Review of: "The evolution of E. coli is NOT driven by genetic variance but by thermodynamics."

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This paper talks about how evolution acts on phenotype, which does not depend directly to the genotype. A similar argument was also made in “Pinheiro F, Warsi O, Andersson DI, Lässig M. Metabolic fitness landscapes predict the evolution of antibiotic resistance. Nature Ecology & Evolution. 2021 May;5(5):677-87” and elsewhere.

The key point by the article is the following: “The generic trajectory for the evolution of*any* natural system, animate or inanimate, trends a power law (Makela and Annila 2010). It is an inevitable consequence of evolution governed by the principle of least action, derived by Maupertuis in 1740. This principle is synonymous with the 2nd Law of Thermodynamics. It says a system will minimize free energy, by whatever efficient means and mechanisms it has, to attain thermodynamic balance with its environment in the least time.” The precise details are not given in this article, perhaps they are given in (Makela and Annila 2010). Referring the details to that paper hinders one to understand the argument.

More complete treatment of the argument should be there for less familiar readers.