
Medicine, *Oeconomy* and Needs

9.1 The *Oeconomy* of Needs

9.1.1 *Resituating Locke's Natural Law in a Philosophy of Necessities and Needs*

It is essential to observe the empiricism and necessitarianism of philosopher-physicians, however broadly, to grasp what 'needs' meant for John Locke, and this is done in the two sections that follow. When investigated in the context of the study of the human body, human needs resulted in physicalist theories, close to materialist determinism. Philosophical thinking that situated the origin of human society, and subsequently of the household or of the state, in the deficiency exemplified by human needs, arose within an existential metaphysics of necessity.¹ This is how Avicenna explained what a human being is in his commentary to Aristotle's *De anima*:

Arising from the characteristics of human beings it is necessity itself that induces them to talk and to teach, then another necessity induces them to give and receive according to the measure of justice, and finally other necessities to arrange meetings or assemblies and discover the arts.²

Human needs were both empirically and conceptually grounded in that type of metaphysics. But this was before Locke. The effort to integrate this type of materialist thinking into a Christian cosmology resulted in the doctrine of necessities.

¹ Whatever exists necessarily through another (that is, everything in the world) is contingent on that relation that has caused it. Only the Necessary Existent (God) is necessary in itself. See Wisnowsky, *Avicenna's Metaphysics in Context*, pp. 245–263 and Wisnowsky, 'Final and Efficient Causality in Avicenna's Cosmology and Theology'.

² 'Ex proprietatibus ergo hominis est ipsa necessitas quae eum induxit ad discendum et docendum et alia necessitas quae eum induxit ad dandum et recipiendum secundum mensuram iustitiae et deinde aliae necessitates, veluti facere conventus et adinvenire artes.' Avicenna, *Avicenna Latinus Liber de Anima seu Sextus de Naturalibus IV-V*, Liber V, c. 1, p. 73.

Ian Harris notes that in *An Essay on Toleration* the functions of government were already explicitly about ‘terrestrial interests’ and that the content of the magistracy was viewed to uphold natural law understood as ‘self-preservation’. In the context of this strategy, Locke’s aims would largely have involved placing religious and ecclesiastical defiance *outside* the authority of the magistrate – in the troubles that arose from religious dissidence in the years after the end of the Commonwealth, as partly described in the previous chapter.³ This separation could obviously be maintained only as long as there existed a homogeneous moral culture in which indifferent matters were minimal, and indeed indifferent to truth and moral good. Otherwise, it was government that ought to become minimal. Locke argued in *An Essay on Toleration* that religion should be separated from government in respect of the interests of civil society.⁴ As is well known, that text urges limitation of the role of government to ‘the necessity of the state and the welfare of the people’, which seems to indicate that by 1667 Locke had made up his mind with regard to governmental ambitions in the public sphere.⁵ Harris argues that in order to establish a distinction between religion and magistracy, Locke had envisaged at least as early as 1667– and, as the previous chapter shows, probably earlier – a government whose exclusive business was ‘the present life’.⁶ Given that Locke grounds the business of public government on the concept of human necessities and the necessities of the nation, a complementary examination of Locke’s employment of the material aspects and necessities of the state is called for.

I will argue next that the impetus to transform the politics of government towards the satisfaction of material necessities is deeply embedded in Locke’s work. That enterprise of detaching government from classical conceptions of the good life and Machiavellian politics dovetailed with his medical studies. It is possible to observe how a wider scientific project for transforming the humanities was carried on, in which religious toleration, though instrumental, merely constituted a part of the whole. The entire project benefits from Neoplatonists interpretations of human beings to promote social sciences and direct their inquiries towards what is material in human life. My plan is therefore to remain faithful to Locke’s vocabulary of ‘necessity’ and ‘needs’ across his works and distinguish that vocabulary

³ Harris, *The Mind of John Locke*, p. 111; p. 115 and generally Chapter 4.

⁴ John Locke, ‘An Essay on Toleration’, in Mark Goldie (ed.), *Locke Political Essays* (Cambridge: Cambridge University Press, 1997).

⁵ Locke, ‘An Essay on Toleration’, p. 142.

⁶ Harris, *The Mind of John Locke*, p. 113.

from less specific notions such as ‘common interests’. As we saw in the previous chapter, he wrote in his early *Essays on the Law of Nature* that, through the law of nature, human beings were friends joined together by ‘common necessity’, and that positive compacts were made as well by ‘common necessity and advantage’.⁷ From *An Essay on Toleration* onwards, Locke began to address the issues of ‘needs’ and ‘necessity’ with a firmer hand.

The change of focus from issues of ecclesiastical politics, as discussed earlier, towards philosophical aspects of medicine, as discussed in the present chapter, also illuminates the new understandings of natural law Locke worked with in the *Two Treatises of Government* (which are examined in the last section of Chapter 12). The concept of ‘needs’ and ‘necessities’ opens up a different avenue of interpretation than Harris’s in respect of several of the philosopher’s standpoints on government, economics and natural law. The surprising degree to which, for the greater part of his life, Locke was involved with medicine and medical studies explains his expert knowledge about the main philosophical traditions and intellectual debates among physicians. For our purposes, an overview of some of the main principles of Galenism will show what physicalism meant for philosopher-physicians. The unique writings of (mainly) philosopher-physicians on *Oeconomy* or household management illustrate the importance of physicalist theories of ‘needs’ employed outside the context of Aristotelian politics or ethics in premodern economic thinking. I argue that Locke employs them instrumentally in his political and scientific project of focusing on necessities of the human being and the state. In particular, Avicenna – who was (after Aristotle) one of the greatest polymaths in vogue in the European Middle Ages and the Renaissance – wrote two texts on ethics of the household, of which only one has been published so far, in Arabic, in which he placed ‘needs’ at the centre of a cosmological vision of human beings. Further, in his commentary to Aristotle’s *De anima*, he displayed the explicit Neoplatonism of his dualist conception of human being, with a soul whose activities were independent of the physical body. In turn, Avicenna explains human beings in society through the needs of their physical body. The fundamental distinction with Aristotle is that for Avicenna soul and body are two coexisting principles, whereas for Aristotle the soul informs the human body.⁸ Therefore when Gérard

⁷ Locke, *Questions Concerning the Law of Nature*, p. 174.

⁸ ‘oportet autem ante omnia declarare quod haec anima quae est apta recipere intelligibilia ex intellectu materiali, non est corpus nec forma existens in corpore.’ Avicenna, *Avicenna Latinus Liber de Anima seu Sextus de Naturalibus IV-V*, Liber V, c. 1, p. 81.

Verbecke wrote that Avicenna had a spiritualist conception of human being, he was referring only to one part of the dualism.⁹ For as we will see he also proposed a materialist or physicalist view of human beings founded in their needs. And both spiritualist and physicalist conceptions were inserted in the necessitarian metaphysics that characterizes the Arabic philosopher.¹⁰

9.1.2 *Studying and Practicing Medicine*

We know that after studying classic languages, logic and rhetoric, the Bible and natural philosophy couched in an Aristotelian curriculum, Locke pursued medical studies in all seriousness. This was in the late 1650s.¹¹ Perhaps one reason for that was that in order to remain in Oxford after obtaining his Master of Arts in June 1658, he had two choices: take orders with a view to receiving tenure or change course in his career. He chose the latter, obtaining a faculty studentship in medicine to continue his studies. Later, when he entered high politics he would write that he ‘pitched upon the study of physic’ due to its distance from ‘public affairs’.¹² Perhaps his dislike of scholastic disputation was another reason for choosing medicine. Locke studied within the classic Galenic system that formed part of the syllabus.¹³ It is worth noting that the fact that Galen was outdated in

⁹ Verbecke also notes that there is in Avicenna no exposition about free will or freedom, and that the aspect of determinism prevails in that spiritualism: ‘Avicenne semble avoir pris conscience beaucoup plus nettement de la dépendance de l’homme, de son insertion dans une sorte de déterminisme universel, que de son autonomie et de sa consistance personnelle. L’homme est grand par son moi spirituel, mais ce “moi” ne lui appartient pas vraiment.’ Verbecke, ‘Le “De Anima” d’Avicenne. Une conception spiritualiste de l’homme’, p. 73.

¹⁰ See the literature mentioned in Chapter 2.

¹¹ On the question of John Locke, medicine and philosophy see Kenneth Dewhurst, *John Locke (1632–1704) Physician and Philosopher. A Medical Biography. With and Edition of the Medical Notes in his Journals* (London: The Wellcome Historical Medical Library, 1963); Patrick Romanell, *John Locke and Medicine: A New Key to Locke* (New York: Prometheus Books, 1984); J. R. Milton, ‘Locke, Medicine and the Mechanical Philosophy’, 9 *British Journal for the History of Philosophy* (2001); Walmsley, *John Locke’s Natural Philosophy (1632–1671)*; and from a different more spiritual perspective, Corneanu, *Regimens of the Mind*. Connecting medicine and economics in Locke see William Coleman, ‘The Significance of John Locke’s Medical Studies for His Economic Thought’ 32 *History of Political Economy* (2000), pp. 711–732; and Locke and other authors, such as William Petty, Maifreda, *From Oikonomia to Political Economy*.

¹² According to Peter Laslett ‘Oxford frustrated him, but he was not yet master of himself enough to make his way in the world there or outside’. Peter Laslett, ‘Introduction’, John Locke, *Two Treatises of Government*, p. 23.

¹³ Dewhurst, *John Locke (1632–1704) Physician and Philosopher*.

important respects did not mean that he had become irrelevant in Oxford. After all, it is telling that many years later, in *An Essay Concerning Human Understanding*, Locke used Galenic language rather than that of the *moderni* Paracelsus (1493–1541) or of Jan Baptist van Helmont (1580–1644).¹⁴ However, Locke read widely in the field and, following the renewed interest in medicine that took place at Oxford University, kept up with modern trends and new ideas.¹⁵ The physician of his father sent to Locke a book from Santorio Santori (1561–1636), the Venetian physicist and pupil of Galileo as early as 1661. Santori seems to have been one of the first serious medical proponents of empirical trials and corpuscularianism.¹⁶ As discussed in the previous chapters, that theory described matter as the disposition and number of corpuscles within space, with the aim of describing everything purely through recourse solely to matter and its mechanical affections. In the version favoured by Boyle, however, no bones were made about the insufficiency of matter to explain the forces and powers of corpuscles.¹⁷ Also, *De statica medicina* was one of Santori's books that featured in Locke's library.¹⁸ It is quite amusing, though also apparently revolutionary text of medical aphorisms proved by Santori through the use of a 'weighing chair'. As he described the instrument in his *Commentaria in Primam Fen Primi Libri Canonis Avicennae* (1625), a dining room chair was suspended from the ceiling in a hidden manner and rested above a finger's height from the floor. It amounted to a system of scales whereby one could

¹⁴ This point is made by J. R. Milton who analyses the absence in the *Essay* of references to Helmontian ideas – from van Helmont, Dutch physician, chemist and mystic, Milton, 'Locke, Medicine and the Mechanical Philosophy', p. 240.

¹⁵ About the foundational Galenic system established by sixteenth century medical humanism and the new ideas and currents in Oxford after the 1650s in Robert G. Franck, Jr. 'Medicine', in Nicholas Tyacke (ed.), *The History of the University of Oxford. Seventeenth-Century Oxford*, vol. IV (Oxford: Clarendon Press, 1997), p. 516; p. 535. The wider interest beyond academic context is proved by the several translations into middle English since the late fourteenth century in Faye Marie Getz, 'The Method of Healing in Middle English', in Kudlien Fridolf and Richard J. Durling (eds.) *Galen's Method of Healing: Proceedings of the 1982 Galen Symposium* (Leiden: Brill, 1991).

¹⁶ See on Santori and his importance for corpuscularianism in England, Fabrizio Bigotti, 'A Previously Unknown Path to Corpuscularism in the Seventeenth Century: Santorio's Marginalia to the Commentaria in Primam Fen Primi Libri Canonis Avicennae (1625)' 64 *Ambix* (2017). That the (unsuccessful) physician of his father sent Locke a text by Santori appears in a letter to Locke of 1661, Dewhurst, *John Locke (1632–1704) Physician and Philosopher*, p. 9.

¹⁷ On Boyle and his corpuscularianism see Clericuzio 'God and the Physical World in Boyle's Thought'.

¹⁸ John Harrison and Peter Laslett, *The Library of John Locke* (Oxford: Oxford University Press, 1965), n. 2546.

ascertain the moment at which the amount of food ingested exceeded the counterweight, as the chair would sink at that point. In Santori's words:

which quantity or weight of salutary food is advisable for somebody, and how high the insensible transpiration in the individual bodies should be, one weighs comfortably with the chair.¹⁹

Santori documented scientifically, in *De statica medicina*, the importance of the balance of ingestion and bodily discharges, in particular through insensible perspiration, which came to be known as basal metabolism: that is, the energy the body needs to perform life-sustaining activities. The ideal balance between the quantity of food that an individual ingested and the waste through perspiration resulted in a healthy individual.²⁰ Suggestive parallels with Locke's discussion of the balance of trade that are found in his writings on money can be detected in *De statica medicina*'s main message concerning balance in the human body.²¹ Balance, as we will see, was a fundamental principle among the philosopher-doctors, albeit not, arguably, in Locke's case. Moreover, the fact that his library contains over four hundred books on medicine and science puts Santori's exceptional work in perspective.²²

Locke's interest in the work of the Bratislavian philosopher and physician Daniel Sennert (1572–1637) is clearer: Locke possessed several of his works, read them very closely²³ and made numerous entries in

¹⁹ See for this, Santori's quote, the drawings and a picture of a replica of the chair Teresa Hollerbach 'The Weighing Chair of Sanctorius Sanctorius: A Replica' 26 *NTM Zeitschrift für Geschichte der Wissenschaften, Technik und Medizin* (2018), p. 125.

