Introduction

In today's era of modern Western medicine, organ transplants are routine, and daily headlines about the mysteries of DNA and the human genome promise that the secrets of life itself are tantalizingly within our reach. Yet to reach this point took thousands of years. One step at a time […] humanity's medical knowledge has moved forward from a time when even the slightest cut held the threat of infection and death[.]

These words, taken from a popular history of medicine course, have been cited to illustrate the "amazing progress humankind has made from the Stone Age until today."[1] They also bear witness to a widespread contemporary belief, namely, the tendency to associate medicine with the idea of progress. Today, the term "progress" is used by a wide range of people – including politicians, scientists, physicians, and patients – to speak of past medical developments and desired future changes. The notion that impressive progress is being made, and occurring in such a step-by-step fashion that it has the potential to "stall" or be "set back," is a common way of making sense of the developments in medicine.[2]

Despite its popularity in the medical field, the idea of progress is out of fashion as a concept with explanatory power. The notion of

[1] See Sherwin B. Nuland, "Doctors: The History of Scientific Medicine Revealed through Biography," *The Great Courses*, The Teaching Company, www.thegreatcourses.com/courses/doctors-the-history-of-scientific-medicine-revealed-through-biography and Clifford A. Pickover, *The Medical Book: From Witch Doctors to Robot Surgeons* (New York: Union Square, 2012), p. 5.

[2] See, for example, the statement by the CEO of the American Medical Association (AMA) in "America Speaks: Polling Data Reflecting the Views of Americans on Medical, Health and Scientific Research," *Research!America: An Alliance for Discoveries in Health*, 14 (2022), p. ii and "AMA President Applauds Members Moving Medicine Forward," *AMA Press Release*, June 8, 2019, www.ama-assn.org/press-center/press-releases/ama-president-applauds-members-moving-medicine-forward.

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progress as a cumulative process that enables an individual or a society to attain something, and then go on to achieve something better, is largely seen as a naïve and misleading way of presenting historical change. The English historian Herbert Butterfield, in his famous work *The Whig Interpretation of History* (1931), drew attention to the flaws inherent in seeing the present as an improvement on the past.[3] In Butterfield's account, and the generations of students who absorbed it, "Whig history," or presenting history as a tale of progress, was exactly what not to do as a historian.[4] Numerous critics have pointed to the ways in which the idea presupposes a Eurocentric sense of civilizational and moral superiority and how narratives of progress are bound up with practices of domination, oppression, and violence. Genocide, the nuclear era, wars, and the persistent threat of war, global inequalities, and climate change; it is possible to argue that empirical claims for progress are undermined by reality. "How does it happen that serious people continue to believe in progress in the face of massive evidence that might have been expected to refute the idea of progress once and for all?"[5] With this rhetorical question, social critic Christopher Lasch sums up the widely held disdain for the notion of progress in history.

This book scrutinizes progress rhetoric in the post-World War II period by focusing on medicine, a field that is arguably the paradigm case for an intense belief in progress. Using the tools of intellectual history, it traces the rise and proliferation of the concept of medical progress, which is influenced in complex ways by changing definitions of health, technological capabilities, and politics. Uncovering and cataloging the multiple meanings of medical progress is important because of the concept's impressive emotional power. The commitment to it is remarkably widespread and that commitment – regardless of its precise meaning – influences scientific and political agendas, as well as shared beliefs about the goals of medicine. Clarifying what people mean when they talk about medical progress shows what gets

[3] Herbert Butterfield, *The Whig Interpretation of History* (London: G. Bell and Sons, 1931).

[4] Among the voluminous literature on Butterfield's impact on historians, see Naomi Oreskes, "Why I Am a Presentist?," *Science in Context*, 26 (4) (2013), 595–609.

[5] This is the first line of his book *The True and Only Heaven: A History of Progress and Its Critics* (New York: W. W. Norton & Company, 1991).

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left out when it is associated with particular kinds of knowledge, as well as who benefits from a specific narrative of progress, and who is harmed by it. In particular, I argue that the most optimistic advocates of medical progress endorse simplified, static views of health and downplay the tensions between individual and social goods. Starting from the normative premise that health is a complex biopsychosocial state and that illness is not fixed, but rather influenced by norms and values, this study shows how progress in medicine is necessarily multidimensional.

I.1 Spotlight on Medical Progress

Why focus on medical progress in particular? Let me start by saying that it is certainly true that the term and the concept of progress have substantial rhetorical and political power in a number of fields. The commitment to measuring and facilitating progress is a fundamental part of the mandate of various international organizations, including the Organisation for Economic Cooperation and Development (OECD), the World Health Organization (WHO), and the United Nations (UN), which reflects the fact that discussions of progress often have explicitly global aspirations. Making progress is a fundamental motivation for both mainstream and alternative economic approaches.[6] It is also a notion able to transcend traditional political boundaries, as the same term "progress" is used by otherwise antagonistic politicians.[7] International science, meanwhile, generally considers the aspiration for progress to be its driving force; there is a virtually unanimous agreement that science is a progress discipline.[8]

[6] See, for example, "Our Founding Mission," *The Economist*, www.economistgroup.com/businesses/the-economist, and Abhijit Banerjee and Esther Duflo, *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty* (New York: PublicAffairs, 2012), p. viii.

[7] See, for example, The White House, "Highlighting a Year of Progress: The Biden-Harris Cancer Cabinet Takes Action to End Cancer as We Know It," March 8, 2024, https://bidenwhitehouse.archives.gov/ostp/news-updates/2024/03/08/highlighting-a-year-of-progress-the-biden-harris-cancer-cabinet-takes-action-to-end-cancer-as-we-know-it/ and "President Donald J. Trump's State of the Union Address," The White House, January 30, 2018, www.whitehouse.gov/briefings-statements/president-donald-j-trumps-state-union-address/.

[8] John Losee, *Theories of Scientific Progress: An Introduction* (London: Psychology Press, 2004), p. 1.

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The interest in medical progress, however, is particularly diffuse; whenever I have looked for the term "progress" – and related notions of "better," "improve," and "advance" – with reference to medical practices and their effectiveness, I have found it. An interdisciplinary project devoted to understanding the goals of medicine highlighted precisely the commitment to "unbounded progress" as the main belief that has inordinately shaped modern medicine.[9] Today, the term progress is regularly used to characterize, among other things, health artificial intelligence (AI), brain imaging technologies, datasets of cancer genomes, and bionic limbs. For example, entrepreneur and philanthropist Mark Zuckerberg connects medical progress with the natural and engineering sciences and praises the AI software, chips, and monitoring devices his organization funds for that reason.[10]

As I argue throughout this study, the myriad of criticisms of the idea of progress as a conceptual category have not had the same impact in medicine that they have had in other fields. It is well known that scientific and technological progress can be used for harm as well as for good, while economic progress, for example, has been roundly criticized for its association with environmental destruction. But medicine is regularly cited as the field in which the benefits of progress outweigh potential harms. Amid a new awareness of the ambivalent effects of progress, dedication to the idea of specifically medical progress in advertising, media, political rhetoric, and societal expectations grew steadily in the past decades. At times, progress in medicine became the answer to the question of "What, if anything, constitutes progress?" Medical progress is, I suspect, one field in which the hope for progress and the belief in technological power and its ability to be harnessed for human well-being are particularly intertwined. Even academics in the humanities, who have long been wary of using normative concepts to assess historical changes, agree that progress in medicine has occurred.[11] I am not a relativist, and I believe that medical knowledge

[9] *The Goals of Medicine: The Forgotten Issues in Health Care Reform*, eds. Mark J. Hanson and Daniel Callahan (Washington, DC: Georgetown University Press, 1999), p. 5.

[10] Mark Zuckerberg, "Can We Cure All Diseases in Our Children's Lifetime?," September 21, 2016, Chan Zuckerberg Initiative, https://chanzuckerberg.com/newsroom/can-we-cure-all-diseases-in-our-childrens-lifetime/.

[11] See the following exemplary material: a medical anthropologist colleague told me – "Clearly, progress *has* happened: Life expectancies are longer and

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and practice can improve, but I also show that medicine is not immune to the multiple epistemological and ethical critiques of progress developed in the past century.

