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BOOK REVIEW

Taxi from Another Planet

Conversations with Drivers about Life in the Universe

Charles S. Cockell

Harvard University Press. 2022, 304 p. ISBN 9780674271838, 24.95 EUR, 26.95 USD

This book is based on scores of conversations with taxi drivers – often via the rear-view mirror and across the glass screen – during a great number of taxi journeys. The dialogues are summarized in eighteen chapters, each of which deals with topics like the inevitability of life beyond Earth, next to whether life in itself has a purpose, and along with “would the existence of aliens dramatically affect human societies”, “why is there life in the first place”, “does life on our planet imply life elsewhere”, and “are we exceptional”? The personality and inquisitiveness of the taxi driver is wrought into the short introductions to each chapter.

Whereas the responses to the drivers were by necessity short and unelaborated, the author provides the reader with detailed answers placed in a broad context involving physics and chemistry, often projected on a history-of-astronomy background.

A strong side of the book is the persistent explanation of the nature of science, *i.e.*, an unceasing process of critical thought in an endless iterative process, with certain inevitable requirements such as the rejection of arguments from authority. Even the all too common viewpoint that science is not “just one way of understanding the nature of things along with other ways that should not be dismissed” is elaborated: any alternative approach to acquire knowledge can only hold as long as it incorporates the gathering of data, together with testing again and again until a coherent and consistent result is reached. In the context of space travel, this rationale is strengthened by Cockell’s categorical statement that aliens *must* use the scientific method when grasping information about the universe that allows them to build a working spaceship. Some taxi drivers also expressed their views that we should solve our problems on Earth first and foremost before exploring and colonizing space. The author counters this opinion by explaining why space exploration also means caring for Earth, for example by way of space telescopes that help protect our planet in the process of knocking asteroids off trajectory.

Chapter 12, “Is Mars an Awful Place to Live?” is really eye-opening: colonization of Mars will, evidently, flourish without displacement, exploitation and destruction of Native Peoples. But here the pastoral aspect ends: Mars has a noxious and asphyxiant oxygen-deficient atmosphere that, together with the planet’s total desolation, will remain a gigantic obstacle for the settlers. Extraterrestrial settlements will not only have technical complexity, but also social challenges: because of their dependence on the human society on mother-ship Earth, settlers will need to develop a strong sense of community with restricted individual freedom.

The subsequent chapter, “Will Space Be Full of Tyrannies or Free Societies?” offers some deep philosophic thoughts about control of resources, for example the prospect that oxygen may become a political problem: human problems that we experience on Earth may very well come along with us in space.

The power of this fascinating book is that it explains a lot of science in simple terms, and offers plenty of food for thought. I recommend this book to science teachers and students, to public libraries and to historians.

I am less happy with some technical and graphical aspects of this book: the first page of each chapter is rendered with black fonts on a grey background, which results in a very low contrast that is not aesthetically pleasing, and hinders reading, especially the image captions which are typeset at about half the size of the text fonts, and for no good reason. On the other hand, I am delighted that all units are metric and centigrade.

Postscript

I am not a fervent taxi user, and almost all of my taxi drivers were more interested in being paid the fare than in my concerns about extraterrestrial life. Except for one. About fifteen years ago I was waiting for a taxi at the office of the European Southern Observatory in La Serena, Chile. A friendly taxi driver came in, and, while picking up my suitcase, he spotted a large-size photograph of the *Sombrero Galaxy* (<https://www.eso.org/public/images/eso0007a/>). With eyes wide open he said “I have seen this thing, it was hovering over a meadow shortly before dusk”. I told him that, whatever he had seen, could not possibly have been that beautifully pictured spiral galaxy which harbors billions of suns, and is at a distance of about 30 million light-years from Earth.

We set off for the airport, and peering into the rear-view mirror, the driver asked me whether I really was an astronomer. He then explained one of his greater personal worries about the future of our planet: he reasoned that at birth babies weigh about three to four kilograms, but adults and older people have weights 80 kilograms or more. A calf, he said, has a birth bodyweight of thirty kilograms, whereas an adult cow or bull reaches eight hundred to one thousand. And since this worldwide process of weight gain is going on since time immemorial, he had become very worried that our planet will one day collapse.

I tried to explain that more than 90% of the mass of the human body is made up of just four elements: oxygen and hydrogen (bonded in water) plus carbon and nitrogen, and that this is also the case for cattle and for many other animals. When bodies decompose after death the constituent elements of body mass are simply released and recycled in nature. I did not tell him, though, that planet Earth gets heavier by several thousand metric tonnes from dust-sized objects and meteorites that rain on the surface of Earth every year. Nor that the Earth ceaselessly loses mass (gas and dust) into space.

My taxi driver was unlike one of Cockell’s taxi drivers who spoke of bacteria and galaxies in one and the same sentence. Nevertheless, his lack of scientific knowledge did not hamper him to struggle, all by himself, with philosophical, religious and existential questions. And, our process of communication was exactly as Cockell described.

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