²⁰ Section I, Aphorism VI: 'If eight pounds of meat and drink are taken in one day, the quantity that usually goes off by insensible perspiration in that time, is five pounds.' Section III, Aphorism XIV: 'Robust persons discharge their food for the most part by perspiration. Those not so strong by urine, and the weak chiefly by an indigested chyle.' For the idea of the balance and Santori's quote, Garabed Eknayan, 'Santorio Sanctorius (1551–1636) – Founding Father of Metabolic Balance Studies', 19 *American Journal of Nephrological Studies* (1999), p. 231.

²¹ In his impressive history of balance Joel Kaye has recently shown the interactions of Galenism with medieval economic and political thought that took place in the thirteenth and fourteenth centuries. He tells a story of promotion of the idea of balance and self-ordering in politics, economy and nature that collapsed after the disastrous plague in Europe in mid-fourteenth century. Joel Kaye, *A History of Balance, 1250–1375: The Emergence of a New Model of Equilibrium and Its Impact on Thought* (Cambridge: Cambridge University Press, 2014).

²² William Coleman discusses some other connections between Locke's medical studies and his economic thinking, Coleman, 'The Significance of John Locke's Medical Studies for His Economic Thought'; Harrison and Laslett, *The Library of John Locke*.

²³ Sennert studied philosophy in Wittenberg from 1593 to 1597, and medicine in Leipzig, Jena, Frankfurt am Oder and Berlin, and received his medical degree from Wittenberg in 1601, John Ruhrah, 'Daniel Sennert' 46 *American Journal of Diseases of Children* (1933).

his notebooks on Sennert's *Opera*.²⁴ Sennert's work combines Galenic and Paracelsian medicine, which were competing schools at the time. The former was the classic Greek tradition inherited through the Arab authors, and the latter a sixteenth-century school of chemical medicine related to Paracelsus.²⁵ The reason Sennert gave for the prestige that the physician-philosophers Galen (129–200 CE) and his codifier Avicenna (980–1037) possessed among seventeenth-century theoreticians of medicine was that despite their 'paganism' (*Ethnicismum*), they had, like Christians, always been occupied with 'the dignity of life'.²⁶ This statement sheds light on Locke's own recourse to medical writers and principles and concepts, in particular that of 'necessities'. The concept of necessities is peculiar in creating a link between the Judeo-Christian tradition as expressed in both the Old and the New Testaments – which views food and other necessities as part of God's plan and care for human beings and sees their provision to the poor as the ultimate expression of charity – and the Greek and Arabic authors discussed here.

Sennert's interests in medicine and philosophy, as well as in alchemy and chemistry – as mentioned in the first volume of *Opera* – made these

²⁴ In Harrison and Laslett, *The Library of John Locke*, n. 2617, the books are Danielis Sennerti, *Opera*, 2 vol. (Lugduni: 1656) and *Aphorismi ex Institutionibus medicis Sennerti*, Francofurti, 1653. The medical books that appeared more in Locke's notebooks are Sennertus *Opera*; Velschius, *Sylloge Curationum et observationum med.* (1667) and Helmont, *Ortus medicinae* (1652) in that order, Sennert being the first, with much difference. See for this, G. G. Meynell, 'John Locke's Medical Notebooks and Medical Reading' 41 *Medical History* (1997), pp. 473–486. The facts of Locke's early medical studies in Jonathan Walmsley, "'Morbus' - Locke's Early Essay on Disease", 5 *Early Science and Medicine* (2000), pp. 366–393. Doubts expressed in Walmsley's article about Locke's early allegiance to Boyle in his thinking about medicine are responded in Peter R. Anstey, 'Robert Boyle and Locke's "Morbus" Entry: A Reply to J.C. Walmsley' 7 *Early Science and Medicine* (2002), pp. 358–377. See also the helpful analysis of the influence of Sennert in Boyle in Newman, *Atoms and Alchemy*.

²⁵ About the battle in France between Galenic rationalism and neo-Paracelsians see Laurence Brockliss, 'Seeing and Believing: Contrasting Attitudes towards observational autonomy among French Galenists in the First Half of the Seventeenth Century', in W. F. Bynum and Roy Potter (eds.), *Medicine and the Five Senses* (Cambridge: Cambridge University Press, 1993).

²⁶ 'Ipse toties Galeno & Avicennae Ethnicismum obiecit: an verò ipse Christiano vitam dignam semper egerit, aut Christiano digna docuerit & scripserit, viri docti & candidi iudicent.' In his view chemists were neither philosophers nor doctors, though extremely useful. Sennerti, *Opera omnia*, tomus primus, p. 192.

two physicians, especially the Arab, inexhaustible sources of knowledge.²⁷ An Aristotelian, Sennert nevertheless parted ways with the Greek philosopher on the question of atomism. Antonio Clericuzio has suggested that Sennert was instrumental in propounding the new version of Christian atomism developed in the seventeenth century.²⁸ Sennert explained that with regard to atomism he followed the pre-Aristotelians, importantly through the writings by Julius Caesar Scaliger, and ‘among the doctors, Avicenna, Fernelius and many others’, in respect of the theory that ‘in the compounded bodies minimal corpuscles retained their form in its integrity after mixing’.²⁹ In other words, in material bodies that were compounded or mixed – practically the majority of bodies – one may find the original elements, ‘the atoms which are minimal corpuscles’, maintaining always its integrity. Mixing entailed the rearrangement of elements rather than completely new substantial forms. The learned Sennert could barely contain his enthusiasm:

That doctrine of the ancient that is, that the elements and simple bodies maintained their nature in its integrity after composition, is the key to nearly the entirety of natural science, and specially of its part of medicine and chemistry.³⁰

²⁷ Sennerti, *Opera omnia*, tomus primus, p. 182. Avicenna’s pharmacological work was one of the strengths of his own version of Galenism. Nancy G. Siraisi, ‘Avicenna and the Teaching of Practical Medicine’, in *Medicine and the Italian Universities* (Leiden, Boston, Köln: Brill, 2001) 63–78; Dewhurst, *John Locke (1632–1704) Physician and Philosopher*, p. 184; p. 205.

²⁸ Clericuzio mentions previous scholarship dealing with the question, but it exceeds my purposes to present it here. See Antonio Clericuzio ‘Minima to Atoms: Sennert’, which is ch. 1 in Clericuzio, *Elements, Principles and Corpuscles*, pp. 9–34. Avicenna seems to have still missed the question of motion, size and arrangement of the particles, in the same, p. 12.

²⁹ ‘Et praecipuè Avicenna ... statuítque, elementa in misto formas suas perfectas & integras retinere, dissecta tamen & minutim concise, ita ut eroum particulae ordine quodam compositae & connexae mutuò aliae aliis cohaerescant. Avicenna, Fernelius sequitur’. Sennerti, *Opera omnia*, tomus primus, p. 120. On Jean Fernel (1448–1558) and the question of divine powers of ‘seeds’, see Hiro Hirai, *Medical Humanism and Natural Philosophy: Renaissance Debates on Matter, Life and the Soul* (Leiden, Boston: Brill 2011). According to McGinnis, Avicenna’s atomism has been obscured in the history of philosophy partly by some parts of his works not being translated, although Sennert evidently knew about it. Jon McGinnis, ‘A Small Discovery: Avicenna’s Theory of Minima Naturalia’ in 53 *Journal of the History of Philosophy* (2015). Sennert also mentions Philoponus, Albertus, Aureolus and Zimara among those who accept the theory.

³⁰ ‘Et ista antiquorum doctrina, quòd scilicet elementa & simplicia corpora suam naturam integram in compositis servant, clavis est ad totam ferè naturalem scientiam, & maximam Medicine & Chymiae partem.’ Sennerti, *Opera omnia*, tomus primus, p. 120. Scaliger was the father of the philologist and historian Justus Scaliger.

The occult qualities in nature – all those elements not visible to eye or microscope – were a matter of wonder and fascination to scientists of the era. They were testimony both to how much could still be learned and, crucially, to how little was still known about nature.³¹ It was ‘the highest imprudence to deduce everything from what was manifest’ wrote Sennert quoting the ‘very penetrating Scaliger’.³²

During the 1660s, Locke was devoted with growing intensity to medical studies at the highest level, and also to medical practice. From at least the summer of 1667 onwards he worked closely together with the London physician, Thomas Sydenham (1624–1689), who was, incidentally, an expert on epidemics. Locke accompanied him on his many visits to patients, in keeping with both the Hippocratic and Galenic traditions, in which both clinical observation and experience were of fundamental importance for physicians. Locke assisted Sydenham in the production of what would become the standard textbook of medicine over the next two centuries: *Observationes medicae* (1676).³³ Sydenham’s description of an ‘epidemic’ constituting a ‘diversity of diseases’ despite the fact that symptoms and external characters ‘appear to the careless observer to coincide’ illuminates his and Locke’s shared interest in the important theme of diversity in respect of empirical studies.³⁴ Among the critiques made by Renaissance lawyers in their disputes with physicians as to which was the superior science, law or

³¹ In the late thirteenth century in Montpellier the physician Arnau de Vilanova expressed that ignorance in the following manner: ‘disagreement among scholars has *still* not come to an end, the specific cause of this or that symptom is *still* not known; we don’t know exactly what *lepra* is, or exactly what all the prognostic signs signify, and so on.’ Quoted in Michael McVaugh, ‘The “Experience-based Medicine” of the Thirteenth Century’, in *Evidence and Interpretation: Studies on Early Science and Medicine in Honor of John E. Murdoch*, 14 *Early Science and Medicine* (2009), p. 127.

³² Sennerti, *Opera omnia*, tomus primus, 109. For Jean Fernel the occult qualities that caused the plague were ‘transnatural’, see Brockliss, ‘Seeing and Believing’, p. 71.

³³ His collaboration with Sydenham during the period 1667–1674 was so close that apparently it cannot be firmly established to whom of them, Sydenham or Locke to attribute two essays on Locke’s hand *Anatomia* (1668) and *De Arte Medica* (1669). On the relationship of Sydenham and Locke, see Peter Anstey, ‘The Creation of the English Hippocrates’ in 55 *Medical History* (2011). Also, Kenneth Dewhurst, ‘Locke and Sydenham on the teaching of Anatomy’, 2 *Medical History* (1958). It is telling that John Ruhrah, historian of medicine and pediatrics considered in the past century that Sydenham had been influenced by Bacon, Boyle and Locke. John Ruhrah, *Pediatrics of the Past: An Anthology* (New York: Paul B. Hoeber, 1925), pp. 321–333.

³⁴ Thomas Sydenham ‘Medical Observations Concerning the History and the Cure of Acute Diseases’ in *The Works of Thomas Sydenham* trans. from the Latin edition of Dr. Greenhill by R. G. Latham (ed.) (London: New Sydenham Society, 1868), p. 32.

medicine, they argued that medicine was an experience-based art (not a science) and empirical, and they also pointed to the (impossible) diversity of its subject matter.³⁵ In the seventeenth century, Sydenham embraced those facts with intelligence and made clinical medicine attractive again. Lockean scholars have argued convincingly that the experienced Sydenham liberated Locke from unrealistic and self-imposed demands to know everything about diseases, of which little could be learned with certainty without more advanced technology, or even with it.³⁶ Leaning more towards observation, clinical experience and common sense, without neglecting science, Sydenham was evidently a model scientist for Locke.³⁷

Locke's studies and work with Boyle, with other Oxford physicians and with Sydenham show plainly that during his early formative years he kept up with the latest theoretical and practical advances in medicine.³⁸ Whether Locke followed Boyle, at least for some time, in his effort to make medicine more scientific, or more chemical, which is not unlikely, does not influence the fact that he was deeply knowledgeable in respect of both the classic and chemical systems.³⁹ Nevertheless, Locke was as usual, ambiguous and cautious on which theory to adopt, while at the same time he engaged in the practice of medicine.

³⁵ 'Quod fuisse principium multarum rerum experientiam colligendi, quae fuit materia medicinae, quam vocatis empiricam, idem Galienus autor est. c. xix, 1; 'Scientiam autem medicinae si negaverim esse nobis, cum hypocras ipsam, artem appellet expresse tenet Galienus et probet Averrois, nec vester denegat Avicenna, num mihi iure poteris succensere? c.X, 14; 'Procedit medicus, sed coniectura magis quam Ratione'. C. xi, 17; 'Quin etiam non ne sunt infiniti numeri, et infinitae proportiones in rebus, quae vobis notae non sunt: quem ve si non fuerint uniformiter appropinquate, principium habeant irrestaurabilis nocumenti?' c. xvi, Coluccio Salutati, *de Nobilitate Legum, et Medicinae* (Venetiis: Pederzani, 1542).

³⁶ Jonathan Craig Walmsley makes an appealing case in this regard in his doctoral dissertation, Walmsley, *John Locke's Natural Philosophy (1632–1671)*; Dewhurst, *John Locke (1632–1704) Physician and Philosopher*; Romanell thought that at a certain point Locke surpassed Sydenham's scepticism, Romanell, *John Locke and Medicine*, p. 140. On Locke's view of 'the weakness of our senses' as 'the cause of our ignorance' see Milton, 'Locke, Medicine and the Mechanical Philosophy', p. 234.

³⁷ Famously he sided Sydenham with Boyle, Huygenius and Newton, as the 'Master-Builders' in 'advancing sciences' in 'The Epistle to the Reader' of *An Essay Concerning Human Understanding*, p. 9; and in his letter to William Molyneux of 1693, after Sydenham had passed away, quoted in Dewhurst, *John Locke (1632–1704) Physician and Philosopher*, p. 309.

³⁸ Arguing that Locke's medical research was original and cutting edge though he never published it, Jonathan Walmsley, 'John Locke on Respiration' 51 *Medical History* (2007).

³⁹ The study about how Boyle's urged to make the work of the Galenists more sophisticated in Michael Hunter, 'A Suppressed Critique of Seventeenth-Century medical Practice and Its Significance', 41 *Medical History* (1997), pp. 322–361.

