Set-theoretic independence approached by an interview study

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In a twofold talk, I present the set-theoretic independence phenomenon and the interview study that was set up to better understand this phenomenon. The presented research is interdisciplinary in that it approaches philosophical questions about a mathematical phenomenon by including methods taken from Social Science.

The set-theoretic independence phenomenon is explicated by a number of mathematical and metamathematical theorems. It refers to the incompleteness of the standard axiomatisation of set theory, ZFC, and various proofs for the existence of models in which specific *independent* statements are true, respectively false.

The set-theoretic independence phenomenon raises philosophical questions about mathematical truth. A mathematical standard account of mathematical truth is that a statement counts as true if it is provable in ZFC. According to this account, independent statements can neither shown to be true nor shown to be false. The following philosophical question is raised: *Is it possible that there are mathematical statements that are neither true nor false?*

The interview study is an empirical approach to the problem. It consists in the analysis of qualitative interviews with professional set theorists in order to find out what they think about set-theoretic independence. The study incorporates already 22 interview partners and will be completed before the end of this year. From that empirical work, we will gain one major insight: We will know what set theorists think about independent statements, that is, we will know the variety of answers that set theorists would give to our philosophical question.