

If we ever encounter extraterrestrial life, here's why they might not seem so alien

[University of Cambridge Professor Arik Kershenbaum] argues that evolution is a universal law of nature, like gravity — and that studies of plants and animals here can therefore tell us something useful about potential inhabitants of worlds far beyond Earth.

He finds evidence for this in the process of evolutionary convergence, in which unrelated lineages of organisms evolve similar features as adaptations to similar environmental challenges. It's an argument he presents in detail in his new book, [The Zoologist's Guide to the Galaxy: What Animals on Earth Reveal About Aliens — and Ourselves](#).

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[Quanta]: You're arguing that wherever organisms confront similar environmental challenges, they may come up with similar adaptive solutions. And you expect to see this throughout the universe?

[Kershenbaum:] Consider flight, since that's the most famous example of convergence. If you live on a planet with an atmosphere, or even with an ocean or some other fluid, if you want to get from one place to another through that fluid, there's only a handful of ways to do it.

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[If evolution on Earth started all over again, of course things] will be different, but many things will be the same. And the things that will be the same are those things that are constrained either by the laws of physics or by the laws of evolution.

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