However, he remained non-committal during this period, probably due to his responsibilities as a civil servant and perhaps also due to the desire to be able to devote time to gathering knowledge and writing the philosophical work he was contemplating.⁴⁰ In turn, the preparation he undertook for his main written works, in the form of the writings and drafts he produced between 1665 and 1675, strengthens the argument that his studies – which included medicine as well as political issues about governance of religious toleration – were instrumental in shaping and renewing his thinking on political and philosophical matters.⁴¹ He continued to study medicine in France (1675–1679) and Holland (1683–1689), a country to which he fled in moments of political trouble.⁴² Whether he had more secretive goals while abroad is a matter of speculation.⁴³ It is known, however, that while in France and Holland, Locke prayed a great deal in the churches of those countries – mostly Catholic churches in France – and undertook a consistent study of their cultures, natural resources, local businesses and money in the style displayed by the physicians and economic geographers Gerald (1604–1650) and Arnold Boate (1606–1653) in their *Irish Naturall History*.⁴⁴ He stayed in Montpellier, then the hub of Neo-Paracelsism, from January 1676 to February 1677.⁴⁵ Locke's notes in his French diary show that while in that city he spent a great deal of time in the 'Physick Garden', studying plants and herbs and producing mixtures. The following quote appears in his diary: 'Disputation at the Physick Schoole. *Much French, hard Latin, little Logic and little Reason*'. This would appear to indicate that he missed a more rationalist standpoint among physicians while in Montpellier.⁴⁶ The question of how Locke valued reason and logic in medicine seems not unimportant, for in 1684 while in Holland, he wrote a similar remark in

⁴⁰ His lifelong practice as a physician, sometimes with spectacular results, such as helping to prevent a natural abortion of the fourteen-year-old Lady Dorothy Ashley (1656–1698), who gave birth some months later to Anthony Ashley Cooper, the third Earl of Shaftesbury (1671–1713), or being pressed by friends and neighbours to treat them as a medical doctor, in Dewhurst, *John Locke (1632–1704) Physician and Philosopher*.

⁴¹ See also Romanell, *John Locke and Medicine*, p. 15.

⁴² This biographical facts in J. R. Milton, 'Locke's Life and Times', in Vere Chapell (ed.), *Cambridge Companion to Locke* (Cambridge: Cambridge University Press, 1994).

⁴³ Maurice Cranston, *John Locke. A Biography* (New York: The Macmillan Company, 1957), pp. 246–253; Philip Milton, 'John Locke and the Rye House Plot' 43 *The Historical Journal* (2000).

⁴⁴ As described by Webster, *The Great Instauration*, p. 428.

⁴⁵ Brockliss, 'Seeing and Believing'; Milton, 'Locke's Life and Times'.

⁴⁶ *Locke's Travels in France 1675–1679, as Related in his Journals, Correspondence and Other Papers*, with an Introduction by John Lough (ed.), (Cambridge: Cambridge University Press, 1953), p. 50.

his journal following from another discussion, this time at the University of Leiden: 'I suppose their studys tend most to practice for in disputeing noe one that I heard urged any argument beyond one or 2 syllogisms.'⁴⁷

9.1.3 Galenism

The sources from which Sennert, Sydenham, William Harvey (1578–1657), Locke and many others learned were so rich that objections about the division of disciplines appear meaningless. In the case of Sennert, as noted earlier, he rejoiced at the rediscovery of ancient atomism. Roger K. French describes the discoverer of the forceful systole and pulse, Harvey, proposing 'a heart-centered Aristotelian microcosm', even though he also appreciated Galenic investigations of brain and nerves, in which the role of the brain as the controller of the body was highlighted. Harvey's Aristotelianism is also present in his philosophical description of how animals satisfy physical needs: all things in nature 'desire the Good, and the Good for the animal is to seek food and drink, cooling respiration, generations of its kind, and so on'.⁴⁸

However, Galen (129–215 AD) – a Greek physician who tended to gladiators as well as the imperial family of Marcus Aurelius – is probably the overarching reference for physicians due to the number of his works that were at the disposal of seventeenth-century scholars and the ambition of his *œuvre*. As noted earlier, Galen was very much read in the context of medical studies during that period, not perhaps as the guiding star of the moment but as someone to criticize and overcome, who was nonetheless indispensable in the process of moving forward in the philosophy of science.

In the Renaissance, the revival of sciences had been thought to demand a return to classical antiquity, still on its way during the sixteenth and

⁴⁷ 'Journal Entry, 31.10. 1684', Dewhurst, *John Locke (1632–1704) Physician and Philosopher*, p. 261.

⁴⁸ In this passage, quoted from French, he notes that Harvey believed he was 'following Aristotle' Roger K. French, 'The Languages of William Harvey's Natural Philosophy' 49 *Journal of the History of Medicine and Allied Sciences* (1994), pp. 24–51, p. 28. On Harvey, as Aristotelian and modern, see Dagmar Provijn, 'Bloody Analogical Reasoning', in Erik Weber, Dietlinde Wouters and Joke Meheus (eds.), *Logic, Reasoning and Rationality* (Dordrecht, Heidelberg, New York, London: Springer, 2014). Galen adapted Plato's principle that the soul is divided into three powers, the rational, the spirited and the desiderative. He disagreed with Aristotle that the heart was the centre of the soul. Instead, the heart was for him the place of the spirited part, that is the one that desires victory and dominion and the liver the location of the desiderative, while reason was located in the brain and was superior to the others. See for this Galen, *On the Doctrines of Hippocrates and Plato*, trans. and commentary by Phillip de Lacy (ed.) (Berlin: Akademie Verlag, 1981) vol. 1.

seventeenth centuries.⁴⁹ Galen was both a philosopher and logician and, together with his impressive experience with the workings of the human body, it is his philosophical argumentation (and his wit) that gave his writings their enduring appeal.⁵⁰ Strictly logical in his reasoning and, as Robert J. Hankinson notes, empiricist but not an Empiricist, Galen frequently observed in his writings that knowledge is tested and starts through the experience of the senses, and that imparts certain knowledge.⁵¹ In *Natural Faculties*, which is devoted to showing the natural sympathy and powers of the organs of the human body, he dealt in philosophical vein with the production of blood through the nutritive faculty.⁵² His theory evolves in the text through the startling image of bread becoming blood. A good deal of the book is devoted to distinguishing philosophically between ‘the two sects in medicine and philosophy’, which might be termed vitalism or Aristotelianism and atomism, and arguing against the

⁴⁹ Susan P. Mattern refers to this phenomenon. It started in the sixteenth century with the anatomist Vesalius who convinced that science would be resuscitated only by returning to its roots in Antiquity paid homage to Galen and criticize him in his work *Fabrica*. Susan P. Mattern, *Galen and the Rhetoric of Healing* (Baltimore: John Hopkins University Press, 2008), p. 13.

⁵⁰ For biographical facts and about the transmission of his works, that despite several disappearances and recovery in translations from Arabic appears to have retained his main theses, see Mattern, *Galen and the Rhetoric of Healing*, pp. 1–27. On Galen as a philosopher see Jonathan Barnes, ‘Galen on Logic and Therapy’ in Richard Durling and Fridolf Kudlien (eds.) *Galen’s Method of Healing* (Leiden: Brill, 1991); P. N. Singer, ‘Galen and the Philosophers: Philosophical Engagements, Shadowy Contemporaries, Aristotelian Transformations’, in P. Adamson, R. Hansberger and J. Wilberding (eds.), *Philosophical Themes in Galen 114 Bulletin of the Institute of Classical Studies Supplement* (2014), pp. 7–38; R. J. Hankinson, ‘Galen and the Sceptics (and the Epicureans) on the Unavoidability of Distress’, in Caroline Petit (ed.) *Galen’s Treatise Περὶ Ἀλυσίας (De indolentia) in Context* (Leiden, Boston: Brill, 2019), pp. 155–179; P. N. Singer, ‘A New Distress: Galen’s Ethics in Περὶ Ἀλυσίας and Beyond’, in the same; Antoine Pietrobelli, ‘Arabic Περὶ Ἀλυσίας: Did al-Kindī and Rāzī Read Galen?’, in the same. Key works in which Galen combined medicine and philosophy are for instance, Galen, *On the Natural Faculties*. Translated by A. J. Brock. Loeb Classical Library 71 (Cambridge: Harvard University Press, 1916); Galen, *On the Doctrines of Hippocrates and Plato; The Diagnosis and Treatment of the Affections and Errors Peculiar to Each Person’s Soul*, P. N. Singer trans, in Peter N. Singer (ed.) *Galen Psychological Writings* (Cambridge: Cambridge University Press, 2013).

⁵¹ R. J. Hankinson, ‘Galen on the Limitations of Knowledge’, in John Wilkins, Tim Whitmarsh and Christopher Gill (eds.), *Galen and the World of Knowledge* (Cambridge: Cambridge University Press, 2009), p. 214; Galen, *On the Natural Faculties*, Book 1, xiv, p. 87; Gassendi has been pointed as the main influence in Locke and subsequent empiricism, see David Fate Norton, ‘The Myth of “British Empiricism”’ *1 History of European Ideas* (1981), pp. 331–344. But in this weak sense of empiricism Galen deserves some credit, probably via Boyle and Sydenham.

⁵² I have used A. J. Brock that refers to them as ‘faculties’ and sometimes as ‘powers’, Galen, *On the Natural Faculties*; Philip J. van der Eijk and P. N. Singer term them ‘capacities’, Philip J. van der Eijk and P. N. Singer ‘Introduction’ in *Galen Works on Human Nature* (Cambridge: Cambridge University Press, 2018).

latter.⁵³ The attribution of such a large role to ‘these absurd little particles’ would, in his view, annul the perspective necessary to the scientist and make distrust the method of observation adopted by those engaged in the study of the human body.⁵⁴ Instead, he argued that from the beginning nature had given an inborn faculty to each of the organs of the body – the kidneys, the liver etc. – which ensured that human beings and animals could continue living. Atomists, on the other hand, argued that there was no substance or faculty peculiar to nature or to the soul, but that they resulted from the way in which corpuscles, which suffered no change from their original form, arranged themselves. In *Natural Faculties* Galen laid out the logical consequences of atomism and applied it to other levels of the study of the human being up to the denial of innate principles:

According to the other school [the atomists], none of these things exist in the natures [of living things], nor is there in the soul any original innate idea, whether of agreement or difference, of separation or synthesis, of justice or injustice, of the beautiful or ugly; all such things, they say, arise in us from sensation and through sensation, and animals are steered by certain images and memories.⁵⁵

Galen is not a materialist in that work. Nature is provident in that she endows natural animal organs with capabilities. In the opinion of that great observer of the human body, this personification of nature – her artistry in crafting bodies rather than anonymous forces – was the only way to understand life.⁵⁶ After corpuscularism took hold of

⁵³ ‘What, then, are these sects, and what are the logical consequences of their hypotheses? The one class supposes that all substance which is subject to genesis and destruction is at once continuous and susceptible of alteration. The other school assumes substance to be unchangeable, unalterable, and subdivided into fine particles, which are separated from one another by empty spaces.’ Galen, *On the Natural Faculties*, Book I, xii, p. 45.

⁵⁴ ‘It was, of course, a grand and impressive thing to do, to mistrust the obvious, and to pin one’s faith in things which could not be seen!’ Galen, *On the Natural Faculties*, Book I, xiii, p. 63.

⁵⁵ Galen, *On the Natural Faculties*, Book I, xii, p. 47.

⁵⁶ ‘For, if there were not an inborn faculty given by Nature to each one of the organs at the very beginning, then animals could not continue to live even for a few days, far less for the number of years which they actually do. For let us suppose they were under no guardianship, lacking in creative ingenuity and forethought; let us suppose they were steered only by material forces, and not by any special faculties (the one attracting what is proper to it, another rejecting what is foreign, and yet another causing alteration and adhesion of the matter destined to nourish it); if we suppose this, I am sure it would be ridiculous for us to discuss natural, or, still more, psychological, activities – or, in fact, life as a whole.’ Galen, *On the Natural Faculties*, Book II, iii, p. 127. Christopher Gill notes that underlying the idea in Galen’s ‘high naturalism’, that is of nature with a design, common also to Plato’s *Timaeus*

English scientists' imagination, it was certainly a question of timing that, as we saw, Boyle would attack precisely that personifying principle of nature for preventing knowledge;⁵⁷ similarly Locke would deny in his early *Essays on the Law of Nature* the innate principles in the human soul.

The complexity of Galen's understanding of the soul is testimony to the many avenues and multiple works through which he sought to understand the interactions between the soul and the body.⁵⁸ Sorana Corneanu describes the ways in which early English empiricists benefited from an assortment of spiritual and psychological traditions as to the cultivation of the mind and its healing – a culture of 'Regimens of the Mind', as she calls it. Certain of Galen's work were among these traditions, together with the Bible, the Stoics and St. Augustine.⁵⁹ Nevertheless, Galen seems to have held a physicalist notion of soul, distinct from other more spiritual writings, in certain works of disputed chronology.⁶⁰ French moralists, the Epicurean Gassendi included, had despaired in this regard of Galen's determinism, as summarized by the remarkable title, 'The capacities of the soul depend on the mixtures of the body', which is to say that the soul's capacities depend on the balance of its humours as between hot, cold, dry and wet elements.⁶¹ In that text, Galen's argument came down to the contention that, since sick and healthy bodily factors greatly influence the soul, food and education may shape the moral character of the child – and that the

and to Aristotle, lies the existence of a Creator, a craftman or demiurge, see Christopher Gill, *Naturalistic Psychology in Galen and Stoicism* (Oxford: Oxford University Press, 2010), pp. 64–84.

⁵⁷ In his remarkable *A Free Enquiry into the Vulgarly Receiv'd Notion of Nature*, see Chapter 7.

