A game of scale. How influenza became the object of international cooperation

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List of abbreviations

ARI	Acute Respiratory Infections
CDC	Center for Disease Control and Prevention
CSI	Commission Sanitaire Interalliée
DRNV	Democratic Republic of North Vietnam
EPI	Expanded Programme on Immunization
FAO	Food and Agriculture Organization
FRG	Federal Republic of Germany
GIP	Global Influenza Programme
GISN	Global Influenza Surveillance Network
GDR	German Democratic Republic
HPAI	Highly Pathogenic Avian Influenza
ICD	International Classification of Diseases
ICSU	International Council of Scientific Unions
IEA	International Epidemiological Association
IHB	International Health Board
IHD	International Health Division
IHR	International Health Regulation
ILI	Influenza-Like Illness
ISB	International Sanitary Bureau
ISC	International Sanitary Conference
ISR	International Sanitary Regulations
ISS	Istituto Superiore di Sanità
LNHO	League of Nations Health Organization
MCR	Medical Research Council
NIMR	National Institute for Medical Research
OIHP	Office International d'Hygiène Publique
PAHO	Pan American Health Organization
PASB	Pan American Sanitary Bureau
PRC	People's Republic of China
RF	Rockefeller Foundation
ROC	Republic of China
RV	Republic of (South) Vietnam
SRV	Socialist Republic of Vietnam
UK	United Kingdom
UN	United Nations
US	United States
USPHS	United States Public Health Service
USSR	Union of Soviet Socialist Republics
WHA	World Health Assembly
WHO	World Health Organization
WIC	World Influenza Centre

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Introduction

Fifty years ago, two books were published that were fundamental to historiographical reflection on infectious diseases: *Plagues and People*, by William McNeill, and *America's Forgotten Pandemic*, by Alfred Crosby. As with any pioneering work opening new avenues of research, both texts have been made outdated by the wealth of information we possess today thanks to the half-century of in-depth study that followed. Still, McNeill deserves credit for laying the groundwork for an epidemiological history that clearly explained the formation of a disease pool that respects no boundaries on the map. Above all, he showed how this pool was based on an ecological dimension, a context marked by certain conditions in which all living beings are linked together, and which allows various pathogens to survive, spread, and mutate[1]. Crosby, on the other hand, had the merit of outlining the history of the Spanish Flu, and of showing how research into the disease had evolved to lay the foundations for what was known at the time about a virus that, year after year, accompanied the lives of the entire world population. A favorable situation, at least from a publishing point of view, also made Crosby's work famous beyond the history departments: the great Swine Flu scare that struck the United States in 1976. The event also played a part in consigning definitively influenza to historiographical reflection. It received somewhat less attention from the political class and the collective memory of our communities. This is despite the fact that, as Crosby himself points out in the preface to the 2003 edition, written while SARS was causing alarm, today's world is a "better place for nasty viruses and a worse place for us than it was in 1918"[2].

Influenza is a constant threat to global health: the frequency of virus mutation, as well as its contagiousness and pace of spread, allow the pathogen to travel quickly from one corner of the globe to another, while animal and human populations are not able to develop lasting immunity to the disease. The disease recurs cyclically, and in the case of type A influenza viruses[3], it can also give rise to pandemics. We are therefore faced with a continuous cycle of contagion, which the WHO has in fact represented in its 2017 *Pandemic Influenza Risk Management* as a "continuum" of phases of

[1] "Infections must have been transferred repeatedly to humankind from animal reservoirs, and particularly from the domesticated species with which human populations began to have extended and intimate contacts. Such infections can, of course, run multilaterally. Human beings, for example, can sometimes infect their domesticated animals. Likewise, infections can be exchanged between domesticated herds and wild populations, both within and across species lines, as chance contacts and the susceptibility of potential hosts dictate". McNeill, William H. *Plagues and People*. Garden City (NY): Anchor Books, 1976, 47.

[2] Crosby, Alfred W. *America's Forgotten Pandemic. The Influenza of 1918*. Cambridge: Cambridge University Press, 2003, XIII.

[3] The nomenclature of influenza viruses will be discussed in more detail later. For now, it is useful to note that there are three genera of influenza viruses in the Orthomyxoviridae family that infect humans, referred to as A, B, and C. The first is the most dangerous, and is classified on two surface glycoproteins, or antigens: hemagglutinin (H) and neuraminidase (N). There are 18 different types of the former and 11 of the latter, giving rise to various configurations.

influenza spread in relation to pandemic risk. The definition of a true pandemic phase is summarized as follows: "the period of global spread of human influenza caused by a new subtype based on global surveillance"[4]. It is interesting to highlight two elements of this definition. The first is that, in order to deal with the pandemic threat of influenza, global cooperation is needed in surveillance, one of the pillars of which is epidemiology, the discipline that studies both the frequency and distribution with which a disease occurs and the conditions that favor or prevent its development. There is no way through which influenza can be 'surveilled' by a nation on its own. But if tackling a pandemic were reduced to identifying it, it would follow that there is no way to combat it. Surveillance has always involved the sharing of strains as well, with the aim of vaccine development and of defining a pro-active approach. However, rapid response is the key for limiting the spread of the disease. The first pandemic that WHO surveillance had to deal with is summarized by McNeill as follows:

> In 1957, for example, a new "Asian" strain of flu appeared in Hong Kong; but before it attained epidemic force in the United States, vaccine against the new variant had been produced in sufficient quantity to affect the incidence and intensity of the infection. This required, nonetheless, nimble footwork on the part of public health authorities and private entrepreneurs in recognizing the new influenza strain and starting vaccine manufacture on a large scale without delay.[5]

George Dehner, in a careful reconstruction of how the US government and pharmaceutical companies responded to the pandemic, highlighted how the vaccination campaign was actually late and unable to stop the spread[6]. In the most recent study on the history of those events from an international perspective, Michael Bresalier states that the Asian Influenza "was the first test of the WIP [World Influenza Programme], and by most accounts, it failed"[7]. As we shall see, much can be learned from failure, and it is useful to quote, as Bresalier does, Anthony Payne, one of the WHO representatives who will appear most often in the following pages. In the proceedings of a symposium held in May 1958, these were Payne's opening words:

> The 1957 pandemic of influenza is the first that it has been possible to study using modern virological techniques in an almost world-wide network of laboratories which had been organized by the World Health Organization with just such an eventuality in mind. It was almost ironical therefore that the epidemic should originate in an area not covered by the programme.[8]

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[4] World Health Organization. *Pandemic Influenza Risk Management: A WHO guide to inform and harmonize national and international pandemic preparedness and response*. Geneva: World Health Organization, 2017, 13–14. https://iris.who.int/bitstream/handle/10665/259893/WHO-WHE-IHM-GIP-2017.1-eng.pdf.

[5] McNeill. *Plagues and People*, 255.

[6] Dehner, George. *Influenza, a century of science and public health response*. Pittsburgh: Pittsburgh University Press, 2012, 82–90.

[7] Bresalier, Michael. *Modern Flu. British Medical Science and the Viralisation of Influenza, 1890–1950*. London: Palgrave, 2023, 349.

[8] Payne, Anthony M.-M. "Symposium on the Asian Influenza Epidemic, 1957". *Proceedings of the Royal Society of Medicine* 51, no. 12 (1958): 1009. https://doi.org/10.1177/003591575805101205.

The intention here is not to 'copy' Bresalier, but rather to highlight some key points that lead us to the historiographical question that this work attempts to answer: to what genre of historical studies does this work belong to? What are the actors explored, and are they only scientific ones? The first element to outline is the inclusion in a specific line of study, namely that of a transnational history of science and science diplomacy, which seeks to reconstruct how certain areas of international relations have developed, and in this specific case, that of international health concerning influenza surveillance. Starting from a more general landscape, this specific field is considered as part of what today is often referred to as Global Health. The introduction to the book *Global Health and the New World Order* reports that, according to a search on Pubmed, the term Global Health already appeared in the 1940s, but its use only became established in the 1980s and beyond[9]. As the book also points out, this shift to global health is identified by many, from various perspectives, as a "marker of recent and large transformations in the governance of health at the international level". In 2009, at the United Nations General Assembly, Secretary-General Ban Ki-moon gave a definition of Global Health that went far beyond purely health-related aspects:

> global health touches upon all the core functions of foreign policy: achieving security, creating economic wealth, supporting development in low-income countries and protecting human dignity. Government and non-Government stakeholders have started to recognize the strategic value of how and why the foreign policy community's support for the health sector is vital for advancing both. The need for increased foreign policy and diplomatic activities on global health problems has created opportunities and challenges for those who shape the foreign and health policies of Member States.[10]

Global Health is described as a concept of health protection that qualifies as such not only because of its geographical scope, but also because it addresses the elements that can give rise to health problems in a comprehensive manner, and therefore, first and foremost, economic poverty and the backwardness of health services. However, this is a task that is carried out through negotiation in the arena of international relations. In this arena, the key players continue to be individual states. It is not the WHO, a multilateral institution, that determines the framework for action because, as Andrew Lakoff effectively summarized when discussing the spread of the Zika virus in 2015, its role remains one of "administrative coordination and technical norm-making"[11]. But given the tasks encompassed by Global Health, a wide variety of actors are active in this arena, including, as in the past,

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[9] Beaudevin, Claire, Jean-Paul Gaudillière, Cristoph Gradmann, Anne M. Lovell, and Laurent Pordié. *Global health and the new world order: introduction*. In Gaudillière, Jean-Paul, Claire Beaudevin, Cristoph Gradmann, Anne M. Lovell, and Laurent Pordié, ed. *Global health and the new world order: Historical and anthropological approaches to a changing regime of governance*. Manchester: Manchester University Press, 2020, .

[10] Reported in Davies, Sara E., Adam Kamradt-Scott, and Simon Rushton. *Disease Diplomacy. International Norms and Global Health Security*. Baltimore: Johns Hopkins University Press, 2015, 2.

