

# Scientific Knowledge is Always Good

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By Avi Loeb on February 16, 2021

*During* interviews in the Spanish language about my new book, [Extraterrestrial](#), I was asked whether knowing about the existence of an alien technological civilization would unify the human species or instead incite turmoil and instability in society? If the latter scenario could materialize, wouldn't it be better not to know whether we have intelligent cosmic neighbors?

Knowledge may not always be beneficial. For example, knowing the exact timing of our death might deteriorate our quality of life, especially near the end when our body may resemble a computer being unplugged from the wall. But gaining scientific knowledge about our cosmic neighborhood brings an improved sense of realism, and this is always good because it helps us respond to existential dangers with more information at hand.

The one quality that elevates humans above animals is the ability to acquire scientific tools that can modify the environment. Sixty-six million years ago, the dinosaurs saw the giant [Chicxulub rock](#) approaching them but could do nothing to prevent its impact despite their huge bodies. The much smaller human bodies possess brains that can design telescopes which identify such rocks before they hit Earth, allowing to deflect them away from impact by [various techniques](#). Identifying the environmental hazards of [climate change](#) carries a similar promise for maintaining the longevity of the human species, as long as bad politics will not interfere with it along the way.

Obviously, scientific knowledge can be used for both good and bad purposes. Take [nuclear energy](#) as an example. It can be used to make nuclear bombs but also to [supply](#) the energy needs of society or power spacecrafts. Using it one way or another depends on the goals and guiding principles for our actions.

In the vicinity of a [black hole](#), one can see images of all sources of light in the universe as a result of the bending of light rays by [gravitational lensing](#). Similarly, the human mind reflects everything it encountered and a single person encapsulated the whole world it experienced. Expanding our knowledge base, makes this world richer with details. This resonates with the ancient teaching in the Jerusalem Talmud that [saving one person's life is like saving an entire world](#).

Early in history, [some people argued](#) that the human body has a soul and should not be dissected. If scientists adhered to this misconception and avoided anatomy, where would modern medicine be? It is clear from this example that false notions and unsubstantiated claims on a subject should not prevent scientists from exploring it using the scientific method and tools, especially when the implications are of great significance to the public.

Altogether this motivates acquiring knowledge about alien neighbors in our Galactic environment. Such knowledge will shape our aspirations on Earth and in space. Of course, we could avoid seeking that knowledge and focus on enjoying low-profile pleasures, such as good food or the company of friends. But the ability to learn about the world is what lifts our ambitions relative to any other terrestrial creatures. Science is the ultimate pursuit of that privilege. There is no bigger thrill than figuring out how the universe works.

In the [search for extraterrestrial intelligence](#), I maintain optimism that finding evidence for another intelligent species will unify humanity, as envisioned [by Ronald Reagan in his 1987 UN speech](#). This might sound naïve and unrealistic but it carries the hope that our future will be better than our past. Underlining this hope is the belief that rational reasoning will prevail over irrational instincts and that the advance of the scientific knowledge can be delayed but never eliminated by societal forces.

Most stars [formed](#) billions of years before the Sun and may have enabled technological civilizations that are far ahead of us. If we find any of them, we could expand our knowledge by borrowing information from neighbors with more extensive cosmic experience. Here's hoping for an exciting future in which we will learn how to get our act together from [smarter kids](#) on our cosmic block, based on [the relics](#) they left behind.

## ABOUT THE AUTHOR



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Avi Loeb is the former chair of the astronomy department at Harvard University (2011-2020), founding director of Harvard's Black Hole Initiative and director of the Institute for Theory and Computation at the Harvard-Smithsonian Center for Astrophysics. He also chairs the Board on Physics and Astronomy of the National Academies and the advisory board for the Breakthrough Starshot project, and is a former member of the President's Council of Advisors on Science and Technology. He is the author of "[Extraterrestrial: The First Sign of Intelligent Life Beyond Earth](#)", from Houghton Mifflin Harcourt in January 2021.

(Credit: Nick Higgins)