In his comprehensive study of the history of the idea of progress, sociologist Robert Nisbet acknowledges the impossibility of empirically or logically verifying the concept of progress per se, while noting that medicine is an exception to this rule:

> One may say, precisely and verifiably enough, that the art of medicine […] has advanced, given our perfectly objective ways of noting the means toward the long-held end or purpose in each art: saving or healing life […]. Plainly, penicillin is, and can be proved to be, superior to old-fashioned remedies – blood-letting or leeching, for example.[12]

Yet as I show in what follows, assessments of medical progress occur in the context of much broader beliefs about human health and well-being than simply "saving or healing life." In particular, largely justified claims about first-order medical progress – the superiority of penicillin to blood-letting to treat a bacterial infection, for example – become bound up with second-order thinking, that is, normative visions of medical historical progress.[13] As a rule, this masks how progress in one dimension – for example, the development of an antibiotic – is entangled with its existence and distribution in complex social circumstances and power structures. What is at stake is the extent to which progress in different aspects of life relates to and interacts with each other.

medical procedures did get better. I also don't want to deny the possibility of future progress in science or medicine. Why would I? I actually hope for progress." This was also the upshot of a conversation I had with Amy Allen, author of *The End of Progress: Decolonizing the Normative Foundations of Critical Theory* (New York: Columbia University Press, 2016) on the sidelines of the Summer School "Progress, Regression and Social Change," in Berlin in 2017. See also her "How Not to Critique the Critique of Progress: A Reply to Payrow Shabani," *Journal of Value Inquiry*, 51 (2017), 681–87. Conversations with medical historian Maria Böhmer and philosophers Lutz Wingert and Nadia Mazouz have furthered my thinking on this issue.

[12] Robert A. Nisbet, *History of the Idea of Progress* (New Brunswick & London: Transaction Publishers, 1980), p. 6.

[13] Second-order thinking can be roughly summarized as thinking about thinking. See Yehuda Elkana, "The Emergence of Second-Order Thinking in Classical Greece," in *The Origins and Diversity of Axial Age Civilizations*, ed. S.N. Eisenstadt (Albany, NY: State University of Albany Press, 1986), p. 40.

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A disjunction that philosopher Ruth Macklin highlights between "wholly uncontroversial" technological progress, on the one hand, and "highly controversial" moral progress on the other is at the heart of this study.[14] This is because medicine is an art that, while it relies on an extensive body of scientific knowledge and treatment possibilities, remains a humanistic practice. Medicine still requires that the doctor recognize the patient as a full human being with their own preferences, values, and uncertainties, which can change rapidly. Moreover, some medical goals – to save life, for example – do not fit together easily with others – such as the goal to provide equitable care to all. These humanistic and social dimensions of medicine sit uneasily with simplistic conceptions of medicine-as-technological-progress.

I.2 Scope and Aims

This book examines the recent focus on medical progress with reference to North America and Western Europe. I have chosen to focus on the Global North for both practical reasons – this study was composed in Switzerland and Canada – and conceptual ones. OECD countries are at the forefront of technological developments in medicine, and this has influenced their sense of embodying progress. For example, Geneva University Hospitals, one of the largest hospitals in Europe, presents itself as ensuring privileged access for its patients to the latest technological developments and medical progress.[15] At the same time, the use of medical technologies in these countries has significantly influenced rising healthcare costs, which has, in turn, intensified discussions about whether technology-driven medical progress can continue indefinitely. Contributing to these discussions are aging populations, as well as the fact that health inequalities within high-income countries persist and are sometimes glaring, even as they coexist alongside sophisticated medical facilities. In many respects, the rising popularity of complementary and alternative medicine in these regions can be understood as a reaction against traditional (biomedical) approaches to progress. The successes and limitations of scientific-technological medicine, then, have led to backlash and rethinking commonly held

[14] Ruth Macklin, "Moral Progress," *Ethics*, 87 (4) (1977), 370.
[15] Hôpitaux Universitaires Genève, Recherche & Innovation, www.hug.ch/recherche-innovation-0.

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views of progress in medicine. The idea of simple, straight-line progress in medicine has encountered both theoretical and practical obstacles in the Global North.

In this book, I write about "modern," "contemporary," and "Western" medicine. These terms are not unproblematic, but I think that there are, nevertheless, justified reasons for employing them here. Current debates about medical progress are bound up with transnational scientific achievements, but they are also informed by developments occurring in what used to be designated "the West." Chinese medicine, for example, at times acts as a counterpoint for the focus on progress I describe here.[16] To be sure, it would be a mistake to consider contemporary Western medicine a monolithic entity that contrasts with other medical systems; it is certainly possible to argue that the term "Western" subsumes substantial differences and can therefore be misleading. That said, I do want to argue for thinking about attitudes toward progress in medicine in light of a set of traditions in which individuals and societies participate and share to different degrees. Valuable philosophical work has shown that we participate in shared social practices founded on assumptions that we have difficulty perceiving because they appear to be self-evident.[17] With this approach to Western/globalized medicine, we can see that even as biomedicine is grounded in specific, localized cultural assumptions and practices, it nevertheless claims neutrality and universality.[18] Furthermore, we can conceive of the commitment to the idea of progress as a tenacious assumption of Western medicine.[19] Indeed, the notion of progress in medicine is rarely made explicit and problematized, but rather accepted as something inherently good.

That shared ideas about progress influence how we perceive the goals of medicine has not gone unnoticed. Research by bioethicists,[20]

[16] See Paul U. Unschuld, *Medicine in China: A History of Ideas* (Oakland: University of California Press, 1985).

[17] See, for example, Charles Taylor, *Modern Social Imaginaries* (Durham, NC: Duke University Press, 2004).

[18] See Deborah Lupton, *Medicine as Culture: Illness, Disease and the Body* (Los Angeles: Sage, 2012 [1994]).

[19] See Deborah R. Gordon, "Tenacious Assumptions in Western Medicine," in *Biomedicine Examined*, eds. M. Lock and D. R. Gordon (Kluwer Academic Publishers, 1988), pp. 19–56.

[20] Daniel Callahan, *What Kind of Life? The Limits of Medical Progress* (Washington, DC: Georgetown University Press, 1990) and Claudio Sartea, "Il

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historians of medicine,[21] philosophers,[22] physicians, and public health workers[23] has used medicine as a case study for ideas about progress in a way that resonates with my approach. Studies of progress have, in their own right, sometimes mentioned medicine as a field in which the theoretical concept could benefit from further empirical inquiry but have not undertaken this task themselves.[24] Thus, it is possible to conclude that the idea of progress in medicine, while crucial, has only ever been studied in a limited way, or discussed briefly, for example, in an article or as the topic of a chapter in an edited volume. At present, there is a lack of academic studies that attempt to bridge the divide between philosophical–historical engagements with progress and the use of the term and concept of progress in the medical context. To my knowledge, there are no full-length studies devoted to the topic, and that is the gap that this work attempts to fill.

passato dell'idea di progresso ed il futuro della bioetica," *Medicina e Morale*, 69 (3) (2020), 293–310; Jean-Paul Thomas, "La médecine progresse-t-elle?," *Raison présente*, 189 (2014), 31–41.

[21] Brigitte Lohff, "Fortschritt mit der Wissenschaft: Wissenschaft ist Fortschritt. Der Wandel der Fortschrittsidee in der deutschen Medizin im 19. Jahrhundert," *Wissenschaftstheorien in der Medizin*, eds. Wolfgang Deppert, Hartmut Kliemt, Brigitte Lohff and Jochen Schäfer (Berlin and Boston: De Gruyter, 2015), pp. 327–54 and Bert Hansen, *Picturing Medical Progress from Pasteur to Polio: A History of Mass Media Images and Popular Attitudes in America* (Newark, NJ: Rutgers University Press, 2009).

[22] Mark J. Hanson, "The Idea of Progress and the Goals of Medicine," in *The Goals of Medicine*, pp. 137–51, Lucien Sève, "La querelle du progrès," in *Pour une critique de la raison bioéthique* (Paris: Editions Odile Jacob, 1994), pp. 209–82, and Anetta Breczko, "'Interest of the Individual' versus 'Common Good' and 'Public Interest' in the Context of Technological Progress in Medicine," *Journal of the Polish Section of IVR*, 3 (2020), 41–52.

[23] Leon Eisenberg, "Medicine and the Idea of Progress," in Leo Marx and Bruce Mazlish, eds., *Progress: Fact or Illusion* (Ann Arbor: University of Michigan Press, 1998 [1996]), pp. 45–64, Didier Sicard, "Réflexions sur le progrès en médecine," *Médecine & Hygiène*, 2491 (2004), 1535–38, Ståle Fredriksen, "Tragedy, Utopia and Medical Progress," *Journal of Medical Ethics*, 32 (2006), 450–53, and Philippe Lazar, "The Idea of Progress and Human Health," in *The Idea of Progress*, eds. Jürgen Mittelstrass, Peter McLaughlin, and Arnold S. V. Burgen (New York: W. de Gruyter, 1997), pp. 219–29.

[24] See, for example, Philip Kitcher, "On Progress," in *Performance and Progress: Essays on Capitalism, Business, and Society*, ed. Subramanian Rangan (Oxford: Oxford University Press, 2015), pp. 115–33, and "Pragmatism and Progress," *Transactions of the Charles S. Peirce Society: A Quarterly Journal in American Philosophy*, 51 (4) (2015), 475–94. See also Stuart Firestein, *Failure* (Oxford: Oxford University Press, 2015), Chapter 9: "Failure in the Clinic."