[11] Lakoff, Andrew. *Unprepared. Global health in a time of emergency*. Oakland, CA: University of California Press, 2017, 3.

philanthropic foundations, non-governmental organizations, and other entities. David Fidler, one of the most authoritative authors on health diplomacy, recalls that in some meetings organized by the Rockefeller Foundation and the WHO focusing on Global Health, diplomacy in this sector has been defined as "the policy-shaping processes through which States, intergovernmental organizations, and non-State actors negotiate responses to health challenges or utilize health concepts or mechanisms in policy-shaping and negotiation strategies to achieve other political, economic, or social objectives"[12]. Therefore, both the range of objectives that go beyond the specific field of health and the dialogue between various types of actors characterize global health diplomacy. In this sense, it is necessary to distinguish global health from international health, which essentially concerns relations between states and is considered to embody a historical phase prior to the way in which global health protection is conceived today. In the introduction to the *Textbook of Global Health*, this difference is summarized as follows:

> The term *global health* is relatively recent. Its predecessor, "international health," came into use circa 1900 after sovereign countries recognized the value of intergovernmental cooperation and began to establish permanent bodies to address health issues of mutual interest, albeit in a context of intense inter-imperial competition. Imperial powers – though sometimes reluctant to exchange information with commercial and political rivals – were especially intent on fending off epidemics of deadly diseases such as cholera and plague that interrupted trade and generated social unrest.[13]

These lines are extremely useful in setting out the framework for the research presented here. Specifically, this research investigates 1) permanent bodies, 2) health issues of mutual interest, and 3) the competitive context. This dissertation will analyze the evolution of the influenza surveillance network, organized by the World Health Organization shortly after World War II and fully developed over the following 35 years. They represented the establishment of new world order, after the previous one was erased in the bloodiest war of all times. And it was delineated on the terrain of the terrain of mutual destruction promised by the nuclear arsenals of the United States and Soviet Union. It was a turbulent period, during which the colonial empires have fallen apart (but not their logics and tools). In some way, the rooms in which the tensions were at least presented in an institutional form were those of the United Nations. Citing the UN framework is not incidental. The 'technical' nature of its specialized agencies, as the WHO is, must be kept in mind when thinking of the range of activities that could become part of its agendas. The same applies to the relationship between Geneva and the political gatherings of the UN: a sort of hierarchical nexus that was not necessary and debated at the

[12] Fidler, David P. *Health Diplomacy*. In Cooper, Andrew F., Jorge Heine, and Ramesh Thakur, ed. *The Oxford Handbook of Modern Diplomacy*. Oxford: Oxford University Press, 2013, 692. https://doi.org/10.1093/oxfordhb/9780199588862.013.0039.

[13] Birn, Anne-Emanuelle, Yogan Pillay, and Timothy H. Holtz. *Textbook of Global Health*. New York (NY): Oxford University Press, 2017, XXI.

origin of the multilateral bodies[14]. Moreover, the role of science in the diplomatic framework of UN became a research subject well before the publication of the 2010 pamphlet on Science Diplomacy that is considered to be a foundational moment for the discipline[15].

The WHO is one of those permanent bodies, caught up in a competitive dynamic between states and empires. Concurrently, it was an autonomous institution, committed to adhering to its own set of guidelines. Although these endeavors frequently proved to be unsuccessful, the medical officers who participated in the founding of the WHO were important actors in the shaping of the objectives of this agency, and of International Health in general. Almost half a century ago, there were already detailed analyses on the possibilities of intellectuals, in general, and scientists, in particular, in intervening in decisions formulated in international politics. It must be remembered *Scientists and World Order. The Uses of Technical Knowledge in International Organizations*, by Ernst Haas, Mary Pat Williams, and Don Babai, a work considered pioneering in this field. The three authors started their elaboration from the need for a new "world order", as it was hinted at the Conference on Conditions of World Order in 1966. The search for this new order was rooted in a period of ideological confrontation, as the Cold War was, when it seemed that tensions arose only, or mostly from this systemic conflict, which could have a nuclear winter as its final outcome. Thus, the shaping of a new order was intended as a working question: "under what conditions would men (divided in so many ways) be able not merely to avoid destruction, but live together relatively well in one planet?" The task of answering this question was entrusted to scientists, "who base their reasoning and action on scientific knowledge". As knowledge progresses and mankind realizes that all the issues are connected, only international organizations can solve them by centralizing action in international organizations, led on the basis of scientific advice[16].

The authors were interested in investigating if scientists could change decisions and policies, and how they could influence the activities of international agencies, and whether they speak as they represented one voice or not. But that work and the dimension of scientific opportunities in which it made the reader navigate should be highlighted here not for the conclusions of their analysis, but for the evident impact it had on later studies. Utilizing a categorization devised by the scholar Peter Haas, the WHO experts could be defined as an "epistemic community". This community was connected to Geneva, but it was also entrenched in political offices, public institutions, and private foundations.

[14] An overview of the issues related to UN framework and science multilateralism in general is in Ruffini, Pierre-Bruno. *Science and Diplomacy. A New Dimension of International Relations*. Berlin: Springer, 2017, 105–113.
[15] See Committee for Survey and Analysis of Science Advice on Sustainable Development to International Organizations. *Knowledge & Diplomacy. Science Advice in the United Nations System*. Washington D.C.: The National Academies Press, 2002. The 2010 publication is The Royal Society. *New Frontiers in Science Diplomacy*. London: The Royal Society, 2010.
[16] Haas, Ernst B., Mary Pat Williams, and Don Babai. *Scientists and World Order. The Uses of Technical Knowledge in International Organizations*. Berkeley: University of California Press, 1977, 3–4 and relative notes.

The community of those working for the WHO had its own political agenda, even when this was not codified and perhaps not unanimously agreed upon. For instance, in the WHO Secretariat there was a clear conception of how international relations should be interpreted and managed[17]. Their objective was pursued in many different ways, in the folds of "administrative coordination and technical norm-making" activity. Adopting Haas' category means adopting

> an approach that examines the role that networks of knowledge-based experts – epistemic communities – play in articulating the cause-and-effect relationships of complex problems, helping states identify their interests, framing the issues for collective debate, proposing specific policies, and identifying salient points for negotiation.[18]

However, although the "epistemic community" can help schematize the actors involved in many events, it is a simplification that cannot help who want to problematize the actual process that led to a specific configuration of scientific issues in the international politics. The flaw behind this category is the fact that it suffers from a dichotomous division between the scientist, understood as the bearer of truth or, at least, of knowledge and practices of an eminently technical nature, and the politician, as the expression of a particular interest[19]. But as Pierre-Bruno Ruffini has written, "it is time for the researcher's dreams to meet reality, and it is because he lives on earth that he crosses the path of the diplomat". The importance of applying scientific discoveries to industrial processes, the methods for funding research, and the fact that every scientist is still a human being, living in a specific country, make the scholar and the intellectual outcomes of his study a strategic asset for nations (still the main actors of health policies, as mentioned above)[20]. And beyond this general acknowledgment, Ronald Doel has already demonstrated how, for instance, US scientists became diplomats and promoters of their national foreign policy. Doel's work challenges the traditional view of science as an apolitical endeavor, instead demonstrating how scientific activities and expertise have become instrumental in shaping foreign policy and international relations, often blurring the boundaries between engagement for the sake of knowledge and diplomatic objectives[21].

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[17] See Siddiqi, Javed. *World Health and World Politics: The World Health Organization and the UN System*. London: Hurst & Company, 1995, or Farley, John. *Brock Chisholm, the World Health Organization, and the Cold War*. Vancouver: University of British Columbia Press, 2009.

[18] Haas, Peter M. "Introduction: Epistemic Communities and International Policy Coordination". *International Organization* 46, no. 1 (1992): 2. https://doi.org/10.1017/S0020818300001442.

[19] An insightful critic of the use of 'epistemic communities' in science diplomacy is in Kaltofen, Carolin, and Michele Acuto. "Rebalancing the Encounter between Science Diplomacy and International Relations Theory". *Global Policy* 9, supplement 3 (2018): 15–22. https://doi.org/10.1111/1758-5899.12620.

[20] Ruffini. *Science and Diplomacy*, 30–33.

[21] Doel, Ronald E. *Scientists as Policymakers, Advisors, and Intelligence Agents: Linking Contemporary Diplomatic History with the History of Contemporary Science*. In Söderqvist, Thomas, ed. *The Historiography of Contemporary Science and Technology*. London–New York: Routledge, 2012, 215–244.

This blurred boundary will be explored in this thesis, which essentially aims at rooting a new history of influenza in the specific framework shaped by international confrontation. This endeavor reminds the reader that science is not 'neutral', and medical knowledge is not an exception. Recently, a section *Focus* of the Italian *Mefisto* journal has been devoted to this issue. In the "Introduction", the editors Gerardo Ienna and Antonio Piccolomini d'Aragona traced a concise yet thorough examination of the controversy surrounding the existence of "pure science". The examination follows the origins of the debate back to the historiographical current of externalism and various important scholars, such as Boris Hessen and Ludwig Fleck, extending the analysis up to the modern developments of the sociology of knowledge[22]. A formulation of this purpose, which for the time being avoids placing this study within specific currents, and which may appear to be simpler while, in reality, expresses the complexity of any historiographical reconstructions, can be borrowed from an article by Geoffrey Bowker. In his investigation of the history of "information infrastructures" through the case study of the International Classification of Diseases, he wrote that tool must be "associated both with a theory of historical knowledge and a particular configuration of technology"[23]. This is an approach that fits well even for influenza surveillance and its means and structures in the WHO framework, which were embedded with the virological conceptualizations and technological possibilities (related not only to the laboratory, but to the transmission of information as well) of that time, when they were conceived and then modified. Influenza surveillance was and is not determined less by its aetiology than by the specific historical context in which it develops.

In our case, the context will be that of Cold War and decolonization. And this is the peculiarity of this new history of influenza that I am endeavoring to sketch out in this dissertation: it will be a history of the disease watched through the lens of this geo-strategic competition. It is not a history of a specific WHO program, nor that of microbial knowledge and practices, and not even a history of institutions or their relations. The intent is rather to present how activities concerning influenza were actually carried out in this historical and political context, how the global threat of a pandemic was managed in various forms of collaboration and competition, which were intertwined with studies on the virus, shaping the institutional, organizational and scientific approach to the disease. In order to do that, an analysis of "influenza internationalization" must be devised in relation to a wide range of studies, starting from those addressing science diplomacy in general. Given the lens of "geo-strategic competition", a few titles must be mentioned: *American Hegemony and the Postwar Reconstruction*

[22] Ienna, Gerardo, and Antonio Piccolomini d'Aragona. "Introduction". *Mefisto. Rivista di Medicina, Filosofia e Storia* 7, no. 2 (2023): 41–43.
[23] Bowker, Geoffrey C. "The History of Information Infrastructures: The Case of the International Classification of Diseases". *Information Processing & Management* 32, no. 1 (1996): 55. https://doi.org/10.1016/0306-4573(95)00049-m.

of Science in Europe (2008), *Competing with the Soviets: Science, Technology, and the State in Cold War America* (2013), *Science and Technology in the Global Cold War* (2014), *Cold War Science and the Transatlantic Circulation of Knowledge* (2015)[24]. Moreover, there are some issues of important journals that devote considerable attention to science diplomacy and offer a significant overview of the state of research in this field and its problems. For instance, *Global Policy* 9, supplement 3 (2018), *Historical Studies in the Natural Sciences* 50, no. 4 (2020), *Journal of Contemporary History* 56, no. 3 (2021), and *Centaurus* 63, no. 1 (2021).

