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## Coinfection, Comorbidity, and Syndemics – On the Edges of Epidemic Historiography

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### Introduction

Once we look beyond the spectacle of daily case and mortality rates, the covid-19 pandemic has produced a myriad of highly localised microhistories. Many of these histories are not just stories of covid-19. The experience of contracting the virus, suffering from its debilitating symptoms and dying of its devastating effects makes for countless stories that depend as much on social conditions, political frameworks and environmental aspects as they are shaped by the co-occurrence of other diseases and conditions. Covid-19 has certainly laid bare a socially uneven pattern of morbidity and mortality, but the pandemic has also thrown a bright light on the vulnerabilities stemming from co-infections, co-morbidities and syndemics. That pandemics are “sampling devices,” that their histories offer a lens with which society’s failings and vulnerabilities can be laid bare, has been a common point of departure for at least a generation of epidemic historians.<sup>1</sup> The concepts of disease co-occurrence discussed in this bibliographical essay all focus on the lived experiences in an epidemic and they all provide a lens, with which the irreducible complexity and arbitrariness of the experience of the pandemic moves into focus. However, these concepts remain a striking lacuna in the historiography of epidemics until today.

The essay departs thus from an awkward position: over the last two to three decades, coinfection, comorbidity and syndemics have become productive and useful references in the social sciences of health, in critical public health as well as in some areas of epidemiological and medical research. It would exceed the reasonable scope of this essay to cover the use and adoption of these concepts across all these various disciplines and fields. On the other hand, the explicit uptake of these perspectives in historical scholarship is so minimal, that it would hardly justify a write-up at all. Rather, the aim here is to introduce each concept briefly and to provide an overview of significant literature that I deem useful and indeed valuable for the future of an epidemic historiography that embraces collaboration with the social sciences.

Coinfection, comorbidity and syndemics are not only useful instruments to interrogate the lived experiences of epidemics, but they share the transgression of a fundamental concept in the conventional historiography of epidemics: disease specificity. While coinfection is used to describe a

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<sup>1</sup> Charles E. Rosenberg, *Explaining Epidemics and Other Studies in the History of Medicine* (Cambridge: Cambridge University Press, 1992).

range of biological, medical and social complexities that emerge from the occurrence of several infectious diseases, comorbidity captures multiplied experiences of illness, often focused on chronic conditions and mental health. Syndemics, with its origin in the intersection of medical anthropology and critical public health, looks at the clustering of multiple epidemics in specific populations, such as HIV entangled with epidemics of violence or drug use. This approach focuses in particular on the social and environmental conditions that contribute to clustering of disease, to the interaction of conditions and to the multiplication of negative effects in a population.<sup>2</sup>

Historically, it is noteworthy that each of these concepts emerged against the background of the AIDS pandemic. AIDS did not fit within the traditional classifications of biomedicine, where an isolated pathogen leads to specific set of distinguished symptoms. Instead, the AIDS epidemic drew the attention of medical researchers, social scientists and historian alike to the unusual ways in which HIV disposed a compromised immune system vulnerable to multiple, often co-occurring opportunistic infections and diseases.<sup>3</sup> This unusual appearance led to an increased interest in the populations, in which these diseases occurred unexpectedly, opening a range of question, which epidemiologists and social scientists alike answered partly through the development of new analytical frameworks. For historians, the onset of AIDS has not only led to reflecting on the usefulness of historical perspectives amid a raging pandemic, but also ignited a process of revising how and to what end we write our accounts of past pandemics.<sup>4</sup>

## Disease Biographies and the Pathogen

The overwhelming majority of epidemic histories remains concerned with specific diseases. Studies of specific periods of cholera, inquiries into the relation between regions and yellow fever or books on the trans-historical trajectories of plague and smallpox depart from and reinstate the specificity of an epidemic disease as a fundamental condition of historical inquiry. As a matter of fact, it is almost impossible to imagine a historiography of epidemics that would neglect, or even disregard the specific disease as a category of knowledge, a vector of comparison or as the lens, through which such histories are told and books written. One would need to turn to the historiography of public health, of colonial and global health and to historical studies of health in particular populations to find some

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<sup>2</sup> Merrill Singer et al., "Syndemics and the Biosocial Conception of Health," *The Lancet* 389, no. 10072 (March 4, 2017): 941–50, [https://doi.org/10.1016/S0140-6736\(17\)30003-X](https://doi.org/10.1016/S0140-6736(17)30003-X).

