

IS PLURALISM IN THE HISTORY OF MATHEMATICS POSSIBLE?

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ABSTRACT. Leibniz scholarship is currently an area of lively debate. We respond to some recent criticisms by Archibald et al.

This is a brief response to the article “A Question of Fundamental Methodology: Reply to Mikhail Katz and his coauthors,” by Archibald et al. in *The Mathematical Intelligencer* [1]. The article by Archibald et al. was in reaction both to our earlier article “Two-track depictions of Leibniz’s fictions” [3] in the same journal, and to other work of ours.

We have argued that, in addition to procedures that can be adequately described in purely Archimedean settings, Leibniz (as well as Cauchy and others) used procedures that exploit genuine infinitesimals, that is, what to him were mathematical entities.

Archibald’s coauthors Arthur and Rabouin have argued that the term “infinitesimal” as used by Leibniz does not refer to a mathematical entity, and is, rather, stenography for exhaustion-type arguments in the style of Archimedes. We have compared the two approaches in [3] and, in particular, presented evidence for our interpretation.

Archibald et al. make a number of false claims concerning both [3] and other publications of ours. Lack of space prevents us from responding in full. A more detailed response appears at [2].

In closing, it is ironic that Archibald et al. should claim that

[O]ver the years, it became clearer and clearer that our interlocutors do not care much about rational discussion and scientific dialogue from *different perspectives*, . . . The latest example of that approach is provided by a paper . . . “Two-Track Depictions of Leibniz’s Fictions.” [1, p. 2] (emphasis on “different perspectives” added)

“Two-track depictions” [3] is devoted specifically to making explicit a pair of *different perspectives* on Leibniz’s calculus, so as to stimulate rational discussion and scientific dialogue.

Archibald et al. do little to clarify the “Question of Fundamental Methodology” of their title, namely that the history of mathematics, like mathematics itself, could benefit from a plurality of approaches.

REFERENCES

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