PIERRE GASSENDI AND THE BIRTH OF EARLY MODERN PHILOSOPHY

ANTONIA LOLORDO

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Pierre Gassendi and the Birth of Early Modern Philosophy

This book is the first comprehensive treatment in English of the philosophical system of the seventeenth-century philosopher Pierre Gassendi. Gassendi's importance is widely recognized and is essential for understanding early modern philosophers and scientists such as Locke, Leibniz, and Newton. Offering a systematic overview of his contributions, Antonia LoLordo situates Gassendi's views within the context of sixteenth- and early seventeenth-century natural philosophy as represented by a variety of intellectual traditions, including scholastic Aristotelianism, Renaissance neo-Platonism, and the emerging mechanical philosophy. Her work will be essential reading for historians of early modern philosophy and science.

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CAMBRIDGE
UNIVERSITY PRESS

CAMBRIDGE UNIVERSITY PRESS
Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo

Cambridge University Press
The Edinburgh Building, Cambridge CB2 8RU, UK
Published in the United States of America by Cambridge University Press, New York
www.cambridge.org
Information on this title: www.cambridge.org/9780521866132

First published in print format 2006

ISBN-13 978-0-511-34603-3 eBook (Adobe Reader)
ISBN-10 0-511-34603-4 eBook (Adobe Reader)

ISBN-13 978-0-521-86613-2 hardback
ISBN-10 0-521-86613-8 hardback

Contents

Preface

A lot of people have helped me with this book. I started working on Gassendi while writing a dissertation on his *Objections* and *Counter-Objections* to the *Meditations,* and I would like to thank my committee – Peter Klein, Tom Lennon, Pierre Pellegrin, and especially Martha Bolton – for their help and support. I wrote the bulk of this manuscript while I was a joint Fellow at Cal Tech and the Huntington Library, and I am grateful to both institutions (and the Mellon Foundation) for their generous financial support and for the lovely working atmosphere they provided. I would especially like to thank Fiona Cowie, Moti Feingold, and Roy Ritchie.

Portions of this book were presented at Dalhousie University, Simon Fraser University, the University of Florida, the University of Nebraska at Lincoln, the University of Virginia, the University of Pittsburgh, and Virginia Tech; and to the Cartesian Circle at UC Irvine, the History and Philosophy of Science Working Group at Cal Tech, the October 2001 meeting of the Midwest Seminar in the History of Philosophy, a joint meeting of the Midwest Seminar, the Centre d'Études Cartesiennes and the Centro Interdipartimentale di Studi su Descartes, and the Oxford Workshop in Early Modern Philosophy. I am grateful to all these audiences.

A number of people have provided helpful comments on the manuscript or portions thereof: Martha Bolton, Jed Buchwald, Andrew Chignell, Fiona Cowie, Jack Davidson, Raffaella De Rosa, Stewart Duncan, Moti Feingold, Dan Garber, Geoff Gorham, Alan Hajek, Chris Hitchcock, Michael Jacovides, Richard Kroll, Mike Le Boeff, Tom Lennon, Paul Lodge, Dominic Murphy, Steve Nadler, Alan Nelson, Margaret Osler,

Pierre Pellegrin, Andrew Pyle, Don Rutherford, Jorge Secada, Ed Slowik, Martin Stone, and two anonymous referees for the Press. Paul Lodge, who has offered moral support and an unreservedly sympathetic ear throughout, deserves special thanks. I would also like to thank my colleagues at the University of Virginia, who allowed me two years' leave and who have been unfailingly supportive in less tangible ways as well. Special thanks are due to Dan Devereux, Brie Gertler, Paul Humphreys, and Jorge Secada.

Finally, I would like to thank Kathryn Burns.

I am sure I have forgotten someone important. If so, it is not out of lack of gratitude, just lack of memory.

Portions of Chapters 2 and 3 appeared in the *British Journal for the History of Philosophy* (as "'Descartes's One Rule of Logic': Gassendi's Critique of Clear and Distinct Perception"). Portions of Chapters 2 and 6 appeared in *Oxford Studies in Early Modern Philosophy* (as "The Activity of Matter in Gassendi's Physics"). Portions of Chapter 10 appeared in the *Archiv für Geschichte der Philosophie* (as "Gassendi on Human Knowledge of the Mind"). I thank the editors and publishers of these journals for permission to use that material here.

References to Gassendi's Works

Animadversiones = Animadversiones in decimum librum Diogeni Laertii, qui est de vita, moribus, placitisque Epicuri (*Notes on the tenth book of Diogenes Laertius, which is about the life, character and opinions of Epicurus*), 1649

De apparente = Epistolae quatuor de apparente magnitudine solis humilis et sublimis (*Four letters on the apparent magnitude of the sun on the horizon and overhead*), 1642

De motu = De motu impresso par motore translato (On the motion impressed by a moving mover), 1642

De proportione = De proportione qua gravia decidentia accelerantur (On the proportion by which heavy falling things are accelerated), 1646

De vita et doctrina = De vita et doctrina Epicuri (On the life and doctrine of Epicurus), 1634

Disqusitio= Disquisitio metaphysica seu dubitationes et instantiae adversus Renati Cartesii Metaphysicam et responsa (Metaphysical investigation, or doubts and counter-replies against the metaphysics of René Descartes, and his responses), 1644

Examen Fluddi = Examen Philosophiae Roberti Fluddi Medici (Examination of the Philosophy of the doctor Robert Fludd), 1629

Exercitationes = Exercitationes Paradoxicae Adversus Aristoteleos (Exercises in the Form of Paradoxes against the Aristotelians), 1624

Mirrour = *The Mirrour of True Nobility and Gentility* [English translation of the 1641 *Vita Peireskii* = *Viri illustris Nicolai Claudii Fabricii de Peiresc, senatoris Aquisextiensis, vita*], 1657