⁵⁸ Summarized as ethical, nutritional, pathological, philosophical and embryological or biological discussions, by Peter N. Singer, 'General Introduction', in *Galen Psychological Writings* (Cambridge: Cambridge University Press, 2014), pp. 1–41. See generally on this question, Gill, *Naturalistic Psychology in Galen and Stoicism*.

⁵⁹ Corneanu, *Regimens of the Mind: Boyle, Locke, and the Early Modern Cultura Animi Tradition*; Corneanu refers to such texts as, Galen, *The Diagnosis and Treatment of the Affections and Errors Peculiar to Each Person's Soul*.

⁶⁰ Galen, *The Capacities of the Soul Depend on the Mixtures of the Body*, in *Galen Psychological Writings*. That *The Capacities* could have been written in an early stage, rather than being a culmination of his career is argued by Peter N. Singer, 'Introduction' to *The Capacities of the Soul*; described as a late work in Gill, *Naturalistic Psychology in Galen and Stoicism*, p. 142.

⁶¹ A good balance in a body means to be in the best state with regard to its own nature, which is assessed with regard to its activities, see Galen, *Mixtures*, in P. N. Singer and Phillip J. van der Eijk (eds.), Piero Tassinari collaborator, *Galen Works on Human Nature* (Cambridge: Cambridge University Press, 2018), p. 78. It has been argued that Jansenists agreed with a

nutrition adults choose makes their souls better or worse.⁶² Just as ‘practices and studies’ were destructive of vice and productive of virtue, so too was ‘nurture’, i.e. food and drink.⁶³ Taking the view that ‘self-styled Platonists’ had not understand Plato, he stated as follows:

So, then, let those who are unhappy with the notion that nourishment has the power to make some more self-controlled, some more undisciplined, some more restrained, some more unrestrained, as well as brave, timid, kind quarrelsome and argumentative – let them now have some self-control, and come to me to learn what they should eat and drink. They will derive the greatest benefit with regard to the philosophy related to their characters; and in addition to this they will make progress in the capacities of their rational souls, too, becoming more intelligent, with regard to virtue, and having better memories. In addition to nourishment and drink, I shall also teach them about winds, mixtures of the ambient air, and even about which countries are to be chosen and which avoided.⁶⁴

For the medical doctor with a particular interest in nutrition, the ingestion of necessities, food and drink, constituted a source of moral virtue in quite literal terms.⁶⁵ Hence the physician of the soul and the physician of the body become more than analogical terms.⁶⁶ Locke was not in complete disagreement with this approach in a long note on ‘Memory’ and

physicalist transmission of sin through generations, see Anthony Levi French *Moralists: The Theory of the Passions 1585–1649* (Oxford: Clarendon Press, 1964), p. 239.

⁶² Galen, *The Capacities of the Soul Depend on the Mixtures of the Body*, p. 401.20.

⁶³ ‘We at least, however, know that every foodstuff is brought down first to the stomach, where it undergoes a preliminary “working” and after this, is taken via the veins leading to that organ from the liver, and produces the humours in the body, from which are nourished all the other parts, and along with them the brain, heart and liver; and in the process of being nourished they become hotter than themselves, or colder, or wetter, being assimilated to the capacity of the dominant humours.’ Galen, *The Capacities of the Soul Depend on the Mixtures of the Body*, p. 401.17; p. 404.4.

⁶⁴ Galen, *The Capacities of the Soul Depend on the Mixtures of the Body*, p. 401.3. For a comment, see Peter Singer, that terms Galen’s position in this text ‘informed materialism’, as different to ‘pure materialism’ Peter N. Singer, ‘Introduction’ in ‘The Capacities of the Soul Depend on the Mixtures of the Body’, p. 340. See especially the discussion by Jaques Jouanna, ‘Does Galen have a Medical Programme for Intellectuals and the Faculties of Intellect?’ in *Galen and the World of Knowledge*. On this type of ‘technically atheist materialism’ in Galenism, see Gowland, ‘The Problem of Early Modern Melancholy’, p. 110.

⁶⁵ See the discussion of this idea on a much abstract level in Plato, Aristotle and Plotinus, in Peter Adamson, ‘Making a Virtue of Necessity: *Anankē* in Plato and Plotinus’ 8 *Études platoniciennes* (2011), pp. 8–30.

⁶⁶ See his view in Galen, *On the Doctrines of Hippocrates and Plato*, p. 299.

‘Madness’, in which he described the moment when the ideas of memory have faded and for some unknown reason imagination takes hold of the other faculties:

If that were once known it would be no small advance towards the easier curing of this maladie and perhaps to that purpose it may not be amisse to observe, what diet, temper, or other circumstances they are that set the imagination agog and makes it very active and imperious.⁶⁷

Furthermore, one of Galen’s main concerns in *Capacities of the Soul* was how to explain diversity, and Galen thought that nutrition went a long way towards offering insights into it:

But those who hold that the soul is not benefitted and harmed by the mixture of the body have no account to give of the differences among children, and have no cause to provide of any of the benefits which we derive from daily regime, nor indeed, of the distinction of character traits.⁶⁸

Thus Galen thought that by listening to those able to ‘cleanses’ us – both physicians of the body and honest mentors – we would be able to diminish the principle of evil that, in disagreement with the Stoics, the Greek physician identified as residing in every human being. However, he regarded matter as not per se a principle of evil. Galen declared himself agnostic about the immortality of the soul as propounded by Plato, while expressing doubts that something which was not material could be affected by the body, as happened in respect of drugs, wine and so on. However, as he noted, his argument was ‘not destructive of the fine things arising from philosophy’ but rather ‘for guidance and for teaching of a point within those things of which the philosophers are ignorant’.⁶⁹ All in all, it seems that in *The Capacities* Galen sought to press on a sceptic audience his idea that nutrition was crucial for both bodily and psychological health, and that he was convinced that his arguments were superior to those of the philosophers.⁷⁰

Notwithstanding his rhetorical goal, the importance Galen attributed to the study of food and nutrition ought not to be underestimated. Galen

⁶⁷ Locke quoted in Dewhurst, *John Locke (1632–1704) Physician and Philosopher*, p. 101. It is informative to know that in this period Locke was reading *Don Quixote*, John Lough, ‘Locke’s Reading During his Stay in France’ in s5-VIII *The Library* (1953), p. 256; *don Quixote* was also a favourite of Sydenham who once remarked that the best book to start the study of Medicine was Cervantes’s master piece, see Ruhräh, *Pediatrics of the Past: an Anthology*, p. 327.

⁶⁸ Galen, *The Capacities of the Soul Depend on the Mixtures of the Body*, p. 409.

⁶⁹ Galen, *The Capacities of the Soul Depend on the Mixtures of the Body*, p. 405.4.

⁷⁰ Singer, ‘Introduction’ to *The Capacities of the Soul Depend on the Mixtures of the Body*, p. 342.

had a philosophical bent and an inquisitive mind, and the manner in which that framework of thought articulated his interest in human needs was through the systemic exposition of human subsistence. The organs of the human body administered the nutrients, so to say, as experts or specialized agents that acted within an association whose members were naturally disposed to act together:

For I believe that I shall prove that the organs which have to do with the *oeconomia* (*οικονομία*) of the nutriment, as also their faculties, exist for the sake of this nutritive faculty. For since the action of this faculty is assimilation, and it is impossible for anything to be assimilated by, and to change into anything else unless they already possess a certain community and affinity in their qualities, therefore, in the first place, any animal cannot naturally derive nourishment from any kind of food, and secondly, even in the case of those from which it can do so, it cannot do this at once.⁷¹

As this quote shows, Galen's view was that an *economy of nutrition* exists within the human body and the food and drink needed to sustain life in the external world. An important tradition of texts called *Regimens of Health* (*Regimina sanitatis*) that would be ubiquitous in Europe from the thirteenth to the sixteenth century arose, via the Arabs, from Galen's works. It constituted studies of the things that belonged to the environment external to the human body and were necessary for its subsistence.⁷² In another text devoted specifically to food, *On the Properties of Foodstuffs*, Galen refers to food as being what in all respects maintains the body of the animal being nourished in an unchanged state, that is, just as the body was when it received it. Hence, the 'precise definition of a food' is 'when there is no qualitative alteration of the body of the consumer', as distinct from medicines or drugs.⁷³ According to John Wilkins, Galen's decision as to which foods to include in *On the Properties of Foodstuffs* was based on 'Value' – i.e. foods that were useful (*chrêsimos*) to the human body were listed while others were excluded.⁷⁴ This

⁷¹ Galen, *On the Natural Faculties*, Book I, ch. X, p. 33.

⁷² The six things that were in them food and drink, air, motion and rest, sleeping and being awake, hunger and satisfaction, and the accidents of the souls, Wolfram Schmitt, *Medizinische Lebenskunst, Gesundheitslehre und Gesundtregimen im Mittelalter* (Berlin: Lit Verlag, 2013), pp. 1–10; p. 45.

⁷³ Galen, *On the Properties of Foodstuffs*, with a foreword by John Wilkins, translation by Owen Powell (ed.) (Cambridge: Cambridge University Press, 2003), Book I, p. 34.

⁷⁴ John Wilkins, 'Foreword' in Galen, *On the Properties of Foodstuffs*, ix–xxv, p. ix. This is the same sense and notion in which it was described the social utility of a citizen for the Athenian citizen body in the times of Plato and Aristotle. A citizen that payed his taxes, behaved himself, served in expeditions, obeyed orders, was useful (*chrêsimos*) to the city. A citizen that was good or useful (*chrêstos*) to Athens more generally cares for the body of the

was not a utilitarian ideological conception, but rather a notion concerning what makes a fitting contribution to the healthy maintenance of the body. As the thirteenth-century Montpellier physician Cardinalis puts it, the physician ‘is more concerned with utility than with truth’ (*medicus plus attendit utilitatem quam veritatem*).⁷⁵ The study of this system or economy of nutrition was therefore of the essence in medical texts and manuals and also allowed one to focus on what was useful to the human body while dealing as a matter of course with material stuff. After all, physicians discussed what was most embedded in matter for human beings – their bodies. Besides, Galen argued, by starting from the body one could reach the soul.

9.2 Physicians and *Oeconomia*

9.2.1 *Towards a Politics of Household*

From the late thirteenth century onwards, a number of authors who were physicians by training wrote on economic matters, extricated from the normative constraints that the Bible and the Aristotelian *Ethics* and *Politics* imposed on European theologians. *On the Man’s Management of his Estate* by Bryson, an obscure Greek Neopythagorean living probably in the first century and the Pseudo-Aristotle’s *Oeconomia* are usually their sources.⁷⁶

city, its interests and harmony, above his own advantage. Kenneth James Dover discovers an almost general convergence between *khrestos* and *khrestimos* (useful) in texts depicting the good or useful citizen. Describing the difficulty of giving an hypothetical authentic meaning of *khrestos*, he provides the following quote: ‘In Hyp. iv 37 (Hypereides, *Defence of Euxenippos*) a good (*khrestos*) citizen is described as a man who cares (*phrontizein*) for the city’s interests and for the *homonoiia*, “harmony,” “like-mindedness,” of the citizens, to such an extent that he is in all circumstances prepared to subordinate his own advantage *vis-à-vis* other citizens to the advantage of the city *vis-à-vis* other cities.’ Kenneth James Dover, *Greek Popular Morality in the Time of Plato and Aristotle* (Berkeley: University of California Press, 1974), p. 296. On Galen expert employment of words, see Françoise Skoda, ‘Galien lexicologue’, in Michel Woronoff, Simone Follet and Jacques Jouanna (eds.), *Dieux, héros et médecins grecs. Hommage à Fernand Robert* (Besançon: Institute des Sciences et Techniques de l’Antiquité, 2001).

⁷⁵ Quoted in Luis Garcia Ballester, ‘Arnau de Vilanova (c. 1240–1311) y la reforma de los estudios médicos en Montpellier (1309): El Hipócrates latino y la introducción del nuevo Galeno.’ 2 *Acta Hispanica ad Medicinam Scientiarumque Historiam Illustrandam*, (1982), p. 104; on Cardinalis see Danielle Jacquart, *Dictionnaire biographique des médecins en France au moyen âge*, Nouvelle édition sous la direction de Guy Beaujouan (Genève: Librairie Droz, 1979).

⁷⁶ *The Book of Bryson, On the Man’s Management of his Estate* in Simon Swain, *Economy, Family and Society from Rome to Islam: A Critical Edition, English Translation, and Study of Bryson’s Management of the Estate* (Cambridge: Cambridge University, 2013).

The former was evidently inspired by Book I of Aristotle's *Politics*, albeit that he produced a fairly independent text of it. The latter was much better known and famous scholars such as Nicholas of Oresme and Leonardo Bruni are among its translators.⁷⁷ Galen was impersonated as the author of the *Yconomia*, an epitome of Bryson's *Management*, which was translated into Latin from the Arab in 1300 by Armengaud Blaise (1264–1312). Blaise, a minor physician in Montpellier, is also remembered as the nephew of the Valencian Arnau de Vilanova (1240–1311), the renowned master of the medical faculty of Montpellier in the end of the thirteenth century. Physician, alchemist and theologian, Arnau was instrumental in the complete incorporation in universities in the West of the Galenian corpus.⁷⁸

Texts derived from Bryson can be found in Arabic, Latin and Hebrew, and now in several other languages, published at different dates over a span of more than a thousand years. The research carried out by Martin Plessner, Giuseppe Baldassarre, Mauro Zonda and Simon Swain have illuminated the main aspects of the history and historiography of the texts.⁷⁹ The chapters on property, slaves, wives and the education of sons are the four that recur in the diverse translations. Carlo Natali describes the first

⁷⁷ See Christos P. Baloglou, 'The Tradition of Economic Thought in the Mediterranean World from the Ancient Classical times Through the Hellenistic Times Until the Byzantine Times and Arab-Islamic World', in Jürgen Georg Backhaus (ed.) *Handbook of the History of Economic Thought: Insights on the Founders of Modern Economics* (New York, Dordrecht: Springer, 2012), pp. 7–91; pp. 26–30.