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In this book, I show, first, that the shared agreement about the value of medical progress rests on the assumption that no one wants to be sick or to die.[25] But this purported agreement does not translate into any one conception of progress; health is a complex biopsychosocial state, and illness is not fixed, but rather influenced by norms and values. This poses problems for simplistic definitions of progress such as, for example, eliminating pathogens. While narrowly scientific conceptions of medical progress have captured the public imagination, the possibilities of meaningful medical progress are much more chastened than the claims of techno-optimists. But inclusive visions of medical progress as better health for the largest number of citizens are also political appeals that entail trade-offs, for example, with regard to expensive procedures or rare disease research. It is for this reason that multidimensional approaches to persons and to health are less likely to channel reductionist and potentially harmful views of medical progress.

Second, I demonstrate that answers to the question "What is medical progress?" have always been contested; the answer that predominates in any particular context is bound up with a specific approach to health and is also a question of power. In what follows I document how medicine – an art that deals with existential questions about human finitude – experiences firsthand the tensions between different kinds of progress and resolves them differently in particular circumstances. Current ways of thinking about medical progress are, therefore, historically contingent. As detailed in subsequent chapters, progress rhetoric in medicine has been associated with a range of ideas about personhood, knowledge, freedom, and justice in the post-Cold War Global North. As I illustrate, these ideas depend on historical and geographical contexts, as well as on personal experiences of illness and therapy, and there are certainly further iterations of medical progress to come. The title of this book *Making Medical Progress* – also a nod to Miriam Solomon's study *Making Medical Knowledge*[26] – reflects the fluidity

[25] On how this assumption is linked to ableism, sanism, and suicidism, see Alexandre Baril, *Undoing Suicidism: A Trans, Queer, Crip Approach to Rethinking (Assisted) Suicide* (Philadelphia: Temple University Press, 2023).

[26] Miriam Solomon, *Making Medical Knowledge* (Oxford: Oxford University Press, 2015). See also Paul Rabinow, *Making PCR: A Story of Biotechnology* (Chicago: University of Chicago Press, 1996).

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with which progress can be associated with different dimensions of selfhood and health.

Finally, this book fits with recent attempts to blend intellectual and cultural history by paying attention to the significance of an idea for its own sake, as well as tracking its broad diffusion and circulation. Medical progress is, I think, particularly able to illustrate the porosity between cultural and intellectual divides and to illuminate how an idea is absorbed into broader patterns of cultural beliefs and expectations. It is arguably in medicine that the agreement about progress is the greatest, it is with reference to medicine that "progress" is popularly used, and it is in medicine that the search for progress acts as an agenda that drives research and shapes the aims of those applying for funding.[27] Moreover, a study of the idea of progress in medicine cannot be separated from medical practices and the varieties of experiences of healthcare recipients. With this in mind, this book adopts a research agenda that breaks down traditional distinctions between the professional and popular. More specifically, my analysis draws on a variety of sources, often academic engagements with the history and philosophy of progress, but also the insights of physicians, patients, and tech actors. Combining these perspectives provides the resources for an in-depth analysis of the idea of progress outlined above.

I.3 Dimensions of Personhood and Patienthood

Any theory of progress in medicine rests on or defends some vision of individual persons and what it means to live together. Indeed, the problems of what it means to be a healthy person or an ill person in a given social context are foundational for coming to grips with medical progress. Historian Jerrold Seigel describes three interconnected aspects of the self that are helpful for understanding how these underpin different views of progress.[28] The first way of approaching the self is bodily or

[27] See, for example, the Swiss National Science Foundation, *The SNSF's Model of Excellence*, www.snf.ch/en/theSNSF/research-policies/model-of-excellence/Pages/default.aspx#Question, or the National Institutes of Health and National Human Genome Research Institute, Advancing Genomic Medicine Research Exploratory/Developmental Grant, https://grants.nih.gov/grants/guide/rfa-files/RFA-HG-20–037.html.

[28] Jerrold Seigel, *The Idea of the Self: Thought and Experience in Western Europe since the Seventeenth Century* (New York: Cambridge University Press, 2005).

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material, involving the corporeal existence of individuals, our physical needs, and the conditions that, for example, make us more or less susceptible to experiencing pain. This facet of the self considers that our health and wellness are determined primarily by our physiological demands and that progress is evaluated in relation to its ability to meet those needs. The second dimension is the self as a reflexive being, able to take distance from bodies, physical limits, impairments, and social relations, and examine them critically, thereby actively participating in its own self-realization. On this level, the self is able to judge its feelings and symptoms, make choices, and pursue self-knowledge; this is the dimension most likely to be associated with self-determination or autonomy. Progress in such an account takes into account the capacity of human beings to give meaning to their lives, their illnesses, and their suffering. Third, the self can be understood as relational, with collective identities, orientations, and values that are shaped within particular social and cultural contexts. Health is relational, to the extent that people consider their own health in relation to the health of others, their environment, their capacity to perform their work or occupation, and so on. In relational views of medical progress, the health of one cannot be detached from the health of others.

These categories help demonstrate how approaches to selfhood and to progress are inextricably bound up with context. For example, ideas about the physical self are very different if one links bodily functions to certain temperaments, as Greek thinkers did, if the body is seen as the means by which genes can achieve their end, as some evolutionary biologists have argued, or if the body is perceived as matter governed by the rules of physics and chemistry, as Director of the Massachusetts Institute of Technology (MIT) Artificial Intelligence Laboratory Rodney Brooks describes it.[29] In the specific case of medical progress, the three dimensions of the self have played different roles at different times. Recently, relational approaches to the self have become fundamental in narrative accounts of illness, in care ethics, and in nursing philosophy. Such approaches also underpin increased attention to the social determinants of health. But the bodily dimension continues to be exalted in optimistic visions of medical progress, and the reduction of the person to the body and its mechanisms is a

[29] See his *Flesh and Machines: How Robots Will Change Us* (New York: Pantheon, 2002), pp. 173–75.

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recurring theme underpinning contemporary visions of medical progress. Brooks, cited above, argues that since humans are composed of biological mechanisms, albeit complex ones, they are mere machines. If a self is reducible to the fundamental science behind basic body functions, medical progress is virtually identical to technological progress. "More medical research, more medical technology, more progress," is how Mark Hanson has characterized this way of thinking.[30]

In addition to acknowledging different dimensions of the self, it is important to recognize the dangers of reductionism when thinking about persons. Philosophical theories that hold that human beings are not merely highly complex organisms but that they are persons do not fit neatly into any one category. Yet what joins them is their interest in the multifaceted realities associated with personhood.[31] Sociologist Christian Smith, for example, shows that human persons are "emergent," in that they cannot be reduced to their component parts, and that the capacity for free will, the ability to create meaning and an identity, relationships, and a sense of virtuous action all contribute to how persons understand themselves and each other.[32] Physician and bioethicist Eric J. Cassell argues in a similar fashion that a person is a composite entity made up of its body, its history, its beliefs, its imagined future, and its subconscious life.[33] A great deal of medical literature has drawn attention to the importance of person-centered care, which involves knowledge of social relationships and normativity.[34] Healing illness requires more than healing specific body parts; it requires acknowledging persons as complex entities, with hopes and needs that go beyond purely physical ones. Such an approach to

[30] Mark J. Hanson, "The Idea of Progress and the Goals of Medicine," in *The Goals of Medicine: The Forgotten Issues in Health Care Reform*, ed. by Mark J. Hanson and Daniel Callahan (Washington, DC: Georgetown University Press, 1999), p. 143.

[31] See Randall Poole, "Conceptions of Humanity in Health Humanities," presentation at the International Health Humanities Conference, McGovern Center for Humanities and Ethics, University of Texas Health Sciences Center at Houston, March 2017.

[32] See Christian Smith, *What Is a Person?: Rethinking Humanity, Social Life, and the Moral Good from the Person Up* (Chicago: University of Chicago Press, 2010), p. 25 e passim.

[33] Eric Cassell, *The Nature of Healing: The Modern Practice of Medicine* (Oxford: Oxford University Press, 2012), p. 25.

[34] A seminal text in this regard is Francis Peabody, "The Care of the Patient," *The Journal of the American Medical Association*, 88 (12) (1927), 877–82.

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persons means that reducing a person to any one dimension of the self, for example, the body, is a misguided, reductionistic exercise that flattens what is ultimately a stratified reality.

As I argue throughout this study, views of personhood that emphasize the integrated nature of and inner tensions within persons – for example, that a person is a complex, thinking, feeling, relational entity – are less likely to develop one-dimensional views of medical progress. Multidimensionality resists these tendencies because it accepts that the knowledge of any one aspect of a person is fundamentally incomplete. It also illustrates how the demands of different dimensions of the self are sometimes in tension. This multiform approach is necessary to develop a more nuanced and realistic approach to medical progress.