<sup>3</sup> Lukas Engelmann, *Mapping AIDS: Visual Histories of an Enduring Epidemic* (Cambridge University Press, 2018).

<sup>4</sup> See the contribution by Rieko Kanazawa to this collection and for example Allan M. Brandt, *No Magic Bullet. A Social History of Venereal Disease in the United States since 1880* (New York: Oxford University Press, 1987); Elizabeth Fee and Daniel M Fox, eds., *AIDS. The Burdens of History* (Berkeley: University of California Press, 1988); Elizabeth Fee and Daniel M. Fox, eds., *AIDS. The Making of a Chronic Disease* (Berkeley: University of California Press, 1992); Rosenberg, *Explaining Epidemics and Other Studies in the History of Medicine*.

aspects of a systematic approach to the co-occurrence of diseases and epidemics.<sup>5</sup> But even in this body of work, specific diseases tend to structure the narratives. The genre of the disease biography, implicit subject of swathes of medical history and explicit title to at least two renowned book series, literally identifies the specific disease with a historical protagonist, offering an anthropomorphised story of birth, life and – rarely – the death of a disease or a pandemic.<sup>6</sup>

It proves challenging and beyond the scope of this essay to determine the beginning of this genre and thus the origin of historian's commitment to relay and maintain disease specificity within their work on epidemics. Within the context of modern history,<sup>7</sup> it would be premature to seek explanations in the laboratory revolutions and the introduction of the pathogen as the focal point of this stubborn narrative convention.<sup>8</sup> Germ theory owed, as George Canguilhem wrote, "much of its success to the fact that it embodies an ontological representation of sickness."<sup>9</sup> While the laboratory and the undeniable specificity of the pathogen have certainly impacted on the ways in which epidemics were conceptualised, it might be important to recall that the field of epidemiology was not subsumed by a focus on pathogens. Rather it might be fruitful to consider the wider context, and ask to what extent the history of epidemics follows a late nineteenth-century model, in which historical writing was integral to the production of epidemiological knowledge. The works of August Hirsch and his geographical history of epidemic diseases is certainly a strong contender to have merged traditions of natural history with historiography and geography to develop "historical pathology" as convention and genre.<sup>10</sup>

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<sup>5</sup> David Armstrong, *Political Anatomy of the Body: Medical Knowledge in Britain in the Twentieth Century* (Cambridge University Press, 1983); Dorothy Porter, *The History of Public Health and the Modern State* (Amsterdam: Rodopi, 1994); Frank A. Barrett and Atkinson College Dept of Geography, *Disease & Geography: The History of an Idea* (York University, Atkinson College, 2000); Suman Seth, *Difference and Disease: Medicine, Race, and the Eighteenth-Century British Empire*, Global Health Histories (Cambridge: Cambridge University Press, 2018), <https://doi.org/10.1017/9781108289726>; Maurits Bastiaan Meerwijk, "Phantom Menace: Dengue and Yellow Fever in Asia," *Bulletin of the History of Medicine* 94, no. 2 (2020): 215–43, <https://doi.org/10.1353/bhm.2020.0035>.

<sup>6</sup> See the book series at Oxford University Press (now defunct, <https://global.oup.com/academic/content/series/b/biographies-of-disease-bod/?cc=gb&lang=en&>) and at Johns Hopkins University Press (<https://jhupbooks.press.jhu.edu/series/johns-hopkins-biographies-disease>)

<sup>7</sup> The three concepts at stake here all imply a specific modern understanding of disease and infection. As their implications and analytical focus would hardly make much sense with regards to epidemics in pre-modern eras, this essay will predominantly be concerned with 19<sup>th</sup> and 20<sup>th</sup> century history.

<sup>8</sup> On the laboratory revolution and its impact on the writing of, for example, plague history see Andrew Cunningham, "Transforming Plague: The Laboratory and the Identity of Infectious Disease," in *The Laboratory Revolution in Medicine*, ed. Andrew Cunningham and Perry Williams (Cambridge: Cambridge University Press, 1992), 209–44; Lester K. Little, "Plague Historians in Lab Coats," *Past & Present* 213, no. 1 (November 1, 2011): 267–90, <https://doi.org/10.1093/pastj/gtr014>; Lukas Engelmann, "The Burial Pit as Bio-Historical Archive," in *Histories of Post-Mortem Contagion*, Medicine and Biomedical Sciences in Modern History (Palgrave Macmillan, Cham, 2018), 189–211, [https://doi.org/10.1007/978-3-319-62929-2\\_8](https://doi.org/10.1007/978-3-319-62929-2_8).

