

WE ARE ALL MINERALS

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AGROPARISTECH

Abstract

Questioning the frontier between the inorganic and the living worlds is a long lasting debate in biology. It has recently been claimed that it can be addressed with new experimental tools thanks to synthetic biology approaches. Yet, it remains based on a very old argument consisting in (i) defining biological life as a minimum set of functions and properties, and then (ii) determining the sequence of events that could (have) lead to it. This constructivist approach implies that it is possible, once a hypothetical consensus is reached on this minimum set, to trace the frontier between living and non-living entities. Should this frontier be determined, this would substantiate the technical possibility to eventually build living organisms from inorganic matter, as challenging as it may be. This logic needs to be questioned. Observations and recent experimental data indeed suggest that the very concept of “border”, and even of “category” is ambiguous and misleading in biology. As a consequence, other ways to define biological life from a materialistic perspective are needed.