I.4 Health and Values

In addition to endorsing some vision of personhood, any theory of medical progress rests on a conception of human health, that is, a set of ideas about what we need to sustain health and its connection to life. The fact that health is linked to maintaining life, and is important – though not sufficient – for a good life is, I contend, the basis of a sturdy societal consensus that promoting health is a worthy social and medical goal. If a person's arm is bleeding profusely, there is a robust, shared agreement that medical intervention and treatment are necessary and that a person in a difficult, life-threatening situation should be helped. This is analogous to the notion that basic physiological requirements are primary goods, normally regarded as such by all human beings, who similarly desire to be protected from primary evils, including avoidable ill-health.[35]

The shared commitment to health as a valuable social good appears more robust than other areas of political life; health has been described as one of those rare goods that benefits from continuous public support.[36] At the descriptive level, healing or attempting to heal the sick has been identified as a "human universal" because it occurs in all societies across time.[37] But what exactly is the health that so many

[35] On primary goods, see John Kekes, *The Morality of Pluralism* (Princeton, NJ: Princeton University Press, 1993).
[36] For a discussion, see Shlomi Segall, "Is Health Care (Still) Special?," *The Journal of Political Philosophy*, 15 (3) (2007), 342–61.
[37] See Donald Brown, *Human Universals* (New York: McGraw Hill, 1991).

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people seek? At times, the question of what is health is approached less through the lens of what it means to be a person who is ill and seeks to be healthy and more often reduced to the bodily dimension of the self. This approach to health underlies medical education, which teaches students that healthcare interventions are designed to restore biological functioning. The biomedical sciences, meanwhile, have appropriated the task of defining what a normally functioning organism – and therefore what health – is. The use of technologies in the medical encounter also tends to rely on a somatic view of health that diminishes the significance of the mind or other factors. It is possible to argue that the entire biomedical model of disease is predicated on the idea that the body and the mind are two distinct substances and that the body is the locus of health.[38]

Physicalist models of health have been associated with ambitious aims for medical progress and significant achievements. But other approaches to health have illuminated various shortcomings with a narrow, somatic definition. Numerous examples – from a nervous stomach and tension headaches to the effects of racism on stress and mental health – attest to how emotional reactions or social life affect bodily systems. In 1977, George L. Engel presented a classic paper on the biopsychosocial model of illness, which sought to address the lacunae of reductionist and mechanistic conceptions of health by adding psychological and social factors.[39] Indeed, health has a reflexive aspect: Being healthy involves feeling healthy, which integrates a necessarily subjective element into the idea of normal functioning. Mental suffering is as real as physical suffering, yet more difficult to grasp and treat; a recent study notes that blurred boundaries between the normal and the pathological are a persistent theme in research attempting to classify mental disorders.[40] Meanwhile, in Western countries, neuropsychiatric conditions such as depression and anxiety are the diseases that cause the most sickness overall. Moreover, health

[38] Neeta Mehta, "Mind-Body Dualism: A Critique from a Health Perspective," *Mens Sana Monographs*, 9 (1) (2011), 202–9.

[39] George Engel, "The Need for a New Medical Model: A Challenge for Biomedicine," *Science*, 196 (4286), 129–36. See also Derek Bolton and Grant Gillett, *The Biopsychosocial Model of Health and Disease: New Philosophical and Scientific Developments* (Cham, Switzerland: Palgrave Pivot, 2020).

[40] *Vagueness in Psychiatry*, eds. Geert Keil, Lara Keuck, and Rico Hauswald (Oxford: Oxford University Press, 2017), p. 3.

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has an inherently relational dimension; French philosopher Georges Canguilhem famously has shown that disease is a deviation from societally defined norms.[41] The social aspects of health are in view, for example, in the World Health Organization's definition of health as "a state of complete physical, mental *and social* well-being" (my emphasis).[42] They also inform the social model of disability, which depicts how society is constructed around a particular idea of normal and thus creates barriers for people with disabilities that would not exist in other circumstances.[43] Much recent work in epidemiology and public health has revealed to what extent health depends on background social and cultural factors that occur beyond the boundaries of classical disease notions.

The conceptual flaws in refusing to consider factors beyond the body are significant: Symptoms with no identifiable physiological cause are a common reason that patients visit doctors.[44] Medicine that reduces persons to their bodies, without taking into account their personal and social contexts, can be dehumanizing as well as misguided because it misses possible causes of illness. This is linked to how patients experience illness. Questions like "Why me?" and "Why now?" matter to patients: Contributions from narrative ethics show that patients benefit when physicians understand the importance patients attribute to their health in relation to different aspects of their lives.[45] Another failure of a reductionist attitude to health concerns its ability to provide comfort. In an interventionist medical system, if the disease is

[41] Georges Canguilhem, *On the Normal and the Pathological*, trans. Carolyn R. Fawcett, intro. Michel Foucault (Dordrecht: D. Reidel Publishing Co., 1978).

[42] "Constitution of the World Health Organization," in *Basic Documents*, 49th ed. (Geneva: World Health Organization, 2020), https://apps.who.int/gb/bd/PDF/bd47/EN/constitution-en.pdf?ua=1.

[43] For an overview, see Mike Oliver, "The Social Model of Disability: Thirty Years On," *Disability & Society*, 28 (2013), 1024–26.

[44] *Medically Unexplained Symptoms, Somatisation and Bodily Distress: Developing Better Clinical Services*, eds. Francis Creed, Peter Henningsen, Per Fink (Cambridge: Cambridge University Press, 2011), p. vi. See also Anne Harrington, *The Cure Within: A History of Mind-Body Medicine* (New York: W. W. Norton, 2008).

[45] See *Narrative Ethics: The Role of Stories in Bioethics*, special report, ed. Martha Montello, *Hastings Center Report*, 44 (1) (2014), 2–44 and Chiara Fioretti, et al., "Research Studies on Patients' Illness Experience Using the Narrative Medicine Approach: A Systematic Review," *BMJ Open*, 6 (2016), e011220.

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real but little or nothing can be done, patients tend to experience this negatively. That is, if patients have unrealistic expectations of medical progress, they experience their illness situation as a failure of medical actors, rather than an aspect of the human condition with which they must cope.

Views of personhood that emphasize the complexity and contradictions of life as a person tend to align with conceptions of health that refer to a complex state of affairs that includes individual experience and social context. But recognizing that physical, mental, and social health are not cleanly divided challenges definitive claims for medical progress. Engel, the "father" of the biopsychosocial model of health, flagged progress toward bridging the biological and psychosocial aspects of health as "slow and halting," both because of the complexities inherent to the endeavor and due to unremitting pressures to favor the more tangible, physical aspect of health.[46] And in a reflective article considering his tenure as a prominent WHO employee, Kenneth Newell argued that there are so many facets of health that have to be seen together, "There is no objective way of judging whether one mix is better or worse than another."[47] By these accounts, medical progress is a complicated process with multiple dimensions, and the goal is an ephemeral, constantly changing one.

I.5 Problematizing Medical Progress

In light of these reflections regarding health and persons, what do people referring to progress in medicine in the media, in politics, in scholarly interventions, and in conversations mean when they use the term? There is no easy answer to that question. The wide range of ways in which health and persons can be understood, and how the term progress is used, makes it difficult to grasp; progress is a popularly used but fundamentally vague concept.[48] "Progress" is a noun, but sometimes a verb or the root of the adjective "progressing," a variety that enables it to carry different amounts of political baggage. In its most common

[46] George Engel, "The Need for a New Medical Model," p. 134.
[47] Kenneth W. Newell, "Selective Primary Health Care: The Counter Revolution," *Social Science and Medicine* 26 (9) (1988), 903.
[48] Anat Itay, "Conceptions of Progress: How Is Progress Perceived? Mainstream versus Alternative Conceptions of Progress," *Social Indicators Research*, 92 (2009), 530.

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use, "progress" refers to advancement to a better state or condition. But etymologically, "progress" has not always implied betterment; the notion that a disease is "progressing" is one of the few contemporary uses of progress in its negative valence.

I have been using the word progress freely up until now, but in the main, I am interested in a specific idea of progress that has been accepted for centuries in Western culture, whereby progress refers to a cumulative process that enables an individual or a society to obtain something and then go on to attain something better.[49] This kind of progress has a normative component in that it evaluates change according to a broadly shared framework or a goal. Such progress also involves an epistemological claim, in that it valorizes certain kinds of knowledge – biomedical knowledge, for example – and posits specific relationships between knowledge gains and other spheres of life. Thus conceived, progress is also an ontological phenomenon, linked to an understanding of how historical change occurs. Examples of such assumptions about reality can be found in statements such as "you can't stand in the way of progress" made by enthusiastic engineers or in the well-known definition of progress as "*irreversible* meliorative change" (my emphasis).[50]

In the medical case, there is a persistent tendency to associate medical progress with the above cumulative-historical view, even as progress in medicine is often best described in a much more limited fashion. Speaking to broader cultural desires that associate medicine with notions of progress, surgeon and writer Atul Gawande observes that Western medicine is singularly focused on the idea of machinelike perfection.[51] The high stakes involved in healthcare mean that there is an urgent and intense need to believe that medical intervention can be constructive for patients. The very notion of progress is associated with the benefits of intervention, as opposed to resignation, or

[49] To paraphrase one of the foremost commentators of the idea, British philosopher John Gray. See his "Cats Can Teach Us about the Meaning of Life," *JSTOR Daily*, December 6, 2020, https://daily.jstor.org/john-gray-cats-can-teach-us-about-the-meaning-of-life/.

