Poison became not just a malicious substance, it became a cause for disease itself, an idea that only expanded in the early modern period.

Gibbs argues that these various nascent ideas of poison as a harmful substance and disease agent came into their full theoretical expression in the fifteenth century, which he portrays as the 'culmination of medieval toxicology' (p. 151). Two early fifteenth-century Italian physicians, Antonio Guaineri and Sante Arduino, solidified the ontological status of poison and the role of 'total substance' in their influential treatises. Gibbs thus calls attention to the significant originality in fifteenth-century medicine, an oft-neglected era. This fifteenth-century scholarship provided the basis for new ideas about disease causation in the sixteenth century.

The longstanding and widespread connection between poison and disease, Gibbs argues, puts the famous poison theories put forth by the Swiss medical rebel Paracelsus into perspective. The idea often attributed to Paracelsus that 'the dose makes the poison' had long been a common understanding, and Paracelsus actually emphasised dosage far less than his concept of a poisonous and a healing part in every substance. At the same time, Paracelsus shifted existing concepts of poison, especially in his focus on the inability of the body to absorb poison rather than the harmful nature of *venenum*.

In varying ways, sixteenth-century physicians put poison at the centre of their disease ontologies. Poison became a common explanation for the French Disease, or syphilis, and French physician Jean Fernel put the 'total substance' of poison at the root of nearly all infectious diseases. In the second half of the sixteenth century, attempts to reconcile the (often divergent) classical and medieval traditions of *venenum* prompted physicians to focus on the specific effects of specific poisons on the body. Gibbs suggests that this effort should be considered more fully in the overall history of toxicology.

Poison, Medicine and Disease is thorough and convincing. Gibbs has consulted well over 200 ancient, medieval and early modern treatises on poison, and he has woven together a clear and coherent trajectory of the status of poison from the ancient world to the early modern period. He demonstrates both the importance of poison to the history of disease ontologies and the centrality of medicine to the history of toxicology. The work can be a heavy theoretical lift at times and thus may be more of interest to the scholar than the general reader, but Gibbs explains the difficult concepts in his texts clearly. His book should be a standard reference work for anyone interested in the history of poison.

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Beth Macy, *Dopesick: Dealers, Doctors, and the Drug Company that Addicted America* (New York: Little, Brown and Company 2018), pp. 384, $11.99, hardback, ISBN: 9780316551281.

Barry Meier, *Pain Killer: An Empire of Deceit and the Origins of America's Opioid Epidemic*, 2nd edition (London: Penguin Random House, 2018), pp. 240, $27.00, hardback, ISBN: 9780525511106.

Ben Westhoff, *Fentanyl, Inc.: How Rogue Chemists Are Creating the Deadliest Wave of the Opioid Epidemic* (London: Grove Atlantic, 2019), pp. 352, $27.00, paperback, ISBN: 9780802127433.

They all start the same: Americana is dying. Immediately, Macy, Meier and Westhoff tell us, the readers, that this is a tragedy. It has characters, heroes and villains that must

be vanquished. Who the villains are, though, varies. Furthermore, how they must be vanquished is left as an open-ended question. Taken together, these three books follow a common narrative of an evil corporation, an unsuspecting population and the ravages of addiction. However, an uncommon thread is who the true villain of the narrative is. Are the villains doctors, the pharmaceutical industry, capitalism or the chemists who created synthetic versions of opioids that have overshadowed what was once a crisis of over-prescription? Further, is focusing on the nuances of villainy the key to explaining the crisis? Not necessarily, though the differences in villainy may indicate why it has been so hard for policy makers, and even the authors of these books, to come to terms with what ought to be done.