<sup>9</sup> Georges Canguilhem, *On the Normal and the Pathological* (Dordrecht: Reidel, 1978), 11.

<sup>10</sup> August Hirsch, *Handbuch Der Historisch-Geographischen Pathologie* (Erlangen: Enke, 1859); August Hirsch, *Handbook of Geographical and Historical Pathology* (London: New Sydenham Society, 1883).

As Olga Amsterdamska and J. Andrew Mendelsohn have shown, epidemiologists sustained since the early 20<sup>th</sup> century a thinking that considered the sick person and the environment often to be just as valuable as offerings from the bacteriological laboratory.<sup>11</sup> Even the formalisation of epidemiology and the development of epidemiological models was historically driven by attempts to exceed the specificity of diseases, or even the narrow confines of pathological phenomena, and instead focus the abstract questions of distribution and “theories of happenings.”<sup>12</sup> Concepts such as coinfection, comorbidity and syndemics, one might assume, have emerged from traditions of epidemiological reasoning with its emphasis on the interdependence of place, host and disease, while the historical lens on epidemics sympathised with the “diagnostic gaze of the clinic.”<sup>13</sup>

## Coinfection

The perspectives assembled under the banner of coinfection offer perhaps the easiest expansion to the historian’s toolkit, suggesting the parallel occurrence of at least two infectious diseases within a patient or a population.<sup>14</sup> The concept has emerged out of the first and second decade of HIV/AIDS. As the infection with HIV laid the immune system bare to the occurrence of multiple viral and bacterial infections, medical research assumed interest in the symptomatology, treatment-implications and complications of the interactions between HIV and hepatitis B and C, or for example leishmaniosis.<sup>15</sup> Especially in the arena of global health, the focus of coinfection research solidified quickly on the co-occurrence of HIV and TB, once TB emerged in the 2000s as the major killer of people with HIV.<sup>16</sup>

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<sup>11</sup> J. Andrew Mendelsohn, “From Eradication to Equilibrium. How Epidemics Became Complex after World War I,” in *Greater Than the Parts: Holism in Biomedicine, 1920-1950*, ed. Christopher Lawrence and George Weisz (Oxford: Oxford University Press, 1998), 303–34; Olga Amsterdamska, “Demarcating Epidemiology,” *Science, Technology, & Human Values* 30, no. 1 (2005): 17–51.

<sup>12</sup> Ronald Ross and Hilda P. Hudson, “An Application of the Theory of Probabilities to the Study of a Priori Pathometry. Part III,” *Proceedings of the Royal Society of London A: Mathematical, Physical and Engineering Sciences* 93, no. 650 (May 3, 1917): 225–40, <https://doi.org/10.1098/rspa.1917.0015>.

<sup>13</sup> Michel Foucault, *The Birth of the Clinic; An Archaeology of Medical Perception* (New York: Pantheon Books, 1973).

<sup>14</sup> See e.g. Miriam J. Alter, “Epidemiology of Viral Hepatitis and HIV Co-Infection,” *Journal of Hepatology*, Proceedings of the 1st European Consensus Conference on the Treatment of Chronic Hepatitis B and C in HIV Co-infected Patients, 44 (January 1, 2006): S6–9, <https://doi.org/10.1016/j.jhep.2005.11.004>.

<sup>15</sup> Richard A. McKay, “Before HIV. Venereal Disease among Homosexually Active Men in England and North America,” in *The Routledge History of Disease*, ed. Mark Jackson (Abingdon: Routledge Handbooks Online, 2016), <https://doi.org/10.4324/9781315543420.ch24>; Fanny Chabrol, “Viral Hepatitis and a Hospital Infrastructure in Ruins in Cameroon,” *Medical Anthropology* 37, no. 8 (November 17, 2018): 645–58, <https://doi.org/10.1080/01459740.2018.1518981>.