[50] Conversation with the author on the sidelines of the Moral Machines Workshop, Zurich, Switzerland, February 23, 2017. The definition comes from Charles Lincoln Van Doren, *The Idea of Progress* (New York: F. A. Praeger, 1967).

[51] Atul Gawande, *Complications: A Surgeon's Notes on an Imperfect Science* (London: Profile Books, 2002), pp. 37–38.

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being with the patient, as in the conceptual framework of palliative care. Hope, an emotional attitude that desires an outcome, implies the possibility – if not the certainty – of progress.[52] Given the importance of hope when confronted with one's own vulnerability and finitude, Adrienne Martin describes it as the watchword for the medical research industry as a whole.[53]

This study does not attempt to provide a comprehensive answer to the question of whether a given intervention or development "genuinely" constitutes progress, in the sense of improvement over time. It makes no attempt to conclusively prove that any specific practice or technique can be unambiguously designated as medical progress or not. What interests me rather is the belief in the existence of progress, what can be called progress as a second-order concept, and the variety of forms this belief takes on. This contrasts with various existing engagements with medical progress, which often are evaluative, and seek to demonstrate that a particular change constitutes a first-order advance.[54] What I am particularly concerned with is the widespread rejection of the idea of progress as a valid conceptual category for describing historical change – a tendency that became particularly pronounced in the post-war period – and the insights that these debates offer into the widely held attachments to the idea of medical progress today. Therefore, I focus on the medical story where the term and concept of progress have been especially widely used, but the medical case is important to me as part of the larger, transdisciplinary story of the vagaries of progress as a conceptual category.

I want to acknowledge the more questionable assumptions inherent in its Enlightenment heritage but also to contend that progress need not be teleological nor linear, as well as to show that I do think there are justified reasons for believing in it. With regard to the epistemological dimension of progress, we must consider how every statement about progress is a statement about change in relation to a contested time slice. Depending on the time reference chosen, statements about

[52] See Jakob Huber, "Looking Back, Looking Forward: Progress, Hope, and History," *Constellations*, 28 (2021), 126–39.

[53] Adrienne Martin, *How We Hope: A Moral Psychology* (Princeton, NJ: Princeton University Press, 2013), p. 3.

[54] See, for example, Jeremy R. Simon, "How to Make Real Constructive Progress in Medicine," *Journal of Evaluation in Clinical Practice*, 17 (5) (2011), 845–51.

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progress will look very different; it is harder to describe the industrial revolution as "progress" in light of climate change. Particularly in the medical case, factors such as side effects – a necessary part of intervening in the human body – and unintended consequences are likely to gain or to lose prominence.[55] For instance, the achievements of "frontier" fields like neonatal medicine and their ability to allow very premature babies to survive are often cited as exemplary medical progress.[56] But depending on when we take stock of the effects thereof – on the date babies are released from the neonatal intensive care unit or later in life with reference to their overall health – there is a very different sense of the progress involved; while more babies survive, a premature birth means higher risks of chronic health problems and disability.[57] Other examples abound; while penicillin has been widely recognized as a "perfectly objective" example of progress – as per Robert Nisbet above – no full account of the antibiotic era can be given without reference to the antibiotic resistance challenges of the present day. Or consider, for example, how the drive to have pain taken seriously as a medical condition and to provide relief is bound up with the current opioid crisis, which itself has been described as caused by modern medicine. In short, claims of medical progress are valid with reference to a particular time frame.

Furthermore, the knowledge we require to grasp the health of a holistic entity such as a person is complex. Gaining knowledge of a particular dimension of health, biophysical for example, remains fundamentally incomplete. A biophysical model of health presumes that health problems are measurable and therefore can be solved by well-defined interventions, procedures, and technologies, something that needs to be considered alongside insights from health's other dimensions. In general, knowledge gains raise the standards for justification and require that related interventions be evaluated by more

[55] See Diana B. Dutton, *Worse than the Disease: Pitfalls of Medical Progress* (Cambridge: Cambridge University Press, 1992).

[56] See Linda L. Layne, "How's the Baby Doing?' Struggling with Narratives of Progress in a Neonatal Intensive Care Unit," *Medical Anthropology Quarterly*, 10 (4) (1996), 624–56.

[57] See Amber Dance, "Survival of the Littlest: The Long-Term Impacts of Being Born Extremely Early," *Nature*, 582 (2020), 20–23. Tracy McVeigh, "Interview: Nathan was born at 23 weeks. If I'd known then what I do now, I'd have wanted him to die in my arms," *The Guardian*, March 20, 2011, www.theguardian.com/society/2011/mar/20/nathan-born-premature-life-death.

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demanding criteria. Increased knowledge also uncovers new uncertainties and new sources of potential error. Such gains also increase the responsibility to act on them, actions that, in turn, have secondary and unintended consequences.

The normative framework we might use to evaluate medical progress is similarly contested. The fact that health has multiple dimensions, and the ways that different dimensions may be in tension with each other, means that there is no objective measure of health nor standard for measuring progress. Medicine has multiple fundamental goals, the way these goals fit together cannot be determined in advance, and there are conflicts among them. The mandate of medicine to save and extend life, for example, may be in tension with the relief of suffering and the pursuit of a peaceful death. Privileging resource-intensive techniques is not reconcilable with the goals of an equitable medicine accessible to all. Medicine is constantly performing a balancing act between the pursuit of individual health and well-being and the common good. Indeed, for a single goal of medicine against which progress can be measured, local solutions generate new difficulties. In essence, this provides that there are only limiting cases in which progress could be judged. We can claim that medical progress exists in relation to the shared commitment to a vital minimum of health needed to sustain life since we know that there are health conditions that we are morally compelled to treat given available material resources. But any further progress in medicine will remain relative to mitigating what we consider shared evils with regard to health.

Moreover, we have to take into account the fact that rather than having a stable ontological status, the confines and scope of medicine and health are the subject of ongoing disputes and are constantly renegotiated. Far from having a unified, consistent mandate, medicine can be defined as a diverse set of ideas, methods, procedures, and practices that have constantly varied depending on time and place.[58] There now exist entire categories of disease that doctors did not use to treat, including attention-deficit hyperactivity disorder, obsessive-compulsive disorder, phobias, chronic fatigue, social anxiety disorder, post-traumatic stress disorder, and various kinds of depression. In a

[58] Diego Gracia, "What Kind of Values? A Historical Perspective on the Ends of Medicine," in *The Goals of Medicine*, p. 88.

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similar vein, there are multiple examples of behaviors that were previously labeled as diseases, such as drapetomania, a disease that caused slaves to run away, masturbation, or hysteria.[59] Concepts of diseases emerge from specific cultural and scientific priorities, while diagnostic innovation goes hand in hand with both treatment innovation and the experience of both illness and therapy.

Taken together, these remarks show that there is no stable standard for measuring progress, nor any stable goal toward which medical progress could orient itself. The criteria we can apply to compare and judge medicine, health, and disease in different contexts are complex and ultimately value based.[60] Determining what progress is necessary to overcome disease and to achieve health is always a social and political act. In sum, the standards by which we might evaluate progress change over time, progress consists in confronting a new set of problems in each historical moment and trying to overcome them, and this means that we can only determine progress in hindsight.[61] Progress might consist in improved epistemic or moral assumptions, but human learning also implies forgetting; progress comes with pauses and regressions. Therefore, rather than seeing progress as a unified process proceeding lawfully across societies, it is better described as localized and circumscribed. Crucially, if progress is nonlinear, but rather multidimensional, progress in one domain – such as one aspect of health – may coexist alongside losses in another.[62] Part of making progress that is neither metaphysical nor deterministic therefore involves facing up to the difficulties involved in weighing the relative importance of problems. Such progress is necessarily a chastened idea of progress.

[59] On disease concepts, see Jacalyn Duffin, *Lovers and Livers: Disease Concepts in History* (Toronto: University of Toronto Press, 2005) and Brandon Conley and Shane Glackin, "How to Be a Naturalist and a Social Constructivist about Diseases," *Philosophy of Medicine*, 2 (2021), 1–21.

[60] For related discussions, see Steven Shapin, "Possessed by the Idols," *London Review of Books*, 28 (3) (2006), 31–33.

[61] See Amanda Roth, "Ethical Progress as Problem-Resolving," *The Journal of Political Philosophy*, 20 (4) (2012), 385.