⁷⁸ Arab and Hebrew were languages common in his birthplace, Valencia (Spain) in the mid-thirteenth century, as his biographers note, while he did not understand Greek. Vilanova employs already around fifty works by Galen in his writings; the new curriculum of 1309 in Montpellier benefitted from the new mass of translations. Ballester, 'Arnau de Vilanova (c. 1240–1311) y la reforma de los estudios médicos en Montpellier (1309)', p. 123; p. 128; Michael R. McVaugh, 'Armegaud Blaise as a Translator of Galen', in Edith Sylla and Michael R. McVaugh (eds.), *Texts and Contexts in Ancient and Medieval Science* (Leiden: Brill, 1997), pp. 115–133; Manfred Gerwing, 'Arnaldus de Villanova', in Henrik Lagerlund (ed.) *Encyclopedia of Medieval Philosophy* (Springer, Dordrecht, 2011) https://doi.org/10.1007/978-1-4020-9729-4_55

⁷⁹ Martin Plessner, *Der Oikonomikoc des Neupythagoreers 'Bryson' und sein Einfluss auf die islamische Wissenschaft* (Heidelberg: Carl Winters's Universitätsbuchhandlung, 1928); the Latin manuscript with the title *Yconomica Galieni*, pp. 205–214; see translation in German of Bryson's text by Plessner, *Der Oikonomikoc des Neupythagoreers 'Bryson'*, pp. 214–259. On the German-Jewish Orientalist Plessner see Amit Levy, 'A Man of Contention: Martin Plessner (1900–1973) and his Encounters with the Orient' 10 *Naharaim*, pp. 79–100; Giuseppe Baldassarre, 'Musonio Rufo e l'Economico di Brisone', in *Studi in onore di Anthos Ardizzoni*, a cura di Enrico Livrea e G. Aurelio Privitera, (Roma: Edizioni dell'Ateneo & Bizzarri, 1978); Maurizio Zonta, 'Fonti Greche e Orientali dell' Economia di Bar-Hebraeus nell'opera La Crema della Scienza' 52 *Annali* (1992) Supplemento; the translation of Bryson into English by Swain, *Economy, Family and Society from Rome to Islam*. On the earlier

chapter of Bryson's *On the Man's Management of his Estate* as putting forward 'an anthropological theory of trade and money based on medical considerations'.⁸⁰ Swain has also more recently highlighted its 'commercial anthropology' in stark contrast to Aristotle's.⁸¹ Baldassarre and Swain have shown that the issues of wives and education are not devoid of interest in themselves.⁸² Baldassarre took the view that the stoic philosopher Musonio Rufo (25–95 CE) was inspired by Bryson's emphasis on the equality of husband and wife and of the importance of fostering harmony in marriage. Musonio went beyond Bryson's stress on economic partnership and dealt with the spiritual partnership of the married couple.⁸³

In his in-depth study of the reception of Bryson's *On the Man's Management of his Estate*, Swain argues that it was the socio-economic background of Islamic countries that made them receptive to Bryson's ideas, at least until the decline in agricultural production that took place in the eleventh century.⁸⁴ He quotes, for instance, the ninth-century intellectual Qusṭā ibn Lūqā who affirmed that intelligent people would put their money in 'landed estates and high value properties, which produce money day after day' if one was careful to 'develop and improve' them.⁸⁵ Yassine Essid has also studied the way in which this genre evolved in Islamic countries in his *Critique of the Origins of Islamic Economic Thought*, which focuses on *Tadbīr al-Manzil* (*The Science of Household Administration*). Bryson's impact in Islamic countries represents in Essid's words 'an important moment in economic thought for Islam'.⁸⁶ In that evolution, Avicenna's *Kitāb Al-siyāsa*

translations from Greek to Arab see Uwe Vagelpohl, 'The User-Friendly Galen. Hunayn ibn Ishāq and the adaptation of Greek medicine for a new audience' in Petros Bouras-Vallianatos and Sophia Xenophontos (eds.), *Greek Medical Literature and Its Readers: From Hippocrates to Islam and Byzantium* (London and New York: Routledge, 2018).

⁸⁰ Natali, 'Oikonomia in Hellenistic Political Thought', p. 105.

⁸¹ Swain, *Economy, Family and Society from Rome to Islam*, p. 37.

⁸² Baldassarre, 'Musonio Rufo e l'Economico di Brisone'; Swain, *Economy, Family and Society from Rome to Islam*, pp. 42–44.

⁸³ Baldassarre, 'Musonio Rufo e l'Economico di Brisone', pp. 42–45.

⁸⁴ Swain, *Economy, Family and Society from Rome to Islam*, pp. 87–108; Yassine Essid, *A Critique of the Origins of Islamic Economic Thought* (Leiden, New York, Köln: Brill, 1995), p. 182. See also Islahi, who is more skeptic about the influence of Bryson but also recognizes its impact, Abdul Azim Islahi, 'The Myth of Bryson and Economic Thought in Islam' 21 *Journal of King Abdulaziz University – Islamic Economics* (2008); for more historical context see Benedikt Koehler, *Early Islam and the Birth of Capitalism* (Lanham, London: Lexington Book, 2014) and Angeliki E. Laiou 'Exchange and Trade, Seventh-Twelfth Centuries' in *The Economic History of Byzantium: From the Seventh through the Fifteenth Century* (Washington, DC: Dumbarton Oaks Studies, Trustees for Harvard University, 2002) vol. 2.

⁸⁵ Swain, *Economy, Family and Society from Rome to Islam*, p. 80.

⁸⁶ Essid, *A Critique of the Origins of Islamic Economic Thought*, p. 182.

(‘The Book of Politics’) is considered to have been the first translation of Bryson’s ideas into Arabic.⁸⁷ Essid notes that Islam ‘both as a religion and as a political reform’ emphasized ‘the economic aspects of life’, in particular ‘trade’, and did not encourage an ascetic lifestyle or advise against the acquisition of property. A moral approach to money was nevertheless required, exemplified by the obligation to help the poor and disincentivization of taking money as an end in itself.⁸⁸ These are all traits shared by the original Bryson that has come to us from its modified Arabic translation.

Some years ago, Nancy G. Siraisi highlighted that the topic of household and family appears to have been of interest to academic physicians since at least the early fourteenth century. She pointed to Blasius of Montpellier, who translated the Pseudo-Galenic *Yconomia*; to Bartolomeo da Varignana (died 1321) in Bologna, who commented on the Pseudo-Aristotle *Oeconomia*; and to Bartholomaeus de Brugis (died 1356), who wrote about *Oeconomia* in Paris.⁸⁹ Only from the early fifteenth century onwards were the *libri morales*, *Ethics*, *Politics* and the *Oeconomia* officially part of the curriculum of the University of Bologna. However, Siraisi discovered a commentary of the Pseudo-Aristotle *Economics* by the physician and master of the Faculty of Arts and Medicine in Bologna, da Varignana.

Da Varignana argued that nature provided food for all animals, but ‘the natural foods’ for human beings were bread, meat and wine which demanded agriculture. On the basis of the need of agriculture, he argued that private property (*possessio*) was natural for human beings.⁹⁰ Related to that was his view that Aristotle’s natural *servus*, included also those working for a daily pay. Siraisi also highlights da Varignana’s bold standpoint on usury, perhaps influenced by the Bolognese jurists, taking it to be self-evident that

⁸⁷ Ibn Sinā, *Kitāb Al siyāsa (The Book of Politics)*, published with an Introduction in three parts by Louis Cheikho, 21 *Al-Mashriq* (1906), pp. 966–973; 22 *Al-Mashriq* (1906), pp. 1037–1043; 23 *Al-Mashriq* (1906), pp. 1073–1078. I am grateful to Mehdi Ghaedsharaf for his translation of the text into French and I have translated it into English.

⁸⁸ Essid, *A Critique of the Origins of Islamic Economic Thought*, p. 5; p.196; and generally, pp. 179–228. Ibn Sinā, *Kitāb Al siyāsa*.

⁸⁹ The author writes that in the fifteenth century physicians would be paid extra if willing to teach the *Politics* (20 Bolognese lire) and *Economics* (5 Bolognese lire), Nancy G. Siraisi, ‘The Libri morales in the Faculty of Arts and Medicine at Bologna: Bartolomeo da Varignana and the Pseudo-Aristotelian Economics’, in 20 *Manuscripta* (1976), p. 110.

⁹⁰ ‘si natura providet animalibus de nutrimento multo magis et perfectis ... sed alimentum hominis sunt [sic] panis, caro et vinum et tallia et homo naturaliter fruitur illis ad suum nutrimentum ... sic ergo possessio secundum naturam naturaliter inest homini ... agricultura immediate est homini naturalis possessio.’ Bartolomeo da Varignana, Pseudo-Aristotelian *Economics*, quoted in Siraisi, ‘The Libri morales in the Faculty of Arts and Medicine at Bologna’, p. 113.

without moneylending the needy would die and cities and kingdoms would fall and, since it was accepted freely, as the borrower needed money, usurious charges were just.⁹¹ Siraisi's short summary of da Varignana's text reveals an early combination of economic and medical ideas and evidences how by limiting the exposition to those disciplines, a physician might downplay the Aristotelian economic tradition condemning usury.⁹²

The form of monetarism advanced in texts about the household by early fourteenth-century physicians such as da Varignana, is at odds with the hands-on approach of the commentary of the same Pseudo-Aristotelian *Oeconomia* by the humanist Giorgio Valla, published in Venice in 1501. In the encyclopedic *De rebus expetendis et fugiendis*, an embryonic specimen of the future genre of *natural histories*, Valla devoted around 50 pages of packed text to analysing the household through a comment on the three books of the Pseudo-Aristotelian *Oeconomia*.⁹³ The first book is a detailed discussion of the best foods for human beings, based on Galen's *On the Properties of Foodstuffs*. The second book describes the norms of the family and the function (*officio*) of the *pater familias*, which was, in a word, to educate his sons in virtue. In common with Avicenna's own text on management of the household, discussed in the next section, the ideal for the man was to practise a liberal profession, enter the military or undertake a public office. The wife administered the house within the walls of the building and the husband went to the market.⁹⁴ Valla repeated Cato's view as to the most important aspects of family life – to feed the family, then to feed the family well, and thirdly to dress them well. He explicitly rejected as dishonourable the idea that the *pater familias* might practise moneylending:

⁹¹ 'videtur woud uxura sit iusta et licita. quia quod voluntarie fit etiam ipso patente. hoc videtur esse iustum ... maior patet ex hoc. quia violentum secundum philosophum primo politice est inustum. Ergo per oppositum violentum est iustum.' Bartolomeo da Varignana, Pseudo-Aristotelian *Economics*, quoted in Siraisi, 'The *Libri morales* in the Faculty of Arts and Medicine at Bologna', p. 115.

⁹² See also with a comparison with Giles of Rome, Roberto Lambertini, 'L'arte del governo della casa. Note sul commento di Bartolomeo da Varignana, agli "Oeconomica"' 17 *Medioevo* (1991).

⁹³ Georgii Vallae Placentini, *De expetendis et fugiendis rebus opus* (Venetiis, Ac Studio Ionannis Petri Vallae, 1501). On this text and natural history, see Brian W. Ogilvie, 'Natural History, Ethics, and Physico-Theology', in Gianna Pomata and Nancy G. Siraisi (eds.), *Historia: Empiricism and Erudition in Early Modern Europe* (Cambridge: MIT Press, 2005).

⁹⁴ Vallae, *De expetendis et fugiendis rebus opus*, Book II, c. cliii. Notable exceptions to this view were Musonius Rufus, and Bryson, as seen before. See on the former in Ilaria Ramelli, 'Transformations of the Household Theory Between Roman Stoicism, Middle-Platonism, and Early Christianity', 2–3 *Rivista di Filosofia Neo-Scolastica* (2008); and on the latter in Swain, *Economy, Family and Society from Rome to Islam*, p. 43; p. 85.

In the laws the thief is condemned for double, the money-lender for quadruple, how worse does the city regard a money-lender than a thief may be inferred in this way. Be the practice of usury far from the *pater familias*.⁹⁵

In the third book, Valla deals with husbandry, animals and implements, even creating an annual calendar of activities to carry out on the farm. Together with Galen, his sources are classic Roman authors, such as Virgil, Cato and Varro.

Valla's classic naturalism, however, was not a typical example of Italian humanists commenting on *Oeconomy*. Anna Becker has recently shown that Leonardo Bruni (1370–1444) and many other fifteenth- and sixteenth-century Italian humanists employed the Pseudo-Aristotelian *Oeconomia*, via Aquinas's general commentary on Aristotle, to define a city whose fundamental 'essence' lay in its households. The term *oikonomia*, which had been retained by medieval translators, became in Bruni's translation of Aristotle's *Politics* 'disciplina rei familiaris'.⁹⁶ In a circular manner, since both household and city were natural to human beings, households were connected to the purpose of the city: the common good. A household was a space for providing the necessities of life, and humanists viewed the city as the household's context.⁹⁷ In turn, service to the city or the state represented the means by which to achieve ethical perfection in the Renaissance.⁹⁸ Bruni also displayed the ambivalence of the Quattrocento humanists. He dedicated the book to Cosimo de Medici (1389–1463) and included the prince in the picture of the *Oeconomia*, since wealth was one of the requisites for him to achieve greatness.⁹⁹ *Oeconomia* diverges from what Aristotle had stated in the *Politics* and *Ethics* about the distinction between natural and unnatural wealth, of which only the former was virtuous. Despite this fact, it was still generally believed at the time that Aristotle was its author.

⁹⁵ Vallae, *De expetendis et fugiendis rebus opus*, Book II, c. p. cliiii (my translation).

