into their nest. Baby herring gulls peck at the red spot on the parent’s bill for food, and will peck at any red spot. Black headed gulls will react typically to a dummy gull head mounted on a stick, minus a body. A deaf mother turkey will kill its own young as a predator response to motion alone because it cannot hear their distinctive chirps. Bees will clear a live bee from the nest if it is daubed with oleic acid, because this acid is given off by decaying bees and triggers an undertaker response. A female digger wasp always inspects its nest before dragging its prey in, and if its prey is moved a few inches, will keep going back to inspect its nest each time. Another digger wasp identifies its nest by landmarks of twigs etc. around its burrow, and if the twigs are moved a few feet, will dive into the ground where it thinks its burrow should be. One digger wasp provisions its larvae in several burrows, according to their daily growth assessed at a morning inspection, and subsequent switching of the larvae doesn’t bring corresponding adjustment in the provisions provided to each one. Evolution certainly hasn’t had an easy time exploring the integration of experience.

All of this is intended to show that a very crude resemblance between an orchid and a female wasp might well be sufficient. “The general lesson we should learn is never to use human judgment in assessing such matters.” Yes, Richard Dawkins really says this in print. If we are not to use human judgment, what kind of judgment are we supposed to use?

Then he emphasizes again his stated purpose of the chapter, to defeat the fallacy of what he dubs “the Argument from Personal Incredulity.” We are apparently not entitled to disbelieve the exclusive Darwinian viewpoint. Of these arguments he says, “Time and again, it has proved the prelude to an intellectual banana-skin experience.” Therefore it must always prove futile to disbelieve the Darwinian paradigm, is the implication in his statement. Now it must be conceded that not many people will take the time and effort to carefully sift through the verbiage masking and distorting the evidence, to sort out word by word the gross transgressions of common sense that pervade the literature. But that does not justify the Darwinian position by default.

Dawkins further pursues his stealthy purpose by adopting the word “brittle” to describe a device that must be perfect if it is to work at all. Our besieged minister surely made a poor choice of words and Dawkins is going to milk them for all they are worth, despite the fact that they are really beside the point. Man made articles are generally not brittle, says Dawkins, for even a 747 can fly on two engines. After ten minutes of thought Dawkins says that he can only come up with one near brittle man-made device, namely the arch, since its integrity obviously depends on the interdependence of its parts. Now think for just one minute. Will half a wheel work? Or a gear without teeth? Or a roof without supports? Or a table without legs? Or a pulley without an axle? Or a lever without a fulcrum? Or a window without a frame? Or a door without a hinge and a latch? Or a bucket without a bottom? Its hardly worth pursuing this tiresome logic. A man can live without one arm or one ear, but not without a heart, or a head. Some things are more essential than others to the integrity of the whole and this is no accident. Experience is a highly structured affair.

But not according to Dawkins. He launches into attack against the straw man by listing various examples of mimicry in nature in addition to that displayed by the orchid. Among those that he contends creationist propaganda has served up as “brittle” are the camouflage of the tiger and leopard; the fishing rod of the angler fish; femmes fatales fireflies that mimic the flash patterns of other species in order to cannibalize them; saber-toothed blennies that mimic fish that clean a host, then feed on the host; many animals that resemble bark, twigs, leaves, flowers, stones, and seaweed; ground nesting birds that fake injury to protect their young; cuckoo eggs that resemble those of their host species; female mouthbreeder fish with dummy eggs painted on their flanks to attract males to brood real eggs.

Throughout his argument Dawkins focuses on that word perfect, maintaining that is the key contention that makes the creationists wrong and Darwinists right. I’m not defending the creationists, only pointing out weaknesses in his arguments. He stresses that not only does visual acuity change from one species to another, so do the conditions. He maintains there will be a continuum of conditions from very bad to very good and then goes into a discussion to explain the obvious. Of course visual acuity varies with distance and lighting and angle. We can’t see in the dark or through the back of our head.

But then Dawkins makes a giant leap of logic. With his smoke screen about perfection in place, holding the reader’s attention on the one hand, on the other hand he tries to float the whole Darwinian position past like a magician doing a magic pass. He says, “As evolution proceeds, resemblances of gradually improving perfection can therefore be favored by natural selection, in that the critical distance for being fooled gradually moves nearer.”