Opera = *Petri Gassendi Opera Omnia in sex tomos divisa (Collected Works of Pierre Gassendi divided into six volumes)*, 1658, which includes

volumes 1 & 2: *Syntagma (= Logic, including Institutio logica; physics;* and *Ethics*
volume 3, pp. 1–94: *PES*
pp. 95–210: *Exercitationes*
pp. 211–268: *Examen Fluddi*
pp. 269–410: *Disquisitio*
pp. 420–477: *De apparente*
pp. 478–563: *De motu*
pp. 564–650 = *De proportione*
volume 4: pp. 75–480: *Observationes Caelestes*
volume 6: correspondence

PES = *Philosophiae Epicuri Syntagma (Treatise on the philosophy of Epicurus)*, 1649

Receuil = *Receuil de lettres des sieurs Morin, de la Roche, de Nevre et Gassend: en suite l'apologie du Sieur Gassend touchant la question De motu impresso a motore translato (Anthology of letters of Sieurs Morin, de la Roche, de Nevre and Gassendi: followed by Gassendi's apology concerning the question De motu impresso a motore translato)*, 1650

Syntagma = *Syntagma Philosophicum* (*Philosophical Treatise*), 1658

Vanity = *The Vanity of Judiciary Astrology, or, Divination by the stars* [English translation of a portion of the 1653 *Institutio astronomica*], 1659

Introduction

This book is both an interpretation of Gassendi's central metaphysical, epistemological, and natural philosophical views and an advertisement for their philosophical and historical interest. Historians of seventeenth-century philosophy can usually tell you that Gassendi was an atomist, an empiricist, or a mitigated skeptic, as well as an opponent of Aristotle and Descartes. They might add that he attempted to revive Epicureanism. However, few are likely to have any clear conception of the theses Gassendi articulates, the arguments he offers in their defense, or the systematic connections between them. This is an unfortunate situation, and I aim to remedy it.

There are at least two reasons why those of us who are interested in early modern philosophy and natural philosophy need to know more about Gassendi. The first is widely recognized. Gassendi's influence and the importance he was accorded by his peers and close contemporaries is unquestionable. Gassendi was a central figure in seventeenth-century philosophy and, as such, very important for the development of modern philosophical thought. He knew and was known by such figures as Descartes and Hobbes and is important for understanding Leibniz, Locke, and Newton. Were one a seventeenth-century intellectual who found Cartesianism unacceptable, Gassendi's philosophy was the obvious alternative.

Less well known, however, is the philosophical interest of Gassendi's system. Gassendi attempts to solve central problems besetting causal theories of perception; distinguishes perceptual from nonperceptual cognition in a way that idea theorists typically failed to do; argues for an explicitly antireductionist version of the mechanical philosophy; presents

a radical account of the source of creaturely activity; and more. I articulate these central themes and issues in a way that makes their underlying philosophical motivations clear.

It is easy for us to think of Descartes and the Cartesian reaction to scholasticism as setting the agenda for seventeenth-century natural philosophy. I hope that, through exhibiting the intellectual situation and agenda of Descartes's chief contemporary rival, this book will have the effect of defamiliarizing the early modern philosophical landscape. We tend to think of the "new philosophers" as reacting against scholastic Aristotelianism or, in the case of later figures, Cartesianism. But even though Gassendi does write in opposition to the doctors of the schools and to Descartes, he is equally concerned with a third set of opponents – Renaissance neo-Platonists and Italian natural philosophers such as Patrizi, Telesio, and Campanella. Gassendi stands at the intersection of a number of traditions: humanism, Aristotelianism, neo-Platonism, the Italian naturalist tradition, and the new mechanist natural philosophy. Thus, coming to understand him is also coming to understand something of the great diversity of philosophical options on offer in the middle of the seventeenth century.

My concern is chiefly with natural philosophy in the broad sense. Gassendi follows the typical Hellenistic trivision of philosophy: logic, physics (otherwise known as natural philosophy or *physiologia*), and ethics. For Gassendi, logic – a discipline that has strong psychological, epistemological, and methodological components – is worth doing only insofar as it is useful, and in particular only insofar as it contributes to physics. Because Gassendi's logic is portrayed as the necessary propadeutic to physics, I include it within my treatment of natural philosophy.

The bulk of Gassendi's natural philosophy consists of detailed accounts of particular natural phenomena such as the formation of clouds and crystals. However, I concentrate on those aspects of Gassendi's natural philosophy that count as more philosophical in our sense of the term: the ontology and functions of the mind; epistemology and the theory of cognition; the metaphysics of space and the metaphysics of bodies; and the relationship between atomic and bodily explanations.

Gassendi alternately characterizes the goal of physics in terms of its contribution to ethics, as Epicurus did, and as leading us to recognize that God exists and that "the excellence and beneficence of this God should be shown reverence" (1.128b). I treat Gassendi's natural theology at some length. However, in order to have some chance of doing justice

to Gassendi's physics, I omit ethics almost entirely.[1] Although Gassendi's natural philosophical work may originally have been motivated by ethical concerns, it is clear from the bulk of his natural philosophical writings and the amount of time he spent on them that natural philosophy took on a life of its own for him.

My chief focus is Gassendi's magnum opus, the *Syntagma Philosophicum*. Two considerations speak in favor of focusing on the posthumous *Syntagma* rather than the earlier *Animadversiones in decimum librum Diogenis Laertii* (*Notes on the Tenth Book of Diogenes Laertius*). First, in the *Syntagma* Gassendi writes in his own voice, while the *Animadversiones* is a commentary, albeit a rather digressive one. Although the *Syntagma* devotes a fair amount of space to reconstructing and interpreting the Epicurean view, Gassendi is careful to make clear where a revised version of Epicureanism can be embraced, and where he wishes to offer a novel view or one from another source. Second, Gassendi wanted his *Opera Omnia* to begin with the *Syntagma* and to include only the strictly philological sections of the *Animadversiones*. This decision indicates either that he was unhappy with the more philosophical aspects of the *Animadversiones* or, more likely, that he thought they had been superceded. Although Gassendi never finished the *Syntagma*, it is his most complete and systematic work.

