

# Review of: "Another rate view on autocatalytic reactions"

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The manuscript discusses the definition of an autocatalytic reaction.

The major result of the work is to suggest that reaction rates and the concentrations of the species involved in reactions must be included in the definition of the autocatalytic process, as they determine the actual dynamics.

The topic is certainly interesting, however, the work in its current form has some points for improvement.

The following are some suggestions:

- The abstract is unclear. In particular, the purpose of the work, the results and the methodology used should be highlighted.
- In the introduction, the author lists some definitions of autocatalytic reactions proposed in the literature, pointing out their inconsistencies. However, the text is somewhat confusing. A methodological division of the proposed definitions, perhaps in table form, might help the reader.
- In the results section, a few examples of autocatalytic reactions are proposed and their dynamics are discussed. The author should justify the choice of these particular examples and highlights their connection with the various definitions of autocatalytic reactions given in the introduction.
- In the results, the author introduces reactions as relationships between chemical species but does not define the dynamics of reactions, except that he then reports the results of numerical simulations.

What kind of dynamics were simulated?

In the discussion section, with reference to the reaction  $M+F \leftrightarrow 2M$  the author introduces the mass action kinetics.

Is this the dynamics used to obtain all the results in the paper?

- In section 2.1 the author says "The reversed direction did not bring anything substantially new. Of course, both concentration profiles end at equilibrium concentrations".

Is the author referring to the profiles of species M and F?

In this case, replace with "end at positive equilibrium concentration".

- In the case of Ostwald's lactonization, the underlying autocatalytic reaction is unclear. Furthermore, assuming the use of mass-action kinetics, there is no correspondence between the rates  $r_{vl}$  and the set of reactions (R3.1, R3.2)