The history of international health, namely how it was shaped by its conferences, organizations, and different diplomatic agendas, has been discussed widely by several important scholars. A sort of precursors were Charles Allen, Neville Goodman, and Norman Howard-Jones, decades ago. More recently, it must be remembered the works by Peter Baldwin, Javed Siddiqi, Mark Harrison, David Fidler, Christopher Hamlin, Paul Weindling, Sylvia Chiffoleau, Valeska Huber, Iris Borowy, and Anne Sealey, mentioning just a few names. John Farley and Josep Barona have worked on the Rockefeller Foundation[25], while Aro Velmet's book *Pasteur's Empire* is the reference for the history of Institut Pasteur[26]. In 2019, on the occasion of the 100th anniversary of the Treaty of Versailles, the Parisian conference "The Making of a World Order: A Reappraisal of the Paris Peace Conference and Treaty of Versailles", became the opportunity for an insightful examination of the order that emerged after the First World War. The resulting book[27] questions the problems of creating a new international, if not global, governance, including the health sector. Its methods of questioning such a task are enlightening. The history of this governance and that emerged after the Second World War, enriched with issues related to medical approaches and specific disease or health campaigns, is traced by Randall Packard in *A History of Global Health*[28], covering more than a century in his research on the transition from colonial to international and, finally, global health.

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[24] Krige, John. *American Hegemony and the Postwar Reconstruction of Science in Europe*. Cambridge (MA): MIT Press, 2008; Wolfe, Audra J. *Competing with the Soviets: Science, Technology, and the State in Cold War America*. Baltimore: Johns Hopkins University Press, 2013; Oreskes, Naomi, and John Krige, ed. *Science and Technology in the Global Cold War*. Cambridge (MA): MIT Press, 2014; van Dongen, Jeroen. *Cold War Science and the Transatlantic Circulation of Knowledge*. Leiden: Brill, 2015.

[25] Farley, John. *To cast out disease: A history of the International Health Division of the Rockefeller Foundation (1913–1951)*. New York: Oxford University Press, 2004; Barona, Josep L. *The Rockefeller Foundation, Public Health and International Diplomacy, 1920–1945*. London: Routledge, 2015.

[26] Velmet, Aro. *Pasteur's Empire: Bacteriology and Politics in France, Its Colonies, and the World*. Oxford: Oxford University Press, 2020.

[27] Wu, Albert, and Stephen W. Sawyer, ed. *The Making of a World Order: Global Historical Perspectives on the Paris Peace Conference and the Treaty of Versailles*. Abingdon, Oxon: Routledge, 2024.

[28] Packard, Randall M. *A History of Global Health. Interventions into the Lives of Other Peoples*. Baltimore: Johns Hopkins University Press, 2016.

Specifically, on WHO, a sort of a 'manual' to its history is *The World Health Organization. A History*, by Marcos Cueto, Theodore Brown and Elizabeth Fee[29]. Cold War and the birth of WHO have been studied by John Farley[30], while a diplomatic point of view on international health has been explored by David Fidler, who should be considered the real authority in this field of studies. His contribution published in the *Oxford Handbook of Modern Diplomacy* summarizes in a brilliant way the pivotal events of this history and its themes[31]. Although his main works are related to more recent issues, especially those regarding the changing landscape of health diplomacy after the SARS case[32], his insights and elaborations are very valuable for every analysis on international health. On the diplomacy of infectious diseases, it is fundamental to consult Disease Diplomacy, by Sara Davies, Adam Kamradt-Scott, and Simon Rushton[33]. The book has at its core the analysis of the International Health Regulations, and its most recent revision: it then discusses the legal binding agreement that defines rights and obligations tasked to WHO countries "in managing public health risks, events and emergencies that have the potential to cross borders"[34]. Influenza has a peculiar relationship with this legal framework, which will be mentioned in several parts of the thesis, although the protagonist of this dissertation will be the Global Influenza Surveillance Network. However, when it comes to the issue of preparedness against health emergencies, it must be mentioned Andrew Lakoff's work[35].

Instead, when it comes to the "borders" and their role for health, there are two books edited by John Krige that are pivotal: *How Knowledge Moves* and *Knowledge Flows in a Global Age*[36]. While this contribution will argue on how and why knowledge (and biological material) on influenza crosses borders, reaching a global stage, but will not present itself as a "global" history[37], here it should be remembered that influenza rarely appears in connection within the development of WHO institutional and diplomatic framework. It has been done for the most recent developments that will be mentioned at the end of the dissertation. Robert Peckham connects the 1968 Hong Kong Flu to the evolution of

[29] Cueto, Marcos, Theodore M. Brown, and Elizabeth Fee, *The World Health Organization. A History*. Cambridge: Cambridge University Press, 2019.
[30] Farley. *Brock Chisholm*.
[31] Fidler. *Health Diplomacy*.
[32] Fidler, David P. *SARS, Governance and the Globalization of Disease*. London: Palgrave Macmillan, 2004, and Fidler, David P. "Navigating the Global Health Terrain: Mapping Global Health Diplomacy". *Asian Journal of WTO & International Health Law and Policy* 6, no. 1 (2011): 1–43. https://www.repository.law.indiana.edu/facpub/820.
[33] Davies, Kamradt-Scott, and Rushton. *Disease Diplomacy*.
[34] "International Health Regulations", *World Health Organization*. https://www.who.int/health-topics/international-health-regulations#tab=tab_1, 15/01/2026.
[35] Lakoff. *Unprepared*.
[36] Krige, John, ed. *How Knowledge Moves. Writing the Transnational History of Science and Technology*. Chicago: The University of Chicago Press, 2019, and Krige, John, ed. *Knowledge Flows in a Global Age. A Transnational Approach*. Chicago–London: The University of Chicago Press, 2022.
[37] See Conrad, Sebastian. *What is global history?* Princeton: Princeton University Press, 2017, and Gänger, Stefanie, and Jürgen Osterhammel, ed. *Rethinking global history*. New York: Cambridge University Press, 2024.

surveillance of communicable diseases[38]. On the occasion of the 65th anniversary of GISN, in 2018, a few articles were published on its history, emphasizing its significance for international cooperation and research[39]. However, none of these texts investigate how scientists of different countries actually met within this network. Beyond a few hints, how they managed their relationships, what issues they collaborated on, and through which channels they passed information and strains – or other related laboratory materials – remains obscure. Moreover, nor are these relationships examined in light of the geopolitical context in which they took place and possible diplomatic pressures.

Mark Honigsbaum and George Dehner have encountered this institutional and organizational political scenario only incidentally in their reflections on the disease[40]. While Honigsbaum delve into the cultural aspects of the disease, Dehner focuses more on the American side of the surveillance that, actually, it is what is missing, in terms of sources, in this thesis. Heidi Tworek mentioned influenza, in one of her articles, focusing on the search for information inside the framework of the League of Nations Health Organization[41]. Jean-Paul Gaudillière gave the virus a privileged position in his article about Rockefeller strategies on vaccine production, and in his book *Inventer la biomédecine* as well[42]. The significance of international collaboration between the British Medical Research Council and the Rockefeller Foundation in defining the virology of influenza has been explored in detail by Michael Bresalier. His 2023 book *Modern Flu* is certainly the most comprehensive and updated research on influenza, covering all the related issues from the 18th century to Covid-19 and synthesizing all his previous studies in one organic opera[43]. However, his focus is on the first half of the 20th century, and on the process of construction of the viral identity of the disease. For this historiographical field, it is also essential to cite John Eyler, and in particular his article "De Kruif's Boast: Vaccine Trials and the

[38] Peckham, Robert. "Viral surveillance and the 1968 Hong Kong flu pandemic". *Journal of Global History* 15, no. 3 (2020): 444–458. https://doi.org/10.1017/S1740022820000224.
[39] Monto, Arnold S. "Reflections on The Global Influenza Surveillance and Response System (GISRS) at 65 Years: An Expanding Framework for Influenza Detection, Prevention and Control". *Influenza and Other Respiratory Viruses* 12, no. 1 (2018): 10–12. https://doi.org/10.1111/irv.12511; Hay, Alan J., and John W. McCauley. "The WHO Global Influenza Surveillance and Response System (GISRS) - A Future Perspective". *Influenza and Other Respiratory Viruses* 12, no. 5 (2018): 551–557. https://doi.org/10.1111/irv.12565; Ziegler, Thedi, Awandha Mamahit, and Nancy J. Cox. "65 Years of Influenza Surveillance by a World Health Organization-coordinated Global Network". *Influenza and Other Respiratory Viruses* 12, no. 5 (2018): 558–565. https://doi.org/10.1111/irv.12570.
[40] Dehner. *Influenza*; Honigsbaum, Mark. *A History of the Great Influenza Pandemics. Death, Panic and Hysteria, 1830–1920*. London–New York: I. B. Tauris, 2014; Honigsbaum, Mark. "Revisiting the 1957 and 1968 influenza pandemics". *The Lancet* 395, no. 10240 (2020): 1824–1826. https://doi.org/10.1016/s0140-6736(20)31201-0.
[41] Tworek, Heidi J. S. "Communicable Disease: Information, Health, and Globalization in the Interwar Period". *The American Historical Review* 124, no. 3 (2019): 813–842. https://doi.org/10.1093/ahr/rhz577.
[42] Gaudillière, Jean-Paul. "Rockefeller strategies for scientific medicine: molecular machines, viruses and vaccines". *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 31, no. 3 (2000): 491–509. https://doi.org/10.1016/S1369-8486(00)00017-0. Gaudillière, Jean-Paul. *Inventer la biomédecine. La France, l'Amérique et la production des savoirs du vivant (1945–1965)*. Paris: La Découverte, 2002.
[43] Bresalier. *Modern Flu*.

Construction of a Virus"[44]. In Gaudillière's and Eyler's works it is evident the pivotal issue of vaccines and immunization, a policy deeply intertwined with political objectives[45]. An articulated discussion of historiography on vaccination has been delineated in a 2023 Special Issue of *Isis*, by Dora Vargha and Imogen Wilkins[46]. There are at least three other contribution of that Special Issue that must be taken into account: Honigsbaum's historiographical review of the Spanish Flu and the imaginaries it evoked; James Stark's analysis of scholarships on "visualization" of microbes, up to their impact on social, cultural, and political dimensions; Barbara Canavan's bibliographic essay on zoonotic diseases and the understanding of them shaped by both historians and anthropologists[47].

