Francis Bacon’s anti-Copernicanism was, for a long time, one of the embarrassing stories of the history of science. The major promoter of the new science denied the movement of the earth, promoted a semi-Paracelsian and vitalistic cosmology, and argued against the use of mathematics in cosmology. Meanwhile, as has repeatedly been shown, Francis Bacon was not ignorant when it came to the novelties and discoveries of the New Astronomy. Quite the contrary: he tried to integrate all the new astronomical discoveries into a properly constructed and properly organised natural history of the heavens. This paper proposes a clarification of the seemingly paradoxical situation described above. In the first part of the paper I discuss the major criticisms formulated by Bacon with respect to astronomy in general and Copernican astronomy in particular. I show that they are motivated by more general concerns regarding the relation between disciplines and by a challenging and quite novel view regarding the role of mathematics in physics. In the second part of the paper I discuss Bacon’s proposal for a new natural history of the heavens suitable to ground a ‘proper’ theory of the heavens.

1 Introduction

Francis Bacon’s was one of the last anti-Copernicans; he denied the motion of the Earth and constructed an ‘uncompromisingly geostatic and geocentric’ semi-Paracelsian and vitalistic cosmology; he argued against the use of geometry in cosmology. And he did all these not only at the end of the
sixteenth-century, but also in his most productive years, 1620–1626, apparently
unaware of the major progresses of the physical and mathematical astronomy
everywhere in Europe. Bacon did not only populate his works with a good num-
ber of standard anti-Copernican arguments; his famous doctrine of the idols
pictured Copernicus as a major originator of intellectual diseases. He even
went so far as treating mathematical astronomy in toto as an idol-generating
theory. Earlier studies have tried to explain Bacon’s attitude by the lack of ‘sci-
entific training,’3 by his general distaste of mathematics4 and by his exclusive
interest in matter-theory.5 Also invoked was Bacon’s isolation from contempo-
rary philosophical developments, his failure to keep track with the scientific
achievements of the day. Alternatively, Graham Rees has offered a remark-
able reconstruction of Bacon’s cosmological thinking showing how, stemming
the tides of mathematical astronomy, Francis Bacon developed the project
of a vitalistic and alchemical cosmology. Eventually, this was an unfinished
project, left in manuscript and published too late to impress any of Bacon’s
late seventeenth-century readers.6

In this paper, I propose to take a look at Bacon’s views on astronomy, astrol-
omy and the constitutions of the heavens from a different perspective, in the
larger context of Bacon’s own proposal for a reformed ‘Living Astronomy’. I
claim that what Rees called Bacon’s ‘semi-Paracelsian cosmology’ was
just one small part of a much larger project. Little has been done so far to

3 Bacon Francis, The Works of Francis Bacon: Baron of Verulam, Viscount St. Alban, and Lord
1874; reprint, New York: 1968) vol. III, 716; henceforth SHE, followed by volume number and
page.
4 This is, for example, the position expressed by Thomas Kuhn in a seminal article. Kuhn
claims that ‘Those critics who ridicule him [Bacon] for failing to recognize the best science
of his day have missed the point. He did not reject Copernicanism because he preferred the
Ptolemaic system. Rather, he rejected both because he thought that no system so complex,
abstract, and mathematical could contribute to either the understanding or the control
of Nature.’ Kuhn T.S., “Mathematical versus Experimental Traditions in the Development of
Physical Science”, in idem, The Essential Tension. Selected Studies in Scientific Tradition and
Change (Chicago: 1977) 46. In fact, as it will become clear in the next section of this article,
Bacon claims rather the opposite: astronomy as a system of calculus is too simple to do jus-
tice to the complexity of the physical ‘system’ which is the universe.
5 Rees, “Semi-Paracelsian Cosmology”. See also Gaukroger S., “The Role of Matter Theory in
Baconian and Cartesian Cosmologies”, Perspectives on Science 8 (2000) 201–222; Gaukroger S.,
Francis Bacon and the Transformation of Early Modern Natural Philosophy (Cambridge: 2001).