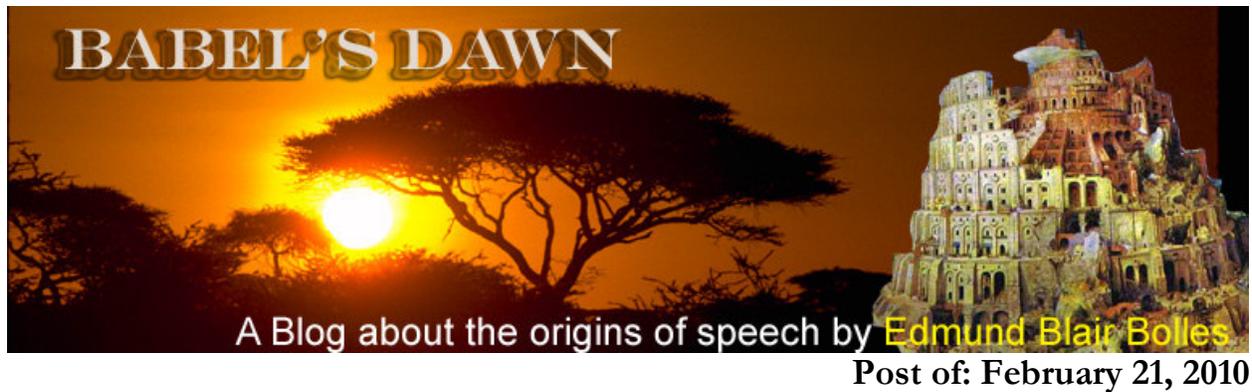


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Is Language a Miracle?



Jerry Fodor has the courage to follow his logic where few dare to tread and rejects natural selection as an explanatory tool.

We are all familiar with Biblical literalists who attack the theory of evolution because it is incompatible with the story of creation told in Genesis. Typically, they attack the science without defending their own beliefs. We see something similar in the approach [Jerry Fodor](#) and [Massimo](#)

[Piattelli-Palmarini](#) take in their new book *What Darwin Got Wrong*. The authors are not generally considered to be much in agreement, but their interests do come together on the subject of natural selection for, while neither one comes close to defending Genesis, both hold beliefs that are impossible if natural selection is true. Academic politics, too, makes for strange bedfellows.

Fodor's most notorious position is that our mental representations cannot come from the environment. They must be innate. Thus, if I have an idea of a toaster, I cannot have acquired it from an environment that includes toasters. It must have been there from the start. Leibnitz had a somewhat similar position (without the toaster) a few hundred years back, but he had an explanation: God gave us the ideas that we need if we are to be in synchronized harmony with the world around us. Fodor, however, is quite eager to get rid of the last traces of all ghosts in the machinery, so he cannot fall back on God. It is also clear that he cannot fall back on Darwin either because it is impossible for natural selection to have provided a brain born in, say, 1935 (the year Fodor was born) with concepts of computers, moon rockets, and iPods.

Piattelli-Palmarini is a loyal student of Noam Chomsky and he agrees with Chomsky's idea of a "Great Leap Forward," in which at a blow the brain was altered to be able to handle the universal grammar of all languages. I had a brief correspondence with Piattelli-Palmarini a few years back and he confirmed for me that he does not believe there was a proto-language, something between the ape state of having no language and our modern state of having a rich, recursive language. Language came as a single evolutionary event.

The objection to that "explanation," is that syntax carries some capacity for describing reality at many levels and it would take some fine tuning (i.e., natural selection over many generations) to bring about such a correspondence. The authors take the position that "whereas Skinner's theory of conditioning is false, Darwin's theory of selection is empty." [p 16] Here they are in agreement with a statement Chomsky made almost 40 years ago, and which they use as an epigraph at the front of the book:

It is perfectly safe to attribute this development to 'natural selection' so long as we realize that there is no substance to this assertion; that it amounts to no more than a belief that there is some naturalistic explanation for these phenomena.

Unlike Chomsky, the authors of this latest book never connect the dots between their attack on natural selection and their own cognitive theories, but if natural selection is an empty theory it cannot be used to criticize other theories.

"But," you might object to either one of the authors, "your theory seems to require a miracle."

To which they can reply that all evolution seems to require a miracle. Too bad we don't know how it works, then the miraculous side would disappear.

