DRIFTING CONTINENTS, PALEONEUROLOGY AND THE PLANET OF THE APES FALLACY.

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Introduction:

We would like to know whether there are other life forms in the universe with human-like intelligence with whom we can communicate. So far SETI searches have not found anything. With each advance in SETI technology, the silence gets a little louder and Fermi’s paradox becomes harder to ignore. There may be other ways to address the question of whether we are alone. If we could show that human-like intelligence is a convergent feature of evolutionary biology on Earth (that is, if we could show that human-like intelligence has evolved independently another time or many other times on Earth) then we would have reason to believe that biological evolution on other planets might also produce human-like intelligence. If we could go back in time and replay the tape of life, we could watch for millions of years to see if something with human-like intelligence evolves a second time. If it did, we would have evidence that human-like intelligence is a convergent feature of life on Earth and, by extrapolation, possibly elsewhere.

Or we could do the following long term experiment in biological evolution: eliminate all human beings from the Earth and wait to see if any species evolves into the human-like intelligence niche that we occupy. Although it would be hard to get ethical clearance, this is the scenario that takes place in the movie Planet of the Apes. Hollywood’s answer to our question is that other apes, specifically the three great apes would evolve to inhabit the human-like intelligence niche. Carl Sagan and most of the community of astronomers involved with SETI seem to subscribe to this Planet of the Apes Fallacy, according to which it is assumed that human-like intelligence is a convergent feature of evolution -- that there is an intelligence niche, into which other species (other apes in the movie) will evolve when we go extinct.

Sagan and Mayr [1,2,3] have debated the issue of whether human-like intelligence is a convergent feature of evolution. They came to no agreement. However, several important pieces of evidence that favor Mayr’s view that human-like intelligence is not a convergent feature of evolution, were not invoked by Mayr. They are: (1) Long term experiments in biological evolution analogous to turning back the tape of life, have already been conducted [6]. The names of these experiments are Australia, New Zealand, South America, Madagascar and India. During the time that these continents and islands were drifting independently of other continents, they were equivalent to independent experiments in vertebrate evolution. All were independent of our evolution and none seemed to produce species that wanted to occupy the human-like intelligence niche. (2) Jerison’s work on paleoneurology [4,5] has been cited as evidence for the independent evolution of big-brainyness and large encephalization ratios. However, in [7] I clarify the interpretation of his data and show that it does not support the idea that there is an intelligence niche, currently occupied by humans, into which other species would evolve if (or when) we vacate it. (3) Deep homology [8,9] undermines the supposed independence of large encephalization ratios.

I review these three types of evidence and show why the Planet of the Apes Fallacy is a fallacy.