Reconsidering the Notion of Structure

in Philosophy of Mathematics

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企画内容：

It has been long since Paul Benacerraf posed what we call the *identification problem* to a simple view that mathematics is about abstract objects. Since then, many philosophers have subscribed to one or another version of *structuralism*, the thesis that the subject matter of mathematics is structures. Yet, problems have been indicated with the existing versions of structuralism. For example, some mathematical theories (what Shapiro calls non-algebraic ones) appear to us to be about objects. C. Parsons takes it to be a challenge to mathematical structuralism to contain a good theory of mathematical object, arguing that most of the existing accounts do not meet the challenge.

To tackle these problems with structuralism, Leon Horsten has recently offered a new account of mathematical structures. It is based on the notion of *arbitrary object* which Kit Fine once put forward, though it did not receive due attention from philosophers then. Fine proposed that such expressions as 'any man' should be seen as designating an *arbitrary* object as opposed to concrete objects. Horsten develops this notion of arbitrary object in order to understand a mathematical structure as a certain kind of arbitrary object. Hence, in his view, mathematics is about structures which stand in a relation to concrete systems parallel to the one which an arbitrary object designated by 'any man' has to actual men.

In light of this new proposal, this workshop aims at reconsidering the notion of structure as employed in philosophy of mathematics from various points of view. We will not just engage with the contemporary literature to develop and examine the above proposal, but also try and consider how we should approach the notion in the first place, taking history of mathematics and history of logic into account.

※提題およびディスカッションは英語にて行います。