<sup>16</sup> Alison Bashford, “Living with Tuberculosis: The Prehistory of HIV/AIDS,” *The Lancet* 375, no. 9728 (May 2010): 1774–75, [https://doi.org/10.1016/S0140-6736\(10\)60794-5](https://doi.org/10.1016/S0140-6736(10)60794-5); Mark Harrington, “From HIV to Tuberculosis and Back Again: A Tale of Activism in 2 Pandemics,” *Clinical Infectious Diseases* 50, no. Supplement\_3 (May 15, 2010): S260–66, <https://doi.org/10.1086/651500>; Amrita Daftary, “HIV and Tuberculosis: The Construction and

The example of TB and HIV - in individual patients as well as on the level of populations - also demonstrates the limits of a mere cumulative analysis. Coinfections are not just a case of “double trouble,” where the histories of TB and HIV merge within population data or where the stigmata associated with the disease stack up within a patient’s experience. Rather, as Janina Kehr and I have argued elsewhere, coinfection encourages also a revision of the histories told about each disease and suggest a closer look at the multiple and bi-directional translations of concepts and ideas between the communities – both experiential and professional – associated with each infection.<sup>17</sup>

A second site of historical inquiry into the cross-cultivating effects of different infectious disease histories might be found in scholarship that investigates technologies, practices and spaces of pandemic control. Without explicit reference to multiple co-occurring pathogens, these perspectives usually exceed the narrow narrative focus of a specific infectious disease. Rich examples can be found in the history of disinfection, fumigation and deratisation, in which the design, development and application of chemical substances bridges pathogens as much as urban, maritime and agricultural spaces.<sup>18</sup> A growing body of works in the history of quarantine-stations and -islands offers not only a revision of the world-history of pandemics from the perspective of interconnected archipelagos, but it also sharpens our attention for the communities incarcerated with different diseases that populated these stations across the globe.<sup>19</sup> Finally, histories of pest-houses and sanatoria have come to appreciate the shifting occupancy of such institutions by different disease communities across time.<sup>20</sup>

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Management of Double Stigma,” *Social Science & Medicine* (1982) 74, no. 10 (May 2012): 1512–19, <https://doi.org/10.1016/j.socscimed.2012.01.027>; Diana Canetti et al., “HIV and Tuberculosis: The Paradox of Dual Illnesses and the Challenges of Their Fighting in the History,” *Tuberculosis (Edinburgh, Scotland)* 122 (2020): 101921, <https://doi.org/10.1016/j.tube.2020.101921>.

<sup>17</sup> Lukas Engelmann and Janina Kehr, “Double Trouble? Towards an Epistemology of Co-Infection,” *Medicine Anthropology Theory* 2 (2015): 1–31; Julie Livingston, *Improvising Medicine: An African Oncology Ward in an Emerging Cancer Epidemic* (Duke University Press, 2012); Johanna T. Crane, “Viral Cartographies: Mapping the Molecular Politics of Global HIV,” *BioSocieties* 6, no. 2 (2011): 142–66.

<sup>18</sup> Lukas Engelmann and Christos Lynteris, *Sulphuric Utopias: A History of Maritime Fumigation* (MIT Press, 2020); David S. Barnes, “Cargo, ‘Infection,’ and the Logic of Quarantine in the Nineteenth Century,” *Bulletin of the History of Medicine* 88, no. 1 (2014): 75–101, <https://doi.org/10.1353/bhm.2014.0018>; David S. Barnes, “‘Until Cleansed and Purified’: Landscapes of Health in the Interpermeable World,” *Change Over Time* 6, no. 2 (November 10, 2016): 138–52, <https://doi.org/10.1353/cot.2016.0010>; Alison Bashford, *Imperial Hygiene. A Critical History of Colonialism, Nationalism and Public Health* (Basingstoke, Hampshire [u.a.]: Palgrave Macmillan, 2004); Mark Harrison, *Contagion* (Yale University Press, 2013); Graham Mooney, *Intrusive Interventions: Public Health, Domestic Space, and Infectious Disease Surveillance in England, 1840-1914* (Woodbridge: Boydell & Brewer, 2015).

<sup>19</sup> Alison Bashford, *Quarantine: Local and Global Histories* (Palgrave Macmillan, 2016); Howard Markel, *Quarantine!: East European Jewish Immigrants and the New York City Epidemics of 1892* (JHU Press, 1999); Krista Maglen, *The English System: Quarantine, Immigration and the Making of a Port Sanitary Zone* (Oxford University Press, 2014).

<sup>20</sup> Guenter B. Risse, *Driven by Fear: Epidemics and Isolation in San Francisco’s House of Pestilence* (University of Illinois Press, 2015).