One notable feature of the *Syntagma* is its use of a genealogical method for writing philosophy. Gassendi explicates each new philosophical question in great historical detail, summarizing and criticizing the views of major figures, before venturing any answer of his own. The use of this method is sometimes taken to indicate a conception of philosophical argument entirely different from that of contemporaries like Descartes or Hobbes – a historicist conception, on which we can neither understand nor justify philosophical positions without understanding their historical location.[2] However, the use of such a method is found in many sixteenth- and seventeenth-century texts.[3] It may well have been simply

[1] Readers interested in Gassendi's ethics should consult Sarasohn, *Gassendi's Ethics*.

[2] This is the thesis of Joy, *Gassendi the Atomist*.

[3] An arbitrarily chosen chapter of Patrizi, *Nova de Universis Philosophia*, for instance, mentions Plato, Theophrastus, Parmenides, Zoroaster, Proclus, the Chaldeans, Aristotle, Philo, Hermes Trismegistus, and Simplicius. Less than one hundred years later, the introductory chapter of Cudworth, *The True Intellectual System of the Universe*, treats the views and interpretations of Democritus, Aristotle, Plato, Leucippus, Protagoras, Posidonius, Moschus or Moses, Iamblicus, Pythagoras, Empedocles, Stobaeus,

how Gassendi thought one wrote philosophy and not the expression of any covert methodological commitments. Moreover, Gassendi's use of the genealogical method seems to me to be strikingly *anti*historicist in that it presupposes that there are grand, transhistorical questions and that everyone discussed was engaging with the same issues and with similar aims. Gassendi's discussion of human freedom, for instance, assumes that Lucretius and Suárez share a concept of freedom and have similar reasons for wanting to preserve human freedom.

What, then, *is* the significance of Gassendi's use of the genealogical method? For one thing, there is a great deal of rhetorical significance to his choice of sources to discuss or omit. It is very easy to read the *Syntagma* and think that Gassendi is attempting to provide an exhaustive historical summary. But this impression is only partly correct. Gassendi tries to recreate the whole range of classical and Hellenistic options – but he does not do the same thing for the contemporary options, leaving out most of the diversity among scholastics and treating Aristotelianism as a simple, unitary view. By doing so, he expresses a guiding assumption that the way forward will have to be found through other means than Aristotle's.

It is unfortunate that Gassendi's use of the genealogical method has made it difficult for twentieth- and twenty-first-century scholars to approach him. I hope that what follows will persuade readers to make another attempt. I begin, in Chapter 1, with an account of Gassendi's life and intellectual context, focusing on two issues that exhibit Gassendi's engagement with humanist historiography and with new natural philosophical movements: the development of his Epicurean project from biography and commentary to a positive philosophical program, and his Galileanism and his strategy for dealing with the condemnation of Galileo. Chapter 2 provides an outline of Gassendi's critiques of the opposing Aristotelian and neo-Platonist schools and of the philosophy of Descartes. It is from these critiques that Gassendi's view of matter emerges. For, he argues, examining his opponents' views shows that we can only preserve secondary causation in a theologically acceptable manner by building the active principle into matter itself.

Anaxagoras, Xenocrates, Ecphantus, Heraclides, Diodorus, Metrodorus Chius, Epicurus, Parmenides, Empedocles, Anaxagoras, Lucretius, Zeno, Chrysippus, the Chaldeans, Cicero, Seneca, Socrates, Diogenes Laertius, and Strabo. Even Sennert, *Epitome Naturalis Scientiae*, intended as a textbook, characterizes its starting question "On the Nature of Philosophy" in terms of the views of Pythagoras, Plutarch, Aristotle, and Cicero.

Chapters 3 and 4 develop an account of Gassendi's theories of perception and cognition and of the philosophical methodology put forth in the *Syntagma*'s *Logic*. In Chapter 3, I discuss his causal theory of perception. Gassendi adopts a version of the notorious Epicurean doctrine that sensation cannot lie, and this – together with the problem, common to causal theorists, of explaining how we can have different ideas of the same thing – leads to a complex and interesting theory of perceptual content. Gassendi thus offers a form of direct realism that is both more sophisticated and more explicit than the versions sometimes attributed to idea theorists like Locke. Chapter 4 explains how Gassendi's direct realism yields an account of the content of ideas that grounds the epistemology of physics. It also addresses the inferences from signs that play the dual role of providing ideas of unperceived entities and grounding probable knowledge of their existence.

Chapters 5 through 9 discuss a series of foundational issues in Gassendi's physics – space and time, the properties and motion of atoms, the structure and motion of composite bodies, the generation and life of plants and animals, and the ontology of bodies. In Chapter 5, I examine Gassendi's arguments for the existence of absolute space and time and his defense of the void against Aristotelian and Cartesian plenism. In Chapter 6, I trace the development of Gassendi's atomism in its historical context, considering how Gassendi's atoms differ from their Epicurean counterparts and the theological and physical motivations for Gassendi's revised account of the nature of atoms. On Gassendi's view, creaturely activity is built into atoms from the moment of their creation. One central problem here is how the innate activity of atoms is consistent with divine creation, conservation, and concurrence. Another is determining whether we are best off thinking of atoms as continually in motion or merely continually possessed of motive power.

My discussion of Gassendi's atomism sets the stage for an account of the relationship between the properties of compound bodies and the properties of the atoms composing them. It is not uncommon for historians of philosophy to think of mechanism as a form of reductionism about the qualities and behavior of composite bodies. This is a reasonably accurate characterization of someone like Descartes who allows no real qualities to bodies beyond the qualities of size, shape, and motion (or perhaps force) ascribed to all matter. Such a characterization, however, implies that mechanism is far less common than often thought. On such a characterization, for instance, Boyle would not count as a mechanist, nor, most probably, would Locke. For both accept the existence

of emergent or super-added qualities. Nor would Gassendi count as a mechanical philosopher. For although he restricts the qualities of atoms to size, shape, and motion or the motive power underlying it, many of the properties of composite bodies cannot be reduced to such qualities. Most important among these are the various powers pertaining to generation and sensation.

