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Would you recognise an alien? Scientists suggest that extra-terrestrials may be shaped by natural selection and could 'look like us'

Site

- Previous studies made predictions about aliens based on what we see on Earth
- But in a new study, scientists have used evolutionary theory to make predictions
- Scientists suggest aliens are likely to be shaped by the same processes as us
- They are likely to exist in various complexities, ranging from basic cell-like aliens to aliens with intricate human-like parts

By [SHIVALI BEST FOR MAILONLINE](#)

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They're regularly depicted in science fiction blockbusters as other-worldly, monster-like beings.

But a new study suggests that in reality, aliens could be more similar to us than thought.

The research indicates that aliens are potentially shaped by the same processes that shaped humans, such as natural selection, and that they may even 'look like us.'

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Researchers from the University of Oxford have shown for the first time how evolutionary theory can be used to predict alien behaviour.

Their theory supports the argument that foreign life forms undergo natural selection, and like us, are evolving to be stronger over time.

Mr Sam Levin, lead author of the study, said: 'A fundamental task for astrobiologists (those who study life in the cosmos) is thinking about what extra-terrestrial life might be like.

'But making predictions about aliens is hard.

THE EVOLUTION OF ALIENS

Researchers have shown for the first time how evolutionary theory can be used to predict alien behaviour.

Their theory supports the argument that foreign life forms undergo natural selection, and like us, are evolving to be stronger over time.

Using the idea of alien natural selection as a framework, the researchers addressed extra-terrestrial evolution, and how complexity will arise in space.



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'We only have one example of life - life on Earth - to extrapolate from.

'Past approaches in the field of astrobiology have been largely mechanistic, taking what we see on Earth, and what we know about chemistry, geology, and physics to make predictions about aliens.

'In our paper, we offer an alternative approach, which is to use evolutionary theory to make predictions that are independent of Earth's details.

On Earth, species have become more complex as a result of a handful of events.

These transitions occur when a group of separate organisms evolve into a higher-level organism - when cells become multi-cellular organisms, for example.

Data suggests that extreme conditions are required for major transitions to occur.



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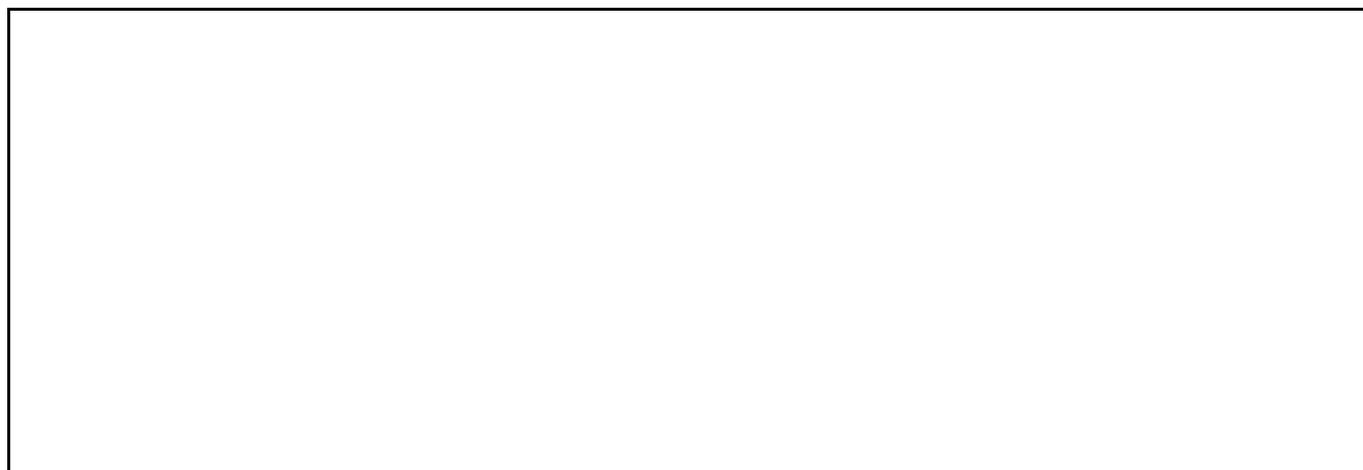


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'This is a useful approach, because theoretical predictions will apply to aliens that are silicon based, do not have DNA, and breathe nitrogen, for example.'

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On Earth, species have become more complex as a result of a handful of events.



