

# Introduction

## *Where experience matters*

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The present dossier gathers the proceedings of the conference organized by the Centre for Philosophy of Science of the University of Lisbon, “*Mathematics and Intuition: Epistemology and Experience*”, that took place in Lisbon on September 25<sup>th</sup> and 26<sup>th</sup>, 2012. This conference aimed to give the proper place to experience in the process of mathematical concept construction. A significant part of the seminars was devoted to discussions on introspection. The opportunity was also given to mathematicians to speak about their own practice and to share thoughts on the role of intuition (some would speak rather about creativity) in the development of mathematics.

When Matthieu Haumesser discusses the possibility of the experience in light of Kant’s transcendental philosophy, he proposes an enlarged reading of Kant’s *Critic of Pure Reason* in which the empirical is not to be considered as inferior to the transcendental, and suggests that a key feature of Kant’s philosophy resides in an irreducible *va-et-vient* between the *a priori* and the empirical.

Michel Bitbol and Claire Petitmengin discuss then the possibility and reality of introspection, as in recent years a strong movement of renewal and redefinition of introspection has been witnessed. The authors raise several questions of epistemological relevance about this renewal. They show that the conditions for a successful study of first-person experience are now fulfilled by the use of the method of the *elicitation-interview* developed by Pierre Vermersch. Recalling Kant’s redefinition of objectivity (objectivity is not something to be found ready-made *out there*, but a project of operational extraction of invariant structures out of a cluster of appearances), the authors

insist on a procedure for introspection, mediated by the interview of elicitation, employed as a descent and ascent investigating method that leads to generic structures of intersubjective value beyond individual reports.

The method of *interview of elicitation* is introduced by Maryse Maurel. Starting from the heritage of Husserl and the pre-reflexive consciousness coined by the philosopher, the author details how, following the insights given by Husserl in his model of passivity and by more recent works, the subject – expertly guided – can access the pre-reflexive gestures of an action he or she made.

The word is then given to two mathematicians, Pedro J. Freitas and António Machiavelo who, as Gian-Carlo Rota and William Thurston did a few decades earlier, give us a phenomenological viewpoint on mathematical practice. Each of them discuss the role and the origin of intuition in the development of mathematics and, despite the authors' claim of not being themselves philosophers, the reader will appreciate how full of philosophical insights those two texts are.