

10 Sublime Wonders of Science

ABOUT THE AUTHOR(S)

Science just gives facts. Our sense of meaning, in the big-picture, must derive from elsewhere. Right?

Wrong.

Below are 10 sublime wonders of science, to make your mind reel and your emotions swell. Scientific wonders about our world provide meaning in the same way that grand narratives and religious cosmologies have traditionally presented a big-picture vision of how the world came to be, our connection to what exists, and awe.

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1. The universe contains physical laws and naturalistic processes that allow complexity to emerge. Without this feature, then nothing.
2. There are more stars in the universe than words ever uttered by all the humans who ever lived.
3. As Elizabeth Johnson wrote, "Out of the Big Bang, the stars; out of the stardust, the Earth; out of the Earth, single-celled living creatures; out of evolutionary life and death of these creatures, human beings with a consciousness and freedom." Seen in this way, science can help us feel connected to the world. We did not come into the world from the outside, we grew out of it.
4. Every individual bacterium, cockroach, and sparrow that ever existed—every person, frog, and cucumber — owes its existence to a completely unbroken stream of DNA stemming from the earliest replicators through every creature that lives today. When fully felt, the power and the wonder of evolution, with its extraordinary diversity and complexity, hits us profoundly.
5. Science, as Loyal Rue wrote, "documents our essential kinship as no other story can do—fashioned from the same stellar dust, energized by the same star, nourished by the same planet, endowed with the same genetic code, and threatened by the same evils." We are not separate from nature or each other in some transcendent, essentialist sense. This can be a ground for a sense of belonging.
6. Conscious experience, along with existence itself, is the greatest scientific wonder of all. We are a part of nature that can know and experience truth, invent, love, be moral, feel indescribable emotion, and consciously plan for the future. Ideas and passion can now transform the world. As far as we know, this level of cosmic self-awareness is being realized in only one tiny fragment of the universe—in us.
7. The findings of modern science are mind-boggling: matter is energy, space itself can bend, time slows down at great speeds, great energies can be released from tiny nuclei, the universe is expanding and the rate of expansion is accelerating, we can communicate almost

instantaneously across the planet, we travel through air and space in flying machines, and we can even turn the spotlight of discovery around towards our own minds and behavior.

8. The benefits of modern science to our well-being and comfort are extraordinary. Thanks to scientific medicine and public health human life expectancy has nearly *doubled* since our great-grandparents day.

9. Science in the future, if applied with wisdom, may be valued not just for its fantastic technological uses and discovery of facts, but also, as Rene Dubos put it "to understand as well as possible the nature of life and of man in order to give more meaning and value to human existence."

10. And here is a scientific astonishment that should hit home deeply for every one of us: The odds of a "specific me" coming into existence are so statistically and incalculably improbable, it is, quite bluntly, a deep wonder and privilege just to be alive.

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But wait, some critics may respond, these scientific wonders cannot fulfill personal spiritual meanings. What about an afterlife? What about a deity or power who loves and cares about *me*, for whom I have a specific purpose?

Well, no, science cannot directly provide for these specific longings, but then here is what matters. There *are* sources of genuine personal meaning. There is passionate engagement. There is human goodness. And there is love. From these, belonging and purpose and legacy spring. *These come from us*. And we are part of the universe. In that profound sense, then, there is meaning in the universe after all.

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The views expressed are those of the author(s) and are not necessarily those of Scientific American.



Lawrence Rifkin

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Lawrence Rifkin is a physician and a writer. Links to his writings on science, meaning, humanism, and medicine are at lawrencerifkin.wordpress.com.