

Pablo Bustinduy. *Space and Political Universalism in Early Modern Physics and Philosophy.* Edinburgh University Press 2024. 272 pp. \$120.00 USD (Hardcover 9781399527804); \$120.00 USD (eBook 9781399527835).

I was intrigued, but initially skeptical, about the concept of this book marrying multiple concepts in one volume. However, on completion, this is one of the most impressive and enjoyable books I have read this year. Pablo Bustinduy has accomplished a praiseworthy feat in condensing into one book a comprehensive overview of the philosophy of space, spanning the history and philosophy of science with conceptions ancient and modern of what space is, what it represents, and how it has challenged a great deal of humanity's vision of what it is and how we relate to the universe.

From the first chapter, Bustinduy takes the reader on a tour of the history of global understanding of space, the world within it, and our place in the universe. To write one book that could accomplish all of this would span several volumes, but he has done remarkably well in condensing the information and explanation down without minimizing or excluding anything too important. Bustinduy is one of the better writers at saying more with less, and he builds upon the established understanding chapter by chapter so that the reader is journeying through the history of humanity's wrestling with space as it has grown larger and larger, whilst our place within it grew smaller and smaller. One almost feels the existential crisis grow as one progresses through the book. It is a very impressive job that I thought could not really be done successfully.

Bustinduy is keen to probe the underlying philosophy, with all its existential angst and fascination, of the new political adventures for space, as well as the reflections on what brought us here in the first place. His well is deep, drawing on everything from antiquity to the present, with scientists, politicians, historians and theologians joining the philosophers in the extrapolation. Given the current frenzy for the Moon, Mars and beyond, as well as the tech boom of the space industry, this book could not be more timely. With so many players involved, I am impressed by how balanced and even-handed the work is when it so easily might have been otherwise. Bustinduy is more interested in the story, and he paints with both broad brushstrokes and a fine point, but it is very well done.

If contrast truly is the mother of clarity, space is exhibit A. The excitement of the new frontier in the 1970s (page 3) can be held against the anxiety of Pascal (6). The journey shows us space unveiled by Newton and Einstein with all the riches of the imagination (7).

Bustinduy states early that he is interested in developing a "logic of space" (8) for



understanding it theoretically and practically. This also helps us comprehend our own world better. The early part of the book reconstructs four principles of space in classical physics: the unbounded, the void, the incorporeal and the immense (18). Each places huge weight on the human imagination, bringing equal parts of fear and adventure into our philosophy of science, epistemology and hermeneutics. Processing these takes us through Aristotle, the Stoics and the most important thinkers in antiquity, but also lesser-heralded thinkers who were of great interest. He has left no stone unturned in uncovering the development of early wrestling with space. We also find the following engagement in Christian theology from its earliest interpretations, to those polymaths like Pascal (72) who fought internally between the god of the philosophers and that of the Bible in trying to understand reality on earth and the heavens. I must commend this unpacking by Bustinduy and how well he has structured each section, leaving us well informed but not overwhelmed.

One could easily have written a longer book on the philosophy of infinity alone. Bustinduy is concise but fair to the topic, within the framework of philosophy of space. “In space, the infinite is physically realized, and conversely, the universe becomes infinite at last” (84). Our becoming smaller as the universe became larger is the crisis dealt with by many philosophers drawn on by Bustinduy, along with the loneliness of the void and its paradox of divinity and emptiness (98). How the universe went from the home of God to a vast nothing strikes at the core of who God is and who we are with equal severity.

With my science hat on I was impressed with the book’s dealings with the history of science. Galileo and Newton are obviously important figures to unpack for both their discoveries and the historical framework they jolted. Galileo (111) and Newton (112) are explored for their impact of mathematicising and reducing the universe more into an abstract, mechanical place. Religious men that inadvertently made it all less divine but more comprehensible, the wonder changed shape. It is hard for us to relate to such a historical shattering of philosophy, but Newton really did bring about a new world (133) and its theological implications were as impactful as any in history. Bustinduy does his best to embody such conception and it is a commendable effort.

The final part of the book wrestles more with the modern world and political universalism. The last two centuries have seen radical technological breakthroughs, but they were also the eras of natural theology (152), romanticism, and Christian metaphysics. Philosophies of openness, the metaphysics of empty space, are interwoven with political philosophies as to what space on our

doorstep and beyond means today. Has the void indeed been closed? (191) Whatever one may think before reading this book, you will be challenged and confronted as to why you hold your position. Our world has never been more open. As modern icons like Hubble and the James Webb Space Telescope peel back the void, the infinite no longer seems as daunting as before. Our conceptions of ourselves and how we operate as a world face renewed challenges not all dissimilar to what Newton and Galileo brought to their world. What of philosophies of power and colonialism as the first human steps are placed on Mars? Robots from the USA, Europe, China and Russia leave their marks across the solar system. Are we in the process of forming a new political theology around space? (208). Whilst I am not in complete agreement with all Bustinduy's conclusions, his outline of an "ontology of limits" (210) was impressive and I consider his efforts to unite a philosophical breakdown of space and political universalism to be strong and praiseworthy.

Anyone with overlapping fields, or even a passing interest in modern politics and how it relates to conceptions of space, should engage with this fine book. Einstein and Newton feature much, as is to be expected, but Aristotle and Pascal are frequent favorites. How he has applied the work of these amongst the great many voices he draws upon is a quality contribution to their perspectives on the matter. There is much gold here to be mined and it continually challenged me.

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