Chapter 7 discusses the relationship between inanimate composite bodies and their component atoms. The relationship between Gassendi's accounts of the motion of composite bodies and the motion of atoms is awkward, although the two accounts are not, I argue, inconsistent. Chapter 8 takes on the comparatively straightforward task of documenting and understanding Gassendi's antireductionist account of life, focusing on the two central cases of generation and the sensitive powers of the corporeal soul. The crucial issue for antihylemorphic theories of generation is to explain how the complex structure of a mature organism can develop out of undifferentiated matter, and Gassendi, like later preformationists, ends up ascribing a great deal of preexisting structure to seeds. In Chapter 9, I analyze the way Gassendi reinterprets the traditional ontological categories of substance, nature, and accident in corpuscular terms. So doing allows us to elicit a general ontology on the basis of the more localized accounts of the previous chapters.

I end, in Chapter 10, with an account of the status and content of our knowledge of God and the incorporeal soul. My account revolves around two issues: first, how Gassendi accommodates cognition of the incorporeal within his radically empiricist theory of cognition and, second, how he deals with the ontology of the incorporeal given his corpuscularian understanding of the categories of substance, nature, and accident. Once we have a sophisticated understanding of Gassendi's ontology and epistemology of the mind, we are in a position to address the vexing issue of the relationship between faith and reason, which has been a central topic in recent work on Gassendi.[4]

[4] As well as Sarasohn, there are three other major recent books on Gassendi, and all of them treat the dialectic of faith and reason at some length: Bloch, *La philosophie de Gassendi*; Brundell, *Pierre Gassendi*; and Osler, *Divine Will and the Mechanical Philosophy*.

1

Gassendi's Life and Times

Pierre Gassendi was born – as Pierre Gassend, son of the peasant farmer Anthoine Gassend and his wife Françoise Fabry – on January 22, 1592, in the village of Champtercier, near Digne in Provence. This was the year of Montaigne's death. He attended the Collège de Digne from 1599 to 1607 – where he learned, primarily, Latin[1] – and the Faculté d'Aix beginning in 1609, studying philosophy with Père Philibert Fesaye. He also followed a course of theology that included Greek and Hebrew.[2] Fesaye was a Carmelite, and the *ratio studiorum* of the Carmelites refers to Aquinas, Toletus, Averroes, and the Carmelite doctor John Bacon or Baconthorp. Baconthorp attacked intelligible species; denied the univocity of being; held that universals precede the action of the intellect and that external objects are intelligible per se although understanding them requires an agent intellect; equated essence with quiddity; and maintained a formal distinction between essence and existence.[3] Gassendi adopted none of these doctrines, save the rejection of intelligible species.

Gassendi was recognized as an exceptional student from early on, and received his doctorate in theology in 1614, at the age of 24, at which time he took the four minor orders of the church and became the theological canon of Digne Cathedral.[4] He kept this job until he was promoted to provost in 1634, after some legal wrangling. In 1616, Gassendi was ordained to the priesthood. In 1617, he was offered the chairs in

[1] La Poterie, "Memoires," 215.
[2] Bougerel, *Vie de Pierre Gassendi*, 7.
[3] Armogathe, "L'Enseignement de Pierre Gassendi."
[4] La Poterie, "Memoires," 216–17.

both philosophy and theology at the University of Aix; he took philosophy, leaving the theology chair to his old teacher Fesaye. At this time, Gassendi was living at the house of the astronomer Joseph Gaultier, "who," Gassendi wrote, "had no difficulty in equaling all the ancient and modern philosophers and mathematicians."[5] Gaultier also provided lodging for Jean-Baptiste Morin, with whom Gassendi would later have a protracted quarrel, and their fellow astronomer Ismail Bouillau, who would become an important correspondent of Gassendi.[6] It was from Gaultier that Gassendi learned much of his astronomy. The two observed a comet together in 1618, and eclipses of the moon and sun, respectively, in 1620 and 1621.[7]

It was in 1617 also that Gassendi met his future friend and patron, Peiresc. Nicolas-Claude Fabri de Peiresc was an influential humanist and antiquarian, known across Europe for his erudition and from his voluminous correspondence with all sorts of intellectuals. Peiresc had interests in numismatics, botany, astronomy, antiquities more generally, and books of all kinds. Indeed, Peiresc is spoken of as an ideal of the late humanist type.[8] He was also, Gassendi tells us,

> studious of Mechanics, or Handi-Crafts; for which cause, there was never any famous Workman that went that way, but he entertained him at his House, and learnt of him many works of mysteries of his Craft; for he would keep him with Diet, wages, and gifts, and make much of him for months and years together. (*Mirrour* 186)

Gassendi goes on to tell us that Peiresc was an admirer of Bacon and an opponent of scholastic doctrines of nature, both respects in which he and Gassendi were of similar mind.

Peiresc was an important figure in Gassendi's early astronomical career. Peiresc had spent the winter of 1599–1600 in Padua, where he attended lectures by Galileo, and after hearing about Galileo's telescopic discovery of the Medicean stars (the moons of Jupiter) in 1610, he had an observatory built and hired Joseph Gaultier to work there. One of Gaultier's first projects was to compute the times of the revolutions of the four moons, and in order to help Gaultier do the computations more

[5] Letter to de Pibrac of April 8, 1621. Quoted by Bougerel, *Vie de Pierre Gassendi*, 13.

[6] Bougerel, *Vie de Pierre Gassendi*, 9.

[7] At least, Bougerel, *Vie de Pierre Gassendi*, 10–11, says that the observations were done with Gaultier, although the record in Gassendi's *Observationes Caelestes* – the posthumous compendium of his astronomical observations – makes no mention of this (4.77a).

[8] For this claim and an excellent account of Peiresc's life, reputation, correspondence networks, and significance, see Miller, *Peiresc's Europe*, passim.

quickly Peiresc hired Morin and Gassendi as helpers (*Mirrour* 143f). Peiresc was to become Gassendi's patron and close friend. It was from him that Gassendi acquired his first telescope, one that had been given to Peiresc by Galileo. It was also through Peiresc's introductions that Gassendi became acquainted with the circle of thinkers around Marin Mersenne – a circle that largely shared Gassendi's admiration of Galileo and that was to be extremely influential for Gassendi's later career.

