The article by M. Heller is very interesting for many reasons. In spite of this we should however keep in mind that it is not a prediction but a forecast only. Therefore, the future models of spacetime may be quite different from those described by the Author. I personally do not believe that mathematics can uniquely predict the future shape of physics. It never happened in the past and unlikely it will happen in the future.

A real progress of physics must be based on really new ingredients. Often it happened that for these new ingredients some place must first be opened by removing old concepts which were then replaced by new ones. For instance, for quantum mechanics W. Heisenberg removed the notion of classical trajectories while for relativity A. Einstein removed the absolute time.

I believe that for future and revolutionary new models of spacetime we should first remove from our considerations the language of standard mathematical analysis and replace it by some kind of non-standard analysis [1] in which standard numbers will be surrounded by specific “quantum monads”. The monads should represent all
quantum mechanical quantities needed to implement all higher quantum symmetries seen in Nature. Classical spacetime coordinates are not sufficient to treat quantum mechanical higher symmetries. These symmetries are so important and of primary meaning that on fundamental level they should play the same role as all spacetime symmetries do in classical physics. In standard approaches higher symmetries are realized in fibre bundles over spacetime while in the models I would most welcome all symmetries, both higher and of classical spacetime character, should be implemented on the level of non-standard spacetime with new non-standard notion of elementary events and non-standard spacetime coordinates [2].

References