The latter article contains two crucial issues: the history of disease ecology and the importance of other disciplines, and particularly anthropology, to influenza historiographical scholarships. On the ecological dimension of pathogens Warwick Anderson has written some of the most important texts[48]. Here, the intent is to highlight that an anthropological background and environmental health merged in the activities of two authors: Lyle Fearnley, who wrote *Virulent Zones: Animal Disease and Global Health at China's Pandemic Epicenter*[49], and Frédéric Keck's contemporary *Avian Reservoirs: Virus Hunters and Birdwatchers in Chinese Sentinel Posts*[50]. While other Lyle's contributions will be used in a few sections of the thesis, especially when the category of 'viral sovereignty' will be presented[51], Keck analysis of the concept of sentinel will be only hinted. But its extraordinary heuristic usefulness must be acknowledged, at least in the introduction. Finally, two French authors have published their important contributions on influenza ecology on an anthropological journal: Frédéric Vagneron[52], and

[44] Eyler, John M. "De Kruif's Boast: Vaccine Trials and the Construction of a Virus". *Bulletin of the History of Medicine* 80, no. 3 (2006): 409–438. https://doi.org/10.1353/bhm.2006.0092.
[45] See Blume, Stuart, and Baptiste Baylac-Paouly, ed. *Immunization and States. The Politics of Making Vaccines*. London–New York: Routledge, 2022.
[46] Vargha, Dora, and Imogen Wilkins. "Vaccination and Pandemics". *Isis* 114, no. S1 (2023): S50–S70. https://doi.org/10.1086/726980. If we talk about 'eradication' of a disease, see Stepan, Nancy L. *Eradication. Ridding the World of Diseases Forever?* London: Reaktion Books Ltd, 2001.
[47] Honigsbaum, Mark. "The "Spanish" Flu and the Pandemic Imaginary". *Isis* 114, no. S1 (2023): S143–S161. https://doi.org/10.1086/726984; Stark, James F. "Making Microbes: Theorizing the Invisible in Historical Scholarship". *Isis* 114, no. S1 (2023): S85–S103. https://doi.org/10.1086/726982; Canavan, Barbara. "Historical Literature Related to Zoonoses and Pandemics". *Isis* 114, no. S1 (2023): S104–S142. https://doi.org/10.1086/726983.
[48] One above all: Anderson, Warwick. "Natural Histories of Infectious Disease: Ecological Vision in Twentieth-Century Biomedical Science". *Osiris* 19 (2004): 39–61. https://doi.org/10.1086/649393.
[49] Fearnley, Lyle. *Virulent Zones: Animal Disease and Global Health at China's Pandemic Epicenter*. Durham: Duke University Press, 2020.
[50] Keck, Frédéric. *Avian Reservoirs: Virus Hunters and Birdwatchers in Chinese Sentinel Posts*. Durham: Duke University Press, 2020.
[51] Halabi, Sam F., and Rebecca Katz, ed. *Viral Sovereignty and Technology Transfer: The Changing Global System for Sharing Pathogens for Public Health Research*. Cambridge: Cambridge University Press, 2020.
[52] Vagneron, Frédéric. "Surveiller et s'unir? Le rôle de l'OMS dans les premières mobilisations internationales autour d'un réservoir animal de la grippe". *Revue d'Anthropologie des Connaissances* 9, no. 2 (2015): 139–162. https://doi.org/10.3917/rac.027.0139.

Ana Aranzazu[53]. In 2013 Aranzazu published an article that is crucial for this elaboration, because it problematized "la transformation des objectifs et la mise en place graduelle des normes régulant la circulation et le partage des souches et des connaissances entre les acteurs" involved in the network through which WHO played a coordinating role. The scholar also argued that the GISN transitioned from an eminently scientific project to an element of a broader system aimed at facilitating vaccine production[54]. To conclude this overview of studies on influenza, a volume edited in 2010 by Tamara Giles-Vernick and Susan Cradock collected a series of contributions offering a broad perspective on the many issues related to this disease[55]. Primary literature is significant as well, but it cannot be cited here. However, there are three books written by microbiologists who were among the protagonists of the period here reconstructed that deserve to be mentioned, as they delineated both influenza-research developments in connection with their biographies: Edwin Kilbourne's *Influenza*, Claude Hannoun's *La Grippe, ennemie intime*, and Robert Webster's *Flu Hunter*[56].

However, none of these books and articles – which represents a partial list, of course – explicitly investigate how influenza in the perspective of how it was dealt with in the international arena, either at what terms it became a subject discussed during international conferences and committees, inside the bodies of multilateral agencies, or in the reports of private and public institutes or the letters that scientists exchanged across their national borders. To be more precise (because certainly the authors previously cited have actually touch upon these issues), what is missing in scholarships on influenza, even when circulation of knowledge and strains is put at the center of the elaboration, is how foreign agendas, diplomatic initiatives, or, generally speaking, the burdens of geostrategic competition have crossed the path of the disease. In the following pages a history of the internationalization of influenza research and control will be sketched, reading this phenomenon through the WHO network, the GISN. But the effort is not limited to reconstructing the history of this laboratory system, its expansion, and the challenges it faced. The intent is to frame these processes inside the dialectics of Cold War and decolonization. The historiographical question raised in this thesis concerns the extent to which Cold War tensions and liberation from colonial rule – and then also the attempt to overcome the causes of

[53] Aranzazu, Ana. "Surveillance de la grippe d'origine animale à l'OMS. Transformation de l'écologie du virus grippal, de la surveillance in extenso à la prévention et au contrôle des pandémies". *Revue d'Anthropologie des Conaissances* 10, no. 1 (2016): 71–93. https://doi.org/10.3917/rac.030.0071.

[54] My translation: "the transformation of objectives and the gradual implementation of standards regulating circulation and the sharing of strains and knowledge between actors". Aranzazu, Ana. "Le réseau mondial de surveillance de la grippe de l'OMS. Modalités de circulation des souches virales, des savoirs et des techniques, 1947–2007". *Sciences Sociales et Santé* 31, no. 4 (2013): 41–64. https://doi.org/10.1684/sss.2013.0403.

[55] Giles-Vernick, Tamara and Susan Cradock, ed. *Influenza and Public Health. Learning from Past Pandemics*. London–Washington D.C.: Earthscan, 2010.

[56] Kilbourne, Edwin D. *Influenza*. New York–London: Plenum Medical Book Company, 1987; Hannoun, Claude. *La grippe, ennemie intime. Itinéraire d'un virologue: de la Grippe espagnole aux grippes aviaire et porcine*. Paris: Balland, 2009; Webster, Robert. G. *Flu Hunter. Unlocking the secrets of a virus*. Dunedin: Otago University Press, 2018.

underdevelopment –, competition for expanding areas of influence, as well as competing conceptions of the objectives of international health policy, impacted a surveillance that could only be global, due to the characteristics of influenza viruses. Investigating this field means exploring how governments, concerned by the memory of the Spanish Flu and set in the world order that emerged from the tragedy of the Second World War, devised their duties to combat the scourge of influenza, and how the disease entered their political agendas: whether international surveillance was influenced by foreign policies or foreign policies were obliged to follow specific paths in relation to it. Did the pathogen become a tool for asserting certain interests or the ground on which constructing solid connections, in order (or under the pretext) to prevent a pandemic? This is the aim of this research.

Filling this gap in scholarships would require a substantial endeavor, one that would exceed the scope of a doctoral thesis, without doubt. Some limits of this dissertation have been already hinted at, and it is useful to expose another couple of them. First of all, two important lines of research are not addressed here: that problematizing the definition of the 'experts' and that which analyzes laboratories through the conceptual framework offered by the Science and Technology Studies (STS). 'Expertise' may seem something intuitive, but when a definition is requested, everything becomes complicated. It encompasses both a legal formulation and a social validation, while it also links deeply to the issue of "non-neutrality" of science. What expertise should give advice in elaborating a global governance that, Fidler said, "settles politics and diplomacy into agreed patterns, providing for more consistency, transparency, and predictability in how actors handle problems diplomatically and politically"?[57] Two useful references are *Building Europe on Expertise* (2014)[58] and a 2019 issue of *Quaderni Storici* devoted to "Esperti biopolitici", and in particular Emmanuel Betta's "Premessa"[59]. Regarding the STS, debating about microbiology, laboratories and networks necessarily recalls Latour's work. The intertwining of history and philosophical speculation around Louis Pasteur and germ theory, reflected in the intertwining of social and scientific facts, laid the foundations for Actor-Network Theory and influenced several scholars. However, for the purposes of this thesis, it did not seem necessary to use these concepts. I simply recommend Sergio Sismondo's book *An Introduction to Science and Technology Studies* to obtain a brief explanation of the main coordinates of these approaches[60].

The thesis examines a series of cases which do not exhaust the entire range of opportunities offered by this approach to the history of influenza. Attempting to list every single event involving the encounter between various countries within the WHO framework would be a rather encyclopedic

[57] Fidler. "Navigating the Global Health Terrain", 6.
[58] Kohlrausch, Martin, and Helmuth Trischler. *Building Europe on Expertise. Innovators, Organizers, Networkers*. London: Palgrave Macmillan, 2014.
[59] Betta, Emmanuel. "Premessa". *Quaderni Storici* 54, no. 160 (2019): 3–10. https://doi.org/10.1408/95913.
[60] Sismondo, Sergio. *An Introduction to Science and Technology Studies*. Malden, MA: Wiley–Blackwell, 2010.

undertaking, as these events are obviously countless. The result would be a list that is not particularly meaningful in highlighting certain dynamics in which influenza has played a significant role. A real limitation, however, is due to the sources used. For a study of this kind, it is clear that the diplomatic sources of the main international players of the time are fundamental. As already mentioned, for reasons of time and funds, it was impossible to examine US sources, although some digitized files from the Rockefeller Foundation concerning the first half of the 20th century were a good substitute. Soviet and Chinese sources, on the other hand, have been precluded by linguistic limitations. Some sources of this kind were examined in the series held at the Italian Archivio Centrale dello Stato and the French Archives Diplomatiques, in addition to the papers of some important scientists linked to the Institut Pasteur, but this was mostly an addition to the main work, which was carried out between Geneva and London. The WHO has done important digitization work that has allowed me to examine important sources from the Office International d'Hygiène Publique and the League of Nations Health Organization, so as to reconstruct the precursors of WHO surveillance.

As mentioned, however, it is this network, and therefore its papers, that are at the center of the analysis of the concrete ways in which influenza was managed. The Global Influenza Surveillance Network has been used here as a field through which to observe the intersection between influenza (and its doctors and microbiologists) and international relations between great powers and emerging ones, colonial empires and nations fighting for political independence or emancipation from apartheid systems such as South Africa, countries of lesser political and economic weight but on the fault line of ideological and geopolitical conflict (such as Franco's Spain after the defeat of fascism or socialist Cuba a few hundred kilometers from the United States), and finally divided nations such as Germany, Vietnam, Korea, and China. However, the key focus of this research is London. The city becomes the hub around which the historiographical reconstruction revolves, taking advantage of its three roles: a fundamental strategic center for the Western Bloc and NATO; the terminal, first of the largest colonial empire in history, and then of the Commonwealth; the place where the main GISN laboratory was established, alongside the US CDC. From the late 1940s to the 1980s, the World Influenza Centre, located within the facilities of the National Institute for Medical Research in north London, was the main hub of the GISN, although Atlanta and then Memphis, from 1975, saw their importance grow in this international circuit. In any case, this is enough to make the reports and correspondence from that laboratory a gold mine of information. The research is based mainly on two documentary strands: the National Archives' health, diplomatic, and colonial papers, and the sources held by the Wellcome Collection, including uncatalogued material from the NIMR and WIC, and private archives of some important scientists. This body of documentation is supplemented by other sources collected from the Bodleian Libraries, Cambridge University Library, the Imperial War Museum, the London School of

Hygiene and Tropical Medicine, and other online repositories. Finally, a few FAO folders have been consulted as well, to integrate information on the cooperation with WHO on influenza ecology.

