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*.

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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.