Review of: "[Commentary] Biology as a postmodern science: Universals, historicity, and context"

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Potential competing interests: No potential competing interests to declare.

Dear Hippokratis Kiaris,

You argue that the universality of biology is in sharp contrast to that of chemistry and physics (of the natural sciences in general) because it is not based on spatio-temporally unrestricted laws of nature, but on accidental historical events that actually construct biological universality. You suggest that "because biology is inherently related to historicity" we should redefine biology as a postmodern science.

I agree with you, as philosophers of biology would do, that biology is special compared to chemistry and physics, and that there are no equivalent universal laws in biology (see, for example, Ernst Mayr's reflections on the autonomy of biology as a scientific discipline in his book What Makes Biology Unique?)

However, it is not inconsistent with the U.S. National Science Foundation's (NSF) statement that the goal of research in the biological sciences is to identify and understand "the rules of life that will allow prediction of the future phenotype, function, and behaviour of an organism". NSF used the game of chess metaphore here: just as we can predict future moves in chess (with some confidence) if we know the rules. It can be argued that the rules of chess also have their own historicity, antecedents (chaturanga), evolution in which historical chance played an important role. Does this mean that NSF understands biology as a postmodern science, since historicity is as points out “a primal notion within postmodern thinking” (I apologise for the irony). However, the issue with postmodern science, assuming it exists and is not a contradiction in terms, is its denial of science as a process of discovering reality rather than inventing it. Things could be much more complicated with social sciences and humanities, but we are talking about biology and natural sciences here. Anyway, nowhere in your article do you offer the definition of postmodern science to which you refer, as it was commonly known, but it is not. In fact, the opposite is true - it is not easy, if possible, to find a coherent definition of postmodern science and postmodern scientific methodology. As I comprehend it, postmodern science is grounded in anti-realism and social/cultural constructionism, making it challenging to conceive of its ability to uncover the rules of life, rather than fabricating them.

In conclusion, I think you are right and in line with the overwhelming majority of philosophers of biology who stress that biology is different from other natural sciences (I am not sure if it is true for all natural sciences, geology for example), but definitely it is different from chemistry and physics. Although the rules of life are not as universal as the laws of physics, it makes sense to discover them because they help us to predict future biological phenomena with some confidence. Your

article highlights the need to re-evaluate the autonomy of biology as it expands and becomes an increasingly interdisciplinary field, although I do not think this means that a postmodern biology is needed as an alternative to contemporary biology.