1 *History*
Medical Progress in Context

We may believe in the doctrine of Progress or we may not, but in either case it is a matter of interest to examine the origins and trace the history of what is now, even should it ultimately prove to be no more than an *idolum saeculi*, the animating and controlling idea of western civilisation.

J. B. Bury, *The Idea of Progress*, p. 6

In his seminal study of the idea of progress published in 1920, J. B. Bury emphasizes the concept's deep rootedness in Western culture. Others who have traced the idea's transformations over time agree on its crucial importance for the self-definition of the West: Robert Nisbet calls it the single most important idea for Western modernity, and conceptual historian Reinhart Koselleck associates it with a historical change whereby the future came to be seen as open-ended.[1] Current scholarship on progress notes the peculiarity and contingency of modern versions of this belief. "Normally," writes historian Charles Frankel, "people have believed that the future would repeat the past."[2] In addition to its importance, recent contributions remark on the inherent neutrality and elasticity of the concept. This variety creates significant challenges for attempting an overview of the history of progress: Charles van Doren, the author of a multiyear collaborative study on the topic, differentiates between fifteen types of theories of progress and nine primary forms of progress denial.[3]

[1] Robert Nisbet, *History of the Idea of Progress* (New Brunswick & London: Transaction Publishers, 1980), p. 4 and Reinhart Koselleck and Christian Meier, "Fortschritt," in *Geschichtliche Grundbegriffe*, Historisches Lexikon zur politisch-sozialen Sprache in Deutschland, ed. Otto Brunner, Wilhelm Conze, and Reinhart Koselleck (Stuttgart: Klett-Cotta, 1977), vol. 2, pp. 352, 371.

[2] Charles Frankel, "Progress, Idea of," in *Encyclopedia of Philosophy*, 2nd ed., ed. Donald M. Borchert (Detroit: Thomson Gale, 2006), p. 45.

[3] van Doren, *The Idea of Progress*, pp. 26–32.

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This chapter does not attempt to retell the rich history of the idea of progress in the West. The aim, rather, is to describe and to analyze the specific role that the art of medicine has historically played in relation to broader cultural attachments to, or rejections of, the idea of progress. In this chapter, I link historical–philosophical engagements with the concept of progress with contemporary understandings of what it means to be a healthy/ill person and the aim and remit of medicine. Daniel Callahan observes that "modern people love progress, *particularly* medical progress" (my emphasis).[4] That progress is important for how contemporary Western societies conceive of the history of medicine is undisputed; in what follows I scrutinize the status of medicine for a survey history of the idea of progress itself.

Inevitably, the following historical sketch provides only partial answers. I rely on recent research into progress rhetoric and draw attention to historical transitions and caesurae in the intellectual history of progress that help illuminate how we got to where we are today. I shift rapidly between periods and contexts, and I refer primarily to philosophical engagements with the idea of progress, material in line with my academic interests. In addition, looking for a modern notion of progress in the past runs into both linguistic and conceptual obstacles. The term progress does not appear in all historical periods discussed in this chapter; in that case, what I examine are equivalents, namely alternative terms and notions that reflect a substantial agreement that significant improvements in the human situation have occurred. As we shall see, both the reduction of the word "progress" to betterment and the idea that there are necessary linkages between advances in different spheres of human life are present only toward the end of the period discussed here.

These limitations notwithstanding, the historical overview that follows is crucial for considering how answers to the question "what is medical progress?" have always been contested and historically contingent. As I show in what follows, improved medical care had very different meanings depending on the respective value ascribed to individual and societal well-being, attitudes toward death, and the role

[4] Daniel Callahan, "Finite Lives and Unlimited Medical Aspirations," in *The Contingent Nature of Life: Bioethics and the Limits of Human Existence*, ed. Marcus Düwell, Christoph Rehmann-Sutter, and Dietmar Mieth (New York: Springer, 2008), p. 164.

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of physicians. And within these shifting ideas of medical progress are numerous longer running threads that return in the post-World War II focus of Chapters 2–4.

1.1 Notions of Selfhood and Progress in Antiquity

To grasp what is distinctive about contemporary views of medical progress, we must put them in context, and ideas of progress dating back to classical times are an obvious point of reference. It is widely accepted in academic scholarship that various worldviews developed in ancient Greece are crucial for the history of the idea of progress itself. Classicist Ludwig Edelstein observes that ancient Greeks formulated most of the thoughts and sentiments that later generations went on to associate with progress.[5] There is no direct translation of the term progress in ancient Greece, though possible equivalents, such as ability awareness or consciousness of human capacity, have been proposed.[6] Already this etymological hurdle requires acknowledging that a modern idea of progress is an unfamiliar category in the ancient world. Greek thinkers had an entirely different horizon for considering historical change, one in which the future is not open-ended, but rather connected back to the present in a cyclical way. And yet a sense of novelty and progress did exist in ancient Greece; fifth-century Greeks were concerned not so much with continuous advances through time to a far-off future but rather with increases in knowledge and technical capabilities. Moreover, the Latin analog, *progressus*, of the Greek words most commonly used to describe progress, has entered all modern European languages.[7]

[5] Ludwig Edelstein, *The Idea of Progress in Classical Antiquity* (Baltimore: Johns Hopkins Press, 1967), p. xxxiii. See also W. Burkert, "Impact and Limits of the Idea of Progress in Antiquity," in *The Idea of Progress*, ed. Arnold Burgen, Peter McLaughlin, and Jürgen Mittelstrass (Berlin, New York: De Gruyter, 1997), pp. 19–46 and Armand d'Angour, *The Greeks and the New: Novelty in Ancient Greek Imagination and Experience* (Cambridge: Cambridge University Press, 2011).

[6] See Christian Meier, "Ein antikes Äquivalent des Fortschrittsgedankens: das 'Könnens-Bewusstsein' des 5. Jahrhunderts v. Chr.," *Historische Zeitschrift*, 226 (1) (1978), 265–316.

[7] Leonid Zhmud, *The Origin of the History of Science in Classical Antiquity*, trans. Alexander Chernoglazov (New York: De Gruyter, 2006), pp. 17–18.

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Greek thinkers viewed history as having both a mythical point of origin and being subject to recurrent cycles. But they drew attention to the ability of citizens to alter and improve their lives through individual will and actions. Historian F. J. Teggart argues that the poet Hesiod (c. 700 BCE) first articulated an idea of human progress, namely that a good life is attainable and that humans have the power to achieve such a life.[8] These views resounded in the works of philosopher Xenophanes (570–475 BCE) who portrayed the various steps by which humans acquired the knowledge and skills to make their life more comfortable: "Indeed not from the beginning did gods intimate all things to mortals, but as they search in time they discover better."[9] Edelstein, who also cites these words, refers to them as the first statement of the idea of progress in Western history.[10]

The Greek interest in progress was stimulated by what has been referred to as the triumphant experience of progress in the fifth and fourth centuries BCE.[11] Various contemporary accounts of these improvements consider *technê* – arts or skills including medicine – central for enabling human beings to overcome the tribulations of their natural situation. Medicine in the tradition associated with Hippocrates of Cos (c. 460–370 BCE) envisaged illness as having natural causes as opposed to being a result of, for example, religious sin or superstition, which is also the reason that Greek medicine has been described as closer to modern medicine than any other historical form.[12] But ancient notions of discovery and the idea of gradual, cumulative progress also influenced the aspirations of medicine at the time. Hippocratic physicians believed that their observations built on what was already known to add to a continually growing body of medical knowledge. The author of the Hippocratic Treatise, "Ancient Medicine," wrote as follows:

[8] Frederick J. Teggart, "The Argument of Hesiod's Works and Days," *Journal of the History of Ideas*, 8 (1) (1947), 77.
[9] Xenophanes, Fragment 18 in James H. Lesher, *Xenophanes of Colophon: Fragments* (Toronto: University of Toronto Press, 1992), p. 150.
[10] Edelstein, *The Idea of Progress*, p. 4. On various relevant points of translation, see Alexander Tulin, "Xenophanes Fr. 18 D.-K. and the Origins of the Idea of Progress," *Hermes*, 121 (2) (1993), 129–38.
[11] E. R. Dodds, *The Ancient Concept of Progress and Other Essays on Greek Literature and Belief* (Oxford: Clarendon Press, 1973), p. 6.
[12] Erwin H. Ackerknecht, *A Short History of Medicine* (Baltimore: Johns Hopkins University Press, 2016 [1955]), p. 36.