⁹⁶ Because 'Bruni takes the principle of avoiding transliterations generally quite seriously'. Eckart Schütrumpf, *The Earliest Translations of Aristotle's Politics and the Creation of Political Terminology* (Paderborn: Wilhelm Fink, 2014), p. 40; the importance of Bruni's translation of *Economics* is apparent, e.g., in Anthony R. D. Padgen, 'The Diffusion of Aristotle's Moral Philosophy in Spain ca. 1400–ca. 1600', 31 *Traditio* (1975).

⁹⁷ Becker, *Gendering the Renaissance Commonwealth*, pp. 13–48.

⁹⁸ Benjamin G. Kohl and Ronald G. Witt, 'Introduction' in Benjamin G. Kohl and Ronald G. Witt (eds.) with Elizabeth B. Welles, *The Earthly Republic: Italian Humanists on Government and Society* (Philadelphia: University of Pennsylvania Press, 1978), pp. 3–24.

⁹⁹ Baloglou, 'The Tradition of Economic Thought in the Mediterranean World', p. 29; James Hankins, 'The "Baron Thesis" after Forty Years and Some Recent Studies of Leonardo Bruni', 56 *Journal of the History of Ideas* (1995).

Something akin to the Pseudo-Aristotelianism of *Oeconomia* had also arrived in the England of the Reformation. Together with the authentic works of Aristotle, the Aristotelian John Case (died 1600) was teaching the *Oeconomica* in the last quarter of the sixteenth century in Oxford.¹⁰⁰ But in the following century, William Ames (1576–1633), the renowned Puritan theologian, discouraged lawyers from undertaking such studies of practical ethics: ‘although there may be some usefulness and necessity of household economy and politics for jurisprudence, the principal usefulness and necessity is nevertheless theology’s’.¹⁰¹ Anna Becker has studied how this type of household economics became foundational in the European theory of the state when Jean Bodin employed it to underline that, unlike the polity as such, the household was strictly necessary for human happiness.¹⁰² We need not follow in more detail the complex narrative that reaches its zenith in the total politicization of the household carried out by Sir Robert Filmer analysed in Chapter 1. Filmer’s political patriarchy identified the household with the *polis* and equated the economical and political societies with one another.¹⁰³

9.2.2 *Politicization and Depoliticization of Needs*

Unlike the Pseudo-Aristotle, the other tradition of *Oeconomia*, that of Bryson, followed, among others, by Pseudo-Galen and Avicenna, was founded on the opposite principle of the depoliticization of material needs, disconnecting from the polis both the household and the means by which to satisfy such needs. The pragmatism and materialism of

¹⁰⁰ Charles B. Schmitt, *John Case and Aristotelianism in Renaissance England* (Kingston and Montreal: McGill-Queen’s University Press, 1983), pp. 20–22; pp. 175–178; on Aristotelian thinking in England, Smith, ‘The Language of “Political Science” in Early Modern Europe’. In mid-seventeenth century the scholastic curriculum of Cambridge also included ‘*Oeconomica*, or principles of domestic government’, William T. Costello, *The Scholastic Curriculum at Early Seventeenth-Century Cambridge*, (Cambridge: Harvard University Press, 1958), pp. 38–40; the Catholic natural philosopher and diplomat Sir Kenelm Digby donated to the Bodleian Library at Oxford University in 1634 the manuscript of Bruni’s Pseudo-Aristotelian *Economica*. https://medieval.bodleian.ox.ac.uk/catalog/manuscript_4248

¹⁰¹ Ames quoted in Mordechai Feingold, ‘The Humanities’, in Nicholas Tyacke (ed.), *The History of the University of Oxford: Vol. IV Seventeenth Century Oxford* (1997), p. 308.

¹⁰² Becker, *Gendering the Renaissance Commonwealth*, pp. 114–115.

¹⁰³ Filmer, *Patriarcha and Other Political Works*, p. 15; p. 17; p. 19. Viewing the *Oeconomia* as a sort of constitutional science in Italy during the sixteenth and seventeenth centuries that developed and sustained the political and cultural idea of the patriciate, see Daniela Frigo, *Il padre di famiglia. Governo della casa e governo civile nella tradizione dell’“economica” tra Cinque e Seicento* (Roma: Bulzoni, 1985).

philosopher-physicians thus found expression in the metaphysics of existence that the concept of 'needs' seemed to embody. It is the here and now of what the human body requires that orders the first communities of human beings, while Avicenna devised an entire cosmology on the basis of needs in a chapter of his *Metaphysics of Healing*. Bryson, Pseudo-Galen and Avicenna's treatises on household management did not acknowledge a hierarchy of soul and body or between the very existence of a human being and the matters connected with that – crucially, property. Together with the clear aim of acquisition of wealth specified in Bryson's economic anthropology, the primary focus is food. It is remarkable that he did not concentrate on the household manager's food-producing activities, but rather on food as the element that gave meaning and foundation to the enterprise of a household. The matter of food and needs as the fundamental issue uniting human beings may seem a trivial note in a minor tradition, but it appears to lead towards bigger questions. The competition for necessities, the naturalization of money, the morally unqualified aim of wealth seeking, and, ultimately, the detachment of moral philosophy from discussions of economic themes all converge in subsequent texts.

The Bryson-Avicenna tradition differed from Plato and Aristotle's discussion on needs in that in the former the householder and his household's needs and wealth are the key focus. Plato's *Republic* also begins with needs, because 'none of us is self-sufficient, but we all need many things'. Accordingly, people started 'to live together as partners and helpers'.¹⁰⁴ However, the tension between needs and luxury immediately follows in the text. On the one hand, Glaucon, one of the speakers in the dialogue, decried the fact that the city is concerned only with providing necessities that maintain the good health of citizens. This referred to the notorious 'city for pigs'.¹⁰⁵ On the other hand, Socrates singles out the luxurious city as the exclusive motive for war.¹⁰⁶ This tension, which is present in every

¹⁰⁴ Plato, 'Republic', G. M. A. Grube and C. D. C. Reeve (eds.) in *Plato: Complete Works*, with and Introduction and Notes by John M. Cooper (ed.); Associate Editor, D. S. Hutchinson (Indianapolis, Cambridge: Hackett Publishing Company, 1997), n. 369c.

¹⁰⁵ Plato, 'Republic', n. 372d. This connection is made in Swain, *Economy, Family, and Society from Rome to Islam*, pp. 27–108.

¹⁰⁶ 'Then we'll have to seize some of our neighbors' land if we're to have enough pasture and ploughland. And won't our neighbors want to seize part of ours as well, if they too have surrendered themselves to the endless acquisition of money and have overstepped the limit of their necessities? That's completely inevitable, Socrates. Then our next step will be war, Glaucon, won't it? It will. We won't say yet whether the effects of war are good or bad but only that we've now found the origins of war. It comes from those same desires that are most of all responsible for the bad things that happen to cities and the individuals in them.' Plato, 'Republic', n. 373 d.

political community, between need and wealth is omitted in the works of the authors of this medical tradition of the *Oeconomica*, which do not discuss needs in the context of the political common good. In its place, a description of the economic circle that results from the interrelation of needs is offered, together with emphasis of the need for a depoliticized arbitrator in quarrels concerning property.

Furthermore, in the first book of Aristotle's *Politics*, the fundamental association – the family – was naturally instituted 'for the satisfaction of daily recurrent need'. The marked naturalistic aspect was tempered by his statement in the very first sentence of Book I that '[o]bservation shows us, first that every city [polis] is a species of associations, and, secondly, that all associations come into being for the sake of some good'.¹⁰⁷ Aristotle connected the necessities of life with his classic ideal of ethical life, the good life and the common good of the city. On the one hand, the art of acquiring property belonged to the management of the household, 'for without the necessities, even life, as well as the good life is impossible'. On the other, also in the household, the amount of property that sufficed 'for the good life' was 'not unlimited'.¹⁰⁸ The state of mind of those who pursued 'mere accumulation' as the main purpose of the household was that of those concerned 'about living, rather than about living well'. There was moreover 'an unnecessary form of the art of acquisition', which was, in a word, 'exchange' – in particular commerce. On the other hand, 'the necessary form' of acquisition was concerned with 'the provision of subsistence'. Aristotle's critique of greed, tyranny and unnatural wealth, all in that packed Book I, must be framed within the ideal of a temperate life championed in *Politics*.¹⁰⁹

Aristotle did not write the *Oeconomica*, but it is generally recognized that he made a far-reaching contribution to economic thinking through his theory on needs. In the impressive and complex commentary on

¹⁰⁷ Aristotle, *Politics*, translated by Ernest Barker; revised with an Introduction and Notes by R. F. Stalley (Oxford: Oxford University Press, 1995), 1252a1; 1252b2.

¹⁰⁸ The difficulties into which Aristotle runs with his statement that the citizens ought to have leisure for politics and not provide for their daily wants (inimical to excellence) are analysed by Soran Reader 'Aristotle on Necessities and Needs' in Soran Reader (ed.), *The Philosophy of Need* (Cambridge: Cambridge University Press, 2006); see also Christopher Rowe, 'Needs and Ethics in Ancient Philosophy', 57 *Royal Institute of Philosophy Supplement* (2005).

¹⁰⁹ 'What they seek appears to depend on the activity of acquisition, they are thus led to occupy themselves wholly in the making of money.' Aristotle, *Politics*, 1257b35. That discussion of public finances, monopoly and money was sophisticated and justifies its enduring impact.

justice set out in Chapters 3–5 of Book V of *The Nichomachean Ethics*, Aristotle wrote that ‘needs’ are the measure of the exchange of goods and are what holds the process of exchange together.¹¹⁰ He also noted that ‘money has become by convention a sort of representative of need’.¹¹¹ ‘Exchange’ was clearly used as an economic term in this context, although a few paragraphs earlier the word was used more broadly to mean communication – a more fundamental social interaction in the context of a polis.¹¹² Arguably, Aristotle’s economic thinking on this point may be situated between the important interpretations made by Moses Finley and Joel Kaye. *Koinonia* (exchange) Finley noted, was a pregnant term in Aristotle’s work, the meaning of which oscillated between ‘association’, in its less dense conception, and ‘community’ as its highest level.¹¹³ Finley’s point was that Aristotle was not carrying out an economic analysis, since in his discussion on money as an equalizer in the market, the philosopher had never lost sight of the polis as a whole. He was, so Finley thought, discussing politics. Kaye, on the other hand, has undertaken a monetarist reading of Aristotle’s discussion on money and uniformly interprets Aristotle’s employment of the concept of exchange in Book V

¹¹⁰ ‘That need holds things together as a single unit is shown by the fact that when men do not need one another, i.e. when neither needs the other or one does not need the other, they do not exchange, as we do when someone wants what one has oneself, e.g. when people permit the exportation of corn in exchange for wine.’ Aristotle, *The Nichomachean Ethics*, 1133b7–9. For the importance of this reasoning on needs, see for instance Ricardo F. Crespo, *Philosophy of the Economy: An Aristotelian Approach* (Cham: Springer, 2013), pp. 17–29.

¹¹¹ ‘All goods must therefore be measured by some one thing, as we said before. Now this unit is in truth need, which holds all things together (for if men did not need one another’s goods at all, or did not need them equally, there would be either no exchange or not the same exchange); but money has become by convention a sort of representative of need; and this is why it has the name “money” (nomisma)—because it exists not by nature but by law (nomos).’ Aristotle, *The Nichomachean Ethics*, 1133a26–29.

¹¹² ‘But in associations for exchange this sort of justice does hold men together – reciprocity in accordance with a proportion and not on the basis of precisely equal return. For it is by proportionate requital that the city holds together. Men seek to return either evil for evil – and if they cannot do so, think their position mere slavery – or good for good – and if they cannot do so there is no exchange, but it is by exchange that they hold together. This is why they give a prominent place to the temple of the Graces – to promote the requital of services; for this is characteristic of grace – we should serve in return one who has shown grace to us, and should another time take the initiative in showing it.’ Aristotle, *The Nichomachean Ethics*, 1132b30–1133a5.

¹¹³ ‘The point to my digression is to underscore the overtones of the section in the *Ethics* on exchange: *koinonia* is as integral to the analysis as the act of exchanging.’ Moses I. Finley, ‘Aristotle and Economic Analysis’ 47 *Past and Present* (1970), p. 8.

of *Ethics* as referring to the exchange of goods and services.¹¹⁴ As I understand it, Aristotle neither utilizes exchange purely as a political term nor purely as an economic term in this short text, but combines both meanings.

Differently, the redirection of the household, or of the estate, solely towards agriculture and property and away from politics and the city is a common theme in Bryson's text. The principles put forward there and in Avicenna's *Kitâb Al-siyâsa* cannot be described as individualistic, but they fundamentally deal only with private economic matters. They advise the wealthy man how to become wealthier in a dignified manner and take for granted the legitimacy of using slaves or servants for the benefit of their owners.¹¹⁵ The central theoretical category in Bryson's work is to be found in the first book, which deals with 'Property', while Avicenna offered a more metaphysical explanation in that first section of *Kitâb Al-siyâ*, as we will see in the following section. However, in both cases, everything starts with the human body's need for food.

Those premises resulted in a theory of the *Oeconomia*, established on the foundation of human needs. With the intervention of a first-class philosopher and physician like Avicenna in the genre of the 'Arabic *Oeconomia*', human needs became the element that united 'the family of humans'. Avicenna had synthesized a Neoplatonism of necessary existence, as we saw in Chapter 2. In his view, human thinking starts with the empirically present, the existent. Next, reasoning in reverse, he proceeded to search for the cause for which that existent thing was necessary. Thus, almost against common sense, the fruit is necessary

¹¹⁴ 'And if equality of exchange is required to ensure social communication, and equalization requires commensuration, then money, the line-instrument of commensuration, is the essential connecting element in the geometry of exchange. By binding exchangers and goods through its role as a medium or connection line, money holds the community together'. Joel Kaye, *Economy and Nature in the Fourteenth Century. Money, Market exchange, and the Emergence of Scientific Thought* (Cambridge: Cambridge University Press, 1998), p. 52.