Gassendi stayed at Aix until 1622 (or perhaps 1623[9]), when the university and its curriculum were placed under Jesuit control and Gassendi had to leave.[10] All the non-Jesuit faculty were dismissed; Gassendi's departure had nothing to do with any particular philosophical beliefs nor, indeed, had he yet published any of those beliefs. After he left Aix, Gassendi returned to Digne, and the next year Book I of the projected seven books of his *Exercitationes Paradoxicae Adversus Aristoteleos (Exercises in the Form of Paradoxes Against the Aristotelians*) was published. Gassendi explained his motivations for writing the *Exercitationes* as they developed during his time teaching at Aix:

> I always made sure that my students could defend Aristotle properly. But at the same time, I also provided as appendices doctrines that would undercut Aristotle's dogmas. Indeed, given the place, the characters and the times, it was necessary to do the former. But not to omit the latter was a matter of candor because those doctrines provided true reason for withholding assent. (3.100)

Exercitationes I was a collection of these more critical parts of his lectures. As we can see from the language of withholding assent, Gassendi's own philosophical allegiances at the time were to skepticism, if anything. He wrote that while he was becoming disillusioned with Aristotelianism, he "began to examine the doctrines of other sects to find out whether they perhaps might offer something sounder. Although I found perplexities everywhere, none of the doctrines impressed me more than the lauded *akatalepsia* of the Academics and Pyrrhonians" (3.99). Although Gassendi's skeptical sympathies diminished significantly over time, skepticism remained an important influence on him.

In October of 1623, Gassendi traveled to Paris, where he met Marin Mersenne and, through him, a number of other prominent intellectuals.[11] Gassendi and Mersenne became good friends, and it is

[9] For difficulties determining the date, see Joy, *Gassendi the Atomist*, 25 n. 2.

[10] Brundell, *Pierre Gassendi*, 1, argues that this was the result of a rather late implementation of the Council of Trent's call for a reformation of seminaries.

[11] La Poterie, "Memoires," 236.

said that until Mersenne's death Gassendi celebrated Mass with him at his convent whenever he was in Paris. Through Mersenne's intermediacy, Gassendi met (at one point or another) the mathematician Gilles Personne de Roberval, the poet Jean Chapelain, Hobbes and the Cavendish family, Grotius, and perhaps Pascal. Gassendi apparently became friends with Hobbes during his time in Paris in the 1640s, although the two had met previously. Hobbes wrote in his autobiography that he later "returned again to France where he could study knowledge more securely with Mersenne, Gassendi and other men," and Gassendi, along with Mersenne, wrote a commendatory letter printed with the third edition of *De cive*.[12] Lisa Sarasohn has argued that there is significant influence between the two men's political theories as well as their natural philosophies.[13] Samuel Sorbière, a disciple of both Gassendi and Hobbes in turn, tells us that when Gassendi was given a copy of *De corpore* on his deathbed, he greeted it with a kiss.[14] Although Sorbière is by no means a trustworthy source, it is also worth noting his report of Hobbes's claim, concerning the *Fifth Objections* and *Counter-Objections*, that Gassendi "never appeared greater than when beating back the ghosts" of metaphysical speculation.[15]

Soon after his journey to Paris, Gassendi – with the encouragement of his Genevan friend Eli Diodati – first wrote to Galileo, telling him rather effusively, even by the standards of the day, that he had long known and admired his work and was in full agreement with him concerning Copernicanism. Around this time, Gassendi abandoned the *Exercitationes*, although he kept the finished but unpublished manuscript of Book II, "On the dialectic of the Aristotelians." Lynn Joy notes two possible explanations for abandoning the *Exercitationes*.[16] One line of explanation emphasizes the significance of Gassendi's Paris trip of 1624–5 and the conversations with Mersenne and others that might well have led him to realize that Book II would greatly offend some powerful people. (Some have suggested that the recent condemnations of Jean Bitaud, Antoine

[12] Hobbes, *Opera philosophica quae latine scripsit,* 1.xiv.

[13] Sarasohn, "Motion and Morality," argues that Hobbes's psychology was influenced by the views Gassendi was developing in the 1630s, and that Gassendi's turn away from thoroughgoing materialism in the early 1640s was spurred at least in part by reaction against Hobbes.

[14] Sorbière's unpaginated preface to the *Opera*, twenty-second page.

[15] Ibid., eighteenth page.

[16] Joy, *Gassendi the Atomist*, 32–7.

de Villon, and Étienne de Clave had some force in this too, although the main basis of their condemnation was that their chemical atomism was "false, audacious and contrary to the faith."[17]) The second is that Gassendi simply came to realize that Patrizi had already made basically the same case in his anti-Aristotelian work, so that Book II would be redundant.[18] Joy suggests the interesting further consideration that by this time, although Gassendi was still committed to opposing Aristotelianism, he was no longer enamoured of the skeptical mode of arguing he had earlier used. One possible reason for this disenchantment, Joy argues, is the influence of the antiskeptical doctrines of Mersenne's *La vérité des sciences*, which made clear to Gassendi that one could oppose Aristotelianism without giving up the possibility of knowledge altogether. Whatever the real reason, none of Gassendi's later works evince the thoroughgoing skepticism found in the *Exercitationes*.

In 1626, Gassendi returned to Digne. His correspondence with Peiresc shows that, by this time, he had already begun working on Epicurus.[19] He stayed in Digne for a few years but in 1628 returned to Paris, where he met the *libertin érudit* François Luillier and the circle of writers surrounding the Dupuy brothers. The Dupuys had been corresponding with Peiresc for years, so this was probably through Peiresc's intermediacy. Since the death of their uncle, the historian Jacques Du Thou, Jacques and Pierre Dupuy had administered and added to his library, and it was in this library that Gassendi would carry out much of his research on Epicurus.