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[M]any and excellent discoveries [in medicine] have been made over a long period of time; and what remains will also be discovered, if an inquirer is competent and, being cognizant of the discoveries already made, conducts his researches beginning from these. […] [And since medicine] has been able by reasoning to rise from deep ignorance very close to perfect accuracy, I think we should admire its discoveries as the work, not of chance, but of scientific inquiry honestly and correctly conducted.[13]

Thus presented, knowledge growth is a cumulative process rooted in systematic observation, with the potential to uncover the mysteries of health in their entirety.[14] This worldview is evident in another Hippocratic essay on the art of medicine, which states that "to discover something among things unknown, which would be better if it were discovered rather than left undiscovered," is the proper ambition and task of intelligence.[15]

But this interest in discovery and the steady growth of knowledge occurred in the context of a broader worldview in which physicians approached health in relation to a structured, predetermined natural order influencing human life.[16] The humoral medicine practiced at the time considered disease the result of an imbalance in vital bodily fluids (e.g., blood/phlegm/yellow bile/black bile) that had different properties (hot–cold/moist–dry) and were themselves identified with natural forces (air/water/fire/earth) outside of a person.[17] Everyone's particular humoral makeup determines their character and dictates the medical treatment they need, that is, how to rebalance their unbalanced humors. For the next 2,000 years, humoral theory and its evacuation

[13] Hippocrates, *Ancient Medicine*, ed. and trans. Paul Potter, Loeb Classical Library 147 (Cambridge, MA: Harvard University Press, 2022), 2, p. 11; 12, p. 31.

[14] Ibid., 8, p. 23.

[15] Hippocrates, *The Art*, ed. and trans. Paul Potter, Loeb Classical Library 148 (Cambridge, MA: Harvard University Press, 2022), 1, p. 191.

[16] On the close connections between Greek medical thought and philosophy, see Philip J. van der Eijk, *Medicine and Philosophy in Classical Antiquity: Doctors and Philosophers on Nature, Soul, Health and Disease* (Cambridge: Cambridge University Press, 2005) and Elizabeth M. Craik, "Teleology in Hippocratic Texts: Clues to the Future?," in *Teleology in the Ancient World: Philosophical and Medical Approaches*, ed. Julius Rocca (Cambridge: Cambridge University Press, 2017), pp. 203–16.

[17] Vivian Nutton argues that this particular constellation of humors was merely one variation among others. See "The Fatal Embrace: Galen and the History of Ancient Medicine," *Science in Context*, 18 (1) (2005), 111–21.

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techniques – venesection, cupping, cathartics, emetics, sweating, and so on – provided an adaptable, personalized, and difficult-to-falsify framework for approaching disease. The medical art, then, was perceived as helping to restore a natural balance that had been disturbed, and in doing so imitating nature. Incremental improvements were framed in relation to the overarching powers of the natural world and the external limits to the progress of medicine, namely the health available to each sick person.

The notion of progress as occurring in relation to an external limitation influenced a shared sense of the aim and possibility of improvement in medicine. Aristotle, for example, in his ethics and politics develops the idea that each person has a unique state of health available to them.[18] For him, the medical doctor must act in a virtuous manner, namely react in a particular situation and context to bring the individual subject "to the highest perfection *of which it is capable*."[19] The final goal of health interventions therefore varies in different people according to their relative endowments, that is, gender, class – Aristotle considered women and slaves to have inferior constitutions – age, and so on, and the physician can never hope to achieve anything like "perfect health"; their objective, rather, must be the relative "golden mean" (*mesotês*) unique to each individual patient. Even if the art of medicine pursues health in an unlimited way, the end itself is a limit to medicine and other arts.[20] These views were closely aligned with Hippocratic thinking about progress, both in terms of the need for pragmatic action based on a specific sickness situation, the incremental nature of medical knowledge, and the inherent limits to medicine. For these reasons – and despite its depiction of medicine as having arrived at close to perfect accuracy – the Hippocratic idea of progress remained modest, and the limitations thereof are reflected in its canonical texts. Another passage on the art of medicine describes its inherent limits as follows:

[18] See Werner Jaeger, "Aristotle's Use of Medicine as Model of Method in His Ethics," *The Journal of Hellenic Studies*, 77 (1) (1957), 56.

[19] Theodore James Tracy, *Physiological Theory and the Doctrine of the Mean in Plato and Aristotle* (Berlin and Boston: De Gruyter, 2014 [1969]) pp. 317–18, citing *Nicomachean Ethics* 1333a29–30.

[20] See Aristotle, *Politics*, trans. H. Rackham, Loeb Classical Library (Cambridge, MA: Harvard University Press, 1932) book I, 1257b25–28, p. 45.

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For in areas where we are able to gain the mastery by means of their nature or the tools of the art, it is possible for us to be craftsmen, but not in others. Thus when a patient suffers some evil more powerful than the means of the medical art, it cannot be expected that this should be in some way overcome.[21]

1.2 Health in Christianity and the Middle Ages

Ancient notions of progress were adapted by successive thinkers in a way that ensured both continuities and distinct legacies for medical progress. Much of the Hippocratic legacy was conveyed to Rome via Galen (AD 129–c. 216), who saw himself as both extending and popularizing the legacy of the Hippocratics. Galen was an experimenter and dissector, who was heavily invested in physical and anatomical explanations. At the same time, he conceived of all structures in a teleological perspective and of individual bodily humors and body parts as subject to life and celestial forces. But the transmission of the Hippocratic–Galenic tradition to the medieval world was fragmented; scientific theories and classical sources flowed through different channels, involving a complex process of cross-pollination between different local knowledges, religious views, and experience accumulated through practice. In the turmoil following the disintegration of the Roman Empire, Persian and Arab scholars preserved, systematized, and developed the medical knowledge of ancient Greek authors and Galen himself. In Europe, health-related knowledge remained mostly in the possession of families, lay healers, and religious orders.

The advent of Christianity altered previous patterns of care and medicine's theoretical framework. In early Christian anthropology, human nature and the body are defined by sin: After the Fall, humankind relinquished immortality and physical perfection and was marked by ill health, aging, and death. Similar to Greek thought, the human person and the world are organized in light of the moral ends of the highest order of being, the spirit or God. Yet a notable difference is the depiction in Judeo-Christian thought of history as linear and tending toward redemption and salvation, for example, as articulated by Augustine of Hippo (354–430).[22] Not only was this philosophy of history profoundly

[21] Hippocrates, *The Art*, 8, p. 203.

[22] On Augustine's influence, see Theodor E. Mommsen, "St Augustine and the Christian Idea of Progress: The Background of the City of God," *Journal of the History of Ideas*, 2 (3) (1951), 354–56. But on the dangers of

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significant for conceptions of disease and their treatment, subsequent scholars have argued that much of the later history of the idea of progress amounts to a secularized version of Christian eschatology, reproduced as a general theme of historical development.[23]

From an etymological perspective, the modern concept of progress is indebted to several Latin terms and their connotations. The Latin *progressus*, the past participle of *progredi*, is derived from the preposition *pro*, which has the same Indo-European root as the ancient Greek, προ, and *gradi* – to step, walk – from the proto-Indo-European root **ghredh*, to walk, go.[24] But the nonspecific use of *pro* in Latin, used to describe categories of motion including forward, from a position in the rear, out, as well as down before, meant that a word like *progrediente* could have a pejorative meaning. For example, Augustine's statement *genere humano progrediente atque crescente* (the human race advanced and grew) is a negative judgment because it refers to the ill-advised blending of the kingdoms of God and that on earth.[25] Another important term circulating in Latin for later theories of progress was *profectus*, a noun from the past participle stem of *proficere*, with the meanings of progress, success, and profit.[26] *Profectus*, as Augustine used the term in the sense of making progress and doing good, was able to resolve all of the world's contradictions. This *profectus*, however, was presented as outside of time and did not involve change per se, but rather a deepening of religious experience.[27] *Progressus*, therefore, was an ambivalent expression, and relative progress was rather described as *profectus* with a specifically religious meaning, as in a recurring description by influential Christian theologians and scholastics, *profectus hominis donum*

the oversimplification of a Judeo-Christian directed view of time, see Arnaldo Momigliano, "Time in Ancient Historiography," *History and Theory*, 6 (1966), 1–23.

[23] See Karl Löwith, *Meaning and History: The Theological Implications of the Philosophy of History* (Chicago: University of Chicago Press, 1957).

[24] "Progress, n.," *Oxford English Dictionary*, Oxford University Press, March 2024, https://doi.org/10.1093/OED/3034306464 and Douglas Harper, "Etymology of Progress," *Online Etymology Dictionary*, www.etymonline.com/word/progress.

[25] Augustine, *The City of God against the Pagans*, vol. 4, book 15, XXII, Loeb Classical Library 414, trans. Philip Levine (Cambridge, MA: Harvard University Press, 1966), p. 543.

[26] "Profit, n.," *Oxford English Dictionary*, Oxford University Press, March 2024, https://doi.org/10.1093/OED/6630322299.

[27] Koselleck, "Fortschritt," p. 364.

