

# Life, the Universe and Everything

or

How complexity could emerge from simple causes

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The term polygeny comes from biology (in genetics) and concerns effects having multiple causes. But how do those causes compose to produce something together that they could not have produced alone? The coming together of causal factors cannot be anything like Martin's case of two triangles forming a square. That would suggest that causation was mere aggregation: piling the causal powers one on top of another. But how would we then get any novelty to emerge: novelty such as that found in biology?

In this paper, we offer an alternative model of composition that we say is genuinely causal while Martin's theory can be classed as mere mereological. We allow for nonlinear interactions between the causes and the possibility of genuine emergence. The resultant effect is often greater than the sum of the component parts. We explore how seriously this emergence should be taken.

This can be of huge significance in understanding how complex macroscopic phenomena, such as biological species, can emerge from simple parts. Emergentism is a thesis associated with philosophy of mind but it is more philosophy of biology where most is at stake. The emergence of life from lifeless components is one of the key mysteries of the universe but understanding the complexity of the composition of causes seems to be one of the first steps we need to take in solving the mystery.