[62] Andy Stirling argues that ideas of progress are thus best represented, "not as a single-track 'race,' but as palimpsests of branching counterfactual paths." "Pluralising Progress: From Integrative Transitions to Transformative Diversity," *Environmental Innovation and Societal Transitions*, 1 (1) (2011), 82–88.

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I.6 Historiography of Progress

Given the wide range of contexts in which progress-talk occurs, it will come as no surprise that the academic literature on the concept is vast. As we shall see in Chapter 1, the eighteenth century is usually considered the heyday of the concept of progress, while it continues to be referred to as the guiding idea (*Leitbegriff*) of the nineteenth century.[63] At the time, the idea was bound up with the optimistic hope that human reason can and will construct a better, more enlightened society. It was also the term of choice to describe new knowledge, improved material conditions, and better societal institutions and to understand them as part of an overarching scheme of improvement.

The theme of progress fundamentally changed the character of history writing by introducing a developmental structure to global history, and it merged with a simultaneous interest in universal histories of the world. Implicit in this idea of progress was the notion of the superior state and civilizing mission of European nations; with the idea of progress, the history of humankind as told in the West became identical with the history of civilization.[64] Documenting the enlightened and reasoned developments that count as progress was bound up with history writing, which aimed at documenting the errors of the past and the present inferiority of non-Western nations.

And yet, tales of progress have always had their skeptics.[65] By the end of the nineteenth century, the widespread fascination with progress in the West was matched by a significant revolt against the view that the future development of human societies was moving in any discernible direction or whether there were common standards or objective truths achievable by reason. In the twentieth century, different families of theories, including critical theory, moral relativism, postmodernism, and postcolonialism, further questioned and undermined the notion. When I told a medical historian colleague that I was working on the idea of progress in medicine, she asked me, "haven't you read Foucault?" Today, prominent critics of progress and the

[63] Thomas Nemeth, "Positivism in Late Tsarist Russia: Its Introduction, Penetration and Diffusion," *The Worlds of Positivism: A Global Intellectual History, 1770–1930*, eds. Johannes Feichtinger, Franz L. Fillafer, and Jan Surman (Cham, Switzerland: Springer, 2018), p. 274.

[64] See *Versions of History from Antiquity to the Enlightenment*, ed. Donald R. Kelley (New Haven, CT: Yale University Press, 2008), p. 440.

[65] See, for example, Henry Vyverberg, *Historical Pessimism in the French Enlightenment* (Cambridge, MA: Harvard University Press, 1958).

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violence that has been conducted in its name abound.[66] A global crisis in the ideology of progress has been linked to phenomena ranging from the enthusiasm for "post" words to the resurgence of popularity of analog objects. Historian and philosopher of science Naomi Oreskes writes that history has come to be seen, no longer as a linear story of progress, but as a story in which the notion of progress can only be considered in relation to the question: progress for whom?[67]

Given its charged history, progress is by no means a neglected topic in academia.[68] The concept has recently benefited from increased scholarly attention across a range of fields including in philosophy of science,[69] law,[70] anthropology,[71] sociology,[72] and

[66] For an overview, see Joshua Foa Dienstag, *Pessimism: Philosophy, Spirit, Ethic* (Princeton, NJ: Princeton University Press, 2009). See also the multiple writings of John Gray, particularly *The Silence of Animals: On Progress and Other Modern Myths* (London: Penguin, 2013), and *Heresies: Against Progress and Other Illusions* (London: Granata Books, 2015), Eileen B. Leonard, *Women, Technology, and the Myth of Progress* (Upper Saddle River, NJ: Prentice Hall, 2003), and Joseph R. Winters, *Hope Draped in Black: Race, Melancholy and the Agony of Progress* (Durham, NC: Duke University Press, 2016).

[67] Oreskes, "Why I Am a Presentist," p. 602.

[68] Older studies include J. B. Bury, *The Idea of Progress: An Inquiry into Its Origin and Growth* (London: Macmillan & co., 1920), Charles Frankel, *The Faith of Reason: The Idea of Progress in the French Enlightenment* (New York: Columbia University Press, 1948), Ernest Lee Tuveson, *Millennium and Utopia: A Study in the Background of the Idea of Progress* (Berkeley and Los Angeles: University of California Press, 1949), John Baillie, *The Belief in Progress* (London: Oxford University Press, 1950), W. Warren Wagar, *Good Tidings: The Belief in Progress from Darwin to Marcuse* (Bloomington: Indiana University Press, 1972), Sidney Pollard, *The Idea of Progress* (London: C. A. Watts, 1986), and Friedrich Rapp, *Fortschritt: Entwicklung und Sinngehalt einer philosophischen Idee* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1992).

[69] Yafeng Shan, "A New Functional Approach to Scientific Progress," *Philosophy of Science*, 86 (2019), 739–58 and Juha Saatsi, "What Is Theoretical Progress in Science," *Synthese*, 196 (2019), 611–31.

[70] Tilmann Altwicker and Olivier Diggelmann, "How Is Progress Constructed in International Legal Theory," *The European Journal of International Law*, 25 (2) (2014), 425–44 and Thomas Skouteris, *The Notion of Progress in International Law Discourse* (The Hague: TMC Asser Press, 2010).

[71] See Maximilian C. Forte, "Progress, Progressivism, and Progressives," *Zero Anthropology*, February 28, 2018, https://zeroanthropology.net/2018/02/28/progress-progressivism-and-progressives/.

[72] Angelos Mouzakitis, "Modernity and the Idea of Progress," *Frontiers in Sociology*, 2 (3) (2017), 1–11 and Nancy Folbre et al., *Rethinking Society for the 21st Century: Report of the International Panel on Social Progress*, vol. 3 (Cambridge: Cambridge University Press, 2018).

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intellectual history.[73] Attention has also been paid to how the idea of progress has been shaped by and itself influenced different historical periods.[74]

The popularity of the concept is further reflected in the number of recent international events and related publications devoted to progress.[75] Some of the most sustained supporters of the idea of progress are a cluster of academics and thinktank operatives – sometimes called "New Optimists," the most prominent of whom is psychologist Steven Pinker – who argue that humanity should be much more sanguine about the genuine progress it has made.[76] Such commentators point to different measures – first and foremost modern medicine – to show that the world is becoming a better place. As a rule, such interventions have a stabilizing function in that they validate current systems, namely, capitalism and democracy. They assume that whatever political and economic arrangements we currently have are working well and therefore ought to be maintained.[77]

[73] Carlo Altini, *Le maschere del progresso: Ascesa e caduto di un'idea moderna* (Bologna: Marietti, 2018), Matthew Slaboch, *A Road to Nowhere: The Idea of Progress and Its Critics* (Philadelphia: University of Pennsylvania Press, 2017), and Yohan Ariffin, *Généalogie de l'idée de progrès. Histoire d'une philosophie cruelle sous un nom consolant* (Paris: Editions du Félin, 2012).

[74] *Tradition, Innovation, Invention: Fortschrittsverweigerung und Fortschrittsbewusstsein im Mittelalter*, ed. Hans-Joachim Schmidt (Berlin: Walter de Gruyter, 2005), Wolfram Kinzig, *Novitas Christiana. Die Idee des Fortschritts in der Alten Kirche bis Eusebius* (Göttingen: Vandenhoeck & Ruprecht, 1994), David Spadafora, *The Idea of Progress in Eighteenth-Century Britain* (New Haven, CT: Yale University Press, 1995).

[75] See, for example, *After Progress*, eds. Martin Savransky and Craig Lundy (Thousand Oaks, CA: Sage, 2022), the *After Progress Digital Exhibition*, www.after-progress.com/, and related symposium series at the University of London in 2019, the *Human Progress and Social Enhancement* workshop at LMU Münich in 2020, organized by Jason Branford and Jan-Christoph Heilinger, "Moral Progress: Special Issue," *Ethical Theory and Moral Practice*, eds. A. W. Musschenga and G. Meynen, 20 (1) (2017), 1–183 and related conference, and "Progress, Change, Development: Special Issue," *International Journal of Postcolonial Studies*, 19 (5) (2017), 599–705.

[76] See, for example, Johan Norberg, *Progress: Ten Reasons to Look Forward to the Future* (New York City: Simon and Schuster, 2016), Michael Shermer, *The Moral Arc: How Science Leads Humanity toward Truth, Justice, and Freedom* (New York: Henry Holt and Co., 2015), and Steven Pinker, *The Better Angels of Our Nature* (London: Penguin, 2011).

[77] See Oliver Burkeman, "Is the World Really Better than Ever?," *The Guardian*, the Long Read, July 28, 2017, www.theguardian.com/news/2017/jul/28/is-the-world-really-better-than-ever-the-new-optimists.