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Dei est (man's progress is God's gift).[28] Medieval philosopher Peter Abelard (1079–1142), for example, discusses advancing by means of understanding (*intelligendo proficiens*), in the sense of improved ability to understand the scriptures.[29]

In medieval Europe dominated by the Church, individuals were encouraged to see earthly maladies as trivial compared to potential eternal rewards, and advances in the human arts and sciences played a secondary role. Prayer and humility were the most important means of addressing sickness, combined with local knowledge of healing plants and practices, including natural and magico-religious remedies of physicians and informal healers. The sequencing and weighting of these different approaches were crucial; a Christian could seek medical help while acknowledging their fundamental dependence on God, the ultimate healer.[30] This religious worldview informed the assumption that pain, as well as chronic and severe illness, was an opportunity for patiently accepting the will of God. In the case of physical torment, being able to deny one's own bodily needs and embrace suffering was what marked a person as able to identify with Christ, and therefore a higher order of being. Indeed, the markedly positive significance attributed to pain, for example, persisted until the early modern period; from the thirteenth to the fifteenth centuries, suffering was not to be dismissed or overcome, but rather felt with a deepening intensity.[31] To take one example, the death process of the archbishop of Canterbury, Hubert Walter, in 1205, was described as having been disrupted by a medical practitioner who favored physical remedies over spiritual ones.[32]

[28] See, for example, Isidorus (Isidore of Seville), *Sententiae*, 2, 5, *Monumenta*, http://monumenta.ch/latein/text.php?tabelle=Isidorus&rumpfid=Isidorus,%20Sententiae,%202,%20%20%20%205&level=4&domain=&lang=1&links=1&inframe=1&hide_apparatus=1.

[29] Tobias George, "From Reading to Understanding: Profectus in Abelard and Origen," in *Progress in Origen and the Origenian Tradition*, ed. Gaetano Lettieri, Maria Fallica, and Anders-Christian Jacobsen (Berlin: Peter Lang, 2020), p. 138.

[30] Gary B. Ferngren, *Medicine and Health Care in Early Christianity* (Baltimore: Johns Hopkins University Press, 2009), p. 61. A key biblical passage for such interpretations is Exodus 15:26, in which God says to Moses: "I am the Lord who heals you."

[31] Esther Cohen, *The Modulated Scream: Pain in Late Medieval Culture* (Chicago: University of Chicago Press, 2010), p. 4.

[32] Faye Getz, *Medicine in the English Middle Ages* (Princeton, NJ: Princeton University Press, 1999), p. 3 e passim.

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In such cases, the point was not to focus on treating and curing the body, but rather on renouncing it and preparing the voluntary acceptance of death, as prescribed by the eschatology of salvation.

In this context, medicine was primarily seen as "assisting God in his works," in Hugh of Saint Victor's (c. 1096–1141) famous formulation.[33] Christ's healing miracles played a crucial role in the Christian faith; *salus* is the term for both health and salvation in Latin. While one's own physical torment was an opportunity for penitence, Christianity's ethical commitment to caring for the sick – associated with charity and the selfless love of fellow Christians – as well as remedying the anguish of others resulted in a sustained interest in practical medicine. In general, in addition to being the fruit of reason and individual experience, medicine was seen as a God-given way to address the earthly burden of having a body.

Translations of the medical texts of classical antiquity set the stage for more detailed and critical expositions, for example, by Persian philosopher and physician Ibn Sina (Avicenna). His *Canon of Medicine* (1025), a medical encyclopedia that proposed a systematic arrangement of the contemporary medical knowledge of the Islamic world, and integrated Graeco-Roman, Persian, and Ayurvedic traditions, went on to have an unparalleled influence. Various factors, including a more significant Western presence in former Byzantium, and the translation from Arabic into Latin of ancient Greek and Islamic medical texts, provided the foundation for a new reception of Galenism in Western Europe. The medicine of the late Middle Ages was marked by the rediscovery of authoritative texts, which enabled practitioners to deal with diseases in new ways and try to identify new pathologies, as well as changing ideas about novelty and progress.[34]

These shifts can be seen in, among other things, debates as to the relative importance of theory or practice in medicine.[35] *Medicina*

[33] See "Introduction," *The Didascalicon of Hugh St Victor: A Medieval Guide to the Arts*, trans. and intro. Jerome Taylor (New York and London: Columbia University Press, 1961), p. 31.

[34] See Chiara Crisciani, "History, Novelty and Progress in Scholastic Medicine," *Osiris*, 6 (1990), 118–39, and A. G. Molland, "Medieval Ideas of Scientific Progress," *Journal of the History of Ideas*, 39 (1978), 577.

[35] See John M. Riddle, "Theory and Practice in Medieval Medicine" (1974) in *Viator: Medieval and Renaissance Studies*, vol. 5 (Berkeley: University of California Press, 2020), pp. 158–85.

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retained the connotation of a practical art gained through apprenticeship training and experience, while *Physica* is a natural philosophy associated with scholarly learning and reflections on the workings of the universe. The association between medicine and the term *physica* marked a change in priorities from the varieties and messiness of discovery and experience toward established learning. It also prompted a shift in the epistemological status of particular kinds of knowledge such as anatomy, physiology, and pathology because of their ability to be systematized. This association between medicine and particular kinds of science was a step with enormous consequences beyond the Middle Ages. It coincided with the solidification of the hierarchies between formally recognized (male) physicians who received academic training and other medical actors, including surgeons, barbers, dentists, and (female) midwives, who operated in local medical markets.

Christianity's transhistorical concept of progress, East–West translations and new knowledges, and the (re)valorization of theory – all these contributed to the sense that human beings can hope for a better life on earth and act so as to bring it about.[36] The idea of a progressive history gained particular impetus in northern France, where contemporary achievements in the arts and sciences were described as part of an overall forward movement; Bernard of Chartres (?-c. 1124), in a well-known formulation, referred to his contemporaries, "as dwarfs sitting on the shoulders of giants."[37] This implied that medicine could not improve merely by studying the teachings of the ancients but that it was necessary to supplement them. Henri de Mondeville (c. 1270–1325), a leading physician in his time, made this explicit when he wrote that: "It seems absurd and almost heretical to believe that sublime and glorious God would have given Galen a

[36] Stanley L. Jaki, "Medieval Christianity: Its Inventiveness in Technology and Science," in *Technology in the Western Political Tradition*, eds. Arthur M. Melzer, Jerry Weinberger, and M. Richard Zinman (Ithaca, NY and London: Cornell University Press, 1993), p. 46. See also Guy Beaujouan, "Histoire des sciences et philosophie au moyen âge: L'émergence médiévale de l'idée du progrès," *Bulletin de philosophie médiévale*, 30 (1988), 20–36, and Alistair C. Crombie, "Some Attitudes to Scientific Progress: Ancient, Medieval and Early Modern," *History of Science*, 13 (3) (1975), 213–30.

[37] See Robert K. Merton, *On the Shoulders of Giants: The Post-Italianate Edition* (Chicago: University of Chicago Press, 1993 [1965]).

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great mind with the condition that nobody after him would be able to discover anything new."[38] But in speaking directly to Galen, de Mondeville created a history to accompany his particular narrative, skipping over, for example, ways in which Persian and Arabic contributions permitted the rediscovery of ancient medical treatises. In part, at least, progress inhered in this process.

De Mondeville's valorization of cumulative progress and enthusiasm for novelty existed alongside the imperative for order and symmetry and the need to integrate new cases and innovations into existing rational systems. The belief in the progressive cumulation of knowledge and confidence in ancient authorities, therefore, coexisted in the sense that accumulation occurred within a closed, predetermined framework. Around 1100, astrology – which purported to fuse mathematics, astronomy, and the patient's personal humoral situation – became an indispensable aspect of medical practice and remained so until well into the seventeenth century. Scientific approaches – such as Roger Bacon's (c. 1219–1292) emphasis on knowledge acquired through experience and experiment – were integrated into broader overarching visions of microcosmic human beings in a macrocosmic world order.[39] To be sure, there was a dynamic relationship between the framework and the "new," but it did not involve radical change. This conceptual apparatus for progress, in which persons were seen as a reflection of the celestial cosmos on a miniature scale, and illness explained in reference to its divine cause, was disturbed by the later findings of Copernicus and Newton. The old world in which matter held a spiritual meaning was slowly replaced by one in which material existence became increasingly important in and of itself. As a result, sustained attention to the mechanistic workings of the human body became increasingly central to notions of medical progress.

[38] Henry de Mondeville, cited in Plinio Prioreschi, "The Idea of Scientific Progress in Antiquity and in the Middle Ages," *Vesalius*, 8 (1) (2002), 38.

[39] See Lynn White Jr., "Science and the Sense of Self: The Medieval Background of a Modern Confrontation," *Daedalus*, 107 (2) (1978), 57. On Bacon and medicine, see Faye Marie Getz, "Roger Bacon and Medicine: The Paradox of the Forbidden Fruit and the Secrets of Long Life," in *Roger Bacon and the Sciences: Commemorative Essays*, ed. Jeremiah Hackett (Leiden and New York: Brill, 1997), pp. 337–64.

