Constructive Axiomatic Method

Hilbert and Bernays describe their formal axiomatic method by distinguishing it from the more traditional genetic aka constructive axiomatic method used by Euclid, Newton and Clausius. I consider a modern version of the constructive method based on the Curry-Howard correspondence and argue that this method of theory-building plays a role in today's mathematics. I illustrate this thesis by examples from Topos theory and Homotopy Type theory. In this context I discuss a possible epistemic role of logic in mathematics and natural sciences.