## Comorbidity

The concept of co-morbidity leads away from the realm of pathogens and offers a powerful lens to consider the epidemic dynamics of chronic illness, of enduring sickness and of those pathological phenomena- like for example psychiatric conditions - that are more difficult to localise than infectious diseases.<sup>21</sup> The perspective also implies a shift in register, away from causes and towards the morbid appearances, the symptoms and experience of disease.<sup>22</sup> While historians have made little use of the concept as an analytical lens, there are a few areas in which thinking about the epidemic occurrence of the simultaneous and multiple development of morbidities is implied.

Georg Weisz has certainly pioneered the historiography of chronic illness in the twentieth century, demonstrating both their social as well as their conceptual bleeding from one condition to another.<sup>23</sup> Attempts to reframe the historical study of multiple illnesses within populations emerged from ecological interpretations of medical geography and medical demography in the mid-twentieth century.<sup>24</sup> The French-Croatian historian Mirko Grmek suggested a “synthetic” framework, to investigate the interconnection between diseases. Pathocenosis was meant to capture pathological states within a population, understood to depend on endogenous and ecological factors as much as on the distribution of other diseases within a society and place.<sup>25</sup> Grmek crafted the space for new environmental histories of epidemics. Pathocenosis lent itself to reconceptualising the history of psychiatric illnesses, revisiting their notoriously shifting specificity and multiplicity. And perspectives like these reinstated the value of the epidemiology of occupational health, championed for example as multifaceted, gendered portraits of uncertain illness by Michelle Murphy in the *Sick-*

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<sup>21</sup> Marjan van den Akker, Frank Buntinx, and J. André Knottnerus, “Comorbidity or Multimorbidity,” *European Journal of General Practice* 2, no. 2 (January 1, 1996): 65–70, <https://doi.org/10.3109/13814789609162146>; Ronald Gijsen et al., “Causes and Consequences of Comorbidity: A Review,” *Journal of Clinical Epidemiology* 54, no. 7 (July 1, 2001): 661–74, [https://doi.org/10.1016/S0895-4356\(00\)00363-2](https://doi.org/10.1016/S0895-4356(00)00363-2).

<sup>22</sup> Lesley Jo Weaver, Ron Barrett, and Mark Nichter, “Special Section on Comorbidity: Introduction,” *Medical Anthropology Quarterly* 30, no. 4 (2016): 435–41, <https://doi.org/10.1111/maq.12335>.

<sup>23</sup> George Weisz, *Chronic Disease in the Twentieth Century: A History* (JHU Press, 2014); Jeremy A Greene, *Prescribing by Numbers. Drugs and the Definition of Disease* (Baltimore: Johns Hopkins University Press, 2007).

<sup>24</sup> Barrett and Geography, *Disease & Geography*; Tom Koch, *Disease Maps. Epidemics on the Ground* (Chicago: University of Chicago Press, 2011); Graham Mooney, “Historical Demography and Epidemiology,” in *The Oxford Handbook of the History of Medicine* (OUP Oxford, 2011), 373–92; Andrew Jonathan Noymer, “Studies in the Historical Demography and Epidemiology of Influenza and Tuberculosis Selective Mortality” (University of California, Berkeley, 2006); Engelmann, *Mapping AIDS*.

<sup>25</sup> Mirko D. Grmek, *History of AIDS: Emergence and Origin of a Modern Pandemic*, trans. Russell C. Maulitz and Jacalyn Duffin (Princeton: Princeton University Press, 1993); Jon Arrizabalaga, “At the Intersection of Medical Geography and Disease Ecology: Mirko Grmek, Jacques May and the Concept of Pathocenosis,” *History and Philosophy of the Life Sciences* 40, no. 4 (December 6, 2018): 71, <https://doi.org/10.1007/s40656-018-0236-8>.