It is important to briefly mention some methodological precautions to keep in mind regarding the sources used. It should be noted that many of the WHO sources used are organized into folders relating to influenza (or associated topics), which actually contain documents produced by various producers. On the one hand, this is a symptom of the various name changes and transformations that have taken place within the WHO divisions, an element to bear in mind when reconstructing the history of the institution; on the other hand, it helps to identify the topic covered by the documents and to conduct a more detailed analysis. However, it is impossible not to highlight how the general work of those offices is lost, and how influenza may have come into contact with other topics in a tangential but interesting way for a historian. In any case, these sources consist mainly of correspondence, which is often reported to give directly an account of the confrontation and the issues behind each dossier. There are also minutes of meetings or reports, which are also often collected in collections specifically compiled by the WHO (the Technical Report Series and the Official Records). Again, these are not proper archival sources, but rather a kind of 'gray literature' produced in Geneva.

The case of the uncatalogued sources of the World Influenza Center is different. In this case, these are letters and documents sent or received by the laboratory acting on its specific function, then divided by period and country. Even in this case, however, the work of the NIMR as a whole cannot be ignored, and for this reason it would actually be necessary to further investigate the rest of the collection as soon as it is catalogued. The situation is different again for documents related to British foreign policy. While the division between the various producers is more evident here, there is another problem to consider upstream: a reconstruction of events that risks being overly tied to the political viewpoint advocated by the governments in London. A carefully critical eye is needed for the contexts of production, but also for the contexts of sedimentation, which may also respond in part to a desire for future representation. Finally, there are private archives of scientists. The collections are strictly related to functions that we can nevertheless define as 'diplomatic', in the broad sense. It still remains an issue that we have already discussed: is the scientist a proper diplomat?

Various other sources were used to supplement the main collections studied for this research. A NATO document and an interview with George Godber, the doctor who led the British delegation to the WHO throughout the 1960s and early 1970s, must be discussed. Oral sources have been left aside (despite the opportunity to speak in person with some of the protagonists of those years) due to the complexity of their management, which in Godber's interview is even amplified by the fact that it is a transcript and therefore cannot record pauses, emphasis, and so on. As for NATO, however, this is

a body of documentation that would certainly be useful to explore in the future. Limited time, the decision not to limit myself to the NATO Archives Online, and the repeated reference in other sources to the fact that influenza was not substantially seen as a danger in the biological warfare convinced me to postpone the exploration of these papers. Both sources are used in a very limited way, more to corroborate or connect other discourses than to support specific historiographical hypotheses[61]. Last, but not least, there are even books and articles used as sources, especially in the last chapter, regarding specifically theoretical elaborations about the ecological dimension of the disease.

Actually, it is this field of research that plays an important role in determining the chronology of this dissertation. While the beginning is set to 1947, when the WHO started the Global Influenza Programme[62] and the WIC was established, it may appear to be a self-evident conclusion that the fall of Soviet Union and the end of the Cold War should be regarded as a watershed in this transnational history of influenza. Anyway, it is not the Politburo that laid the foundations for a revolution in the GISN, but it was the nexus between four processes that culminated in the years 1981–1983 – at least, according to this analysis: 1) the integration of People's Republic of China[63] in the WHO surveillance and the identification of its southern areas as a hypothetical "influenza epicentre"[64], because of their environmental dimension; 2) the renaming of 'fowl plague' in 'Highly Pathogenic Avian Influenza'[65] and the development of an official WHO program on influenza ecology that, although failed, marked the acknowledgment of the centrality of that in pandemic control[66]; 3) a series of meetings on ecology of influenza and molecular virology (three of them in China), which opened new opportunities on characterization of viruses; 4) the polarization between expanding immunization campaigns that were fueled by the success of the eradication of smallpox (as the Expanded Programme on Immunization[67]) and development of basic medical services as the Primary Health Care promoted[68]. In two decades, these processes would lead to a crisis in the model for sharing viral strains that will be observed, but

[61] For a general reference on methodological issues concerning the history of international relations, see Di Nolfo, Ennio. *Prima lezione di storia delle relazioni internazionali*. Roma–Bari: Editori Laterza, 2006.
[62] Monto. "Reflections on The Global Influenza Surveillance and Response System (GISRS)", 10.
[63] On China see Barrett, Gordon. *China's Cold War Science Diplomacy*. Cambridge: Cambridge University Press, 2022. Millwood, Pete. *Improbable Diplomats. How Ping-Pong Players, Musicians, and Scientists Remade US-China Relations*. Cambridge: Cambridge University Press, 2022; Lin, Yi-Tang. *Statistics and the language of Global Health: Institutions and experts in China, Taiwan, and the world, 1917–1960*. Cambridge: Cambridge University Press, 2022; Brazelton, Mary A. *China in Global Health. Past and Present*. Cambridge: Cambridge University Press, 2023.
[64] Shortridge, Kennedy F., and Charles H. Stuart-Harris. "An Influenza Epicentre?" *The Lancet* 320, no. 8302 (1982): 812–813. https://doi.org/10.1016/s0140-6736(82)92693-9.
[65] Alexander, Dennis J., and Ian H. Brown. "History of highly pathogenic avian influenza". *Revue scientifique et technique. Office international des epizooties* 28, no. 1 (2009): 19–38. http://dx.doi.org/10.20506/rst.28.1.1856.
[66] Aranzazu. "Surveillance de la grippe d'origine animale à l'OMS", 79–80.
[67] See Okwo-Bele, Jean-Marie, and Thomas Cherian. "The expanded programme on immunization: A lasting legacy of smallpox eradication". *Vaccine* 29, Supplement 4 (2011): D74–D79. https://doi.org/10.1016/j.vaccine.2012.01.080.
[68] Medcalf, Alexander J., Sanjoy Bhattacharya, Hooman Momen, Monica Alexandra Saavedra, Margaret Jones, ed. *Health For All: The Journey to Universal Health Coverage*. Orient Blackswan: Hyderabad, 2015.

they would also open new opportunities for cooperation and diplomacy. As this topic will be touched upon at the conclusion of the thesis, there is no point in anticipating other content so extensively here. The aim was to legitimize a chronology spanning from 1947 to the beginning of the 1980s.

However, to a proper understanding of the events of the period, it is necessary to clearly present the broader political, scientific and institutional context. WHO influenza surveillance was not born in a void. In order to achieve this objective, the structure of the dissertation presents six chapters. The opening chapter establishes the historical and political backdrop of international health. It frames disease management not merely as a medical endeavor but as a diplomatic territory born out of a new diplomatic environment created after the Congress of Vienna and the rise of imperialism. It will focus on the International Sanitary Conferences, the birth of multilateral organizations, and will debate the roots of WHO and FAO, providing a synthetic overview of the institutional context (governmental as well as private) that allowed health to become a pillar of global policy. The second chapter explores the shift from traditional quarantine to modern epidemiological surveillance. It argues that the drive for international governance was fueled by a new world order requiring the regulated flow of people and goods. This shift was based on new technologies, and specifically the telegraph, which made it possible to exchange information almost in real time. This chapter serves to set the stage where the history of influenza takes place. In its last pages, the integration into surveillance of disease ecology will be traced. The third chapter narrows to influenza, detailing the scientific journey to identify the virus. This chapter posits that the management of influenza served as a laboratory for modern health governance. The interplay between the biological characteristics of the pathogen and the public health goal of pandemic prevention met with conceptions of laboratory work born out of the Great War and the organizational model established by the Rockefeller Foundation, creating the precursor to WHO surveillance before Second World War. To sketch the picture of influenza identity, classification of the disease will be discussed in the last pages of the chapter.

At half of the thesis, it comes the core of the research. The fourth chapter is the first that focuses on the establishment of the Geneva influenza program and the GISN. It highlights the challenges of maintaining a scientific network during intense geopolitical friction. The pivotal practice of sharing strains across borders is explored through formal and informal contacts in a decade during which the Eastern Bloc withdrew from WHO. But the Cold War rim will not be the only one presented in these pages, as well strains will not be the only subject of cooperation. The 1957 Asian Flu pandemic is considered as the critical test for international cooperative efforts at the end of this decade. The fifth chapter covers two decades, from the end of the 1950s to the end of the 1970s. Its sections argue that health policies became means exploited in the “peaceful coexistence” to establish hegemony in the

competition between the Western and Eastern Blocs. However, decolonization added complexity to global health governance, moving the analysis beyond a simple bi-polar lens. Influenza programs are studied into this framework, and here the aim will be to answer the crucial question: was the disease used to pursue specific foreign policy agendas? Was influenza surveillance used to negotiate positions in the global arena? The last chapter addresses specifically the 1970s and 1980s, focusing on the leap forward in molecular biology and the changing landscape of health models. It will also focus on the ecology of influenza, explaining how a proper understanding of the animal-human interface shifted the surveillance paradigm. The influences that this revolution exerted on vaccination in a period when WHO committed to large immunization campaigns shaped the contours of a new diplomatic context, in which developing countries would have a groundbreaking role.

The nexus between the ecological control of animal reservoirs, vaccines and the emergence of countries imposing themselves as new actors of the international arena within the change of the pillars as well as the regulations of the governance of cooperative efforts in influenza surveillance reminds us of the "co-produced" nature of science, technology and diplomacy, borrowing a formula that Kenji Ito and Maria Rentetzi used in the introduction to an issue dedicated to *Nuclear Diplomacies*. Both the activities of producing a "seemingly systematic knowledge" and diplomacy involve "negotiations, persuasions, compromises, alliances and confrontations"[69]. In 1947, the note that was presented to WHO Interim Commission in order to promote the establishment of the World Influenza Centre stated that "many problems concerning influenza can be solved only by international collaboration, such as could be fostered by the World Health Organization"[70]. That document referred to the epidemiological and antigenic studies needed to counter the mutation rate and speed of spread of type A viral strains. It made it essential to collaborate and share information and biological material on a regular and frequent basis – up to a weekly update –, in practice on a weekly basis, and on a global scale, across the geographical and ideological borders. The aim is then to observe how the necessity for stable relations, which tended to involve all countries in the world (interested in limiting the impact of influenza on both health and economy), was actually negotiated in a scientific and research network organized by one of the agencies of the UN.