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1.3 Progress and the Person in the Renaissance

In the accompanying conceptual revolution, medicine played an important metaphorical role. Historian Peter Gay describes how medicine was intimately linked to the scientific revolution from the beginning and how its proponents saw themselves as physicians, ministering to a sick civilization.[40] The sickness in question was the deference to antiquity associated with medieval thought and the belief – in the assessment of English philosopher Francis Bacon (1561–1626) – that an ambitious kind of progress was impossible.[41] Bacon's approach joined a utilitarian rationale that knowledge should be used for human good, with the joy inherent in discovering the truth. His attempt to undertake a total reconstruction of the foundations of all human knowledge was based on his disdain for his predecessors' attitudes to progress; the state of knowledge, he wrote, is "neither prosperous nor greatly advancing." Bacon did not break with a religious outlook so much as transform it; he depicts God as engaged in an "innocent and kindly" game of hide and seek with regard to knowledge and argues that if humans use their newly found knowledge "for the benefit and use of life," this will be sanctioned by God.[42] Bacon singled out medicine as a highly useful art that had much to gain by adopting the new empiricist scientific method and placed new emphasis on trying to understand how the body functioned.[43] In particular, because of its potential to affect human well-being, it was also crucial for human progress, understood as the advancement of God-sanctioned knowledge.[44]

[40] Peter Gay, *Enlightenment: An Interpretation*, vol. 2, *The Science of Freedom* (New York: Alfred A. Knopf, 1969), p. 13.

[41] Francis Bacon, *Novum Organum, or True Suggestions for the Interpretation of Nature*, ed. Joseph Devey (New York: P. F. Collier & Son, 1902), para 88, p. 67. On Bacon's commitment to progress more generally, see Robert K. Faulkner, *Francis Bacon and the Project of Progress* (Lanham: Rowman & Littlefield, 1993).

[42] Francis Bacon, "Preface to the Instauratio Magna," in *Prefaces and Prologues*, vol. 39, the Harvard Classics (New York: P. F. Collier & Son, 1909–14), available at www.bartleby.com/39/20.html.

[43] See Bacon's *The Advancement of Learning*, ed., William Aldis Wright (Oxford: Clarendon Press, 1869 [1605]), and his island utopia, *New Atlantis* (1626), in which he emphasized the importance of good health and the ways in which medical advances could improve human well-being.

[44] Marta Fattori, "*Prolongatio Vitae* and *Euthanasia* in Francis Bacon," in *Francis Bacon on Motion and Power*, eds. Guido Giglioni et al. (Switzerland: Springer, 2016), p. 124.

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René Descartes (1596–1650) shared Bacon's desire to recast the conceptual foundations of progress, and his methodological skepticism, which separated an immaterial mind and a body that has a different order of existence, further challenged the integrated worldview of the Middle Ages.[45] Descartes himself was not a crude materialist, but in describing the body as made up of component parts – bones, nerves, muscles, veins, blood, and the like – independent of the mind, his work inspired reductionist currents of thought that sought to locate health squarely in the physical body.[46] Cartesian dualism, historian Klaus Bergdolt argues, meant in fact the secularization of the body and was reclaimed by those who sought to put physical and mechanical interventions at the center of theories of medical advance.[47] Descartes himself saw medicine as a prime field that could benefit from his method. He referred to health as "the first good [*le premier bien*] and the foundation of all other goods in this life" and argued that "if it were possible to find some means of rendering men wiser and more capable than hitherto, I believe we must seek it in medicine."[48] Concomitantly, his expectations of the progress of medical science were vigorously optimistic:

> What we know is almost nothing compared to what remains to be known; we could be freed from innumerable maladies, of body and mind alike, and perhaps even from the infirmities of old age, if we had sufficient knowledge of their causes and of all the remedies which nature has given us.[49]

Based on such statements, Descartes has been interpreted posthumously as aspiring to nothing less than to use medicine to provide a solution to the human condition.

Bacon's and Descartes's ideas were widely discussed, but there was no single way in which the attitudes to progress they articulated

[45] Among the extensive literature on Descartes and medicine, see Gerrit Arie Lindeboom, *Descartes and Medicine* (Amsterdam: Rodopi, 1979), *Descartes and Medicine: Problems, Responses and Survival of a Cartesian Discipline*, ed. Fabrizio Baldassarri (Turnhout, Belgium: Brepols, 2023), and *Embodiment: A History*, ed. Justin E. H. Smith (Oxford: Oxford University Press, 2017).

[46] See William Barrett, *Death of the Soul. Philosophical Thought from Descartes to the Computer* (Oxford: Oxford University Press, 1987).

[47] Klaus Bergdolt, *Well-being: A Cultural History of Healthy Living* (Cambridge: Polity Press, 2009), p. 202.

[48] Descartes, *Discours de la méthode pour bien conduire sa raison et chercher la vérité dans les sciences* (Paris: Librairie Hachette, 1876 [1637]), p. 65.

[49] Ibid.

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were integrated into medicine. The iatrochemical ideas of the Swiss physician Paracelsus (1493–1541), the insights of anatomist Andreas Vesalius (1514–1564), the description of blood circulation by William Harvey (1578–1657), and the mechanical worldview of the iatrophysicists of the seventeenth century – to name but a few – blended with Cartesian/Baconian theories, the humoral framework, and religious beliefs in complex ways. The medical knowledge of the ancients, and Hippocrates in particular, continued to be valorized, and medical progress was portrayed as the rediscovery of the past.[50] This tendency to view Hippocrates as the origin and ultimate goal of highly divergent concepts of medical progress was strengthened by both cyclical understandings of history and theories of degeneration. Hippocrates could be portrayed as the "dawn" of medical art, and the medical Renaissance a new dawn, or, in a theory of permanent degeneration, as the only dawn in the history of medicine. In England, for example, renowned physician Thomas Sydenham (1624–1689), a follower of Francis Bacon known as the "English Hippocrates," stressed the importance of on-the-ground experience and that his role lay in assisting nature. Yet while Sydenham operated in a humoral framework, and saw himself as contributing to and maintaining Hippocratism, he also laid the foundation for going beyond Hippocrates by suggesting that medicine should study not so much patients and their illnesses, but rather diseases as phenomena with an existence separate from the persons who suffered from them.

In general, from the seventeenth century onward, suffering was demythologized, and no longer considered a sign of communion with Christ.[51] The rise of Protestantism, which repudiated magical healing and religious practices allowed by the medieval Church, such as visits to sacred shrines and the use of holy relics, contributed to the decline of magical practices in medicine.[52] Yet spiritual worldviews, and the fact that salvation was anchored in Christ, continued to inform the meanings ascribed to suffering and to place them in a time frame that extended beyond punctual episodes of illness. For example,

[50] See Thomas Rütten, "Hippocrates and the Construction of 'Progress' in Sixteenth- and Seventeenth-Century Medicine," in *Reinventing Hippocrates* (London and New York: Routledge, 2001), pp. 37–58.

[51] Bergdolt, *Wellbeing*, p. 204.

[52] See Keith Thomas, *Religion and the Decline of Magic: Studies in Popular Beliefs in Sixteenth and Seventeenth Century England* (New York: Penguin Books, 1982).

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historian Mary Fissell chronicled how in early modern England men and women attributed acute afflictions to incidents or sins committed years earlier.[53] For these patients, understanding the meanings of illness and health – which were linked to a divine plan and their personal religious beliefs – was more important than the cure or the curer and emphatically more relevant than the new experimental science.

New scientific insights, therefore, coexisted with traditional Hippocratic remedies, and the overall view of the body as a "divine machine," as Leibniz (1646–1716) had put it in his *Monadology* (1714).[54] Slowly, the religious meanings of *profectus* edged closer to a form of world-historical progress, without taking on all of the connotations that it would later on.[55] The dynamic process whereby ideas of progress influenced and reinforced medical practices was particularly visible in the so-called Quarrel of Ancients and Moderns in the latter part of the seventeenth century. This debate opposed those who believed that nothing in modern times reached the heights of antiquity and those who argued that modernity could be superior to classical times. For moderns, it became highly desirable to direct their efforts toward a goal located in the future, and they also enabled the articulation of what Nisbet calls the first secular statement of the idea of progress in modern Europe.[56] And this new idea of progress gave medicine a particular status.

1.4 Medical Progress, Self, and Enlightenment

It was during the Enlightenment that a mindset that no longer associated improvement with the recovery of the past, but rather with a

[53] Mary E. Fissell, *Patients, Power, and the Poor in Eighteenth-Century Bristol* (Cambridge: Cambridge University Press, 1991), pp. 34–35. See also Olivia Weisser, *Ill Composed: Sickness, Gender and Belief in Early Modern England* (New Haven, CT: Yale University Press, 2015).

[54] Leibniz, *Monadology* (1714), para 64, in Lloyd Strickland, *Leibniz's Monadology: A New Translation and Guide* (Edinburgh: Edinburgh University Press, 2014), p. 27.

[55] Koselleck, "Fortschritt," p. 368.

[56] Robert Nisbet, "Idea of Progress: A Bibliographical Essay," p. 17. See also Hans Robert Jauss, "Ursprung und Bedeutung der Fortschrittsidee in der 'Querelle des Anciens et des Modernes,'" *Die Philosophie und die Frage nach dem Fortschritt*, eds. Helmut Kuhn and Franz Wiedmann (Munich: Anton Pustet, 1964), pp. 51–72.

