Norma B. GOETHE

Modeling Expressions, Conceptual Metaphors and Metaphorical Uses of Formal Language

It is often assumed that formal textbook presentations in mathematics aim to reveal the structural organization of mathematical concepts but, as it has been argued from different perspectives, what is characterized formally in such presentations leaves out a great amount of inferential organization of the notions underlying mathematical reasoning.

From the perspective of cognitive science, for instance, there are important conceptual metaphors that come into play when modeling mathematical expressions which help conceiving mathematical notions but none of such metaphorical uses can be reduced to literal expressions without losing the cognitive insight the metaphor was conveying. In my paper I will draw on some case-studies to discuss the relevant interaction between text and reader.

Norma B. GOETHE is university professor of philosophy and research professor at the School of Philosophy and the CIFFyH, National University of Cordoba, Argentina. She studied Philosophy, Logic and Epistemology of the Sciences in Cordoba (National University of Cordoba) and Munich (LMU). She did her doctoral and postdoctoral research at Harvard University, Philosophy Department. Between 2004 and 2008 she spent time of research at the Leibniz Archives (Hanover) funded by the DAAD (Bonn). In the academic year 2009–2010 she was a Fellow at the Lichtenberg-Kolleg (University of Goettingen) funded by a DFG project, and in 2011 and 2012 a Visiting Research Fellow at the HAB (Wolfenbüttel). Her research interest focuses on the study of Leibniz in the context of a broader interest in the philosophy and history of mathematical practice. E-mail: ngoethe@ffyh.unc.edu.ar.