Can a wasp copulate with an orchid from a distance? And the wasp is not a night time philanderer that can mistake a lover in the dark. And the wasp is attracted not only by shape and color but also by smell, and the size must be just right for pollination to occur. These are highly complex variables that must be selected together in concert through parallel sets of mutations. Smell alone is as characteristic as fingerprints and so vast in its possibilities as to be virtually unlimited. Shape and size can be almost anything, and large combinations of color are possible. Yet the orchid's survival depends upon selection from this unlimited range of options, with a very specific need for an insect pollinating vector. Somehow this maze of possibilities converges upon a specific wasp sufficiently for the strategy to work, and we are asked to believe that the selection was achieved by repeated parallel sets of blind fortuitous accidents, completely at random. Remember that the Darwinian position is that mutations are rare accidents and only a rare few offer a survival advantage.

Earlier on Dawkins cites odds of a million million million million million to one for the genetic code evolving twice by accident, so that we *must* all have evolved from a single cell. The odds of all of the factors coming together by parallel series of rare random mutations in order for the orchid to imitate the wasp in the required time for selection pressure to be effective are so complex as to be not computable, but they are at least of the same order of enormity as the odds that Dawkins cites above. Try to compute the odds of a fish sprouting a fishing pole complete with a bait on the end of its nose. Before this succeeded there must be gillions upon gillions of extinct mistrials among many species of fish, with part poles growing out of their tails and bellies and sides.

But Dawkins directs the discussion to his liking where he can make a point or two and pretend this wraps up the whole case. By citing a little knowledge acquired by biological research, one is supposed to believe he has the weight of the entire scientific community behind him. He focuses on the eye, the creationist's favorite conundrum, as he calls it. There is no intention here to defend the creationists' traditional positions, especially the literal Genesis account. The intention is only to explore the weaknesses in Dawkins' arguments for Darwinism and show that the evidence is better explained by intelligent direction in the evolutionary process. Eyesight, he observes, fades with age, being adaptable to a continuum of tasks, so there is no difficulty in understanding the gradual evolution of the eye.

Think about this for a moment. Does the gradual wearing out of our biological machinery justify the Darwinian stance that all life forms, including those complete with eyes, evolved not only gradually but also by blind luck in a game of chance atomic billiards? This is clearly the implication that he wishes to convey in argument after argument that is completely beside the point. I have pointed out before that intelligence allows for learning through intelligent feedback and consequent adjustments to intentionally converge toward an anticipated result. Pure chance allows for no communicative feedback and no direction.

He now enlists the enormity of geological time to make his case credible, citing the work of two researchers, Nilsson and Pelger, to show that the eye can evolve in a relatively short period of time. Apparently, according to biologists' reckoning, invertebrate eyes, employing at least nine different design principles, have independently evolved between forty and sixty times from scratch

among many species. One might well wonder how nine different design principles were conceived. One might well wonder why all this diversity of accumulated information should be lost to the higher sentient evolution of the vertebrates, if evolution really is a linear branching affair that is not otherwise in communication with itself. One might also wonder why the vertebrates should not have to explore the same ground again in order to arrive at a suitable “camera” eye design. Later we shall see that the vertebrates are thought to have branched off from the chordates, which diverged in the Cambrian Period, thus ignoring a couple hundred million years of other invertebrate evolution, including eyes.

In any case Nilsson and Pelger had to start somewhere, he says, and make some assumptions in devising a computer model to simulate the number of generations required to evolve an eye. To start with, they had to assume that a light sensitive cell had already somehow evolved, although it could be of no selective advantage. Selection pressure would require some kind of vision process in which the eye could be an integral part to offer a survival advantage. This question is set aside as “a nice subject for future study,” as the critical questions invariably are, since nobody knows how to study them within the Darwinian paradigm. The paradigm fails completely with fundamental questions.

Nilsson and Pelger worked at the level of tissues which can change according to random mutations. They began already well on the road to an eye, with a flat retina atop a flat pigmented layer and protected by a flat transparent layer. The critical elements in an eye are thus assumed as already given, arranged in the required order, in correct relative size, and in the correct position, without bestowing any survival advantage whatever to the animal. That surely makes things infinitely easier. How could such a meticulous arrangement of complex cells have happened by accident if it was useless as a functioning eye? We have not yet even mentioned the maze of neural connections from retinal cells to a brain that somehow becomes wired to portray the signals as a meaningful image to a resident observer of some kind, or how this is integrated with other sensory modalities together with visceral and somatic motor responses.