The narrative is that America has a 'culture of medication' (Westhoff, p. 264). Americans consume (and die from) opioids more than any other country in the world. 'Death, addiction, and despair [are] now a fundamental part of American life' (Meier, p. 154). Two threads emerge: one about medical and the other about illicit opioids (Meier, p. 154). Meier's *Pain Killer* focuses on the early years of the opioid crisis, and the over prescription of OxyContin due to aggressive marketing tactics by Purdue, which appears to be the common villain throughout all three texts. Purdue is also a company which, according to Macy, bullied Meier following the release of his book (Macy, p. 73). At the same time, decades of chemical experiments created fentanyl, and the widespread distribution of it has been made possible through technological advancements and global capitalism; Westhoff calls this 'capitalism run amok' (p. 20). While Meier focuses heavily on the origins of OxyContin and the relationship between Purdue and physicians, Macy writes about the crisis from a more sociological, community-based perspective. Westhoff's book is less about the pharmaceutical industry and OxyContin and more the creation and dissemination of fentanyl since the mid-twentieth century. Further than that, he explores the supply chain of other synthetic drugs, and how global capitalism (especially with technological advancements) has made possible the international synthetic drug trade, particularly through trade with China. Read together, these three books present a common narrative. These three specific stories encapsulate what the opioid crisis means in America. Though the common narrative appears holistic, there remain questions and avenues of inquiry that are brought up at this review's conclusion.

Purdue is the primary villain of this common narrative, whose villainy is made possible by global capitalism. When it was recommended that doctors begin prescribing less abuse-prone drugs, a Purdue rep redirected blame onto the physicians, arguing 'the problem was inadequate pain management. . . not OxyContin's abuse' (Macy, p. 45). In this regard, is the blame redirected to physicians or drug users? It appears to be the drug users: Macy writes of a representative for the company that argued 'the issue is drug abuse, not the drug' (p. 51). Through the aggressive marketing of OxyContin in the 1990s, demand for stronger opioids rose, leading to the story of the crisis told by Westhoff. Meier himself battled directly with this corporate villain, only to lose his position writing about Purdue as a reporter for the *Wall Street Journal*. The connection between the first and second main villain cannot be understated: whereas Purdue introduced swaths of Americans to opioid addiction through misinformation, the crisis has been exacerbated through chains of illicit opioid trade to America.

There is near consensus amongst these authors that American neoliberalism has contributed immensely to the ongoing opioid crisis, making it this review's second villain. Global capitalist networks have benefited from the war on drugs, to the point where it is possible to obtain illicit opioids anywhere. 'We can't keep the drugs out of solitary

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confinement in a federal prison. . . How are we going to keep them out of festivals or off the streets?' (Westhoff, p. 247). There is a labour and productivity cost, as well. According to Macy, in 2017 the crisis came with a financial toll of '$1 trillion as measured in lost productivity and increased health care, social services, education, and law enforcement costs' (p. 31). What is the worth of a neoliberal citizen whose productivity is lost to addiction? Not only does neoliberalism exacerbate the crisis, there is a very clear cost in the form of human productivity within this system, perhaps intensifying class inequalities. This is a villain that cannot easily be overcome.

Meier ends his volume by writing that 'change is not optional. It is essential if we are to alter the cascade of death, addiction, and despair that is now a fundamental part of American life' (p. 154). However, neither Meier nor the other authors particularly offer policy-based solutions. This raises the question, what *do* they say about what ought to be done? Based on these three books, there appear to be a number of initiatives that are integral to overcoming the opioid crisis. First, all the books seem to agree on the effectiveness of stigma reduction and education campaigns. Both Westhoff and Macy cite the need for education on the harms of opioids, but also the culture and stigma associated with drug use and addiction. Westhoff writes that 'harm reduction comes from the understanding that preventing the use of drugs is impossible and that making sure they are used as safely as possible is a necessity' (p. 255). Macy notes that 'no matter where [she] turned in central Appalachia, the biggest barriers to treatment remained cultural. Stigma pervaded the hills and hollows, repeating itself like an old-time ballad, each chorus featuring a slightly different riff' (p. 256). This stigma is also felt for pain patients, who Meier argues have been effectively criminalised (p. 37). Second, they suggest the benefits of harm-reduction strategies, such as supervised consumption sites, the provision of opioid overdose reversal medications and substitution therapy. This solution is most advocated for by Westhoff. The caveat, however, is that harm reduction doesn't solve the problem in and of itself. These other factors are not explained in detail, though Macy draws attention to the economic impact of addiction and the link between opioid addiction and poverty. Third, the role of community-based health care is clear. In the midst of a faltering health care system in the USA, Macy notes that returning to community-based health care is integral to not only overcoming the crisis, but strengthening civil society. For Westhoff, in particular, these instances of community-based health care appear to be heroes in overcoming the crisis. Why is there no consensus about what ought to be done, nor true clarity in the form of policy recommendations? Certainly, it is somewhat out of scope: all three books are about the story of different parts of the opioid crisis. Though, as seen above, we are able to infer the above three hints at what the authors feel about the future of the crisis.

