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Thinking with Levinas about history of mathematics and mathematics education

Abstract

For the French philosopher Emmanuel Levinas, the philosophical inquiry on human being does not begin with and capitalize on his nature (ontological perspective) but on his relation to the Other (ethical perspective). Ethics is not taken by Levinas as a "satellite" element of human existence, but rather as the central and the determinant field of reflection. Human being is no longer perceived as an isolated subject being beset by phenomena, an ipseity thrown in reality, but a subject ethically constituted revealing himself in relation to the Other. In mathematics education, Levinas's philosophy has helped some researchers to constitute theoretical frameworks in which one could avoid drawing on a private, self-regulated and autonomous (in a rationalist and dualist perspective) subject (*e.g.* Boyland 2016, Maheux 2013, Radford 2012, Roth 2011, Roth & Radford 2011).

Focusing on theoretical concerns, this workshop will propose an introduction to Emmanuel Levinas's philosophy by highlighting how the phenomenological reflections of Levinas on Otherness support our own respective research activities on history and mathematics education (history of mathematics for a nonviolent mathematics education, as an experience of radical otherness, reflections on humanism and "antihumanisme", pedagogical objectives related, operationalization in research). Data from empirical studies and from our own research with secondary school students (15-18 years old) and prospective teachers will be provided in order to stimulate *in vivo* the reflection of the group. These data deals with students being confronted with the reading of historical texts, including excerpts from: *The Compendious Book on Calculation by Completion and Balancing (*Al-Khwarizmi)*, Observations sur la composition des mouvements et sur le moyen de trouver les touchantes des lignes courbes* (Roberval), *Méthode pour la recherche du minimum et du maximum* (Fermat), *Protomathesis* (Finé) and *Summa de Arithmetica, Geometria, Proportioni et Proportionalita* (Pacioli).

Specifically, it will be proposed:

- an introduction to Levinas's philosophy at a theoretical level;
- readings of small carefully chosen excerpts from Levinas' texts;
- discussions hosted in a dialogical form helping to formulate questions and to stimulate the reflection of the participants;
- data examination from empirical studies with the objective to reflect upon Levinas' perspective in a more "applied" or "practical" way;
- finally, a list of questions aiming at resuming the reflections of the participants that will lead to short writing activities organized in small groups (e.g.: "Describe your agreement about the following statement: 'For students, analyzing historical documents is an experience of *extreme alterity*, but sometimes they are attracted by that and sometimes discouraged'.");
- these small written essays could be part of the paper for the Proceedings of ESU 8.

References

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