And, in the course of this reconstruction, the ultimate goal is to investigate the forms and ways in which this network responded to the pressures caused by the great geopolitical transformations of those decades, with the clash between the Soviet Bloc and the Western one, and the national liberation

[69] Ito, Kenji, and Maria Rentetzi. "The co-production of nuclear science and diplomacy: towards a transnational understanding of nuclear things". *History and Technology* 37, no. 1 (2021): 4. https://doi.org/10.1080/07341512.2021.1905462.

[70] WHO. *Minutes of the Fourth Session of the Interim Commission*. Official Records of the World Health Organization, no. 6, 1948, 194.

struggles that dismantled colonial empires. Exploring how science and politics negotiated influenza control in one of UN agencies that is most dependent on intellectual production provides significant insights into the current landscape of multilateral institutions. And in general, it can give suggestions on our era as well, now that we hear increasingly that a new 'Cold War' is coming. The idea of such research took shape in the wake of the Covid-19 pandemic. Bombed by public statements regarding the origin of the virus and transparency in sharing strains and data, the question arose spontaneously: can political wrangling jeopardize surveillance? How was the issue of preventing a pandemic handled during that period? Were there the same problems and debates of few years ago? Searching for any hints on that, I came across a video about the pandemic that occurred in the late 1960s. In that, it was reported that in the United Kingdom a saying was coined that went something like this: "when Mao sneezes, the world gets sick"[71]. It convinced me that a transnational and diplomatic science history of influenza was worth investigating, today. As Benedetto Croce argued in his book *Teoria e storia della storiografia* (1917), "è evidente che solo un interesse della vita presente ci può muovere a indagare un fatto passato"[72]. This thesis explores influenza surveillance of decades ago to hint at possibilities on how to manage surveillance in the complicated decades to come.

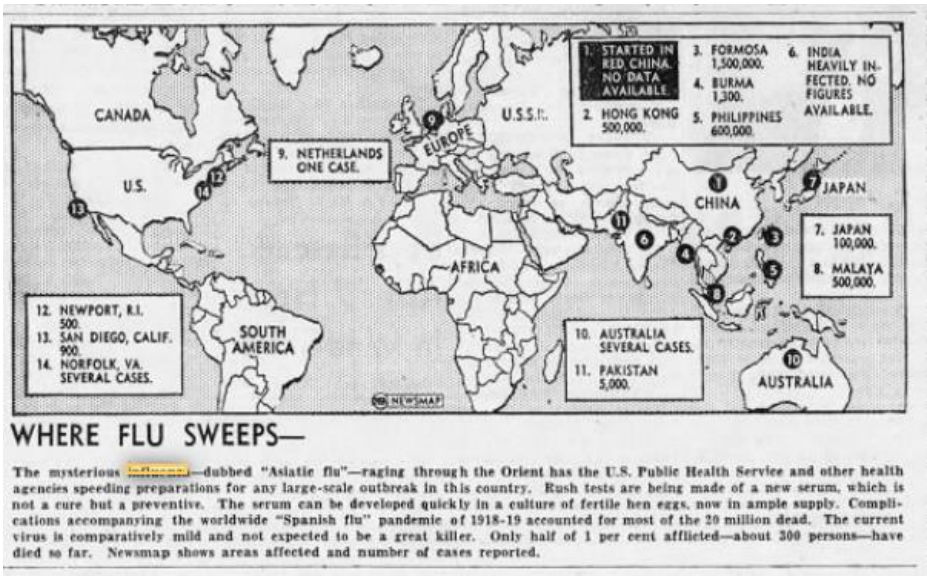

Fig. 1. The Asian Flu "started in Red China", highlighting the origin of the pandemic in a communist country. The *Tallahassee Democrat*, in "Fall, Flu & Football: Tallahassee, 1957", *Tallahassee Historical Society*. https://tallahasseehistoricalsociety.org/2020/08/04/fall-flu-football-tallahassee-1957/, 30/01/2026.

[71] "Epidemia di influenza 'spaziale': 13 milioni di italiani a letto", *Archivio Istituto Luce*. https://patrimonio.archivioluce.com/luce-web/detail/IL5000046121/2/epidemia-influenza-spaziale-13-milioni-italiani-letto.html, 24/01/2026.

[72] My translation: "it is evident that only an interest in the present life can motivate us to investigate a past event". Croce, Benedetto. *Teoria e Storia della Storiografia*. Napoli: Bibliopolis, 2007, 12.

1. The establishment of a global health arena

This chapter will outline some features of the history of international health. The content aims to present the main approaches adopted towards diseases, and how they became diplomatic territory in the era of the rise of imperialism (and also of its health initiatives). The results of the International Sanitary Conferences will be presented, as well as the origins and fundamental characteristics of a series of multilateral institutions, culminating in a brief mention of the WHO and the FAO. The aim is not to write their institutional history – though many issues of it will be discussed in other chapters – but to provide an synthetic overview, albeit approximate, of the political and institutional context in which the subsequent chapters will unfold.

1.1 From the Black Death to cholera: measures against the 'invader'

This chapter is essentially introductory in nature. Its purpose is to retrace the fundamental steps that, over the last two centuries, have defined the birth and development of a framework for international cooperation on health issues. The intention is first and foremost to show how certain health threats and measures have become a matter that has to be dealt with through contacts and stable relationships extending beyond the borders of individual states. It also shows how, as a result, health protection soon became a foreign policy issue. Or rather, how a different climate and approach to resolving points of friction between countries also came to involve health issues, giving rise to a genuine international health system. While its origins can be traced back to the mid-19th century, it is important to understand how infectious diseases were dealt with previously. This would influence international health care until well into the 20th century[73].

The story told here begins with the Black Death in the mid-14th century. It begins in one of the commercial capitals of the then known world: Venice. In fact, although there was no knowledge of the aetiology of this terrible disease, there was at least one element that was clear even then, namely the issue of the disease's transmissibility. It was logical that a city that had established itself as the hub of a widespread and active commercial network – a system characterized by the transport of goods and people, and therefore of health risks – should be the first to address the issue of adopting measures to prevent contagion or at least contain and manage it. In 1346 plague reached the Black Sea, and in March 1348 arrived in Venice. The city appointed the officials *pro conservatione sanitatis*, and the following month Florence did the same, giving government officials the task of monitoring

[73] For a comprehensive overview of this history, see Snowden, Frank M. *Epidemics and Society: From the Black Death to the Present*. New Haven: Yale University Press, 2020.

markets and ascertaining the origin of goods and merchants. Milan barricaded itself and decided to use a network of guards to collect information on outbreaks and manage access to the city.

During the 1370s, the practice of preventively isolating travelers and ships from infected places for a period before allowing them to enter the city took hold in Italy and Ragusa. This is how quarantine was born: 'quaranta' is forty in Italian, indicating the days of isolation identified as the period within which an acute disease should manifest itself, according to Hippocratic doctrine, as well as a purifying period in Christian tradition. Eventually, in 1423, Venice once again identified a specific place for isolation, namely an island in the lagoon where the Augustinian monastery of Santa Maria di Nazareth was located and where staff from the leper hospital dedicated to San Lazzaro gathered. The origin of the word 'lazaretto' is uncertain, but as well as 'quarantine' it comes from the vernacular spoken in the Italian peninsula, from forms such as 'nazaretho' or 'lazaretho', originating respectively from the monastery on the Venetian island and the patron saint of lepers[74].

It is important to highlight a very important turning point. The transfer of personnel from the site dedicated to lepers to the site dedicated to plague victims clearly represents a central transition in the history of infectious diseases. Although the spaces dedicated to the two types of patients may seem similar, there was a deep divide between leprosariums and lazarettos: the former were a kind of ghetto for those who were different and excluded, while the latter were merely places of passage, in the hope that the patients were not contagious. This difference is perfectly summed up by Cosmacini:

> Sono l'epidemiologia e la clinica della lebbra e della peste a determinare le rispettive valenze e metafore, a condizionare le rispettive istituzioni e strutture di difesa. La lebbra è una malattia cronica, subcronica, invalidante, non mortale. È morte civile, non fisica. La peste è una malattia acuta, iperacuta, non invalidante, mortale. È morte vera, non metaforica.[75]

In a certain sense, Cosmacini considers this phenomenon as the transition from welfare hospices to a more modern concept of hospitalization. In the historiographical reconstruction outlined here, this transition also represents the roots of the conceptual and practical system that, over the following centuries, would shape the contemporary surveillance of communicable diseases. A world of growing flows, which saw the danger of contagion as a decisive factor in relations with foreign countries. The management of this risk through measures such as quarantine, which had a strong impact on trade, made them therefore also a weapon of trade policy. These are some of the premises that would lead

[74] Cosmacini, Giorgio. *Storia della medicina e della sanità in Italia. Dalla peste nera ai giorni nostri*. Roma–Bari: Editori Laterza, 2016, 36-40.

[75] My translation: "The epidemiology and clinical management of leprosy and plague determine their respective significance and metaphors, shape their institutions and defense structures. Leprosy is a chronic, subchronic, disabling, nonfatal disease. It means civil, not physical death. Plague is an acute, hyperacute, nondisabling, fatal disease. It is real death, not metaphorical". Cosmacini. *Storia della medicina e della sanità in Italia*, 64. Michel Foucalt has devoted several pages to leprosy and plague as well, focusing on the social impact of these two diseases.

to the definition of internationally agreed health policies. But even if the medical issues were not the only ones that drove this development, economic reasons alone would not have been enough to bring about 19th-century international health.

When addressing the issue of building a framework of international agreements and cooperative actions, it is obvious that diplomacy was the breeding ground for such a transformation. But before discussing that point, it should be remembered that the plague was not the only disease of the modern age. Smallpox, measles, tuberculosis, scabies, and ergotism, to name a few of them, were well known even to those populations that had adopted quarantine practices to combat the plague. Quarantine was adopted even inside each state to prevent the spreading of those diseases. But after plague ceased to be endemic in Europe, plague emerged again as a scourge that could be considered a disease of the East, with the Levant connections as its conduit, and therefore believed to be preventable by cutting off the channels of transmission through isolation[76]. Although this disease became endemic in various European areas for centuries, disappearing with the improvement of hygiene and urban conditions, it was easy to segregate again plague to far landscapes, and in this case quarantine as a practice remained conceptually linked to the fight against diseases of which the origin lay outside European borders. This separation was also fueled by the colonial scenario.

The European conquest of the Americas and the development of the slave trade between the two sides of the Atlantic have been a case study of great interest from a medical point of view for many years. The formula of the 'Columbian exchange' is well known beyond the confines of historiography, and the devastating impact that diseases such as smallpox had once exported to the lands recently discovered by explorers is common knowledge. Infections also spread in the opposite direction. Although it is not an unanimously accepted theory, it is likely that syphilis was imported from the Americas. The phenomenon of dissemination initiated by new geographical discoveries was not exclusive to diseases, but it also pertained to knowledge. An example is the use of a product derived from the bark of cinchona, a tree native to the Andes, as a medicine against malaria. These are the origins of quinine, which would become a fundamental tool in colonial expansion in regions heavily affected by that disease[77], transmitted by mosquitoes, similarly to yellow fever. However, there was no cure for the latter disease, and its mode of transmission was unknown, so it was treated in the same way as other contagious diseases. Actually, in many cases quarantine was the only proper prophylactic answer to many diseases.