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future goal orienting earthly life, really took hold. The most ardent proponents of the notion of progress during that era – such as Abbé de Saint-Pierre (1658–1743) and Turgot (1727–1781) – sought to popularize a view whereby human societies pass through stages, from hunting, pastoral life, and agriculture, becoming ever more perfect, as evinced by the cultural and material accomplishments of contemporary European society.[57] Marquis de Condorcet (1743–1794), whose work is generally referred to as the zenith of the idea of progress, adopted Turgot's idea of the law of progress enabled by reason and claimed that the progress of the sciences and the perfection (*perfectibilité*) of human faculties could proceed without limits.[58] Not only did key Enlightenment figures portray progress as expanding potentially infinitely but also as a harmonious whole, whereby progress in different spheres of life, including science, politics, economics, and morality, is mutually reinforcing.[59] The comprehensiveness of this view of history as proceeding upward in a same direction, and the interdependence between different spheres, meant that individual instances of progress were no longer viewed as ambivalent, but rather as part of a broad historical movement in a forward direction. It was also around this time that an important semantic shift took place and the spiritual *profectus* was replaced or superseded by the secular *progressus* and its derivatives.[60] From then on, progress was largely reduced to the notion of betterment; historian Christian Meier writes that "no progression toward something bad could be progress."[61]

From these premises, the potential of medicine – a field that was starting to be considered foundational for other forms of knowledge

[57] See Turgot, *Discours sur les progrès successifs de l'esprit humain*, (1750), *Institut Coppet*, www.institutcoppet.org/turgot-discours-sur-les-progres-successifs-de-lesprit-humain-1750/. On Turgot, see Jean-Pierre Poirier, *Turgot: Laissez-faire et progrès social* (Paris: Perrin, 1999) and Robert Nisbet, "Turgot and the Contexts of Progress," *Proceedings of the American Philosophical Society*, 119 (3) (1975), 214–22.

[58] See Condorcet's *Esquisse d'un tableau historique des progrès de l'esprit humain* (Paris: Masson et Fils, 1822 [1795]).

[59] See Nannerl O. Keohane, "The Enlightenment Idea of Progress Revisited," in *Progress and Its Discontents*, eds. Gabriel A. Almond, Marvin Chodorow, and Roy Harvey Pearce (Berkeley: University of California Press, 1982), pp. 21–40.

[60] Koselleck, "Fortschritt," p. 371.

[61] Christian Meier, *The Greek Discovery of Politics*, trans. David McLintock (Cambridge, MA: Harvard University Press, 1990), p. 191.

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about persons and societies – was framed as transformative. Diderot (1712–1784), for example, wrote that it "is very hard to think cogently about metaphysics or ethics without being an anatomist, a naturalist, a physiologist, and a physician."[62] Medicine occupied a crucial place in the nascent discipline of the philosophy of history, and the optimism of the philosophes was reflected in histories of medicine that presented present-day practices as the embodiment of progress; Daniel Le Clerc's *Histoire de la médecine, où l'on voit l'origine et les progrès de cet art, de siècle en siècle* (*History of Medicine, Where We See the Origin and Progress of This Art, from Century to Century* [1696]) was a case in point.[63] For the philosophes, medicine continued to play an important symbolic role; its capacity to wage a campaign against disease was closely associated with the Enlightenment questioning of superstition and religion. Historian Peter Gay notes that Christianity was portrayed as an "infection," a "germ," and a dangerous source of contagion. In Enlightenment rhetoric, both the attempt to control nature and question revealed religion were framed as a struggle for health.[64]

Condorcet, in particular, had an exuberant faith in medicine as a means of human betterment and ascribed it a prominent place in his vision of how nature and earthly life are proceeding together toward truth, happiness, and virtue. He described reason as driving the potentially limitless nature of medical progress and concluded that it would be able to eliminate disease, and perhaps even death. He argues that:

> the progress of protective medicine (*médecine préservatrice*), which will become more efficacious with the progress of reason and of the social order, will mean the end of infectious and hereditary diseases and illnesses brought on by climate, food, or working conditions. It is reasonable to hope that all other disease may likewise disappear as their distant causes are discovered. Would it be absurd, then, to suppose that this perfection of the human species should be seen as indefinite progress; that the day will come when death

[62] Cited in Peter Gay, *The Enlightenment*, vol. 2, p. 15.

[63] (The Hague: Isaac van der Kloot, 1729 [1696]). Similar works include John Friend, *The History of Physic from the Time of Galen to the Beginning of the Sixteenth Century* (London: J. Walthoe, 1725) and Robert James, *A Medicinal Dictionary Including Physic, Surgery, Anatomy, Chemistry and Botany in All Their Branches Relative to Medicine* (London: T. Osborne, 1743), which includes a Preface "tracing the Progress of Physic."

[64] Peter Gay, *The Enlightenment: An Interpretation*, vol. 2, p. 16.

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will be only due to rare accidents or to the ever-slower decay of vital forces, and that ultimately the average span between birth and decay will have no assignable value?[65]

This passage, written in 1793 as he was hiding from the Jacobins and two years before his untimely death in prison, exemplifies the divergence between the expectations placed on historical progress and the realities of flesh-and-blood life on earth.

In contrast to naïvely confident views of progress, or theories that human life is directionless, Immanuel Kant developed a particularly influential theory of progress grounded in a teleological conception of the universe.[66] Kant depicts nature as purposive and goal-directed and thought of this as a condition for the actions of moral agents to have meaning. For Kant, progress is conceived as an answer to the question "What can I hope for?." In developing the notion that we have a moral duty to hope for progress, he rejected sanguine hopes about the history of humanity proceeding in the direction of progress. In fact, he wants to show that the problem of progress cannot be resolved directly through experience and that knowledge of the development of history based on past facts is impossible.[67] The irrelevance of historical evidence for progress is justified by the fact that the hope for improvement, which every person feels, is enough to ensure progress.[68] Per Kant, we have an inborn duty to assume that progress is possible, even if history might suggest otherwise.

Beyond his account of hope, the significance of Kant's philosophy for the idea of progress further lies in his association between the human

[65] *Esquisse d'un tableau historique des progrès de l'esprit humain*, pp. 304–5.

[66] On Kant's different explanations for why we have the right to understand human history as a purpose-directed process of progress, see Axel Honneth, "The Irreducibility of Progress: Kant's Account of the Relationship between Morality and History," *Critical Horizons*, 8 (1) (2007), 1–17.

[67] Immanuel Kant, "An Old Question Raised Again: Is the Human Race Constantly Progressing," in *Religion and Rational Theology*, trans. and ed. Allen W. Wood and George di Giovanni (Cambridge: Cambridge University Press, 2012), p. 300. See also Pauline Kleingeld, "Kant, History and the Idea of Moral Development," *History of Philosophy Quarterly*, 16 (1) 1999, 59.

[68] See Kant, "On the Common Saying: 'This May Be True in Theory, but It Does Not Apply in Practice," in *Kant, Political Writings*, ed. and intro. Hans Reiss, trans. H. B. Nisbet (Cambridge: Cambridge University Press, 1991 [1970]), 2nd enlarged ed., pp. 88–89. See Sofie Møller, "Kant on Non-Linear Progress," *Ethics & Politics*, 23 (2), 127–47.

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capacities for reason, morality, and freedom. In Kant's view, the human capacity for reason is what enables us to become conscious of our moral duty and of absolute principles of morality. Human will, thus conceived, is autonomous because it is capable of self-determination according to this freely chosen moral law discoverable by reason. Moral autonomy, in Kant's view, implies the ability to abstract from one's own, biased point of view – including emotions and inclinations – and to subject oneself to universalizable moral principles. This includes the ability to rationally detach oneself from an ailing body and identify principles that transcend an individual perspective. Kant argued that, since purposiveness in nature requires us to develop our reason and free will, it therefore helps human beings realize their freedom. His view of flawed, mutually antagonistic moral agents, combined with the existence of autonomy as a normative ideal, meant that Kant understood the human condition as a process of "incessant laboring and becoming," through which we try to improve ourselves.[69]

The intellectual history of medicine was profoundly influenced by these philosophical developments. For example, the text by German physician Johann Karl Osterhausen (1765–1839) *On Medical Enlightenment* (*Über medizinische Aufklärung* [1789]) – a direct reference to Immanuel Kant's *What Is Enlightenment?* (*Was ist Aufklärung*? [1784]) – describes medical Enlightenment as man's emergence "from his ignorance [*Unwissenheit*] in all matters concerning his physical well-being." And he advocated a physician-led movement designed to eradicate "errors, miracle cures, occult remedies and other silly tricks [*Alfanzereien*]" that he associated with previous medical regimes.[70] The belief in the possibility of progress informed various practices of the time, including the establishment of hospitals and a new interest in the collection of vital statistics (fertility, death, height, weight, criminal record, etc.) of the population as part of the nascent discipline of social statistics and analysis of disease patterns.[71]

[69] Immanuel Kant, *Religion within the Boundaries of Mere Reason and Other Writings*, ed. and trans. A. W. Wood and G. di Giovanni, intro. R. M. Adams, (Cambridge: Cambridge University Press, 1998 [1793]), 6:48.

