Evidence, Modalities, and Causality in Gödel's Formal Philosophy

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The logical and philosophical analysis of evidence based on formal proofs led Gödel to an important epistemological distinction between formal provability (reducible to Turing computability) on the one side, and provability and definability in general on the other (Gödel 1946). Both Gödel's modal and "justificational" rendering of the concept of provability (Gödel 1933, Gödel 1938) resulted with the "absolute proof" concept, independent of particular formal systems (on pain of the violation of the second incompleteness theorem). Turing computability (and thus, at least indirectly, formal provability) is a mechanical, and hence, causal affair. It can be connected with Gödel's broader philosophical views, including the so-called "modal collapse" theorem, $\phi \rightarrow \Box\phi$, of his formal ontotheology (Gödel 1970). This theorem can be interpreted causally as the ontological principle of sufficient reason, and, by the adoption of justification logic tools (e.g., Fitting 2014), included in a special way into a causal re-formalization of Gödel's ontotheology (Kovač 2015). We claim that the "absolute" concepts of provability and definability can be approached on the ground of Gödel's causal philosophy, in analogy with a causal description of Turing computability, although (at least presently) not leading to as evident and "sharp" concepts as involved in the description of the latter.

References

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