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Other engagements with progress seek to reclaim the concept's emancipatory potential and link it to a more disruptive politics. Philosopher Axel Honneth observes that "'progress' is a necessary and unavoidable perspective for all those of us today who aim at revitalizing emancipatory action."[78] The notion that progress is essential but problematic, and requires new, reconstructed conceptual foundations, runs through a number of works in contemporary philosophy and political theory. Thus, scholars have probed the different meanings of progress in history and the need for a reformulation of the idea today,[79] the potential tensions between scientific and technological progress and other more humanistic forms of progress,[80] the links between progress, normativity, and social change,[81] the extent of moral progress in history,[82] as well as the question of what it means to make political progress.[83] Among other things, representatives of "neoprogressivism,"[84] as Jakob Huber terms contemporary philosophical reappraisals of progress, have sought to reconceive progress in a nondogmatic way, which relies on the notion of learning processes in which human agency plays an important but unstable role.

I.7 Historiography of Medicine and Progress

Given the ubiquitous use of the term progress in professional medical contexts and popular ideas about medicine, it may come as a surprise

[78] Axel Honneth and Felix Koch, "The Normativity of Ethical Life," *Philosophy and Social Criticism*, 40 (8) (2014), 824.
[79] Peter Wagner, *Progress: A Reconstruction* (Cambridge: Polity Press, 2016).
[80] Nicholas Agar, *The Sceptical Optimist* (Oxford: Oxford University Press, 2015).
[81] Amy Allen, *The End of Progress: Decolonizing the Normative Foundations of Critical Theory* (New York: Columbia University Press, 2016) and Rahel Jaeggi, *Fortschritt und Regression* (Berlin: Suhrkamp, 2023).
[82] Allen Buchanan and Russell Powell, *The Evolution of Moral Progress: A Biocultural Theory* (Oxford: Oxford University Press, 2018), *Philip Kitcher: Moral Progress*, ed. and intro. Jan-Christoph Heilinger (Oxford: Oxford University Press, 2021) and Hanno Sauer et al., "Moral Progress: Recent Developments," *Philosophy Compass*, 16 (10) (2021), e12769.
[83] Christopher F. Zurn, "Political Progress: Piecemeal, Pragmatic, and Processual," in *Debating Critical Theory: Engagements with Axel Honneth*, eds. Julia Christ et al. (Rowman & Littlefield: Lanham, 2020), pp. 269–86 and Catherine Lu, "Progress, Decolonization and Global Justice: A Tragic View," *International Affairs*, 99 (1) (2023), 141–59.
[84] Jakob Huber, "Looking Back, Looking Forward: Progress, Hope, and History," *Constellations*, 28 (2021), 126–39.

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that the topic has not been more investigated in academia. Historians of medicine have a particular relationship with and perhaps a particular aversion to the idea of progress. One reason is that the history of medicine was originally told by doctors and from a heroic perspective. The first specialized historians of medicine in the nineteenth and early twentieth centuries were themselves practitioners, and they characterized medicine as a continuous tale of progress. In the English-speaking world, the best-known spokesperson for this model was Canadian physician and educator William Osler (1849–1919), who saw medicine as a fundamentally progressive science and sought in his history lectures to provide a bird's eye view of medical progress.[85] It was only in the 1970s and 1980s that trained historians began to engage substantially with the history of medicine, something that occasioned new historiographic controversies about whether nonphysicians could sufficiently grasp medical practices.[86] At stake was also the question of whether the history of medicine should be embedded in a narrative of progress, which both confirmed the superiority of science-based medicine to what came before and perpetuated that view of history.

"Unilinear scientific progress,"[87] a "linear march of progress,"[88] "the march of medical progress,"[89] as a rule, such depictions of medical history were seen as the worst kind of presentism by academic historians. Today, historians of medicine are uniquely aware of the pitfalls of seeing the development of history as a straightforward path to current truths. Rather, history is perceived as uniquely able to raise inconvenient perspectives and an antidote to perpetuating the "dangerous illusion" that medicine is on a progress track from religion

[85] "Preface," *The Evolution of Modern Medicine: A Series of Lectures Delivered at Yale University on the Silliman Foundation in April* (Champagne, IL: Project Gutenberg, 1998 [1913]), p. 3.

[86] See Leonard Wilson's editorial, "Medical History without Medicine," *Journal of the History of Medicine*, 35 (1) (1980), 5–7, and David Rosner's response, "Tempest in a Test Tube: Medical History and the Historian," *Radical History Review*, 26 (1982), 166–71.

[87] Frank Huisman, "Shaping the Medical Market: On the Construction of Quackery and Folk Medicine in Dutch Historiography," *Medical History*, 43 (1999), 359.

[88] Mark S. Pernick, "Bioethics and History," in *The Cambridge World History of Medical Ethics*, eds. R. Baker & L. B. McCullough (New York: Cambridge University Press, 2009), pp. 16–20.

[89] Jonathan Sadowsky, *Electroconvulsive Therapy in America: The Anatomy of a Medical Controversy* (New York and London: Routledge, 2017), p. 6

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to science.[90] In addition to history, insights from science and technology studies highlight how medical innovations and their application are bound up with social contexts and constraints. Medicine, increasingly, has come to be seen as part of an intricate network, involving market forces, institutions, power hierarchies, and ideologies, and one in which lawful, inevitable progress has little meaning.

The interest of the medical humanities, then, has largely been to move away from triumphalist narratives by recapturing the complexities, roads not taken, and undocumented effects of simplistic accounts of medical progress. The notion of linearity that clings to progress implies that the acceptance of new, more refined techniques is nearly inevitable and therefore inherently oversimplifies what are often complex and circuitous adoption procedures.[91] In many cases, there is no clear move from theory to practice, as shown, for example, by the introduction of antisepsis and asepsis or the adoption of surgical gloves.[92] Moreover, many therapeutics initially perceived as cutting-edge and desirable are ineffective or end up harming patients.[93] Other studies meticulously document how views of disease – for example, diagnostic judgments based on "objective," laboratory evidence rather than "subjective" evidence such as patients' sensations – are inherently partial, with losses as well as gains.[94] This has led some historians to argue that the technological orientation of modern medicine is a contingent development.[95]

[90] Gerald N. Grob, *Aging Bones: A Short History of Osteoporosis* (Baltimore: Johns Hopkins University Press, 2014), p. xvii.

[91] On this point, see Sally Frampton, *Belly-Rippers, Surgical Innovation and the Ovariotomy Controversy* (Cham: Palgrave Macmillan, 2018).

[92] See Thomas Schlich, "Introduction," *Palgrave Companion to the History of Surgery*, ed. Thomas Schlich (New York: Palgrave Macmillan, 2018).

[93] See Gerald N. Grob and Allan V. Horwitz, "Rhetoric and Reality in Modern American Medicine," *Diagnosis, Therapy, and Evidence: Conundrums in Modern American Medicine* (New Brunswick, NJ: Rutgers University Press, 2010), pp. 1–32.

[94] Mary Fissell, "The Disappearance of the Patient's Narrative and the Invention of Hospital Medicine," *British Medicine in an Age of Reform*, eds. A. Wear and R. French (London: Routledge, 1991), pp. 92–109.

[95] I am grateful to historian Thomas Schlich for discussing this issue with me. See also John V. Pickstone, "Introduction," in ibid (ed.), *Medical Innovations in Historical Perspective* (Houndsmills: Macmillan, 1992), pp. 1–16 and Ilana Löwy, "Medicine and Change," in ibid (ed.), *Innovations in Health and Medicine. Diffusion and Resistance in the Twentieth Century* (London: Routledge, 2002), pp. 1–15.

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The critique of progress by medical historians also means reflecting on the relativistic implications thereof. In a well-known intervention on nineteenth-century therapeutics, historian Charles Rosenberg sought to break with past scholars who presented change as equating progress.[96] In doing so, he tried to move the study of past medicine away from questions of physiological efficacy and to connect it to broader contexts of explanation and meaning-making. Once historical context was taken into account, he argued, medical therapies of the past "worked" in the sense that they produced physiological effects that were predictable for physicians and experienced by patients as relief. Reflecting on the wider import of Rosenberg's conclusions for medical progress, John Harley Warner argues that relativism is an important tool for historical understanding because it forces us to acknowledge that the very claim about whether a treatment "works" is context dependent.[97] Ultimately, this methodological premise implies that techniques such as blood-letting "worked" for those physicians and patients who used them, and antibiotics "works" in a later era.[98] But if each system of therapeutics works according to its own criteria, determining progress becomes more complex. The upshot of this line of reasoning is that while we are invested in the therapeutic regimes of our own time and can prefer them on that basis, broader claims of progress are difficult.

Progress-oriented stories of medicine often focused on a series of breakthroughs in medical science, accompanied by "heroic" acts of a small number of affluent, influential white men, who were ideally positioned to reap the fruits of progress. In 1985, Roy Porter published a seminal article, "The Patient's View," that questioned writing the history of medicine as a story of scientific progress and called for

[96] Charles E. Rosenberg, "The Therapeutic Revolution: Medicine, Meaning, and Social Change in Nineteenth-Century America," in *The Therapeutic Revolution: Essays in the Social History of American Medicine*, eds. Morris J. Voegel and Charles E. Rosenberg (Philadelphia: University of Pennsylvania Press, 1979), pp. 3–23.

