



## Mutual Explainability, or, a Comedy in Computerland

By Simon DeDeo  
(Published: April 21, 2020)

Many people believe that the universe is a giant computer. This view implies that what is uncomputable has no causal power. We propose that, to the contrary, at least one uncomputable object, Kolmogorov Complexity, does play a causal role in the physical world, and that we have good scientific reasons to therefore believe it exists. We use a simple set of arguments, based on the probabilistic extension of algorithmic information theory, to show that such a causal role is not only consistent with the best evidence from cosmology, but also predicts an otherwise mysterious feature of our environment: mutual explainability. Mutual explainability is the fact that things that tend to correlate with each other also tend to explain each other.

Available at: <https://pile.sdbz.cz/item/68>