[70] *Über medizinische Aufklärung* (Zürich: Heinrich Gessner, 1798), cited in Klaus Bergdolt, *Das Gewissen der Medizin: Ärztliche Moral von der Antike bis Heute* (Munich: C. H. Beck, 2004), p. 198.

[71] William Bynum, *The History of Medicine: A Very Short Introduction* (Oxford: Oxford University Press, 2008), p. 42. See also Ludmilla Jordanova,

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The link Condorcet articulated between political and medical optimism was particularly evident in the American colonies and the new republic where the attachment to the idea of progress was widely shared. The expansive spaces of the American continent were themselves seen as able to provide new and highly valuable sources of medical knowledge. Inventor and statesman Benjamin Franklin (1706–1790) marveled in 1780 at rapid scientific progress and speculated that it was impossible to know where the powers of man over nature would stop. All diseases, he wrote, "may by sure means be prevented or cured, not excepting even that of old age, and our lives lengthened at pleasure even beyond the antediluvian standard."[72] Breaking with previous limits – either natural or God-given – was sometimes justified with reference to the philosophy of Adam Smith and Smith's claim that bodily desires were not evidence of decadence or moral degeneration and to be resisted, but rather could be harnessed for progress.[73] In contrast to Christian philosophers, who placed moral and social value on limiting rather than multiplying needs and desires, the modern conception of progress valorized material comforts and the creative ingenuity required to produce them. These achievements are not only evidence of human beings' godlike powers but also what assure their salvation. According to Christopher Lasch, this is a key moment in the history of progress since the modern conception of progress depends on a positive assessment of the proliferation of wants.[74]

But it would be unwarranted to attribute a simplistic optimism about progress to the Enlightenment era in general. Romantic thinkers, for example, were concerned that Descartes' reduction of the body to its component parts irrevocably damaged the ability of medicine to treat and understand the whole person. They drew attention to what they perceived as a spiritual vacuum in medicine and tended to view the self in terms of the multitude of relations it entertains with others. Johann Gottfried von Herder (1744–1803), for one, mocked the philosophers

"Reflections on Medical Reform: Cabanis' Coup d'Oeuil," in *Medicine in the Enlightenment*, ed. Roy Porter (Amsterdam: Rodopi, 1995), pp. 166–80.

[72] (modernized spelling) "From Benjamin Franklin to Joseph Priestley, February 8, 1780," *Founders Online*, National Archives, https://founders.archives.gov/documents/Franklin/01–31–02-0325.

[73] Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, ed. S. M Soares (Amsterdam: MetaLibri, 2007 [1776]), p. 133.

[74] Lasch, *The True and Only Heaven*, p. 45.

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who had unguarded, simplistic ideas of progress and favored instead a vision of social life as an organic whole. He stated "if only it were true that everything proceeded prettily in a straight line and that every succeeding human being and every succeeding race got perfected according to his [the philosopher's] ideal in a beautiful progress."[75] He drew attention to Swiss physician Albrecht von Haller's conception of irritability (*Irritabilität* or *Erregbarkeit*) and sensibility (*Sensibilität* or *Empfindlichkeit*) as important concepts for determining health.[76] Jean-Jacques Rousseau (1712–1778), who was associated with the emerging cult of feelings, was sharply critical of future-oriented views of progress, contrasting the present with a state of nature where there was no need for medicines, and even less for physicians.[77] Rousseau embodies the view that nature is what conserves health, while sickness arises because of the corrupting influence of society. Various lifestyle choices – including urban living and book learning – associated with the Enlightenment itself were seen as creating nervous, hysterical hypochondriacs. Meanwhile, Rousseau's own views on health have been an inspiration for modern "naturist" medicine, from hydrotherapy to dietetics, which tends to associate progress with the rediscovery of natural rhythms.[78]

As developed in the eighteenth century, the modern concept of progress understands history itself as the embodiment of progress. At the same time, this approach creates a disjunct between lived, historical experience and the potentially limitless horizon of expectations for progress. It should come as no surprise, therefore, that the theories of progress discussed in the Enlightenment era were articulated in the context

[75] Cited in Slaboch, *A Road to Nowhere*, p. 14.

[76] See Frank W. Stahnisch "The Tertium Comparationis of the Elementa Physiologiae: Johann Gottfried von Herder's Conception of 'Tears' as Mediators between the Sublime and the Actual Bodily Physiology," in *Blood, Sweat and Tears: The Changing Concepts of Physiology from Antiquity into Early Modern Europe*, eds. Manfred Horstmanshoff, Helen King, and Claus Zittel (Intersections – Interdisciplinary Studies in Early Modern Culture, vol. 25) (Leiden and Boston: Brill, 2012), pp. 609–10.

[77] J. J. Rousseau, "Discours sur l'origine et les fondements de l'inégalité parmi les hommes," in Rousseau, *Discours sur l'inégalité parmi les hommes; Contrat social; Discours sur l'économie politique; Projet de paix perpétuelle* (Amsterdam: Marc-Michel Rey, 1776), p. 15.

[78] See Serge Thériault, *Jean-Jacques Rousseau et la médecine naturelle* (Montreal: Les Editions Univers, 1979) and Philippe Casassus, "Les idées de Jean-Jacques Rousseau sur la médecine," *Médecine*, 13 (7) (2017), 330–34.

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of very high rates of sickness and mortality. Only smallpox was being treated somewhat successfully by inoculation, and various diseases such as rickets and tuberculosis contributed to high levels of sickness overall. It is reasonable to speculate that a sick person who consulted a physician in the eighteenth century had a worse chance of surviving than one who did not; in Enlightenment society, it was justified to be more concerned about the dangers of medical practice for patients than its benefits. Voltaire (1694–1722), for example, wrote that regimen is better than medicine, and that for a very long time, ninety-eight out of a hundred doctors were charlatans.[79] The disconnect, therefore, between visions of open-ended progress and the realities of medical practice was huge. But at the same time, these attitudes to progress provided momentum for the idea of large-scale historical transformation.

1.5 Nineteenth Century: Medical Progress and Civilization

The commitment to elaborating philosophical frameworks for progress continued unabated during the nineteenth century and witnessed the development of numerous social philosophies that aimed to become the "science" of progress.[80] Auguste Comte (1798–1857), for one, developed a schema of historical progress according to which society moved through theological, metaphysical, and positive stages of world history; in the positive phase, it is possible to discern the scientific laws of historical and societal development. Comte used various biological and medical analogies to describe the task of enlightened thought in the positive age; he considered society an organism and thought that if its equilibrium was disrupted, it became sick. Positive philosophers, therefore, were physicians able to restore society's health.[81]

[79] He did however refer to surgery as the "most useful of arts," "having undergone such swift and renown progress this century." Voltaire, "Histoire du Siècle de Louis XIV," ed. Gustave Masson and G. W. Prothero (Cambridge: Cambridge University Press, 1882), p. 124. Cited in J. D. Rolleston, "Voltaire and Medicine," *Proceedings of the Royal Society of Medicine*, 19 (1926), 25.

[80] See Piotr Sztompka, "Agency and Progress: The Idea of Progress and Changing Theories of Change," in *Rethinking Progress: Movements, Forces, and Ideas at the End of the Twentieth Century*, eds. Jeffrey C. Alexander and Piotr Sztompka (London: Routledge, 1990), p. 247.

[81] See Mary Pickering, *Auguste Comte: An Intellectual Biography*, vol. 3 (Cambridge: Cambridge University Press, 2009), p. 542.

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By emphasizing the connection between scientific progress and social life, Comte laid the grounds for other theories that sought to link medical progress and the life of social collectivities.

Darwin's *On the Origin of Species*, published in 1859, further developed the possibility that personal growth is linked to progressive developments in nature. Darwin left open the possibility for interpreting his theory as progress, writing that "as natural selection works solely by and for the good of each being, all corporeal and mental environments will tend to progress toward perfection."[82] In his *Descent of Man* (1871), he made the link with medicine more explicit and, using the racialized discourses of the nineteenth century, articulated the widespread concern over the perceived degeneration of the human stock, and the ways in which improved medical interventions aggravate this. He wrote:

> [w]ith savages, the weak in body or mind are soon eliminated; and those that survive commonly exhibit a vigorous state of health. We civilized men, on the other hand, do our utmost to check the process of elimination; we build asylums for the imbecile, the maimed, and the sick; and our medical men exert their utmost skill to save the life of everyone to the last moment. There is reason to believe that vaccination has preserved thousands, who from a weak constitution would formerly have succumbed to small-pox. Thus the weak members of civilized societies propagate their kind. […] It is surprising how soon a want of care, or care wrongly directed, leads to the degeneration of a domestic race […].[83]

Darwin demurred from unpacking the implications of these ideas in medicine; he argued that intentionally neglecting the weak and helpless would be profoundly evil and that sympathy for the suffering of the weak is the noblest part of human nature. But various subsequent iterations of Darwinism invoked the well-being of the social organism to justify why potentially successful medical techniques should not be applied to individual members of society with existing conditions that made them "deficient."