[97] John Harley Warner, *The Therapeutic Perspective: Medical Practice, Knowledge, and Identity in America, 1820–1885* (Princeton, NJ: Princeton University Press, preface to 1997 edition [1986]). For Warner's reflections on methodological relativism, see his "Preface to the Paperback Edition," p. ix.

[98] See Ian Kerridge and Michael Lowe, "Bloodletting: The Story of a Therapeutic Technique," *Medical Journal of Australia*, 163 (4) (1995), 631–33.

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taking into account the views of patients, and linked medical events to social rituals, in which families and communities play a part.[99] New historical sensibilities to the voices of patients, including the stories of women, minorities, and communities facing barriers, have drawn attention to the fact that social positions associated with age, abilities, class, gender, and race intersect to determine who benefits from specific kinds of medical progress and who suffers from it.[100] This insight exists alongside the awareness of the difficulty inherent in recovering such voices when few of them recorded their views on illness and treatment. But it also draws attention to the fact that historical narratives of progress are necessarily selective, and these are precisely the viewpoints that have been omitted to allow a relatively uncomplicated story of progress to emerge.

It would, however, be an exaggeration to say that historians of medicine have not at times been very clear about what constitutes progress. Historian David Wootton, for example, set 1865, the date that Joseph Lister used antiseptic surgery, as the moment marking the beginning of the first real progress in medical therapy.[101] He argues that historians of medicine have a simple choice: either understanding the past on its own terms, in which case Hippocrates' and Galen's cures saved lives, or in light of modern science, in which case these cures were often deadly.[102] Wootton, however, remains the exception; as historian of science Steven Shapin observes, in the past few decades, academic historians of medicine "didn't – with rare exceptions – criticize the idea of medical progress so much as fall silent about it, seeing their job as something other than its documentation and celebration."[103] And if academic historians did not so much talk about progress as avoid it, popular accounts have filled the gap. Given medicine's extraordinary technical prowess, triumphant histories of medicine remain remarkably popular today.

[99] "The Patient's View: Doing Medical History from Below," *Theory and Society*, 14 (2) (1985), 175.

[100] See, for example, Deirdre Cooper Owens, *Medical Bondage: Race, Gender and the Origins of American Gynecology* (Atlanta: University of Georgia Press, 2017) and Elinor Cleghorn, *Unwell Women: Misdiagnosis and Myth in a Man-Made World* (London: Penguin, 2022).

[101] David Wootton, *Bad Medicine: Doctors Doing Harm since Hippocrates* (Oxford: Oxford University Press, 2007).

[102] David Wootton, "Understanding the History of Medicine," *BMJ*, 334 (7597) (2007), 762.

[103] Shapin, "Possessed by the Idols," *London Review of Books*.

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Widely read books aimed at a general public, in the genre of *Physicians, Plagues and Progress: The History of Western Medicine from Antiquity to Antibiotics* and *The Medical Book: From Witch Doctors to Robot Surgeons*, contribute to our understanding of medicine as the locus of progress in contemporary society.[104] Often, they use evolutionary metaphors to portray modern medicine as an inevitable history of progress, emphasizing cumulative achievements and minimizing the ways in which these are entangled with significant failures and rejections.

I.8 Medical Progress: A Multidimensional View

This book is about the politics of medical progress and the real-world implications of conceptual choices. For example, we might describe a specific medical technology as progress, we may associate progress with the ability of individuals to determine what happens to them in healthcare, or we might see progress in a given procedure being made available to all. These differing visions are better understood not as more or less accurate reflections of what medical progress "really" is – arguably they are all justified first-order instances of progress – but rather as normative positions underpinned by specific ideas of personhood, of society, and of health.

In the chapters that follow, I unpack and historically contextualize ideas of progress that hold currency in particular circumstances. I do so with a special interest in the terms "medicine" and "progress." To avoid overuse, I alternate the usage of progress with other words such as advance, improvement, or even development. I am, of course, aware that these terms are not entirely synonymous with progress; in particular, they do not link back to the larger tradition of progress rhetoric that I am particularly interested in. In the case of medicine, I do at times refer to health progress, as do the actors who are interested in minimizing the role of biomedicine and who favor broader conceptions of health. That said, rather than focusing on a wider thematic cluster of terms, I look specifically at medical progress to offer a *Begriffsgeschichte* – a conceptual, semantic history – of the term "progress" and its recent incarnations in medicine.

[104] Allan Chapman, *Physicians, Plagues and Progress: The History of Western Medicine from Antiquity to Antibiotics* (Oxford: Lion Books, 2018) and Pickover, *The Medical Book* (2012).

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Chapter 1 offers a historical overview of progress rhetoric up to 1945, and specifically how the interest – or disinterest – in progress is entangled with contemporary understandings of what it means to be a healthy/ill person, and the medical priorities of the time. While present-day ideas about medical progress rest on very different understandings of the human person from other cultural and historical contexts, their emergence from a combination of scientific knowledge and ethical preoccupations recurs throughout history. Indeed, both utopian and modest visions of medical progress have historical antecedents. This rough historical guide, therefore, explores the roots of contemporary statements about progress and explains how they relate to current epistemological and ethical priorities.

Subsequent chapters offer a more or less chronological survey from 1945 to the present day, each of them focusing on different operative concepts for medical progress – knowledge, freedom, and justice – before concluding with an epilogue on sustainability. Chapter 2 describes the heady excitement surrounding scientific medical progress in the post-war period and subsequent theoretical challenges culminating in the idea that progress claims are only valid in relation to context. It also scrutinizes how, in light of relativistic questions about to what extent knowledge can be progressive, medicine continues to be portrayed as uniquely immune to these uncertainties. It concludes by analyzing two recent examples, evidence-based medicine and health AI, both of which have been praised as objective examples of a particular kind of medical knowledge progress.

Chapter 3, on freedom, begins by showing how awareness of the insufficiencies of medical progress as "merely" scientific knowledge gains led to a new interest in knowledge with the ability to empower patients. This chapter also details how, in some cases, taking individual freedom seriously meant challenging traditional (technological) forms of medical progress because they were not patients' preferred methods of intervention. It concludes with a detailed examination of the most recent instances in which technological progress is presented as being highly compatible with personal freedom. To that end, I discuss the way in which genomic medicine promises to make "empowered patients in the twenty-first century" – to paraphrase the title of a recent book.[105]

[105] Barbara Prainsack, *Personalized Medicine: Empowered Patients in the 21st Century?* (New York: New York University Press, 2017).

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The final chapter traces debates on progress and social justice focusing on the late 1980s onward. The critique of a medical marketplace, the perceived need to challenge an autonomy-based notion of progress, and a certain sociopolitical optimism all contributed to reimagining medical progress by placing left-wing sensibilities front and center. Effectively, the idea of progress lost its narrower "medical" focus, in favor of the idea of health progress and became associated with ambitious projects for achieving social equality. Part of the story told in this chapter is the extent to which increased knowledge of health inequalities has come to embody progress. But here too, a single-minded commitment to the notion of progress as health justice comes replete with trade-offs and unresolved tensions.

The book concludes by considering one possible future incarnation of the idea of medical progress, progress as achieving sustainability. Visions of sustainable medical progress enlarge the concept of human health to include the health of nature, call for expanding the time frame in which medical progress is assessed, and posit environmental limits as a constraint on open-ended progress. At the same time, few of these visions engage with the pluralistic nature of medical progress, preferring to understand measures that support a robust natural environment as intrinsically good for the health of individuals and societies.

In structuring my chapters this way, I am not arguing that these incarnations of medical progress are somehow exclusive to a particular time or were ever hegemonic; I rather think they occur simultaneously and all have deep historical roots. Nevertheless, there are moments in which specific ideas gain a particular resonance. My research shows that the notion of medical progress grafts particularly well onto the normative high ground of a particular historical moment. Within the chapters, I do two main things. First, I show the way in which the progress of knowledge, freedom, and justice has been both justified and contested and the implications for specifically medical progress of these debates. This task is epistemological, that is related to investigating the methods, validity, and scope of different kinds of medical knowledge.

The second aim is ethical and related to ideas about what is a person and what constitutes health. Throughout the book, I contend that the most vocal proponents of medical progress have tended to believe one of two things. Either they have focused on one particular element

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of health (biological or psychological or social) or they have argued that the three elements (biopsychosocial) are mutually reinforcing and progress in one aspect leads to progress in the other two. I, therefore, show that when thinking about medical progress, not only do we have to consider the epistemological aspects of how progress in any one dimension of health is not uncomplicated but also that health has multiple dimensions and that progress in one dimension does not necessarily mean progress in another.

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