In December, Gassendi and his friend François Luillier traveled to Holland for several months. In July, he met with Isaac Beeckman and, like Descartes, was greatly impressed by him: Writing to Peiresc, he called Beeckman "the best philosopher I have yet met."[20] Beeckman knew Gassendi as the author of the *Exercitationes*, a doctor of theology, and a canon of Digne. The two discussed music and motion, and Beeckman wrote in his journal that Gassendi "approved" what he heard and "seemed

[17] Villon and De Clave replaced the four Aristotelian elements with the five chemical elements – salt, sulfur, mercury, earth, and water – and mounted an attack on Aristotle in their fourteen theses. Kahn, "Entre atomisme, alchimie et théologie." For the effect of the condemnation, see also Spink, *French Free-thought from Gassendi to Voltaire*, 89–90.

[18] Rochot, "Vie et Caractère," argues that this is implausible because Gassendi would almost certainly have known about Patrizi's work *before* 1624 and *Exercitationes* I borrows numerous arguments and rhetorical tropes from Patrizi.

[19] Tamizey de Larroque, *Lettres de Peiresc*, 4.178–81.

[20] Ibid., 4.198–202.

to hear with joy and admiration."[21] A few, not terribly interesting, letters followed.

Gassendi's next published works were the *Phaenomenon rerum*, printed (poorly, he thought) in Holland in 1629 and reprinted in France the next year under the title *Parhelia sive soles quatuor spurii* (*Parhelia or four spurious suns*); and the *Examen Philosophiae Roberti Fluddi Medici* (*Examination of the Philosophy of the doctor Robert Fludd*), written at Mersenne's behest to combat the philosophy of the English doctor Robert Fludd. Gassendi's second astronomical publication, *Mercurius in sole visus* (*Mercury seen on the face of the sun*), the record of his confirmation of Kepler's 1629 prediction of the transit of Mercury across the face of the sun, was published in 1632. The next year or two were spent in Provence, where the Epicurus project appears to have continued; at least, Gassendi made repeated visits to Peiresc and his library. The relative serenity of this period was disturbed only by news of the condemnation of Galileo.

In 1634, the second of Gassendi's occasional works on other philosophers was written and published, this time at his patron Peiresc's request: *Ad librum D. Edoardi Herberti de Veritate Epistola* (*A Letter concerning Edward Herbert's book On Truth*), which addressed Herbert's antiskeptical arguments. Among other things, Gassendi objects to Herbert's fourfold distinction between kinds of truth; his reliance on innate "common notions"; his claims about what is universally agreed upon; and his careless treatment of sense perception. Many of the important themes and interests of Gassendi's later work appear in his criticisms of Herbert of Cherbury. Particularly notable are Gassendi's attacks on innate ideas and his concern with the details of sense perception.

The next year, Gassendi wrote the first of four letters that would be published together as *De apparente magnitudine solis humilis et sublimis* (*On the apparent magnitude of the sun on the horizon and overhead*). The first letter was written to his friend Gabriel Naudé from Aix on December 5. A second letter, written to Fortunio Liceti from Aix on August 13, followed in 1640; the third and fourth appeared in 1641. The four letters *De apparente* deal with problems parallel to the moon illusion, and Gassendi offers an atomist explanation of them.[22]

Peiresc had supported Gassendi throughout this period. The two were close, and Peiresc's death on June 11, 1637, seems to have come as rather a

[21] Beeckman, *Journal tenu par Isaac Beeckman de 1604–1634*, 3.123.
[22] For more on *De apparente*, see Joy, *Gassendi the Atomist*, 106–29.

shock. (Insult was added to injury when Peiresc's nephew refused to give Gassendi the books and mathematical instruments bequeathed to him in Peiresc's will.[23]) In memory of Peiresc, Gassendi wrote a biography describing not only their friendship but also the work in natural philosophy they had done together. This is thought to be the first instance of a new genre – the biography of a scholar.[24] The *Vita Peireskii* was widely read: The first publication in 1641 was followed by Dutch printings in 1650 and 1655 and, in 1657, an English translation printed under the name *The Life of Peireskius* or *The Mirrour of True Nobility and Gentility*. Apparently, biography was to Gassendi's liking: he would later write a full-length biography of Tycho Brahe and much shorter biographies of the astronomers Copernicus, Peurbach, and Regiomontanus.

The loss of Peiresc was both the loss of a friend and the loss of a patron. Louis de Valois, then governor of Provence, soon replaced Peiresc as Gassendi's patron. They never achieved the same degree of intimacy, however, and de Valois was not a member of the republic of letters in his own right, as Peiresc had been. However, as governor he was a rather more powerful figure than Peiresc: De Valois's patronage reflected Gassendi's increased philosophical status.

In 1640, Gassendi wrote the first two letters *De motu impresso par motore translato* (*On the motion impressed by a moving mover*), addressed to Pierre Dupuy. They were published in 1642 but circulated widely beforehand. In these letters, Gassendi puts forth a version of Galilean relativity to defend Copernicanism from the objection that heavy bodies would not fall as they do if the earth were moving. The cautious Gassendi expressed this argument not as a defense of Copernicanism but merely as showing that one common argument against Copernicanism was wrong.

Despite Gassendi's care on this last point, the publication of *De motu* occasioned some controversy. Both Morin and the Jesuit Pierre Cazré published attacks on *De motu* and its allegedly Copernican implications. Gassendi replied to Cazré in the first letter *De proportione qua gravia decidentia accelerantur* (*On the proportion by which heavy falling things are accelerated*)[25] on December 8 that year. He also replied to Morin, in 1643's third letter *De motu*. This was not, however, published until 1649, in the

[23] La Poterie, "Memoires," 224, gives a very brief account of the disapproval this was generally met with, and of Peiresc's nephew's insinuations.

[24] Miller, *Peiresc's Europe*, 16–48.

[25] Two more letters were written, and the three were published together in 1646.

Apologia in Morini Librum, and even then against Gassendi's wishes. While the *De motu* controversy was going on, Gassendi was also writing what is now his most widely read work, the *Fifth Objections* to Descartes's *Meditations*, which would be followed by the much longer *Counter-Objections*. I discuss both the arguments and the circumstances of composition of these counter-Cartesian works in Chapter 2.

