

ON THE INVENTION-DISCOVERY DILEMMA

JERZY POGONOWSKI

One of the oldest questions in philosophy of mathematics is the dilemma: is mathematics invented or discovered? As it is the case with many intricate philosophical questions, there is no definite commonly accepted answer here. However, one can investigate the arguments used in favor of each of the solutions to the dilemma. These arguments depend on the accepted views concerning the ontology and epistemology of mathematics. They are provided by mathematicians themselves but also by philosophers and cognitive scientists. They refer to many related questions, e.g.: what cognitive access do we have to mathematical objects?

We are going to analyze the most original arguments used in these discussions. Our own position may be characterized as friendly to structuralism and as seriously taking into account the evident though striking fact of the *unreasonable effectiveness of mathematics in science*. We advocate the position according to which mathematics is a *science of patterns* and at the same time an *art of solving problems*. We pay attention to the fruitfulness of *mathematical agnosticism* – an attitude that prefers not to decide dogmatically the invention-discovery dilemma. Such a secure and pragmatically oriented attitude is sometimes colloquially called a *shut-up-and-calculate* approach.

The work on this abstract has been sponsored by the National Scientific Center research grant 2015/17/B/HS1/02232 *Extremal axioms: logical, mathematical and cognitive aspects*.

DEPARTMENT OF LOGIC AND COGNITIVE SCIENCE, ADAM MICKIEWICZ UNIVERSITY IN POZNAŃ, POLAND

E-mail address: pogon@amu.edu.pl