

On the Independent Emergence of Space-time

By Richard Healey

Abstract

Space and time have been fundamental to metaphysics and physics since the pre-Socratics. Their union has remained fundamental even after Minkowski's pronouncement that special relativity doomed each separately to fade away as a mere shadow, and Einstein's declaration that space-time itself exists only as a structural quality of the gravitational field described by general relativity. But difficulties in meshing general relativity with quantum theory have prompted a widespread conviction that space-time is not fundamental but emergent.

This raises a difficult ontological question: What is there more fundamental than space-time from which it might emerge? Rather than try to answer this question I suggest we reject its presupposition that emergence demands a specifiable ontological basis.