The term "survival of the fittest" was associated with political and social philosopher Herbert Spencer (1820–1903) who, drawing on

[82] Charles Darwin, *On the Origin of Species* (Minneapolis: Lerner, 2008 [1859]), p. 455.
[83] Charles Darwin, *The Descent of Man*, vol. 1 (New York: American Home Library, 1902 [1871]), pp. 180–81.

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Comte, argued that organic progress is effectively the law of social progress.[84] While in the past, natural selection had performed the task of weeding out the weaker, "unfit" members of the population, modern medicine and welfare were now doing the opposite. In time, "Social Darwinism," an umbrella term referring to the application of natural selection to other areas of human life, became closely related to negative eugenics, a term referring to medical measures aimed at reducing or hindering the reproduction of all those deemed unworthy – including the "feeble minded," "racially inferior," criminals, mentally and chronically ill, or simply impoverished. Negative eugenics, as Peter Gluckman and others have shown, were seen as a modern, technological, and scientifically justified solution to a social problem. If science provided the tools to improve animal or plant breeds through selection, reproduction was seen as a natural extension of such "progress."[85]

In this way, racism, colonialism, and the exclusion of entire categories of people were bound up with the commitment to the idea and practice of medical progress.[86] Improved medical techniques were explicitly associated with issues of power and control, especially of marginalized groups. The first uses of various medical devices, such as the speculum, for example, were justified in reference to and tested on the most powerless members of society. The insistence on the physical insensitivity of slaves and their purported high tolerance for pain underpinned various instances whereby intrusive forms of examination were used in the name of medical advance.[87] The experience of prostitutes in France, Germany, and Britain, where the speculum was used as an instrument of surveillance by the medical police, further highlights how an intrusion into the body in the name of more accurate examination techniques and medical advances was a profoundly

[84] Herbert Spencer, "Progress: Its Law and Cause" in *Essays: Scientific, Political and Speculative* (London: Williams and Norgate, 1891), vol. 1, p. 10.
[85] See Peter Gluckman et al., *Principles of Evolutionary Medicine* (Oxford: Oxford University Press, 2016), pp. 332–35.
[86] See Robert A. Williams, *Savage Anxieties: The Invention of Western Civilization* (New York: Palgrave, 2012).
[87] Joanna Bourke, "Pain Sensitivity: An Unnatural History from 1800 to 1965," *Journal of Medical Humanities*, 35 (3) (2014), 301–19 and Deirdre Cooper Owens, *Medical Bondage: Race, Gender, and the Origins of American Gynecology* (Atlanta: University of Georgia Press, 2017).

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political act.[88] Knowledge gained in controlling infectious disease could be used to control and even eliminate populations who lacked that knowledge. In such cases, those with access to medical advances purposefully withheld and/or selectively wielded medical knowledge in the name of civilizational "progress."[89]

At the time, most theoreticians of progress were utilitarian in that they were convinced that the health of the community took precedence over the health of individuals. But a broad commitment to Comte's laws of historical progress resulted in no single vision of medical progress. In Germany, for example, Comte's ideas influenced German pathologist and statesman Rudolf Virchow (1821–1902), a founder of scientific biomedicine. Virchow was both ambitious and optimistic about the powers of science, believing that his century embodied progress toward the scientific age.[90] Yet he also drew attention to the connection between the origins of disease and social conditions that could be addressed and remedied. In contrast to the eugenicist ideas associated with Social Darwinism, he called for moral and sociopolitical progress, which he associated with the principle of equal entitlement and public healthcare.[91] In the context of social legislation and the rise of welfare associations, physicians were portrayed as bearing considerable responsibility for addressing social questions.

These ideas about progress interacted with contemporary scientific developments, such as the disease theory of medicine, which developed in France in the first decades of the nineteenth century, and formalized what Sydenham had intimated, namely that each sick patient is affected by a unique disease phenomenon, and the task of the clinician is to recognize and treat the disease. Knud Faber, in an early

[88] See Ornella Moscucci, *The Science of Woman: Gynaecology and Gender in England, 1800–1929* (Cambridge: Cambridge University Press, 1990).

[89] See Gary Geddes, *Medicine Unbundled: A Journey through the Minefields of Indigenous Health Care* (Victoria: Heritage House, 2017), James Daschuk, *Clearing the Plains: Disease, Politics of Starvation, and the Loss of Indigenous Life* (Regina: University of Regina Press, 2014), and Samir Shaheen-Hussein, *Fighting for a Hand to Hold: Confronting Medical Colonialism against Indigenous Children in Canada* (Montreal: McGill-Queen's University Press, 2020).

[90] Virchow, "Lernen und Forschen: Rede beim Antritt des Rectorats an der Friedrich-Wilhelms-Universität zu Berlin," October 15, 1892 (Berlin: Angust Hirschwald, 1892).

[91] See his *Collected Essays on Public Health and Epidemiology* (Cambridge: Science History Publications, 1985 [1848]), p. 14 e passim.

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study of nosography, disease classification, describes its significance in terms of how clinical medicine is, therefore, at work like the other natural sciences "at the great task of attempting to understand natural phenomena in an attempt to control them."[92] As a rule, the introduction of new techniques and theories was not perceived at the time as a simple triumph of progress over reaction, but rather as mixed blessings with drawbacks. Anesthesia, for example, was introduced in the 1840s, and with anesthesia, "the patient-as-a-person" was no longer present during an operation.[93] Robert Koch's (1843–1910) insights into how particular germs could cause disease, Joseph Lister's (1827–1912) use of antisepsis, and Louis Pasteur's (1822–1895) research on micro-organisms have been interpreted as harbingers of progress. In reality, all these had varying degrees of acceptance and effectiveness and existed in complicated relationships between the laboratory and medical practice.[94] The recognition of the mental dimensions of health and sickness and the valorization of prior experience of illness for healthy living continued to be widespread. Friedrich Nietzsche (1844–1955), for example, emphasized the limits of scientific knowledge and the ability to cope with suffering and illness as a key part of human life.[95] The nineteenth century also witnessed significant medical nihilism and denials of the effectiveness of medical treatments.[96] But it was also during these decades that traditional therapies associated with treating unbalanced humors started being questioned more actively. In 1833, a satirical lithograph by Honoré Daumier showed a doctor seated at his desk under a bust of Hippocrates and asking himself: "Why the devil do all my patients go off like this [in coffins] … I do my best by bleeding them, purging them, drugging them … I just don't

[92] Knud Faber, *Nosography*, 2nd ed., rev. (New York: Haber, 1930), 210ff, cited in Eric Cassell, *The Nature of Suffering and the Goals of Medicine* (Oxford: Oxford University Press, 2004), p. 6.

[93] See Martin A. Pernick, *A Calculus of Suffering: Pain, Professionalism and Anesthesia in Nineteenth-Century America* (New York: Columbia University Press, 1985).

[94] See, among others, *Medical Innovations in Historical Perspective*, ed. John V. Pickstone (New York: St Martin's Press, 1992) and Michael Worboys, *Spreading Germs: Disease Theories and Medical Practice* (Cambridge: Cambridge University Press, 2000).

[95] See his *The Birth of Tragedy*, trans. and intro. Douglas Smith (Oxford: Oxford University Press, 2008 [1872]).

[96] Jacob Stegenga, *Medical Nihilism* (Oxford: Oxford University Press, 2018), pp. 11–12.

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understand it!"[97] Such depictions exemplify the change whereby doctors began fundamentally to challenge conventional Hippocratic remedies, thereby also contributing to new ideologies of medical progress.

1.6 Early Twentieth-Century Visions of Progress

In his comprehensive study, Robert Nisbet observes that there is no want of declarations by historians and intellectuals that the idea of progress "died with Herbert Spencer," "ended with the nineteenth century," and "was banished forever by World War I."[98] Yet writings from the time show that an enthusiastic belief in progress remained viable, paradoxically in light of World War I. In a period marked by military tensions and confrontations, the ethos of progress became bound up with engineering advances necessary to defend national priorities, as well as related corporate interests. During the Great Depression, this type of commitment to a business–military–engineering model of progress is evident. The world fair entitled "A Century of Progress" held in Chicago in 1933, and celebrating what has been called the "western, masculine perspective of technology" is just one event that contributed to defining a particular historical narrative of progress.[99]

In medicine too, the idea of progress became increasingly associated with medical science and technology. The influential Flexner Report *Medical Education in the United States and Canada* (1910) signaled a realignment of medical knowledge and practice with scientific disciplines including anatomy, physiology, pathology, and microbiology. In Flexner's view, the physician should act like a scientist: observe, make a hypothesis, and act to test their theory accordingly.[100] This enthusiasm for the physician-scientist prompted a return to the optimistic hope that scientific medicine could potentially overcome and eliminate disease. Writing in 1914, a physician observed that the student of scientific medicine "has possession of methods which ultimately will lead

[97] Cited in David Wootton, *Bad Medicine*, p. 142.
[98] Nisbet, *Idea of Progress*, p. 297.
[99] See Cheryl R. Ganz on the "western, masculine perspective of technology" in relation to the idea of progress, *The 1933 Chicago World's Fair: A Century of Progress* (Urbana, Chicago and Springfield: University of Illinois Press, 2008), p. 2.
[100] Abraham Flexner, *Medical Education in the United States and Canada*, intro. Henry S. Pritchett (New York: Carnegie Foundation for the Advancement of Teaching, 1910), p. 55.

