Optics, Simple Circular Motion and Conatus

Introduction

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This issue materialises an idea of Martin Bertman, the late founder of Hobbes Studies, and I am very happy to have brought to fruition his project of devoting a special issue of the review to topics related to Hobbes's natural philosophy. The four essays collected here show that a lot of water has passed under the bridge since Frithiof Brandt's Thomas Hobbes' Mechanical Conception of Nature and that nowadays critical interest is no longer so biased in favour of the political and ethical aspects of his philosophy.

Two of the essays (by Henry and Jesseph) deal with two key topics of Hobbes's physics – motus circularis simplex and conatus. The other two (Medina and Giudice) deal with optics. The doctrines of simple circular motion and of conatus are crucial to an understanding of the theoretical peculiarity of Hobbes's version of mechanical philosophy. Optics is a science (like geometry and politics) of which he claimed to be the modern re-founder, as Giudice and Jesseph point out. However, over and above the topic each essay specifically addresses, between the lines they all evoke the delicate underlying problem of Hobbes's epistemology.

On what grounds can Hobbes claim to have preserved the “Aristotelian” deductive causal status of science – shielding it from the deadly attacks of sceptics – without ever contradicting his rigorous empirical and nominalist premises?

The complete and complex answer to this question is found in De Corpore and has its core in the doctrine of the twofold consideration of phantasms as “internal accidents of our mind or as a species of external things” (species rerum externarum or accidentia animi interna).¹

¹ Thomas Hobbes, Elements of Philosophy the First Section, Concerning Body Written in Latine by Thomas Hobbes of Malmesbury; and now Translated into English; to Which Are Added Six lessons to the Professors of Mathematicks of the Institution of Sr. Henry Savile, in the University of Oxford (Londini: A. Crooke, 1656), abbreviated as Concerning Body hereafter in footnotes,
This distinction presents a very original aspect compared with the ideistic gnoseological line which prevailed in early modern thought (Descartes to Hume via Locke) because neither does the consideration of phantasms as *species rerum externarum* concern “external things” as *substances* (in a metaphysical or ontological sense), nor does the consideration of phantasms as *accidentia animi interna* deal with dematerialised objects.

Rather than denoting an “external” world of substances, the annihilation of which is indeed hypothesized, “external things” are to be understood “not as really existing, but appearing onely to exist.” Therefore the first consideration regards bodies as something that merely appears, namely bodies qua “imagined”, i.e., “perceived”, “conceived” or “known”; which, in Hobbes’s vocabulary, is tantamount to saying that they concern the imagination, perception, conception, knowledge of bodies.

We must remember that, on the basis of his empiricist and nominalist approach, real ideas (or phantasms) are for Hobbes only those of the individual bodies of experience and that there is no real idea of an accident as universal except as the idea of the body which is affected by it (in this he falls a long way short of the classical empiricist conception of body as a collection of qualities). On the one hand, a body is only perceived/conceived to the extent it is endowed with accidents (i.e., qua shaped, large, moved, at rest, coloured, etc.). On the other hand, an accident is perceived/conceived only as a “manner of our conception of Body”. Even when we refer to a certain single accident, the idea we actually have is still the “whole idea” of the individual body, and what we do is to consider the body according to that accident only, i.e., laying aside (or subtracting) all other accidents (thus to consider is a fundamental operation of knowledge).

In conclusion, phantasms – as principles of our knowledge – signify phantasms of bodies, and the phantasms of bodies *considered* qua phantasms (ideas) are nothing more than bodies thought or imagined. This, according to

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2. Ibid.