Alphonse de Richelieu, cardinal-archbishop of Lyon and brother of the already-deceased Prime Minister Cardinal Richelieu – who had known Gassendi since the 1620s when he was archbishop of Aix – named Gassendi professor of mathematics at the Collège Royal in 1645.[26] The chair of mathematics was given him in recognition of his prowess in astronomy, one of the branches of mixed mathematics, rather than any concern or talent for pure mathematics. Gassendi officially kept this position until his death, although on his physicians' advice he stopped teaching earlier.[27] In 1647, the first public installment of the Epicurus project was published at Lyon under the title *De vita et moribus Epicuri* (*On the life and character of Epicurus*). This was intended both to demonstrate the impeccable personal morals of Epicurus and to render his doctrines consistent with the Catholic faith. Gassendi's *Institutio astronomica*, together with his inaugural lectures at the College Royal, was also published in that year. The *Institutio astronomica* was widely reprinted, at, for instance, London in 1653 and again in 1683, the Hague in 1656, and Amsterdam in 1680.

Part of the *Institutio astronomica* was published in 1658 in English translation as *The Vanity of Judiciary Astrology*. There Gassendi is concerned to argue against two different sorts of astrology: the kind that predicts the weather on the basis of the stars and the kind that predicts the fortunes of particular men from their genitures or nativities. Neither has any real predictive power, according to Gassendi. The motions of the stars are not – contrary to vulgar opinion – the causes of tempests and mutations in the air but only signs.[28] Predictions of men's fortunes on the

[26] Sarasohn, *Gassendi's Ethics*, 12.

[27] Bougerel, *Vie de Pierre Gassendi*, 394.

[28] Gassendi gives a number of arguments for this claim. For example, the fixed stars rise a month later in the year than they did in the times of the ancient Greek philosophers, but the seasons remain unchanged and aligned to the sun. For another example, Sirius acts as a sign of heat to us but in the antipodes it is a sign of cold, so the appearance of Sirius cannot itself be the cause of either heat or cold – and so on for all the fixed stars. In any case, Gassendi notes, even in France the connection between the stars and the weather is not exact, for weather is far more variable than the predictable heavens.

basis of their genitures fare even worse. Gassendi notes that people have an unfounded faith in judiciary astrology because of their tendency to remember successful predictions and forget failed ones. Moreover, there are pragmatic objections to the use of nativity schemes because they are not conducive to either peace of mind or sensible behavior. If an early death is predicted, a man may become nervous and make himself sick; if long life is predicted, he may become reckless. Indeed, Gassendi writes, "we have many stories both Ancient and recent that testify, that those men have generally been most unhappy, who confided in the Astrologers promising them very great happiness" (*Vanity* 14.87).[29]

Gassendi also mounted a more theoretical attack on judiciary astrology, laying down a general rule for the knowledge of future events: "[W]hatsoever, doth import the knowledge of any effect to come, ought to be either the necessary Cause of that particular effect, or which being posited, such an effect doth alwaies follow; or as a necessary Signe, or which being given, such an Event doth always succeed" (*Vanity* 14.2). The first clause is satisfied by things like the conjunction between the sun's approach to the vernal equinox and the budding of plants; the second, by the morning twilight and the rise of the sun. The connections alleged between nativities and the fortunes of men fit neither of these two cases. Nor, Gassendi goes on to argue, do they satisfy even the weaker standards of reasonable conjecture where "many Observations concurr to attest, that such a Cause, or Signe is more frequently attended on by that particular effect, than not, or that that effect doth more usually succeed upon that Cause, and after that Signe, than upon any other" (*Vanity* 4.2). This is an application of the theory of signs, which is crucial to Gassendi's epistemology.

Gassendi was in Paris in 1648 and attended Mersenne on his deathbed.[30] Shortly thereafter, he returned to Provence, in part for the sake of his health: He had suffered from pulmonary and respiratory problems since his youth. The second, rather larger, installment of the Epicurus project came out in 1649 in three volumes as *Animadversiones in decimum librum Diogenis Laertii (Notes on the tenth book of Diogenes Laertius*, which is the chapter about Epicurus in *Lives of Eminent Philosophers).* The original publication of the *Animadversiones*, which sold out quickly in

[29] That is, page 87 of Chapter 14. Page numbers in the edition I consulted are nonstandard; for instance, Chapter 4 starts over at page 1 but numbers for Chapters 1–3 run consecutively.

[30] Rochot, "Vie et Caractère," 45.

Paris, contains as an appendix the *Philosophiae Epicuri Syntagma*.[31] Samuel Sorbière apparently translated the *PES* into French, but the translation was never published and has since been lost.[32]

Gassendi's health improved considerably while he was living in Digne and in Toulon (where Louis de Valois had moved as a result of the recent troubles in Aix), despite Morin's prediction of impending death.[33] By February 5, 1650, he was well enough to ascend a nearby mountain to repeat the experiment of the Puy-de-Dôme with Bernier.[34] For the next three years, Gassendi continued to live and work relatively quietly in Provence. On September 25, 1652, Queen Christina of Sweden wrote to Gassendi, saying that she consulted him "like an oracle of truth for clarifying her doubts," wondering if he would mind taking the trouble to instruct her ignorance, and so forth.[35] A letter from her chief physician followed, broaching the subject of Gassendi coming to Sweden more explicitly. Gassendi excused himself on the grounds of advanced age (he was then sixty), continual infirmities, and the fact that he was accustomed to living in a more temperate climate than that of Sweden. (He did not, tactfully enough, mention Descartes's unfortunate demise.) Indeed, he had been advised that even the harshness of the Parisian climate should be avoided.

Nevertheless, in May of 1653, Gassendi returned with Bernier to Paris and took up residence at the house of his new patron, Henri-Louis Habert de Montmor. This was a sad year: Gabriel Naudé had died in July, and Louis de Valois, in November. But in 1654, along with the biography of Tycho Brahe, Gassendi produced a number of minor works: *De sestertiorum moneta nostra expressorum Abacus*; *Romanum Calendarium compendiose expositum,* which treats the calendar up to Gregory XIII's reformation; *Notitae*

[31] For the claim that the *Animadversiones* was quickly sold out, see a letter of May 16, 1649, from John Pell to Charles Cavendish, quoted in Hervey, "Hobbes and Descartes," 78.