*Building-Syndrome*, or as deeply racialized genealogies of vital capacity by Lundy Braun in *Breathing Race into the Machine*.<sup>26</sup>

The other commonplace in the history of co- and multimorbidity is to be found in the historiography of cancer. From maps of the Victorian cancer landscape to becoming the “emperor of all maladies,” histories of cancer regularly avoid specificity and engage the multiple ways in which cancer and its metaphors have shaped experiences, politics and cultures of sickness in the twentieth century.<sup>27</sup> The anthropologist and historian Julie Livingston finally returns to comorbidity to describe the veiled experiences of emerging cancers and to problematize the powerful taxonomies between infectious disease, non-infectious conditions and risk-factors within the co-occurring epidemics of TB, HIV, hypertension and diabetes in Botswana.<sup>28</sup> Disease specificity, from the ubiquitous perspective of living and dying comorbid lives around the globe can appear as a somewhat misleading “intellectual conquest.”<sup>29</sup>

## Syndemics

In a recent commentary, Nicola Bulled and Merrill Singer argue that the multiplicity of covid-19 dynamics around the globe should be plotted against the background of past and ongoing syndemics in different national contexts.<sup>30</sup> In the case of South Africa, covid-19 emerged among the intersecting endurance of TB and HIV epidemics, both entangled with a series of harmful social conditions, promoting “disease clustering and interaction, as well as population vulnerability to disease.”<sup>31</sup> Syndemics, as Singer envisioned the concept in 1996, capture the intersection of diseases with those social conditions that adversely impact disease in communities.<sup>32</sup> As with coinfection and to some

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<sup>26</sup> Michelle Murphy, *Sick Building Syndrome and the Problem of Uncertainty. Environmental Politics, Technoscience, and Women Workers* (Durham, N.C.: Duke University Press, 2006); Lundy Braun, *Breathing Race Into the Machine: The Surprising Career of the Spirometer from Plantation to Genetics* (University of Minnesota Press, 2014).

<sup>27</sup> Agnes Arnold-Forster, “A Pathology of Progress? Locating the Historiography of Cancer,” *The British Journal for the History of Science* 49, no. 4 (December 2016): 627–34, <https://doi.org/10.1017/S0007087416001175>; Agnes Arnold-Forster, “Mapmaking and Mapthinking: Cancer as a Problem of Place in Nineteenth-Century England,” *Social History of Medicine* 33, no. 2 (May 1, 2020): 463–88, <https://doi.org/10.1093/shm/hky059>; David Cantor, *Cancer in the Twentieth Century* (Johns Hopkins University Press, 2008); Siddhartha Mukherjee, *The Emperor of All Maladies* (HarperCollins UK, 2011); Joanna Baines and Emm Barnes Johnstone, *The Changing Faces of Childhood Cancer: Clinical and Cultural Visions since 1940* (Springer, 2014).

<sup>28</sup> Julie Livingston, “When Sickness Comes in Multiples:: Co-Morbidity in Botswana,” in *Biosocial Worlds*, ed. Jens Seeberg, Andreas Roepstorff, and Lotte Meinert, Anthropology of Health Environments beyond Determinism (UCL Press, 2020), 146–67, <https://doi.org/10.2307/j.ctv13xpsqt.12>.

<sup>29</sup> Grmek in Arrizabalaga, “At the Intersection of Medical Geography and Disease Ecology,” 71.

<sup>30</sup> Nicola Bulled and Merrill Singer, “In the Shadow of HIV & TB: A Commentary on the COVID Epidemic in South Africa,” *Global Public Health* 15, no. 8 (August 2, 2020): 1231–43, <https://doi.org/10.1080/17441692.2020.1775275>.

<sup>31</sup> Bulled and Singer, 1236.

<sup>32</sup> Merrill Singer, “A Dose of Drugs, a Touch of Violence, a Case of AIDS: Conceptualizing the SAVA Syndemic,” *Free Inquiry in Creative Sociology* 24, no. 2 (1996): 99–110.



extent for comorbidity, the framework emerged at the global peak of the AIDS pandemic and was shaped mostly by medical anthropologists. The aim was to acknowledge co-occurring epidemics as fundamentally entangled with those populations in which biological or behavioural factors persist that exacerbate “the negative health effects of any or all of the diseases involved.”<sup>33</sup> Commonly, these are populations affected by conditions of poverty, inequality and discrimination, all adding up to states of bad health.<sup>34</sup> Syndemics research, which was quickly taken up in critical public health and found a productive use among medical epidemiological researchers, focuses on those “communities experiencing co-occurring epidemics that *additively* increase negative health consequences.”<sup>35</sup> It prompted productive questions about disease interaction on multiple levels and led to the uptake of innovative research designs in HIV/AIDS and beyond.<sup>36</sup> Recently, Emily Mendenhall has utilised the concept specifically with reference to non-communicable diseases, such as depression co-occurring with diabetes.<sup>37</sup> With a focus on the synergistic effects of often separated and isolated conditions, syndemics has surely become the most influential concept developed to integrate disease-clustering, disease-interaction and disease context into medical and epidemiological research.<sup>38</sup>