¹¹⁵ This sort of landed enterprise was not uncommon in the Mediterranean economy. 'The fact, also, that great aristocrats made their money primarily from land and from imperial donations reduced their interest in investment in trade, and thus to some (unknown) extent kept an important source of capital only partially available to merchants. This aspect must not be exaggerated, for, as we have seen, the production of large estates was commercialized. But it was an inhibiting factor to greater expansion. In sum, the volume of transactions increased, the role of the Byzantine merchant increased, the exchange economy was active, but there were also barriers and negative factors.' Angeliki E. Laiou 'Exchange and Trade, Seventh-Twelfth Centuries', p. 759.

to the tree, and not the other way around.¹¹⁶ ‘Human needs’ also appeared in Avicenna’s *Kitâb Al-siyâsa* and later in *The Metaphysics of “The Healing”* as the links in an existential chain of necessity. A common critique levelled by scholars working in this sphere is that Avicenna’s intellectualism lacks a theory of moral practical reasoning.¹¹⁷ This is visible in particular since there is no moral law that makes sense of human needs, beyond their empirical existence. As a consequence of the all-important role attributed to human needs in the absence of an ethical or political context, a minimalist version of a natural law of necessity results from Avicenna’s philosophical elaboration. His *Metaphysics of the Healing* argues that human needs were the reason to found the society of humans and the household, and from that he extrapolates the foundation of the state. In these materialist terms, the only ruler that the state required was a prophet or sage who as an arbitrator would adjudicate in respect of conflicts about property and other transactions.

In the texts discussed in this and the next section, the reasoning on *Oeconomy* starts with an individual-based theory of needs, which develops into a domestic and naturalistic outlook on food and other necessities of life, and also notes the competition assumed to occur with other human beings who are ‘partners in necessity’. *The Nasirean Ethics*, written in Persia around 1235 by Avicenna’s commentator Naşîr al Dîn al ʿTûsî, explodes the limits of the genre with two new and independent books on ethics and politics. However, it also establishes the second discourse on ‘Economics’ on the basis of similar ideas about the needs of human

¹¹⁶ Robert Wisnovsky writes that ‘Avicenna applied the distinction between essence and existence to the relationship between final and efficient causes as a way to pre-empt the circularity that loomed behind the Neoplatonists’ scheme of procession and reversion ... [and] was led to invent a new metaphysical basis for his philosophy’ in the process. Wisnovsky, ‘Final and Efficient Causality in Avicenna’s Cosmology and Theology’, p. 101.

¹¹⁷ Critiquing that Avicenna wrote so little on ethics, Majid Fakhry, *Ethical Theories in Islam* (Leiden: Brill, 1994), pp. 85–88; among authors of the Middle Ages, Abd al-Latif equally criticized him on that point, Cecilia Martini Bonadeo, *Abd al-Latif al-Baghdadi’s Philosophical Journey: From Aristotle’s Metaphysics to the ‘Metaphysical Science’* (Leiden: Brill, 2014), p. 180. Avicenna received a Neoplatonised Aristotle which as explained by Robert Adamson produced in some of the authors an intellectualism to the effect that ‘it would seem that the “practical” part of philosophy involves only the actions themselves, and not grasping the ethical principles which are put into practice.’ Peter Adamson, ‘The Arabic Tradition’ in John Skorupski (ed.), *The Routledge Companion to Ethics* (London and New York: Routledge, 2010), pp. 63–75; p. 65.

nature.¹¹⁸ The first two paragraphs summarizing Avicenna's ideas on the issue are worth quoting:

Whereas mankind needs food for the preservation of the individual; and the food of the human species cannot be procured without the organization of techniques, such as sowing, harvesting, cleaning, pounding, kneading and cooking; and the arrangement of such processes cannot conceivably be effected save by the collaboration of helpers, and the application of tools and utensils, and the consumption therein of long periods of time; (this being contrary to the case of the food of other animals, which is prepared naturally, so that their urge is limited to the search for fodder and water, in accordance with the demand of nature; and when they have stilled the access of hunger and thirst, they refrain from further motion), and since the restriction of mankind to the amount of their day-by-day need would inevitably bring about the exhaustion of supplies and a dislocation of their mode of life, it being impossible to contrive in one day the quantity of food which forms the daily ration:

This being so, the need has befallen to store the necessaries of life and to keep them safe from the rest of one's fellows, who are partners in necessity; but safeguarding cannot be effected without location, in which food and sustenance will not spoil, and which – at the times of sleep and waking, by day and night – will restrain therefrom the hand both of the unjust and the predator.¹¹⁹

The survival of mankind and the individual, and thus needs are the theoretical framework for the organization of life. The severance of the discipline of economics from politics and ethics is thus made through focusing on human needs.

Bryson's *On the Man's Management of his Estate* has a convoluted history. The Greek original is only preserved in a few fragments, while the earliest complete text is in Arabic. The translation into Arabic is thought to be from around 900 AD.¹²⁰ Interpolations of Galen's *Natural Faculties* or a closely related work appear to explain the medical tone of its introduction. Its chapter on 'Property' starts by noting how God placed in man the faculties he needs for the sustenance of his body and his well-being.¹²¹ There

¹¹⁸ Naṣīr al-Dīn al-Ṭūsī, *The Nasirean Ethics*, translated by G. M. Wickens, (London: George Allen & Unwin Ltd., 1964); according to Yoyo Hambali *The Nasirean Ethics* 'set the pattern for subsequent works on practical philosophy in the Islamic tradition.' Yoyo Hambali, 5 *Turats* (2009), pp. 53–66, p. 53.

¹¹⁹ al-Ṭūsī, *The Nasirean Ethics*, 153.

¹²⁰ About the fragments in Greek sources Friedrich Wilhelm, 'Die Oeconomica der Neupythagoreer Bryson, Kallikratidas, Periktione, Phintys' 70 *Rheinisches Museum für Philologie* (1915); Swain, *Economy, Family and Society from Rome to Islam*, p. 38.

¹²¹ 'At the same time He made him wanting, mutable, and ceasing; and because of this man stood in need of replacing and restoring what was dissolved from him. (3) I mean by the term "faculties" (i) the faculty which each one of his body parts uses to derive from food what is similar to it, in the quantity in which it needs it; (ii) the faculty which changes and

'is a need of many other different crafts' to procure all that human beings and animals require for subsistence. Thus plants 'need' cultivation, animals 'need' feeding' and other activities. However, despite their potential to know the crafts, human life is so short that it is impossible for a single individual to have mastery of all crafts. However, 'for the management of his life a man needs all the crafts.' Moreover, a similar connection exists between the crafts: 'each one of the crafts ... needs another'. The text continues:

and (since) it was impossible for one man to be expert in all of them, all people needed one another for managing their lives, and for this reason people needed to form cities and live together in them to help each other with the crafts.¹²²

Although everyone needed one another, their particular needs were not exactly the same, and the value of the things they needed also differed.¹²³ Disagreements would arise for this reason and barter would not be enough to solve the problems caused by disparities in need. The market would not work properly if a certain product's availability varied 'owing to greater or lesser availability on the market, the level of people's need of it, or their lack of need of it, or of excessive amounts of it at different periods, and people's use of each product at any time'. Accordingly, it was suggested that barter was not enough for the proper functioning of the market. What was said about products also held true for the crafts themselves. It was at this point that money appeared, in the form of coins made from gold, silver and copper that were instrumental in allowing prices to be set for all items:

Whoever has possession of these substances (gold, silver and copper) we have named becomes, as it were, one who has possession of all the products he needs.¹²⁴

converts the foodstuff so that it becomes similar to the body part that is to be nourished by it: thus if what is to be nourished by it is flesh, it becomes flesh, if it is bone, it becomes bone, and if it is nerve, it becomes nerve; (4) (iii) the faculty which retains in the body part what has been attracted to (the body part) while it remains fluid and until it becomes solid and is joined to (the body part); '... of this he needs to replace what is dissolved from him by movement, and the replacement is the foodstuff which nourishes him.' 'The Book of Bryson, On the Man's Management of his Estate' in Swain, *Economy, Family, and Society from Rome to Islam: A Critical Edition*, p. 5.

¹²² 'The Book of Bryson, On the Man's Management of his Estate' in Swain, *Economy, Family, and Society from Rome to Islam: A Critical Edition*, p. 6

¹²³ See also Aristotle on this point about exchange on occasion of needs and money as a representation of need above.

¹²⁴ Bryson, 'On the Man's Management of his Estate' in Swain, *Economy, Family, and Society from Rome to Islam: A Critical Edition*, p. 7.

Life was made 'good' through the possession of wealth, and thus Bryson set out 'to explain the best way to manage it, through (the acquisition and preservation of) property, and its expenditure'. He briefly noted that it was not worthwhile being unfair in business because trade was mostly about reputation, and recommended as the best rule that everyone stay in the craft of his or her ancestors, since all crafts were needed and it would produce chaos if everyone tried to change their place in society. With reference to the preservation of property, he counselled balancing expenditure and acquisition and seeking to procure a surplus of possessions for accidents that suddenly diminish property could happen at any time. The optimal would be of course the condition of the manager of an estate who acquires more than is expended. Bryson also advised against uncertain capital investments and, in general, any sort of difficult undertaking, since profit and even capital might be lost in the venture. He likens one who buys land despite lacking time to develop it to 'a greedy man who eats something he cannot digest' and characterizes such a person as a bad manager.

Bryson continues: '[t]he fourth consideration required for the preservation of wealth is that the man should not invest his money in anything that is slow to leave his hands'. Gems and that sort of thing would be most inconvenient in this regard. The fifth consideration was to be quick in parting with merchandise but slow to sell real estate. In this case, although the promise of higher profit would be tempting, wealth would be better secured in a long run through real estate.¹²⁵ With regard to the expenditure of wealth Bryson names a number of vices that one ought to avoid, which, in summary, amount to not being able to judge, understand and attend *what are the real needs* at a given time and in a given place – an economic science of needs is what this seems to suggest. Bryson also declared that 'the sordid man' was odious and that a good manager was not mercenary, since he spent little on himself but gave surplus money generously to family, friends and the poor, while keeping something aside as a safeguard against the vicissitudes of fate.

In sum, Bryson's is a useful treatise for entrepreneurs who own real estate. It combines strict economic reasoning with a sense of the virtues expected of a good landowner and of the knowledge about practical needs. Its most striking feature is that it is conceived only for private citizens and their fortunes, with neither political context, city or state, nor a higher political ruler that governs the state.

¹²⁵ See Swain 'Introduction' in *Economy, Family, and Society from Rome to Islam: A Critical Edition*.

9.2.3 Avicenna's Kitāb Al-siyāsa (Politics), *the Metaphysics of "The Healing" and the Pragmatic Politicization of Needs*

Interest in Avicenna's philosophical works was less intense in the Renaissance than in the two previous centuries, which, in the judgment of Dag Nikolaus Hasse, is evidenced by the small number of new printings that occurred. However, the situation was different with his medical works. His *Canon Medicinæ* was the most translated Arabic book during the Renaissance, and the standard textbook in the universities of many countries well into the eighteenth century.¹²⁶ Avicenna was an extraordinary systematizer of Galen's work and also included original theories of his own. While he was a very prolific philosopher, as mentioned earlier, he wrote virtually nothing on ethics in his encyclopaedic works and only very short and focused treatises on sin and the science of ethics. Albert the Great notes in *De Bono* how Avicenna in his commentary in *De anima* considers that all moral customs are about opinion and non-necessary, and therefore that the Arabic philosopher did not put forward a natural law theory.¹²⁷ In fact, Avicenna briefly presents a utilitarian way of understanding morality in his *De anima*:

It is for the utility of society that of all actions that a human being usually does, there are some of them that are not licit.¹²⁸

These that are not licit one should teach to children to avoid them, in a different way for a boy and a girl, and they would 'quasi naturally' understand when this is taught to them.¹²⁹

¹²⁶ Also a list of the printed Latin editions of Arabic physicians and other scientists before 1700, in Dag Nikolaus, Hasse, *Success and Suppression. Arabic Sciences and Philosophy in the Renaissance* (Cambridge Massachusetts, London: Harvard University Press, 2016), p. 8; p. 19; p. 357. Averroës (1126–1198) was not only expositor of the works of Aristotle but also chief *Qāḍī* or judge in Córdoba and court physician to the Spanish Caliph. Among many others, McGinnis also mentions Abū Bakr Muḥammad ar-Rāzī (born 864) who wrote, *Doubts about Galen*, Jon McGinnis 'Natural Knowledge in the Arabic Middle Ages' in Peter Harrison, Ronald L. Numbers and Michael H. Shank (eds.), *Wrestling with Nature: From Omens to Science* (Chicago: University of Chicago Press, 2011); see also McGinnis on some philosophical attempts to combining Galen and Islam, while always maintaining a certain theological perspective, visible, if nowhere else, in key concepts employed in the translation of Aristotle, p. 63.

¹²⁷ Alberti Magni, *De bono*, n. 499.

¹²⁸ 'Et propter utilitatem societatis est ei proprium ut, ex omnibus actionibus quas solet agere, sint quaedam actiones quas no licet agere', Avicenna, *Avicenna Latinus Liber de Anima seu Sextus de Naturalibus IV-V*, Liber V, c.1, p. 74.

¹²⁹ 'quod docetur dum est puer et coalescit in eo, et a pueritia consuescit audire quod has actiones non licet agere, ita quod conception horum fit ei quasi naturalis.' Avicenna, *Avicenna Latinus Liber de Anima seu Sextus de Naturalibus IV-V*, Liber V, c.1, p. 74.