[32] Rochot, "Vie et Caractère," 89.

[33] During their quarrel over Copernicanism, Morin cast a horoscope of Gassendi showing that although Gassendi had "a good mind, appropriate for all the sciences he applied himself to," the malign influence of Saturn also made him "inclined to dissimulate" and "easily irritated" – characteristics that, he says, Descartes, "a man of knowledge and great reputation," had also encountered in his dealings with Gassendi. He also predicts that Gassendi would die from lung troubles after two years' illness. It took longer than that, but Morin's prediction of sickness and lung problems were accurate, although, of course, Gassendi had a history of such illness well before Morin cast his horoscope (*Receuil* 9).

[34] For a description of this experiment, see Chapter 5.

[35] Bougerel, *Vie de Pierre Gassendi*, 368.

Ecclesiae Diniensis; *Manuductio ad Theoriam seu partem speculativam Musicae*; and one of his two, anonymous, French publications, *Sentiments sur l'Eclipse qui doit arrivée le 12 du mois d'août prochain, pour servir de réfutation aux faussetez qui ont esté publiées sous le nom du docteur Andreas.*[36] An alarmist pamphlet, predicting that dire consequences would attend the upcoming eclipse, had become well known in Paris. Gassendi's sixteen-page response, written in an attempt to calm the people, explains to his readers that an eclipse is just a very short night, no more likely to cause harm than any normal night, and that only God knows when the end of the world will come. During this period, Gassendi was in the habit of attending a Saturday academy of mathematicians, along with such old friends or acquaintances as Bouillau, Pascal, Roberval, and Girard Desargues, and it may have been this group who inspired him to write *Sentiments.*[37]

Gassendi fell seriously ill that winter, and – although his health recovered in the spring of 1655 – he grew sick again that August. Guy Patin and several other physicians attended him. Bougerel tells us that there was some dispute about when they should stop bleeding him, but in the end, he was bled fourteen times.[38] Gassendi died on October 24, at Montmor's Paris house and was buried three days later at Saint-Nicolas-des-Champs in the Montmor family chapel. His last words, at least according to Sorbière, were "vides quid sit hominis vita" (behold what is the life of man).[39]

He left his personal effects and a reasonable sum of money to his secretary, Antoine de La Poterie, in recompense for unpaid wages. He left the choice of a few of his books to Montmor and to his "good and dear friend" Jean Chapelain, and the rest to his secretary. The books inventoried after Gassendi's death included Proclus on Plato, in Greek and Latin; Digby's *Demonstratio immortalitatis animae rationalis*; a Bible in Hebrew and Latin; the *Méthode pour convertir ceux qui sont hors l'église* of Armand-Jean de Richelieu; Thomas's commentary on Boethius' *Consolation of Philosophy*;

[36] The other is the *Discours sceptique sur la passage du chyle & sur le mouvement du coeur.* This anonymously published work is somewhat sympathetic to Harvey's account but ultimately rejects it. Gassendi there claims to have observed the septum between the two chambers of the heart. (In the *Examen Fluddi*, Gassendi had earlier attacked Fludd's use of the circulation of the blood to defend a circulation within the macrocosm.) French, *William Harvey's Natural Philosophy*, 328–34.

[37] Bougerel, *Vie de Pierre Gassendi*, 408.

[38] Ibid., 409–10.

[39] Ibid., 412.

Fineus' *In Euclideum*; Plutarch's *Lives*; the Greek text of Plotinus's *Enneads*; and Ficino's edition and translation of Plato's works.

Gassendi also left behind a large number of papers. In a small locked armoire were found a folio volume called "Epistole," one called "De rebus celestibus," and another titled "Liber duo dessimus de Universo"; two small treatises called "De musica" and "Adversus Aristoteleos" (presumably, the second part of the *Exercitationes Paradoxicae Adversus Aristoteleos*); and a bag of money. Gassendi's remaining manuscripts and other possessions were brought from Montmor's country house: These included a Greek Aristotle, a copy of the *Animadversiones*, and a number of manuscripts – notably some labeled "Syntagma philosophicum" and "Syntagmatis philosophici pars secunda" – as well as a red leather telescope given to him by Galileo and some other astronomical instruments. Montmor took the red morocco telescope, while La Poterie received the remainder of Gassendi's astronomical instruments. All the manuscripts were left to Montmor, with the suggestion that Gassendi's disciple Bernier and his secretary La Poterie should help in organizing them. His few household goods were left to his sister Catherine.[40]

After Gassendi's death, Sorbière and Montmor began constructing a finished text of the *Syntagma* from these manuscripts so that they could publish an *Opera Omnia*. The completed *Opera* came out in six folio volumes in 1658. A number of English publications of Gassendi came out in the next few years as well: the very popular *Vanity of Judiciary Astrology* in 1659; the *Institutio logica* and *Philosophiae Epicuri Syntagma* in 1659, and – after the appearance in 1678 of Bernier's only slightly shorter *Abrégé* of the *Syntagma* – a translation of Bernier's version of the *Ethics*, under the name *Three Discourses of Happiness, Virtue and Liberty*. Two other widely read English works contain partial translations and partial, not always accurate expositions of Gassendi's views: Walter Charleton's 1653 *Physiologia Epicuro-Gassendo-Charletoniana* and Thomas Stanley's three-volume *History of Philosophy* of 1655–6. Both contain quite a few non-Gassendian elements as well. Gassendi's *Opera Omnia* was reprinted in 1727 at Florence; this is the same text as the 1658 *Opera*, with a few corrections and different page numbers. Although the *Opera* was reprinted in facsimile in 1964, there is, unfortunately, no contemporary critical edition of his works.

[40] Gassendi's will and the inventory of his belongings, together with useful annotations, are published as Fleury and Bailhache, "Documents inédits sur Gassendi."