

**THE CONWAY-KOCHEN-SPECKER THEOREMS AND THE  
NATURE OF REALITY**

**EINDHOVEN MATHEMATICS COLLOQUIUMS**

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Princeton mathematicians John Conway and Simon Kochen have recently proved a so-called “Free Will Theorem” (Notices AMS 56, pp. 226-232, 2009), whose mathematical content is largely contained in the beautiful Kochen-Specker Theorem from 1967. The conceptual background to both theorems is not to be found in the debate on Free Will, but in the Einstein-Bohr debate (1927-1949) on such matters as determinism and the existence of Reality. This debate became a philosophical muddle, and it is gratifying that mathematics has now brought it to an end. This talk provides an introduction to these matters, including an improved and unified presentation of the Kochen-Specker and Conway-Kochen Theorems. No background except linear algebra and elementary logic is required.