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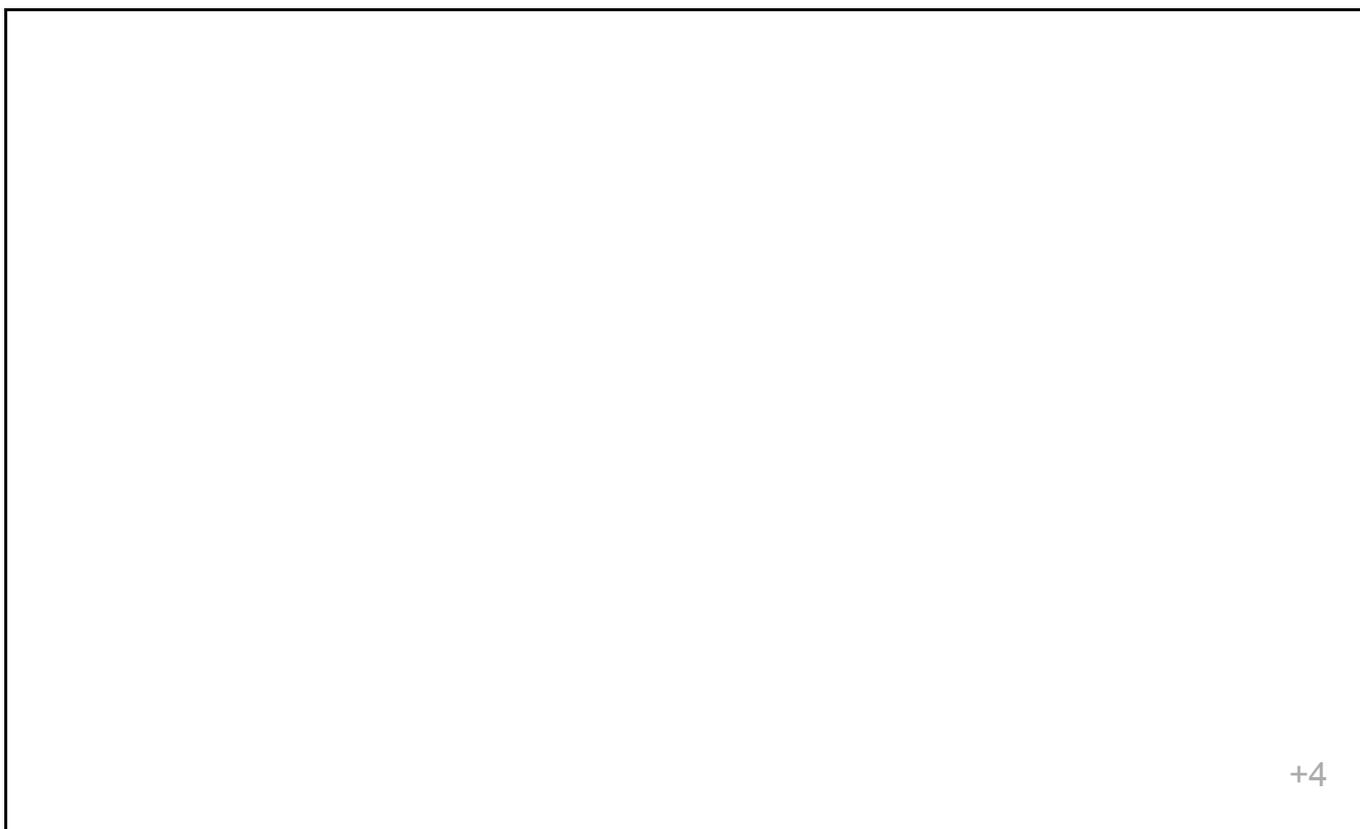
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Pictured is a fictitious alien called 'The Octomite' that comprises a hierarchy of entities (pictured is circles, right)



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These illustrations represent different levels of adaptive complexity that aliens may have gone through. (a) A simple replicating molecule, with no apparent design (b) An incredibly simple, cell-like entity (c) An alien with many intricate parts working together

These transitions occur when a group of separate organisms evolve into a higher-level organism - when cells become multi-cellular organisms, for example.

Data suggests that extreme conditions are required for major transitions to occur - and the same may be true for aliens.

In terms of looks, the researchers make a number of predictions about aliens.

WHAT WILL ALIENS LOOK LIKE?

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WHAT WILL ALIENS LOOK LIKE?

In terms of looks, the researchers make a number of predictions about aliens.

Mr Levin said: 'We still can't say whether aliens will walk on two legs or have big green eyes.

'But we believe evolutionary theory offers a unique additional tool for trying to understand what aliens will be like, and we have shown some examples of the kinds of strong predictions we can make with it.

'By predicting that aliens have undergone major transitions - which is how complexity has arisen in species on earth, we can say that there is a level of predictability to evolution that would cause them to look like us.

'Like humans, we predict that they are made-up of a hierarchy of entities, which all cooperate to produce an alien.

'At each level of the organism there will be mechanisms in place to eliminate conflict, maintain cooperation, and keep the organism functioning.



Mr Levin added: 'We still can't say whether aliens will walk on two legs or have big green eyes.

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'Like humans, we predict that they are made-up of a hierarchy of entities, which all cooperate to produce an alien.

'At each level of the organism there will be mechanisms in place to eliminate conflict, maintain cooperation, and keep the organism functioning.

'There are potentially hundreds of thousands of habitable planets in our galaxy alone.

'We can't say whether or not we're alone on Earth, but we have taken a small step forward in answering, if we're not alone, what our neighbours are like.'

Could life exist here? Artist impression of alien world surface



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