Syndemics has been one particularly successful concept, with which the uncertainty of dividing sensibly between biological, social and political epidemics has been addressed and operationalised for social research as most medical research had failed “to take into account biological, social, and political issues of co-infection.”<sup>39</sup> The success of the syndemics framework has also led to further consideration of multi-causal models in the analysis and understanding of epidemics. As for example Nancy Krieger’s work demonstrates, these questions have not only emerged out of the history of social medicine and social epidemiology, but their acknowledgement also continues to inform the project of critical epidemiological research today.<sup>40</sup>

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<sup>33</sup> Singer et al., “Syndemics and the Biosocial Conception of Health,” 941.

<sup>34</sup> Merrill Singer et al., “Syndemics, Sex and the City: Understanding Sexually Transmitted Diseases in Social and Cultural Context,” *Social Science & Medicine* 63, no. 8 (October 2006): 2010–21, <https://doi.org/10.1016/j.socscimed.2006.05.012>.

<sup>35</sup> Merrill Singer, *Introduction to Syndemics: A Critical Systems Approach to Public and Community Health* (John Wiley & Sons, 2009), 12; Singer et al., “Syndemics and the Biosocial Conception of Health”; Merrill Singer, Nicola Bulled, and Bayla Ostrach, “Whither Syndemics?: Trends in Syndemics Research, a Review 2015–2019,” *Global Public Health* 15, no. 7 (July 2, 2020): 943–55, <https://doi.org/10.1080/17441692.2020.1724317>.

<sup>36</sup> Alexander C. Tsai and Bridget F. O. Burns, “Syndemics of Psychosocial Problems and HIV Risk: A Systematic Review of Empirical Tests of the Disease Interaction Concept,” *Social Science & Medicine* (1982) 139 (August 2015): 26–35, <https://doi.org/10.1016/j.socscimed.2015.06.024>; Alexander C. Tsai, “Syndemics: A Theory in Search of Data or Data in Search of a Theory?,” *Social Science & Medicine* 206 (June 1, 2018): 117–22, <https://doi.org/10.1016/j.socscimed.2018.03.040>.

<sup>37</sup> Emily Mendenhall, *Syndemic Suffering: Social Distress, Depression, and Diabetes Among Mexican Immigrant Women* (Left Coast Press, 2012).

<sup>38</sup> Tsai and Burns, “Syndemics of Psychosocial Problems and HIV Risk.”

<sup>39</sup> Ian Harper, *Development and Public Health in the Himalaya: Reflections on Healing in Contemporary Nepal* (Routledge, 2014), 199.

<sup>40</sup> Nancy Krieger, “Theories for Social Epidemiology in the 21st Century: An Ecosocial Perspective,” *International Journal of Epidemiology* 30, no. 4 (August 1, 2001): 668–77, <https://doi.org/10.1093/ije/30.4.668>;

## Conclusion

To consider these three concepts of disease co-occurrence for historical scholarship raises a few broader questions. Once again, the division between the social sciences and historical research emerges as a dividing line. The question is, if this division is merely a semantic lacuna or if there are other, material or methodological reasons for this gap. One might ask to what extent the topography of health archives skews historical research towards disease specificity, while the empirical research of the social sciences tends to emphasise the experiential dimensions of disease co-occurrence? However, while historians might ascribe to disease biographies and the specificity of disease ontologies in their writing, the stories they tell commonly revolve around microhistories that emphasise the intersections of multiple diseases and conditions. It would be a thankless task to collect painstakingly all historical scholarship that considers multiple infectious diseases and their, however fleeting, overlap. Similarly, the multiplicity of symptoms that exceed narrow clinical classification of a single disease is likely found in most disease biographies. And while the explicit use of terms such as syndemics are often avoided by historians, questions of social and racial inequalities have been at the heart of the historical inquiry into pandemics of the past, as Michael McGovern and Keith Wailoo demonstrate in their contribution to this collection. The conclusion for historians of epidemics is thus neither to give up on the productivity of disease biographies, or to introduce equally stubborn theoretical frameworks in (what would likely be quite whiggish) epidemic histories, but to develop familiarity with their adaptation in social science and medical research to build robust capacity for interdisciplinary translation.

