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Concept Mathematics

Summary. Part III deals with the very definition of conceptual mathematics and then a discussion of first attempts to generate a systematic approach to conceptual mathematics.

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This Part III is not restricted to the usual definition and theorems, but extends to an investigation of a new type of mathematics, which we call "concept mathematics". In Section 10.4.1, we shall discuss more systematically the need for such a type of mathematics. Here we just want to prepare the reader for this transition.

The origin of our proposal stems from the above introduction and investigation of categories of semiotic signs, represented by H-jets in our terminology. This setup enforces a search for the semiotic anatomy of mathematical conceptualization. Such a necessity follows from the simple, but painful insight that mathematicians (and everybody, but in a less pronounced style) don't know what they are doing, the Goldbach conjecture being the example *par excellence*: simple concepts enable unsolvable questions! Conceptual mathematics should focus on this mysterious movement of the mathematical body when it adds concepts. Calculations are not the core of mathematics, they are rather an excuse and trick to circumvent the crucial questions underlying the very problem of problem solving.

Part III will be devoted to potential candidates of the body's organs of conceptual mathematics. This body is above all a growing entity, adding new mathematics is the crucial operation, where our lack of control becomes visible. In other words, we shall discuss the process of creativity underlying the strategies of solving mathematical problems.

G. Mazzola et al., *Functorial Semiotics for Creativity in Music and Mathematics*,
Computational Music Science, https://doi.org/10.1007/978-3-030-85190-3_6