In any case Nilsson and Pelger then let the refractive index of the transparent layer mutate while the shape of the model could deform at random, but under two all important constraints. Any mutant change must be small, and it must represent an improvement. How is any improvement to be demonstrated by the creature if the proto eye is not already properly wired to a functioning brain and integrated to some functional extent with its whole nervous system? Nilsson and Pelger are cheating more than a little bit. But the whole field is so biased that this kind of procedure is allowed.

And what basis is there for assuming that ordered hierarchies are not structured into the genetic expression of a host creature such that a comparatively small mutation on one level does not result in comparatively major changes on subsumed levels? Hierarchically ordered homeodomain proteins and homeotic genes that activate batteries of genes in an ordered sequence are recognized in biological text books. But that implies intelligence at work. Hierarchical order is not consistent with random order.

Despite such gaping holes in the logic it was concluded from this hopelessly simplistic computer study that a good camera eye can evolve in fewer than four hundred thousand generations, and for

small animals this amounts to less than half a million years. What they are talking about is only the evolution of the refractive index and the shape of the eye, and this with cheating. All the really hard stuff is ignored completely. Yet Dawkins concludes from this camera eye simulation: “There has been enough time for it (the camera eye) to evolve from scratch fifteen hundred times in succession within any one lineage.” Is this good impartial science?

Dawkins [3] makes an admission here, as to his reasons for insisting that evolution must be gradual. “Without gradualness in these cases we are back to miracle, which is simply a synonym for the total absence of explanation.” Is intelligence a miracle? Can we explain how intelligence works, how it’s ordered? We live with it every day, and from very modest self-observation we find that it seeks out spatially, temporally, and intuitively ordered patterns in order to cope with experience. The socio-economic organizations that we function in are also structured communications systems that we have patterned according to the way that experience is implicitly presented to us. We are not totally blind victims of chance in everything that we do. We can plan and be agents of responsible action. Since we are also products of the evolutionary process, is it such a travesty of common sense to think that intelligence may also be at work in the evolutionary process?

The point is that this avenue of research into the nature of intelligent order has been declared off limits by science while a host of clues abound right under our noses. This is an outrageously unscientific bias that is shared by most of the scientific community. Of course eyes evolved. But they didn’t evolve, gradually or otherwise, by blind meaningless luck. Dawkins’ whole argument is again completely beside the point. He is blowing smoke to screen the real issues. It is very hard to understand why intelligent academic leaders should devote such strenuous efforts to consign themselves and the whole of humanity to a mindless oblivion. Only double speak saves true believers from this personal realization.

Dawkins [3] goes on to the “dance language” of honey bees in an effort to explain how it could have evolved gradually with intermediate steps. A foraging bee returns laden with pollen and nectar and then proceeds to communicate where the food supply is by doing a figure eight dance in the darkness inside the hive on a vertical comb. There is a straight section in the middle of the figure eight which is oriented like the needle of a compass to tell the direction in relation to the sun, and the position of the sun is adjusted for by an internal clock that bees have. The distance is communicated by the rate of a peeping sound the dancer bee makes, perhaps combined with its rate of turning and waggle. The other worker bees then leave the hive and fly in a straight line to the food supply.

Before going on let’s examine Dawkins position closely again. Ask yourself, is it sufficient to establish that evolution is a gradual process in order to prove the Darwinian position that all advances are the result of rare random mutations that accidentally endow an incremental survival advantage? We all know that intelligence can gradually accomplish things. But as Dawkins seems to see it there are only two contestants in the field, the Darwinists and the Biblical creationists with a Genesis bent. He doesn’t seem to acknowledge the possibility that the whole creative process could itself be an intelligent process, with all of the properties that we normally ascribe to intelligence. This means that there is an intelligent order that is both transcendent and immanent through which all things are in some way interrelated. This approach at least has the advantage of

explaining the natural emergence of our own intelligence and it is not necessarily opposed to a certain niche for both the Darwinian adaptation of species, and also the essential values that have evolved through our various religious traditions. But Dawkins' extreme and exclusive stance keeps running into insurmountable difficulties even on the grounds that he chooses to prove its efficacy.