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to the solution of most if not all of our problems."[101] While we have seen that this utopian belief in the unlimited potential of medical progress existed regardless of medicine's practical capabilities, it was bolstered by the fact that early twentieth-century patients were starting to benefit from new methods of diagnosis – including X-rays, blood, and laboratory tests – and, eventually, the so-called "drugs revolution" associated with the discovery of penicillin in 1928. These technologies and interventions provided physicians with the confidence that – as one wrote in 1934 – "when I told my patient what was wrong, I *knew* that was what was wrong."[102] This belief was one further iteration of a limitless model of medical progress, seeking not only the improvement of human health but its ultimate mastery, and bound up with the faith that science could discover the causes of and cures for disease.

Alongside calls to understand medical progress in terms of scientific progress, another strand of thinking highlighted the evident social aspects of illness, including the high disease levels of immigrants, workers, and those with lower incomes generally. From its inception, socialist thought emphasized the adverse health effects of capitalism and incorporated them into a theory of progress; Engels's *The Condition of the Working Class in England* (1845) cited numerous medical reports and physicians cataloging terrible social circumstances and asked rhetorically "[h]ow is it possible, under such conditions, for the lower class to be healthy and long lived?"[103] Numerous socialist thinkers saw illness and premature mortality primarily as the product of a sick – that is, capitalist – society. Henry Sigerist, director of the Johns Hopkins Institute for the History of Medicine, admired "socialized medicine" and called for simultaneous scientific-technical and social progress to make medicine available to a maximum number of people.[104] Socially oriented liberalism also sought to reconstruct progress with reference

[101] H. S. Pritchett, "The Medical School and the State," *Journal of the American Medical Association*, 63 (8) (1914), 648.

[102] A 1934 medical graduate cited in Eric Cassell, *The Nature of Suffering and the Goals of Medicine* (New York and Oxford: Oxford University Press, 2004), p. 7.

[103] Frederick Engels, *The Condition of the Working Class in England in 1844*, trans. Florence Kelley Wischnewetzky (London: Swan Sonnenschein & Co., 1892 [1845]), p. 98.

[104] Henry Sigerist, "The Development of Medicine and Its Trends in the United States, 1636–1936," *The New England Journal of Medicine*, 218 (8) (1938), 328.

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to the well-being and happiness of society, including its least fortunate members. Adopting and reappropriating Comte's metaphors of society as an organism, new liberals, including D. G. Ritchie (1853–1903), L. T. Hobhouse (1864–1929), and J. A. Hobson (1858–1940), argued that moral questions could be resolved with reference to the health of the social organism and elaborated a vision in which biological, social, and industrial progress all reinforce one another. As Michael Freeden has shown, the new liberal commitment to the better health and medical treatment of worker-citizens also amounted to an investment in social progress in a capitalist model.[105]

Different visions of social – and therefore medical – progress were supported by different understandings as to what constituted health. In America, Hermann M. Biggs, Commissioner of Health of New York State, declared in 1911 that the reduction in the death rate is the principal index of human and social progress.[106] But others questioned whether a longevity measure was fully able to capture the multiple facets of health. In a speech delivered in 1918, sociologist Max Weber differentiated between technical progress and moral life and highlighted medicine's particular role in bridging the two. He concluded that to the extent medicine is a technical art, it can make progress, but it cannot address ethical questions about how to live.[107] In essence, Weber argued that since health is bound up with the human condition, we are dealing with scientifically insoluble questions of value, and conventional conceptions of progress do not apply. Such critiques echoed within the medical establishment; in 1926, MD Francis Peabody at Harvard Medical School called for a return to considering patients as "whole persons" and observed that while young medical graduates have been taught a great deal about the mechanisms of disease, they do not know how to bring patients back to health: "They are too 'scientific' and do not know how to take care of patients."[108]

Alongside uncertainties as to whether health is an objective value that can be fully captured by science, social thinkers questioned visions

[105] See Michael Freeden, *The New Liberalism: An Ideology of Social Reform* (Oxford: Clarendon Press, 1986 [1978]), pp. 241–42.
[106] Hermann Biggs, "Public Health Is Purchasable," *Monthly Bulletin of the Department of Health of the City of New York*, 1 (10) (1911), 226.
[107] Max Weber, "Wissenschaft als Beruf," *Gesammelte Aufsätze zur Wissenschaftslehre* (Tübingen: 1922), pp. 524–55.
[108] Peabody, "The Care of the Patient," p. 877.

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of progress based on ineluctable laws. Science, for example, was generally acknowledged as having progressed; its history was described by historian of science Georges Sarton in 1936 as the only history able to illustrate the progress of humankind.[109] Yet its aspirations to objectivity and progress were increasingly scrutinized. Georges Sorel, in his *Les illusions du progrès* (*The Illusions of Progress* [1908]), emphasized the utopian qualities of various progress doctrines and the mistaken expectations of science; science, he wrote, is not a "mill (*moulin*) into which you can drop any problem that faces you" or a "recipe" that produces outcomes that are automatically true.[110] Ludwik Fleck (1896–1961), in his study *On the Genesis and Development of a Scientific Fact* (1935), questioned the notion of a fact as an objective truth and considered progress of knowledge – including medical knowledge – as linked to shifting presuppositions or thought styles. Fleck's insights were crucial for ideas of progress since he argued that there is no vantage point from which one thought style can be deemed superior to another.[111] In doing so, he anticipated subsequent challenges to the notion of cumulative scientific progress, which profoundly affected ideas of progress in medicine.

1.7 Conclusion

By the 1940s, the experience of war, fascism, and a wider awareness of the domination of the less powerful in the name of progress meant that the concept had acquired a heavier connotation than it had in previous decades. Perhaps most famously, the oppressive nature of progress was summed up in Walter Benjamin's *Theses on the Philosophy of History* (*Über den Begriff der Geschichte*, 1940), which emphasizes that progress cannot be conceived independently of the sufferings and losses of those who are subjected to it. His analysis of Paul Klee's

[109] Georges Sarton, *The Study of the History of Science* (Cambridge, MA: Harvard University Press, 1936), p. 5.

[110] Georges Sorel, *Réflexions sur la Violence* (Paris: Marcel Rivière et Cie, 1908), p. 94.

[111] "Introduction," in *Cognition and Fact: Materials on Ludwik Fleck*, eds. Robert S. Cohen and Thomas Schnelle, Boston Studies in the Philosophy of Science, 87 (Dordrecht: Springer, 1986), p. xxiii. See also Fleck's "Some Specific Features of the Medical Way of Thinking (1927)," in Ibid., pp. 39–46.

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painting "Angelus Novus" sought to capture the dialectical nature of the concept of progress from the viewpoint of its victims and concludes that the storm we call "progress" is actually a "single catastrophe that keeps piling wreckage upon wreckage."[112] The dualities of progress came to the fore in science, the field that just recently had been portrayed as exemplifying progress. Nuclear weapons marked a turning point in the assessment of whether inordinate increases in knowledge were always desirable and symbolized a new awareness of the darker consequences of scientific progress. Philosopher and psychiatrist Karl Jaspers (1883–1969) voiced his generation's concern that progress in different spheres was not harmonious and that the failure to recognize that progress in knowledge and technology did not lead to progress in the sum total of humanity could have horrific consequences.[113] Philosopher Theodor Adorno (1903–1969) linked progress in knowledge to the drive for "technification" and increased ability to control nature but a concomitant loss of capacity to understand the humanistic aspects of life.[114] Contributions from Jaspers, Adorno, and others all flagged the ambivalences of an optimistic, all-encompassing notion of progress that went on to have a profound relevance for medicine.

With the post-war period, we arrive at the beginning of this book's journey through the second half of the twentieth and twenty-first centuries. In essence, the history of the idea of progress in medicine reveals it to be as much an intellectual history as it is a history of different personalities and techniques. Ideas of progress themselves have influenced and shaped the practice of medicine, and they have done so by emphasizing not a single facet of personhood or health, but rather different facets at different times. If contemporary medicine is sometimes characterized as a field in which progress is assured, the history of the idea of progress shows the multiplicity of possible meanings medical progress can take on.

[112] Walter Benjamin, "Theses on the Philosophy of History," in *Illuminations*, ed. and intro. Hannah Arendt, trans. Harry Zohn (New York: Schocken Books, 1969), pp. 257–58.

[113] Jaspers, *The Origin and Goal of History* (London and New York: Routledge, 2021 [1949]), p. 136.

[114] *Minima Moralia: Reflections from Damaged Life*, trans. E. F. N. Jephcott (Frankfurt: Suhrkamp, 1951), p. 129.

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