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[76] Harrison, Mark. "Disease, Diplomacy and International Commerce: The Origins of International Sanitary Regulation in the Nineteenth Century". *Journal of Global History* 1, no. 2 (2006): 199. https://doi.org/10.1017/S1740022806000131.
[77] Birn, Anne-Emanuelle, Yogan Pillay, and Timothy H. Holtz. *Textbook of Global Health*. New York: Oxford University Press, 10.

In different forms, places and intensity, that practice was still widespread, especially in the Mediterranean, when during the 18th century it began to be the subject of growing disagreement on more than one point. Quarantine was criticized from a medical point of view by all those who were developing a certain theoretical opposition to the theory of contagion, being unaware of the chain of transmission of pathogens. Based on the revival of ancient humoral theories, miasma – elicited by specific climatic conditions, or by the presence of certain substances or processes such as organic decomposition – were considered the culprit of epidemic diseases. Meanwhile, merchants, especially British and French ones, both with interests in the Near East, were increasingly disturbed by quarantines that delayed and disrupted trade, and not infrequently led to the destruction of goods, with serious economic repercussions. Although it should be noted that even for those standing for quarantine, a more efficient system of information on ships – on the place of departure, the goods and crew, and the journey undertaken – would have been sufficient to make this measure more selective, it continued to be subject to various criticisms. Nevertheless, throughout the 18th century, public authorities continued to use it as the only means available to protect the health of the population[78].

By the 1770s, health issues had become part of international diplomacy. First, the variety of measures taken from port to port only caused chaos on the routes used to transport goods and people, sparking criticism from the merchant classes, and from the growing number of frequent travelers. Paradoxically, it was the Napoleonic Wars that finally swayed doctors' opinions in favor of reform, if not the abolition of quarantines altogether. The large armies marching across Europe certainly provided an extraordinary opportunity for the doctors who followed them to evaluate pathological processes, but once again the turning point in the history of international health must be traced back to the Levant[79]. In 1798, general Napoleon promoted an expedition to conquer Egypt, with the aim of undermining British interests in the Mediterranean, but also and above all of cutting the links that London had with its colonies in India through that area. And perhaps, in the future, to use the land of the pharaohs as a springboard to project the French army towards the Indian subcontinent. It was a decisive moment: Napoleon's men were severely affected by the plague that was raging throughout the Near East at the time. The context of the great adventure in an exotic country was the final incentive for a concept of contagion that was already taking hold.

As Sylvia Chiffoleau has brilliantly summarized, the history of public health at the international level must certainly be understood as part of the history of the foreign policies of the various actors involved, but it is equally linked to colonial history. The historian points to Napoleon's expedition to

[78] Harrison. "Disease, Diplomacy and International Commerce", 199-201.
[79] Harrison. "Disease, Diplomacy and International Commerce", 202–204.

Egypt as the beginning of a second wave of colonial expansion, which matured into forms of direct political control of territories. They were not only the Americas, where European empires were already present, but the attention shifted strongly towards the East, the Mediterranean, and Asia[80]. After all, the Ottoman Empire had been in deep crisis for years and was losing its grip on many territories, while the British crown's victory in the Seven Years' War had given it unchallenged control over trade with India. This would bring great wealth, but with it also cholera epidemics, which would mark the history of international health care in its early days. Then, to fully understand the approach to this infection, we must first understand the colonial context through which it arrived in Europe.

The interest in indigenous pharmacopoeia that would lead to the extraction of quinine was not the result of mere scholarly curiosity but also had important practical purposes. Explorers, merchants at trading posts on the African coast, and the authorities of the colonial system based on plantations and slave labor had to deal with diseases that were little known (except malaria, in an aetiological sense), if not entirely new. By the end of the 16th century, Portuguese doctors and travelers had produced a long and substantial literature on the health challenges they encountered outside Europe. Over the next two centuries, these diseases became increasingly associated with the specific environmental conditions of the 'overseas' territories. It was fairly intuitive to note the clear difference between the climate and landscapes of the two tropics and those of the temperate zone of the colonial countries. Thus, during the 18th century, an interpretative framework for this space emerged, defining it as 'tropical nature', which was then characteristic of the intertropical belt within which most of the lands subject to various forms of colonial enterprise were located (from the sugar plantations of the West Indies to the Indian protectorates of the United Kingdom, passing through the trading posts along the African coast). A 'medicine of warm places' took on autonomous contours[81].

Nancy Stepan has clearly highlighted how, at the end of the 18th century, medical experience in those areas had led to the crystallization of certain diseases as they belong to the 'tropical nature'. This 'environmentalist' conception of distribution of disease was also supported by new technologies such as thermometers and barometers, which made it possible to 'quantify' the difference between the tropics and European cities[82]. The French expedition in Egypt occurred in relatively close temporal proximity to the emergence of quantification tendencies in sciences and the emergence of positivist philosophy, phenomena that did not closely overlap, but were concordant for sure[83]. In

[80] Chiffoleau, Sylvia. *Genèse de la Santé Publique Internationale. De La Peste d'Orient À l'OMS*. Beyrouth: IFPO, 2012, 14.
[81] Stepan, Nancy L. *Picturing Tropical Nature*. London: Reaktion Books Ltd, 2001, 16 and 155.
[82] Stepan. *Picturing Tropical Nature*, 155.
[83] See Porter, Theodore M. *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. Princeton, NJ: Princeton University Press, 2020, 17–22.

1787, the term 'tropical disease' was used for the first time in a medical treatise: the text is *A Treatise on Tropical Diseases; on Military Operations; and on the Climate of the West Indies*, by Benjamin Moseley[84]. This title immediately suggests to the reader the idea that tropical diseases are intrinsically understood as diseases of the colonies, and that are treated by physicians because of the military need to protect soldiers on armed expeditions. However, the process of 'tropicalization' went even further. It had such power that it even managed to overcome the barriers of empirical experience: diseases defined as tropical were not always limited to that large part of the planet.

The category of tropical disease was in fact a powerful tool for determining the otherness of the colonies from the civilized and conquering Europe, shaping and reshaping the boundaries of certain diseases according to ideological and political needs. Malaria, yellow fever, and cholera are three cases which, when analyzed one after the other, allow us to observe how this process worked between the late 18th and early 20th centuries. Randall Packard has written a book on malaria, whose title already highlights the dynamic "making of a tropical disease". In the 17th century, various species of the Plasmodium parasite had spread as far as England and even Russia. Only the ecological changes linked to capitalist agriculture and land reclamation then led to the disappearance of the vector of the parasite, the Anopheles mosquitoes, from those regions during the first decades of the 18th century. However, the disease remained endemic in various areas just above the tropics, such as southern Europe and the southern part of the United States[85]. Its most severe form is caused by a microorganism that thrives in warm climates, but the danger was not confined to the tropical area. Despite evidence to the contrary, malaria was traditionally considered a tropical disease.

A disease that is historically and geographically endemic to the band between the two tropics is yellow fever. This is because the mosquitoes that carry the virus that causes it, the *Aedes aegypti* species, do not survive the winters of temperate zones. In the 18th century, however, there was no idea that it was that small animal that was responsible for the transmission of the pathogen through its bite, and the disease was therefore automatically associated with the tropical climate. However, this is not the only element in the history of this disease that reveals a strong connection with colonialism. In another book, Stepan uses the reception of yellow fever in the United States to discuss what she calls the 'politics of disease', or 'its connection to larger political and symbolic issues of the day, as well as other class and economic priorities'. Yellow fever

> was not by any means the most significant disease in the Americas by the late nineteenth century, as measured by mortality or morbidity. But the disease's dramatic epidemic character, its

[84] Stepan. *Picturing Tropical Nature*, 156 and 265.
[85] See Packard, Randall M. *The Making of a Tropical Disease: A Short History of Malaria*. Baltimore: Johns Hopkins University Press, 2007, chapter 2 and 3.

> often high fatality rate and the disruption that epidemics and quarantines caused at a time of growing trade and immigration, combined to give yellow fever a national prominence that other diseases did not have.[86]

Yellow fever sometimes seemed to be a disease of local origin, other times it seemed to invade a community from outside, through ships and goods. Above all, it was evident how it hit European newcomers the hardest, and thus became a public health problem as the United States took advantage of the substantial migration flows to the country. Those who had lived in warm climates seemed to be resistant to yellow fever, and this only reinforced the idea of the 'tropicality' of the disease. The black population, despite several cases disproving this belief, was considered immune. "It is a telling example of how disease interpretations were shaped by political racism", Stepan aptly writes, when probably those who had seemed unable to be infected with what was also called 'Yellow Jack' had simply gained immunity from it after having contracted the disease previously, in mild form[87].

The early imperialistic ventures in which the United States embarked renewed the link of yellow fever, as well as that of malaria, with colonial exploitation of tropical areas. In the very last years of the nineteenth century Washington went to war with Spain over Cuba. The novelty of those years is the simultaneous discovery of the vector of the two diseases. The analyses and hypotheses previously made by Scottish physician Patrick Manson and French medical officer Charles Laveran, as well as the studies of Italian entomologist Giovanni Grassi, paved the way for the revolution in knowledge about malaria. In 1898, English Ronald Ross described the life and transmission cycle of the malaria parasite. That same year, Cuba was practically occupied by the United States, and soon Yellow Jack would rage again. The US Army's Yellow Fever Commission, headed by Dr. Walter Reed, conducted experiments on the disease, verifying its transmission through the bite of the *Aedes aegypti* mosquito in 1900. Within a few months, Chief Sanitary Officer William Gorgas initiated another war, this time against mosquitoes. Actually, the extermination campaign quickly brought cases of yellow fever under control throughout the Caribbean island[88].

The same kind of initiative was proposed for malaria, as well as yellow fever, when Washington took control of the area of the future Panama Canal in 1904. An attempt by the French to construct a similar waterway during the 1880s had proven unsuccessful, also because of thousands of deaths from the aforementioned diseases. This commercial infrastructure, which would soon become crucial for global trade, prompted the US authorities to make an extraordinary effort to combat diseases. Thanks

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[86] Stepan, Nancy L. *Eradication. Ridding the World of Diseases Forever?* London: Reaktion Books Ltd, 2001, 37.
[87] Stepan. *Eradication*, 37–38.
[88] Birn, Pillay, and Holtz. *Textbook of Global Health*, 10 and 22. Stepan. *Picturing Tropical Nature*, 166 and 184. Stepan. *Eradication*, 21–22, 35–36, 43–44, 51–55. Packard. *The Making of a Tropical Disease*, 115–121.

to an immense commitment of resources and disruption of the environmental dimension of what was, after all, a relatively small area, yellow fever was made to disappear – until 1954 – and malaria cases halved. The work, once again led by Gorgas, did not address other diseases that could have affected the area in any way: the public health intervention focused solely on diseases that were considered an obstacle to the construction of that large infrastructure, crucial for the projection of US commercial interests. The link between the eradication campaigns and colonialism is not only confirmed but also takes on a new dimension. The success achieved in Cuba and Panama in combating yellow fever gave the impression that it was possible to impose better control on the conditions of those areas that were being divided up between the imperialist powers of the time. In essence, domination was confirmed in the idea of shaping the tropical environment to suit Western needs[89].