The closest they come to addressing their own particular concerns is in Chapter 3. And by the way, I want a gold star for being able to quote from the book's first part, which is perhaps the most confused, ill-focused, hodge-podge of aggressively technical arguments I have ever read. Buried in a section on master genes comes this paragraph.

Italian geneticist Eduardo Boncinelli has offered an interesting and relatively tentative hypothesis which, if even roughly correct, implies that there are significant aspects of our brain that are not consequences of selection for their fitness but rather side effects of selection for quite other phenotypic traits...; in particular, since the OTXI 'master' gene controls the development of the larynx, inner ear, kidneys and external genitalia and the thickness of the

cerebral cortex, selective pressures sensitive to changes in the function of the kidneys (due to the bipedal station, or different liquid intake and excretion resulting from floods or droughts), or the fixation of different sexual patterns, may have had in turn secondary effects on the expansion of the cerebral cortex and the structure and function of the larynx. The peculiarity of the overall picture of the evolution of language and cognition in humans, should this reconstruction prove to be correct, has been stressed to us by Boncinelli. Neither we nor Boncinelli are claiming that this actually is the right evolutionary story about the emergence of the enlarged cortex in the human brain, only that some such story might be correct and that it is, as far as we know, consonant with the facts currently available. A dogmatic adherence to adaptationism blinds one to such interesting possibilities. [45]

In short: one gene controls many features of the body, so that if selective pressures produce, say, a change in kidney function, changes to the brain and vocal apparatus might just come along for the ride.

Some readers may be confused by that bit about “selective pressures” producing a change in kidney function. Don't the authors disbelieve in natural selection? Not quite. They believe the theory is empty but not false. That is, selection exists but the theory of natural selection cannot tell us anything about it. For example, the theory cannot distinguish between traits that have been selected and those that are side effects of the selected gene. Thus, we cannot assume that a trait is an adaptation that has been selected; it might just have been a tag-along.

This argument is the old one by [Stephen Jay Gould](#) and [Richard Lewontin](#) that not everything evolution produces is an adaptation. If you build an arch, you get a space known as a spandrel. The arch is an adaptation for supporting a wall; the spandrel is a free rider imposed by the geometry of walls and arches. But even if the enlarged cortex is a tag-along effect of bipedalism and kidneys, natural selection does not disappear from the story. Further changes were required before we got a brain capable of thinking about toasters and indirect objects, or we evolved vocal apparatus capable of talking about them. If those changes too were spandrels rather than adaptations, if it really was spandrels all the way down, well then our knowledge of syntax and toasters are miracles. If they are not the result of God's direct intervention, they are natural miracles, improbable events piling up on one another with one unlikelihood leading to another so that the final result is an impossibility cubed.

Granted, rejecting their private agendas is no defense of natural selection, but that theory's long, empirical success hardly needs defending from *a priori* arguments. You can see from the quoted paragraph how their basic argument runs: we cannot say what is the adaptation and what the spandrel, so we cannot say how natural selection works in any particular case. As they note, however, Gould and Lewontin first made the arch/spandrel distinction and yet they remained firm adaptationists.

The authors make another argument as well. The modern synthesis of natural selection and genetics assumes that changes to the genes are random. They deny it. Some changes are much more likely than others to be viable, which is certainly true. But so what? It will be very surprising if our new, physical understanding of the genome does not result in many changes to our understanding of how genes change and do their work. Yet it will take more than revised genetics to sink natural selection.

In fact, natural selection is so logical that I have stopped to ask myself how it could be falsified. I thought of a few ways. First, the traits that promote survival might not be inherited. Then

there would be nothing to select. Second, the environment might kill off members of a generation at random. Then there would be no process of selection. The new study of epigenetics gives some force to the first choice, and it has long been observed that the race is not always to the swift. Yet natural selection still seems to work and the authors don't lean on these possibilities.

Links:

Jerry Fodor: <http://rucss.rutgers.edu/faculty/Fodor/cv.html>

Massimo Piatelli-Palmarini: <http://dingo.sbs.arizona.edu/~massimo/>

What Darwin Got Wrong:

<http://www.amazon.com/gp/product/0374288798?ie=UTF8&tag=tellingitcom-20&linkCode=xm2&camp=1789&creativeASIN=0374288798>

Stephen Jay Gould: <http://www.stephenjaygould.org/>

Richard Lewontin: http://en.wikipedia.org/wiki/Richard_Lewontin