Louis Cheikho, the editor of *Kitâb Al-siyâsa* at the beginning of the twentieth century, thought that *Al-siyâsa* was one of these treatises on moral custom, despite its name (*The Book on Politics*), and that it was the book mentioned in passing by the historian of medicine Ibn Abî Uşaybi'a.¹³⁰ *Kitâb Al-siyâsa* is regarded by other scholars as Avicenna's *Politics*, since it starts with an introduction explaining why politics are needed, which, as we will see, boils down to the fact that 'any human from king to vassal needs to eat, for this is the way that their life is sustained'.¹³¹ But Avicenna seemed to understand politics also as 'moral management', which is made clear in one passage dealing with the 'politics of the soul': one carries out politics starting with management of oneself.¹³²

Kitâb Al-siyâsa starts in the style of a theological text praising Allah for the graces and benefits given to all creation and especially to human beings. Avicenna then seeks to undergird theoretically the argument put forward by Bryson and others as to a net of needs that put humanity in motion.¹³³ God, Avicenna wrote, had created human beings as the best, most complete and balanced creatures, endowing them with the possibility to tell the difference between just and unjust. God had also differentiated between Creator and creature, landlord and tenant, government and the governed. Through these differences, human reason had a means by which to acknowledge the existence of God. 'Difference' therefore amounted to a method of reasoning that he continued to employ in the section entitled 'The Difference Among People in Terms of Characters and Level', in which he explained that God had given his graces differentiating

¹³⁰ Quoted narrating the following story: 'Another of my neighbors was a man named Abû Bakr al-Barqî, who was born in Khwârizm. He was a renowned jurist, devoting himself entirely to jurisprudence, Qur'anic exegesis and ascetic practices. But he felt an inclination for the sciences and asked me to write commentaries on certain books for him. I wrote for him "al-Hâsil wal-Mahsûl," comprising nearly twenty volumes, and also – in the field of ethics – a book entitled "Virtue and Sin." These two books are to be found only with him for he never lent them to anyone for copying.' Ibn Abi Usaibia, *History of Physicians* (1971) www.tertullian.org/fathers/ibn_abi_usaibia_01.htm.

¹³¹ Ibn Sînâ, *Kitâb Al-siyâsa*. A later version of this edition is listed among Avicenna's minor works in Jules L. Janssens, *An Annotated Bibliography on Ibn Sînâ, (1970–1989): Including Arabic and Persian Publications and Russian References* (Leuven: Leuven University Press, 1991), p. 72

¹³² 'when a man's politics towards his souls is at its best, there is no need for someone else to impose his policy on him and to follow and implement another's policy.' Ibn Sînâ, *Kitâb Al-siyâsa*, p. 972. He uses politics in another sense when recommending the debates among children in the education of the son. 'Then they sometimes are friends and sometimes they argue. And by forgiving themselves, they will improve themselves. This is the best preparation for politics.' Ibn Sînâ, *Kitâb Al-siyâsa*, p. 1076.

¹³³ Ibn Sînâ, *Kitâb Al-siyâsa*.

individuals in terms of reason and opinion, possessions, household and so on. If everyone were equal and at the same level, he argued, corruption and annihilation would ensue, and ‘this is why there is competition and jealousy and what appears to be cruelty and wickedness’.¹³⁴ However, the sages knew that if everyone were king, humanity would be annihilated. If everyone were rich, no one would be willing to help others with kindness, and in the opposite situation, if everyone were poor, all would starve:

and there is differentiation in their substances, and the existence of this differentiation in their situations considers the reason for their continuation and the cause of their satisfactions.¹³⁵

Difference also meant satisfaction of different needs. By ‘difference’ Avicenna referred literally to diversity. In the *Metaphysics of the Healing* it is evident that utilization of ‘difference’ is one of Avicenna’s favoured means of logical reasoning – a means of mapping physical reality in his mental world.¹³⁶ In *Kitâb Al-siyâsa* difference was the reason for continued survival of creatures, also within human society.

There was also *need*, which functioned as a reversal of the process of differentiation and connected what had been differentiated. In *Kitâb Al-siyâsa* needs made everyone equal. Both the king and the vassal equally needed to eat in order to survive and preserve their personality.¹³⁷ Avicenna describes how a human being differs from the other animals, who were passive when satiated. A human being prepares food in order to eat it and save what is left after the meal, and thus ‘needs’ a place to preserve that stored food and helpers to guard it. And the only one who would help him collaboratively in that enterprise would be a wife. That was the origin of the family. With the coming of children, ‘there would be many more in need of a meal’, and he would ‘need’ companions and servants to help with these tasks. They would look up to him from the standpoint of vassals or members of a crowd:

In this case, be either king or vassal, or owner or crowd, or ruler or ruled, or master or servant, all they are equal in that each one in the universe needs the meal that keep his spirit and cause his body to survive. And he needs a

¹³⁴ Ibn Sinâ, *Kitâb Al-siyâsa*.

¹³⁵ Ibn Sinâ, *Kitâb Al-siyâsa*.

¹³⁶ Avicenna, *The Metaphysics of ‘The Healing’*, p. 21; p. 25; p. 29; p. 34; p. 81; Finianos, *De l’existence à la Nécessaire Existence chez Avicenne*; Jon McGinnis, ‘Logic and Science: The Role of Genus and Difference in Avicenna’s Logic, Science and Natural Philosophy’, 18 *Documenti e studi sulla tradizione filosofica medievale* (2007).

¹³⁷ Ibn Sinâ, *Kitâb Al-siyâsa*, p. 970.

guardian to safeguard himself and where he lives, where he rests from his efforts and he needs a wife in order to take care of his house for him and she guards his property and he needs the child that does the work when he is old and gives him a helping hand when he is old, and continues his generation, and enlivens his reputation when he is old; and he needs servants that carry the heavy weights and when they meet there is an owner and possessor, and a vasa and possessed.¹³⁸

Situating this interconnected necessity of the human family in the context of the management of the estate by the male owner entails everyone on the estate working together to meet the needs of everyone, albeit that the proprietor is responsible for the subsistence of all whom he is charged with protecting. This requires that the owner be an honest and just man. Avicenna provides an ethical discussion of the means for healing of the soul of the estate owner, in the style of Galen's counselling by a good honest friend: self-examination and self-punishment for breaking bad habits or indulging in vices and corruption.¹³⁹

Unlike Bryson, Avicenna's section on how to obtain one's wealth turns to Aristotle. There were two groups of people, he explained. The first group constituted those that could subsist due to inherited wealth or thanks to the people around them. God inspired the second group that needed nourishment to get it through commerce and industry. Avicenna commended industry as more durable than commerce, since property was perishable and inconstant. He divided industry into men of state, scholars and men of war or soldiers. Moreover, in the section on servants (not slaves), Avicenna noted that although they might occasionally be punished, and the authority of the owner of the estate must be clear, there was a need for optimal conditions of labour. He argued, for instance, against constant change in tasks that does not allow the person to work well, and ultimately to be human. 'Therefore, this work is considered a moral virtue for the servant, which cannot be forsaken, and it is like the essence and nature of a person who is not separate from man'. The servant ought not to be afraid that he or she will be dismissed. Hence, the master ought to give the servants to understand that their position in the estate is secure and stable. 'This is a great sense of humanity, of grandeur and dignity.'¹⁴⁰

Avicenna develops further the political aspect of the issue of human needs in Book Ten, Chapter 2 of *The Metaphysics of 'The Healing'*,

¹³⁸ Ibn Sīnā, *Kitāb Al-siyāsa*, p. 970.

¹³⁹ Ibn Sīnā, *Kitāb Al-siyāsa*.

¹⁴⁰ Ibn Sīnā, *Kitāb Al-siyāsa*.

following the tradition of texts centred on needs described so far, but now delineated as a building block of society.¹⁴¹ In short, Avicenna argued that the difficulties existing in a society that was united through the materialist principles of human needs must be supervised by a type of prophet-legislator – an arbitrator of sorts. Despite his divine calling the prophet-legislator would not attempt to interfere in civil society beyond resolving disputes over ‘yours and mine’. Neoplatonic dualism – the strict demarcation between the materialist origins and functioning of society and its spiritual aspect – is the most conspicuous principle in the chapter:

We now say: It is known that the human differs from the rest of the other animals in that he does not lead a proper life if isolated as a single individual, undertaking the management of his affairs with no associate to help him satisfy his basic needs.¹⁴²

Avicenna held that the needs of each human being must be complemented by the undertakings of another of his or her own species. He described this by reference to the same traditional chain of diverse crafts connecting supply and needs. One would sew, another would make the sewing needle, yet another would provide vegetables, while a further person would ‘bake for him’. Neither the benevolence nor the interest of the baker, as stated famously by Adam Smith, but their mutual ‘needs’ would motivate him to bake for his fellow human being according to Avicenna. It seems that Smith would add to the materialist ‘needs’ of Avicenna generating society, the marginal profit produced through entrepreneurship.¹⁴³ It was evident then, Avicenna concluded, that ‘man’s existence and survival’ required partnership:¹⁴⁴ ‘Partnership is only achieved through reciprocal transactions just as this is inescapably needed in the various trade practices that belong to [man].’¹⁴⁵ Reciprocal transaction involved law and justice, which must have ‘a lawgiver and a dispenser of justice’. The lawgiver must be someone who would not ‘leave people to their private opinions’ with regard to what was lawful. The survival of humanity depends on the

¹⁴¹ Avicenna, *The Metaphysics of ‘The Healing’*.

¹⁴² Avicenna, *The Metaphysics of ‘The Healing’*, Book 10, ch. 2, 1; also Avicenna, *Avicenna Latinus Liber de Anima seu Sextus de Naturalibus IV-V, Liber V, c.1*, p. 73.

¹⁴³ ‘it is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest.’ Adam Smith, *An Inquiry into the Nature and Cause of the Wealth of Nations*, Edwin Cannan (ed.) (London: Essex Street, 1904), p. 16.

¹⁴⁴ Avicenna, *The Metaphysics of ‘The Healing’*, Book 10, ch. 2, 1–2.

¹⁴⁵ Avicenna, *The Metaphysics of ‘The Healing’*, Book 10, ch. 2, 2.

lawgiver, without whom people would not otherwise recognize justice, 'each considering as just what others owe them, unjust what they owe others'.¹⁴⁶

Avicenna connected the material and spiritual realms, *The Metaphysics of "The Healing"* by noting that it was impossible that providence, which had supplied human needs in respect of tiny things such as 'the growing of hair on the eyebrows' would not have envisaged a righteous legislator. If 'the First Principle and the angels after Him' exist, one who was necessary 'to introduce the order of the good' must also exist. 'A prophet, therefore, must exist, and he must be a human'.¹⁴⁷ When this man comes to life, the main principle governing the prophet's legislation was to let the people 'know that they have a Maker, One and Omnipotent'.¹⁴⁸ However, the legislator ought not to involve people in anything relative to doctrine. Politics and religion ought to be separated. This would only confuse people, and their religion. Moreover, people understood such elevated matters only with great difficulty – only a few would achieve understanding of them. A danger was also latent in trying to instil doctrinal matters in people. It 'might even lead them to adopt views contrary to the city's welfare, opposed to the imperatives of truth'.¹⁴⁹

This chapter has discussed literature that has been available in the West since the thirteenth century, derived from Greek and Arabic sources, in which the concept of needs and necessities is related both to physicalist guides to explaining the origins of human society through needs and to managing a man's estate, himself and the State. This literature employs the notion of needs and imbues it with a strong physical meaning that concerns nourishment, shelter and diverse crafts required for the economy. Furthermore, Avicenna's texts, in particular, bestow a strong metaphysical meaning on the notion of needs that relates to connecting people and making them equal on grounds of their common precariousness, the existence of diverse classes due to human differences, and to the diverse crafts needed in the economy. There exists therefore a combination of diverse historical understandings of *oeconomy* as a home or an estate, even as a state, some stressing its potential political elements, and other undermining them. All appear to be influenced by physicians' literature and a Neoplatonic metaphysics of necessity. Especially the Brysonean and Avicennean Arabic strand narrowed down ethics, politics

¹⁴⁶ Avicenna, *The Metaphysics of "The Healing"*, Book 10, ch. 2, 2. An idea to be found in Locke's *Essays on the Law of Nature*, as we saw earlier.

¹⁴⁷ Avicenna, *The Metaphysics of "The Healing"*, Book 10, ch. 2, 3.

¹⁴⁸ Avicenna, *The Metaphysics of "The Healing"*, Book 10, ch. 2, 4.

¹⁴⁹ Avicenna, *The Metaphysics of "The Healing"*, Book 10, ch. 2, 5.

and even theology to a physicalist focus on material needs, chiming well with modern sceptical tendencies in natural law as to the capacity of an individual's human mind to ascertain what was right and just. The background to subsequent writings on political economy was thus prepared.

Locke's emphasis on human necessities already in his early philosophical works possibly originated from his reading of the philosopher-physicians and his experience as a physician. To my knowledge, this emphasis has not come under scrutiny, except perhaps by Karl Marx, who in view of his foundational use of it for his materialist enterprise and his evident knowledge of Locke's work in *The Capital* seemed quite enthusiastic about the notion of necessities.¹⁵⁰ In Chapters 10, 11 and 12 I analyse what use Locke made of his doctrine of necessities in his monetary, epistemological and political writings. With the background of the *oeconomy* of needs described in this chapter, his ideas on the necessity of money appeared tied to larger (Arabic and European) medical and materialist traditions of needs:

for money being a Universall commodity, and as necessary to trade as food is to life, every body must have it at what rate they can get it, and unavoidably pair deare when it is Scarce.¹⁵¹

¹⁵⁰ Karl Marx, *Capital. A Critique of Political Economy*, Vol I., Samuel Moore and Edward Aveling trans. and Frederick Engels ed. (Progress Publisher, Moscow, USSR, undated [from the First English ed. 1887]).

¹⁵¹ John Locke, 'Some of the Consequence that Are Like to Follow Upon Lessening of Interest to 4 per Cent' (1668) in Patrick Hyde Kelly (ed.), *Locke on Money*, v. I (Oxford: Clarendon Press, 1991), p. 172.