What is not the answer? What is left out? There are two particular avenues of inquiry that all three texts avoid, for the most part. First, decriminalisation takes up a combined two lines of text across all three books. Westhoff cites it as a barrier to overcoming the crisis, but instead focuses on harm-reduction measures. It is not mentioned in Meier's text, and for Macy it is a fleeting thought beyond its success in curbing overall drug-related deaths in Portugal (p. 265). Second, overcoming the social structures of inequality that make one more likely to become an addict. Poverty and under-education, or even social determinants of health angle are not necessarily attributed to discussions of who the people are that fall victim to the opioid crisis. The closest to this is that Macy cites the importance of shifting away from a crime-centred approach and toward a health-centred approach to addiction and illicit drug use.

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Perhaps the greatest takeaway gleaned from these texts is that the opioid crisis is not easily explained. Because of this, the solutions are not easily explained either. But there are things that can be done: we can stop thinking about addicts as criminals, rather understanding that there is a need to rebuild civil society and a return to the community for health care. Through this cultural shift we may come to better ameliorate the conditions under which addiction persists; we can offer means to help those in need through harm-reduction initiatives. Criminalisation and the war on drugs remain institutionalised villains that have been shown to create nothing but societal decay. All three texts must be regarded a required reading for anyone curious about how we got to where we are, amidst the opioid crisis. For historians, they are invaluable texts regarding the socio-political context within which the contemporary opioid crisis has emerged. Through investigative journalism these authors produce a common narrative that clarifies the complexity of the crisis, identifies its main actors and defines important milestones. However, I encourage readers to keep a critical eye on what the future may hold.

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Marcos Cueto, **Theodore M. Brown**, and **Elizabeth Fee**, *The World Health Organization: A History* (Cambridge: Cambridge University Press, 2019), pp. 388, £26.99, paperback, ISBN: 9781108728843.

Written by three medical historians, Marcos Cueto, Theodore M. Brown and the late Elizabeth Fee, *The World Health Organization: A History* is a timely and resourceful story told beyond an institutional account. The book covers seven decades of the accomplishments and setbacks of the largest intergovernmental health organisation on Earth. It is characterised by the authors as a narrative history. It does not offer ambitious theoretical or historiographical remarks on the transformation of the organisation, but it does provide readers with a thorough and engaging examination of the institution, from its pre-incarnation and origins to its contemporary evolution in the ever-changing world order.

The WHO documents its internal histories almost every decade, with its developmental objectives and project outcomes summarised in in-house records. Medical historians who mostly work at universities have published several historical critiques in the past 20 years. Given the volume of publications devoted to the WHO, why do we still need a narrative history? This well-timed chronicle tells us how the WHO has transcended its traditional purview as an institution. It explores the organisation's relationship with its multiple antecedents and partners, such as the United Nations Programme on HIV and AIDS, Medicine Sans Frontier, the United Nations Children's Fund, the World Bank and the Gates Foundation. Most importantly, the narrative comments on a visionary and well-intended design that has been embedded into an intricate and diverse world map.

A cross between chronicle and social history, *A History* features 11 chapters that unfold from socio-medical and technocratic, biomedical perspectives. These chapters largely trace the sequential order of the WHO's development, starting with the period before the establishment of the organisation during the years of the League of Nations. In some chapters, the authors present a comprehensive examination of project gains that have also been offset by losses – occurrences that are best represented by the organisation's varied attempts to eradicate malaria, smallpox and polio. The organisation first emerged at the time of scientific internationalism, being influenced by the interests of major Cold