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Thierry J.-L. Courvoisier

From Stars to States

A Manifest for Science in Society

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For Milan, Marylou, and Marlo
Hoping that the Enlightenment will continue to illuminate their century

Foreword

Who can look up at the night sky and fail to be filled with wonder and curiosity? Astronomy is a science that seems accessible to all, especially as described by Thierry Courvoisier, and its exploration gives the reader the rare opportunity to expand their interest beyond the narrow confines of our own planet.

The first four chapters of this book masterfully describe how science has unpicked many of the mysteries around us to reveal some of the beauty of our Universe. For both scientists and non-scientists alike, it is a real pleasure to be walked through the nature of scientific discovery and feel the excitement of the process pouring off the page. As we read further, we also learn about the pursuit of science being a fundamental part of our culture, as rich in the inspiration it can provide as music, poetry and literature.Without doubt, we know that scientific pursuit generates knowledge and understanding but we struggle to articulate the societal impact of this knowledge and how it touches every aspect of our lives. Here the author paints us a picture of the responsibility of scientists in communicating their knowledge and translating that knowledge into real impact for understanding and solving pressing global issues such as climate change and sustainable food production for an ever increasing global population.

But again, Thierry Courvoisier points out that this cannot be achieved by scientists alone and there is an increasing imperative to engage with the broadest range of stakeholders from the public to business, policy makers and politicians. These are sometimes uncomfortable bedfellows for scientists as it requires stepping out of the 'rational' world and confronting other aspects of being human such as emotion and conviction.

This engaging book is like a story of the evolution of a science, through how knowledge is generated to promoting a rational basis for political decision making. It will leave the reader slightly breathless, provoked and wanting more.

Anne Glover
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Foreword to the French edition

This book is not a vision of our planet, somehow homing in on us from Sirius, but rather a defence of science, which inspired our fellow citizens until only recently, in the hope that it will continue to do so for some time to come. His aim is to renew the dialogue between science and society which has become something less than systematic over the past few decades, so that the relationship between the scientific community and the world of politics does not just focus on investment and profit.

According to Thierry Courvoisier in his final lecture at the University of Geneva: "Astronomy has decisively extended and enhanced the sphere of human thought. Of all the natural sciences, it is perhaps the one that has made the greatest contribution to our social, cultural, and economic lives." In his book, he returns to the example of astronomy and astrophysics, from their beginnings right up to the present day, leading as they have to the extreme sophistication of modern measuring devices. He shows us beyond all possible doubt how they have indeed come to enrich our thought.

As it gradually came into being over the centuries, science was not only confronted with ignorance. It had also to answer difficult societal questions. For science is based on reason, while society is based on values. By associating "science" with "conscience", Rabelais associated human knowledge with a notion that encompasses our subjective appreciation of our acts and their moral value. Rabelais was a contemporary of Copernicus. They were both doctors at a time when the study of anatomy was not allowed to appeal to the forbidden art of dissection, and when the Copernican revolution could not be admitted because, through religious dogma, the Earth had to be at the centre of the world. The moral values of society weighed heavily on science.

Over five centuries, human knowledge has increased considerably and the values of human societies have changed, but the interface between science and society has certainly not grown any simpler. In this context of the inexorable advance of science and technology today, we come to ask: What are the limits of science? It is one that torments society, attracted by science and at the same time distrustful, even suspicious about what could be done with this newly acquired knowledge. What are

its intrinsic limits? And what limits shall we ourselves impose? Indeed, should we impose limits? And why should we wish to go beyond such limits?

In his book, Thierry Courvoisier asks us to reflect upon the various aspects of the relationships between science, society, and politics. He advocates a dialogue so that societies faced with challenges they are unable to resolve can integrate scientific knowledge while taking the time required for due consideration of the consequences.

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