Is life more likely than black holes to be an adaptation for universe replication?

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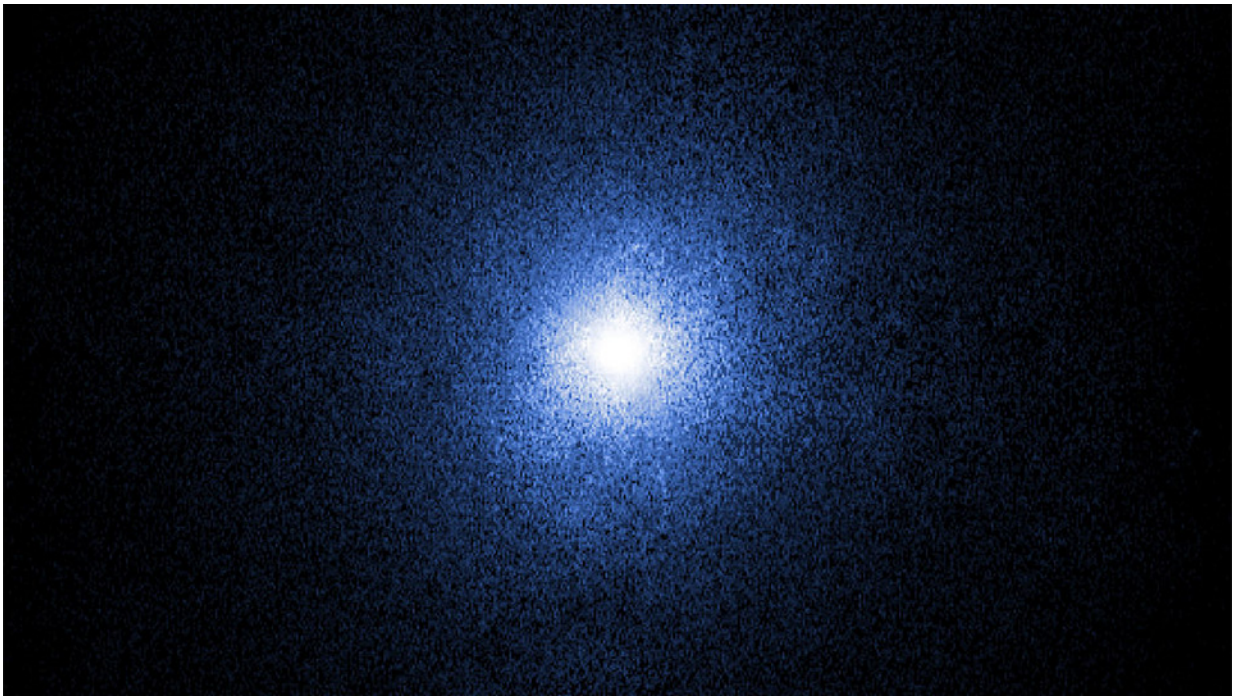

Intelligent life is more likely than black holes are to be an adaptation designed by cosmological natural selection, an evolutionist from Brunel University London speculates.

Writing in the journal Complexity, Dr Michael Price takes an adaptationist view on the theory of cosmological natural selection

introduced by theoretical physicist Professor Lee Smolin in the early 1990s.

Smolin suggests that black holes are an adaptation designed by cosmological natural selection and that life is a by-product of selection for black holes. Universes self-replicate through black holes, and selection favours universes that contain more black holes.

Dr Price theorises that, based on our knowledge about how natural selection operates at the biological level, intelligent life is actually more likely than black holes to be a mechanism by which universes replicate themselves – a concept known as cosmological natural selection (CNS) with intelligence.

Price notes that natural selection operating at the biological level is the strongest known process in the universe for creating complex order and for slowing down the process of increasing entropy (degeneration and decay), and it may operate at the cosmological level as well.

Essentially, life is much more complexly ordered and less likely to arise by chance than a black hole, and thus more likely to be an adaptation for universe replication, he explains. This view contrasts with Smolin's suggestion that black holes are the adaptation and life is the by-product.

"Living organisms are the least entropic, that is, the most complexly ordered and improbable entities known to exist," Dr Price, Head of Brunel's Centre for Culture and Evolution, explains.

"Biological natural selection (BNS), then, is the strongest known anti-entropic process because it creates organisms. Biological natural selection endows those organisms with traits called adaptations that ultimately enable genetic replication. We recognise a trait as an adaptation based on its improbable complexity, and this complexity is

the hallmark of natural selection.

"If we accept, as Professor Smolin argues, that we live in a multiverse where universe designs reproduce competitively according to a process of selection, then biological natural selection may be a reliable guide to what we should expect from cosmological natural selection.

"By implication, I suggest that both intelligent life and black holes are plausible candidates to be CNS-designed adaptations but the probability of being such an adaptation is higher for life than black holes or indeed, for any other known object in the universe, because life is the most complexly improbable thing we know of.

"I also suggest that more generally, CNS may be the ultimate primary cause of cosmological order, just as BNS is the ultimate primary cause of biological order. In other words, BNS and CNS may together be ultimately responsible for much of the order that we observe in the universe. Without this order there would be no entropy because nothing would decay to a less-ordered state and therefore no arrow of time.

"In sum, the process of selection may be far more fundamental to explaining the nature of our universe than is generally supposed."

More information: 'Entropy and selection: Life as an adaptation for universe replication' by Michael E. Price, Department of Life Sciences, Brunel University London, is published in *Complexity*: www.hindawi.com/journals/complexity/aip/4745379/

Provided by Brunel University

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