

Review of: "Femmes finales: natural selection, physiology, and the return of the repressed"

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The paper is a review of the changing views of biologists, including William Whewell, Thomas Henry Huxley, Richard Owen, and Charles Darwin, on the topic of teleology and final causes during the 19th century. My dog in the race is an interest in the history of science, although (1) I am a computer scientist, not a biologist, and (2) (possibly because of such) my brain is not very good at holding hard facts in long term memory, meaning, I tend to store concepts and pointers to where I can find things. For example, I know the paper distinguishes final causes from teleology, even though they seem the same to me at my level of understanding, but I can't recall the details. So be warned, I might just mix them up as I go. The paper starts out with some imaginative metaphorical thoughts by Francis Bacon in the 17th century, equating final causes to the vestal virgins of classical Greece. My take on that is that, like Plato's cave, the virgins are archetypes we can never interact directly with, only with shadows of them. Nevertheless, the virgins inspire us to search for divine ends in the world.

Toward this George Wilson states, "Nevertheless, we must seek after, and love Final Causes, even with a lover's passion, although in this life they can never be ours. An irresistible impulse compels us to cling to them. It would be proof of insanity if we were only mortals ... But both are the most natural and irrepressible instincts of immortals, who look forward, through God's mercy, to all eternity as their time of studentship, and to all His Infiniteness as the object of their study. For such contemplation of Final Causes will never end, any more than it will ever beget satiety."

Since Bacon let the vestal virgins out of the bag, two hundred years later biologists felt emboldened to both carry on with it, and additionally offer up the idea of a secret mistress as a symbolic belief in final causes, guiltily held despite the tide turning against them. I can throw in here: when programmers run code, we unashamedly refer to the computer as having intentions and even feelings: "It doesn't like the new data format, throwing exceptions left and right". Of course now it looks like computers are actually acquiring sentience, so we are ahead of the game.

Here is a salient quote from Thomas Huxley:

"The Teleology which supposes that the eye, such as we see it in man or one of the higher Vertebrata, was made with the precise structure which it exhibits, for the purpose of enabling the animal which possesses it to see, has undoubtedly received its death-blow. Nevertheless it is necessary to remember that there is a wider Teleology, which is not touched by the doctrine of Evolution, but is actually based upon the fundamental proposition of Evolution. That proposition is, that the whole world, living and not living, is the result of the mutual interaction, according to definite laws, of the forces possessed by the molecules of which the primitive nebulosity of the universe was composed. If this be true, it is no less certain that the existing world lay, potentially, in the cosmic vapour; and that a sufficient intelligence could, from a knowledge of the properties of the molecules of that vapour, have predicted, say the

state of the Fauna of Britain in 1869, with as much certainty as one can say what will happen to the vapour of the breath on a cold winter's day."

To me, the above encapsulates a grudging retreat from final causes as a divine mandate. Chemistry and physics were done with them, and there apparently wasn't any blowback from religion. But biology is a different matter. Humans are biological beings. The uproar over God's role in the origin and evolution of humanity continues to this day, although now outside of biology. What I read from Huxley's (and others') statements is that God set the rules and processes up with the intention of things winding up where they did. This seems akin to Deism, the idea that God is a behind the scenes actor, which was still kicking around in the 19th century. People like Thomas Jefferson, a deist and founding father of the United States, could claim religious adherence without resorting to Christian dogma.

In sum, it seems that biologist of the 19th century ended up changing the rules of the game, declared victory, and carried on.

I think if I was living back in those days, if I could be sure that someone like Huxley would defend me from dire repercussions, I might openly wonder why, if designed in the image of God, we have blind spots, backaches, hemorrhoids, and flat feet, among other imperfections. Of course, as an on-and-off-again Catholic, the nuns imparted this in me in perpetuity: Adam and Eve are to blame!

I love the flowery prose that writers used in the 19th century, although these days the double negatives take some getting used to.

The paper is well worth the read, and I learned a lot reading it.