

Review of: "Darwin, Gödel, Luria, Delbrück: Biomedical, Mathematical, and Metamathematical Perspectives on Attributes and Consequences of Random Somatic Mutations Subject to Selection"

Íñigo Ongay De Felipe¹

¹ Universidad de Deusto

Potential competing interests: No potential competing interests to declare.

Yeah, I agree with previous reviewers that this is an interesting manuscript which provides a worth considering and intriguing discussion of some cases where isolated changes in the genetic pool of an organism has a massive phenotypic impact for that organism and for its extended phenotype. The discussion makes a fun read and some of the consequences that the authors endorse are probably plausible, although I am not sure if they are entirely new to the existing literature. In that regard it would be great if the authors could do more to clarify explicitly what contribution their paper is supposed to make and how that is important for the current state of the art.

More generally, this might be just me but I wonder to what extent the relative rarity of the cases that the paper focuses on hinders the relevance of the discussion for the great scene of things regarding the evolutionary process. That is an angle that the paper does not tackle explicitly, and I readily admit that this evolutionary scope does not necessarily need to be of the interest of the authors. Still, I think that it would be interesting to notice any possible ramifications for the way in which evolution is understood. In particular, I feel curious about whether there could be any connections between the concept of heredity that the paper addresses and the implication of the notion of inheritance under the so called extended evolutionary synthesis at least in some of its theoretical directions.

Finally, I was very much intrigued by the parallel between genotypes and formal axiomatic systems that the manuscript draws. Regrettably that part of the paper is too sketchy so the reader is left with the impression that the authors could have expanded a lot more on this analogy and its implications. On the surface of it, there seems to be a disanalogy between both situations in that genes that codify for detrimental traits stand on a very different page than axioms incompatible with other axioms within a formal system. In the later case, there is clearly a problem of logical consistency, in the later, there is no biological inconsistency to be seen (although it may be a problem for the fitness of the organisms in question). Said this, however, the analogy is interesting and worth expanding further.