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With the talk

From Mathematics to Philosophy and Back:

Poincaré on Content, Conceptual Architecture and the Humanly Playable

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Abstract:

In an earlier paper on Poincaré I discussed the links between Poincaré's notion of *Conceptual Architecture* and his constructivist approach to mathematics as emerging from his debate with the "logicians". The main point of my analysis was based on the idea that the *Conceptual Architecture of Mathematics* should be conceived as a *conceptual structure in construction*. However I did not delve into the details on how to develop such a structure. In the present paper I would like to try to close that gap. Indeed, the main aims of the present paper, rather an epistemological project, are to suggest that the notion of Conceptual Architecture can be developed in the context of a constructive type theoretical reconstruction of Erlangen's project of fully interpreted scientific constructive language (*Orthosprache*), and that a dialogical type theoretical reconstruction of the notion of Erlangen Constructive Language provides both

- (i) a new perspective on Poincaré's arguments against analyticity and formalism in the context of Gerhard Heinzmann's (1985) interpretation of Poincaré's *pragmatism*.

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(ii) a setting that implements Poincaré's epistemological view that the Architecture of Mathematics is the result of the creative effort of the human mind that involves the development of a contentful language in the reach of the *human playable*.