

True V or not true V , that is the question

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Abstract

An important objection against the set theoretical Platonist goes as follows. For the set theoretical Platonist, the Continuum Hypothesis (CH) must be either true or false of set-theoretical reality because, according to him, such a reality exists independently of whether anybody thinks about it or not. But since, as a consequence of the independence of CH from the axioms of ZFC, it is perfectly legitimate to develop systems of set theory for which CH is true, and systems of set theory for which CH is false, it follows that set theoretical Platonism, besides being at a loss in dealing with propositions like CH, conflicts also with mathematical practice.

The main contention of this paper is that if mathematics is a science of patterns (structures), where patterns are neither objects nor properties of objects, but aspects (or aspects of aspects, etc.) of concrete objects which dawn on us when we represent objects (or aspects of ...) within a given system (of representation) there is no difficulty in accounting for the above mentioned phenomenon. Indeed, since patterns, besides being dependent on concrete objects or on aspects of concrete objects (or on aspects of aspects of ...) depend also (epistemically and metaphysically) on systems of representation (mathematical theories), there is no difficulty whatsoever in accounting for the reality of both patterns describable by a system of representation in which CH is considered to be true, and patterns describable by a system of representation in which CH is considered to be false. Of course, such a position has vast and profound consequences on: how we should represent set theoretical reality, i.e., a Multiverse of sets vs. the more traditional Universe; set theoretical truth; the foundational rôle of set theory in mathematics; etc. some of which will be object of discussion in this paper.