Dawkins goes on to point out that many insects navigate by the sun and bees can see the polarized direction of light, and thus can navigate on cloudy days. Now this capacity to see the polarization of light, however gradually it may begin, must be the result of a fortuitous series of random sets of mutations, according to Darwinism, even though fortuitous mutations are extremely rare. Each mutation must be a set, because it must fully integrate specially designed emerging receptors in the bees' eyes into the whole nervous system of the bee, together with its motor responses to survival needs, as the bee is genetically programmed to perceive and respond to them. It is very hard to imagine that one genetic mutation can accidentally alter the eyes together with a host of adjustments to the nervous system and behavioral responses. And if it is a set, similar complementary sets of mutations must occur many times in succession to effect the result gradually through selection pressure. And only rare mutations endow a survival advantage. How then can a random collection of mutations occur simultaneously to alter the eye and nervous system to act in concert in any meaningful way. A bee might well begin to grow antlers first.

It is Dawkins' position that this capacity evolved as an adjunct to the evolving bee's eye. It must also have evolved in parallel with the bee's internal clock in such a way that both are linked to motor responses to need. The directional process is reversed for bees in the Southern Hemisphere, and reverses annually in the tropics, so a rare mutation must do more than just fortuitously hit on perceiving polarized light, and being able to use it. It must interpret the information, linking this to a specific spatial direction of motion with respect to the sun when it is shining in various parts of the world and also to an internal clock. If all of these things do not come together at once, at least to some extent, then no survival advantage can be demonstrated that will drive evolution in a positive direction according to the Darwinist theory. If Dawkins or anyone else can conceive of how the complexity of this task can be accomplished without benefit of intelligent input from a broad base of experience, why don't they explain it instead of producing peripheral smoke screen arguments that mask and ignore the main issues.

Dawkins deals only with what he portrays as the main problem, to establish a credible series of gradual intermediate steps. Some tropical bees build exposed combs attached to a tree. One species is cited that dances on top of the comb such that the straight run of the dance points to the food, and the straight run may have begun with a few steps on take off that became ritualized. An obvious way to prolong the take off run is to repeat it, thus leading to a figure eight, Dawkins says. It might be obvious to an intelligent human being. But is he now talking about a random genetic mutation that directs behavior, or is he investing the bee with an independent intelligence governing behavior to some extent, such that it also directs its genetic programming? Dawkins own words imply the latter, which he earlier insists is utterly impossible. There is no intelligent feedback in the Darwinian position.

To this point, none of this discussion addresses the question of how the bees evolve the capacity to identify the message that is being transmitted through hearing and feel, and then translate it into the appropriate action. To perform the dance is one thing. To perceive and interpret it is another.

Why should the other bees pay any attention to one bee that has slowly begun to act just a little bit strange? Why should they gradually intuit some meaning in this bee's slight deviations from the norm. Do bees have an empathy for one another? Are they consciously aware to some extent? Are they psychically bonded? Are they in intimate communication? Do they experience mutual needs? Do they have some form of inter-bee value judgment? Is there some level of intelligent comprehension of the dance that can be learned, as more advanced creatures do, by following adults when they are young and gradually making the necessary associations? Could there be some collective patterned energy at work, in conjunction with their genetic make up, that they independently relate to and that guides them accordingly? Or is their response to the dance only blindly genetically programmed by atomic billiards? In any of the former cases there is intelligence at work in the evolutionary process. In the latter case, the already prohibitive odds of a random collection of simultaneous parallel mutations working toward a concerted result are multiplied many orders of magnitude.

“The steamhammer of geological time” is not long enough to crack this “peanut” as Dawkins calls it, because concerted parallel mutations in a whole generation of individuals are necessary before they can even *begin* to demonstrate a selection pressure to their collective advantage. Bees must slowly learn to dance according to where they found flowers. Genetics must relate to direction and distance—to space and time. As if the odds against a concerted set of such mutations happening by accident once was not enough, another complementary *set* of complex mutations must again happen by chance, to interpret the dance—and again, and again, and again in generation after generation after generation, if the final result is to be achieved gradually by selection pressure. Dawkins' own argument of gradualness in the evolutionary order only compounds the already impossible odds against it happening by chance to more impossible levels.

References

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