In a sense, the events related to US experience gained from combating yellow fever were also crucial for two other reasons. On the one hand, precisely because of the approach just outlined, they can be considered among those moments in history when colonial medicine underwent a definitive transformation as an instrument of empires. On the other hand, they provided practical proof that eradication was a viable way of tackling a disease. Both of these developments can only be understood within the new scientific and epistemological framework provided by the germ theory, or modern microbiology. The existence of microscopic pathogens had made it possible to separate the aetiology of diseases from the natural and climatic characteristics of the area in which they were observed. In this way, it became possible to intervene and change the living conditions of the colonies by targeting pathogens and their ecology, under the authority of the imperial officers. Eradication of mosquitoes, for instance, had shown its effectiveness and this was further proof of the germ theory: by eliminating the vector, the transmission of the cause of the disease was prevented[90].

The history of malaria and yellow fever in the 1800s brings us directly to the issue of contagion, which profoundly marked that century and is closely intertwined with that of cholera, the last of the 'tropical diseases' considered here. Cholera was counted among that kind of disease because, first and foremost, it met the basic geographical principle of belonging to the tropical area, in this case

[89] Birn, Pillay and Holtz. *Textbook of Global Health*, 10 and 22. Stepan. *Picturing Tropical Nature*, 166 and 184. Stepan. *Eradication*, 21–22, 35–36, 43–44, 51–55. Packard. *The Making of a Tropical Disease*, 115–121.
[90] The theme will be taken up and expanded later, but in the meantime, reference was made to the first chapter of Stepan. *Eradication*, and Arnold, David. *Introduction: Tropical Medicine before Manson*. In Arnold, David, ed. *Warm Climates and Western Medicine: The Emergence of Tropical Medicine, 1500–1900*. Amsterdam–Atlanta: Editions Rodopi, 1996, 1–19.

India[91]. Even though the origin of the disease in the Indian subcontinent is debated today[92], cholera as it was known in Europe in the early 19th century had not the same pathological features of the disease associated with the southern area of Asia. According to the tenets of classical Hippocratic medicine, a choleric condition was diagnosed when the state of illness consisted of the expulsion of yellow bile – *choler* – one of the four humors described by ancient physicians. Therefore, for much of the 19th century, cholera continued to be used to name two different diseases. The distinction was certainly identified in the degree of danger and the ability to spread (limited in the case of European cholera, unlike Indian cholera). By 1900, with the emergence of microbiology, the disease would be described solely by the pathogen at its origin, by its aetiology, and the same applies to other gastrointestinal phenomena[93].

But the reality is that, for decades after the disease appeared in Europe in the 1830s, the identity of cholera would still be strongly determined by the colonial interpretative framework and by methods of disease control based on the notion of self-defense against external threats. It is interesting to note that the idea that cholera was a disease that invaded Europe is highlighted in many of the studies that have addressed the issue over the last thirty years. Anne Hardy has devoted considerable attention to this interpretive paradigm, and to preventive responses that were elaborated in the United Kingdom[94]. The geographical identity of cholera has become the subject of an important study by Mark Harrison. He examined how, despite the epidemic appearance in various and several countries during the 19th century, the attribution of the disease to the epidemiological specificity of India must also be traced back to "distinctive British-Indian medical tradition […] as well as to the political implications of admitting that cholera was a truly international disease"[95].

In this historiographical reconstruction, various variables belonging to the political dimension of empires begin to emerge. Another entirely social and political factor associated with the conception of cholera as it took shape during the 1800s, was the supposed higher susceptibility of the poor and degraded social groups in the suburbs of industrial cities[96]. There is some truth in this determination:

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[91] Huber, Valeska. "The Unification of the Globe by Disease? The International Sanitary Conferences on Cholera, 1851–1894". *The Historical Journal* 49, no. 2 (June 2006): 453. https://doi.org/10.1017/s0018246x06005280. Bynum, William F. "Policing Hearts of Darkness: Aspects of the International Sanitary Conferences". *History and Philosophy of the Life Sciences* 15, no. 3 (1993): 428.

[92] See Sen, Srabani. "Indian Cholera: A Myth". *Indian Journal of the History of Science* 47, no. 3 (2012): 345–374.

[93] Hamlin, Christopher. *Cholera: The biography*. Oxford: Oxford University Press, 2009, 19–21.

[94] See Hardy, Anne. "Cholera, Quarantine and the English Preventive System, 1850–1895". *Medical History* 37, no. 3 (July 1993): 250–269. https://doi.org/10.1017/s0025727300058440.

[95] Harrison, Mark. *A Question of Locality: The Identity of Cholera in British India, 1860–1890*. In Arnold, David, ed. *Warm Climates and Western Medicine*, 133.

[96] Indeed, some scholars of the era even considered cholera "as a means of Malthusian equilibration". Hamlin. *Cholera: The biography*, 63. A recent study to bear in mind is Huber, Valeska. "Pandemics and the Politics of Difference: Rewriting the History of Internationalism through Nineteenth-Century Cholera". *Journal of Global History* 15, no. 3 (November 2020): 396–397. https://doi.org/10.1017/s1740022820000236.

the *Vibrio cholerae* bacterium thrives in and is transmitted through water and food contaminated by feces. Therefore, the risk of contracting the disease increases in places without adequate sanitation and sewage systems. Even when British physician John Snow proved that cholera plaguing London in 1854 came from the water of the Broad Street pump and then gathered all the evidence necessary to produce a class analysis of the risk of exposure to the disease, he refused this approach[97]. "The medical framework deployed to understand cholera was mostly based on two main features: class hierarchy and colonialism"[98], as Mauro Capocci and Daniele Cozzoli summarized in one sentence, drawing upon Christopher Hamlin's work on cholera. As such, the understanding of cholera was shaped by political perspectives, which in turn influenced the comprehension of its transmission and the responses of various governments.

Cholera is an example of a 'tropical disease' that largely conforms to the elements attributed to them. It was a condition associated with a specific area of the world and with its specific climatic and environmental characteristics. The advent of the microbiological revolution would ultimately explain why the appearance of the disease outside India seemed to be seasonal in some way (the sensitivity of the bacterium to heat and humidity), a trend that was already recognized at that time[99]. Anyway, this development occurred by the end of the century, albeit not without significant resistance. It is evident how an intrinsic link between the disease and the environment could readily be considered at the origin of cholera. This concept was perfectly consistent with the knowledge acquired from ancient medical tradition, that of Hippocrates and Galen, based on which the word cholera itself was coined. In particular, among the various theoretical nuances of the 19th century, the miasmatic theory still maintained some legitimacy. According to it, diseases originated from the presence and inhalation of air corrupted by some element[100], as testified by the origin of the name "malaria", literally "bad air" in Italian.

The miasmatic theory allowed the classical education of doctors at the time to be preserved, as well as the irreducible separation between the nature of imperial powers and that of tropical colonies. Malaria to a certain extent (specifically in English medical world), and especially yellow fever fitted perfectly into this interpretative scheme, apart from the few occasions when the disease manifested beyond the boundaries usually attributed to it. When cholera began to spread, it was certainly quite

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[97] Birn, Pillay, and Holtz. *Textbook of Global Health*, 16.
[98] Capocci, Mauro, Daniele Cozzoli. *Introduction: The Age of Empire, the Making of the Modern Nation, and the Advancement of Medical Sciences*. In Capocci, Mauro, Daniele Cozzoli, ed. *Empire, Nation-building, and the Age of Tropical Medicine, 1885–1960*. London: Palgrave Macmillan, 2024, 3.
[99] Hardy. "Cholera, Quarantine and the English Preventive System", 252.
[100] Capocci, Mauro. *Contagio*. In Bassi, Simonetta. *Il lessico della modernità. Continuità e mutamenti dal XVI al XVIII secolo*, vol. 1. Roma: Carocci editore, 2023, 186. Watts, Sheldon J. *Epidemics and History: Disease, Power, and Imperialism*. New Haven: Yale University Press, 1999, 170–171.

shocking, because within a few waves it broke out in every corner of the globe. As mentioned, it did not immediately lose its Indian 'citizenship', but starting in 1817 the disease began to spread by successive steps beyond Bengal. The list and duration of these epidemic phases is debated, but by the early 1830s cholera had reached Europe[101]. In the decades that followed, the disease would go global, and the impact of its violence and rapid spread synergized with an increasingly connected world in which distances were becoming less and less significant. This new horizon of social life was also clear to contemporaries and would be one of the underlying reasons for the emergence of health diplomacy[102]. To understand this dimension, it is necessary to comprehend how political views also shaped the debate that developed in response to the unstoppable spread of cholera, focusing on how diseases are transmitted.

Shortly after World War II, Erwin Ackerknecht wrote an article[103] that has now become a sort of cornerstone of historiographical works on the subject. His interpretation of the medical camps of that time defined two opposing sides: the contagionists and the anti-contagionists. The contagionists were sort of precursors to germ theory, while their opponents remained faithful to the miasma theory or, in general, they considered the emergence of a diseases to be caused by local conditions and particular environmental influences. Ackerknecht's hypothesis argued that the different scientific positions were deeply linked to the political and ideological agendas of the time. His opinion was that liberalism and the promotion of trade were two essential elements in the spread of anti-contagionism, through which quarantine could be seen as a relic of the past and a menace to personal freedom and trade[104]. Since then, Ackerknecht's interpretation has been the one with which scholars have grappled, highlighting the need to rectify the dichotomy he presented. The ideas of doctors could be much more nuanced, just as the origin of certain diseases could be seen in processes that did not fit perfectly into the opposition between contagion and miasmatic influences[105]. As William Bynum pointed out, the article published by Ackerknecht "was concerned principally with cholera", and with the reasons behind the different responses that came from European countries. But as Hamlin showed, even on that specific disease, there was a wide range of aetiological opinions. Harrison has even attempted to explain the concepts surrounding cholera not only by overcoming rigid dichotomies, but also by

[101] Generally, six pandemics are considered to be occurred, and this is the most common chronology: 1817–24, 1826–37, 1846–60, 1863–75, 1881–96, 1899–1923. A seventh pandemic, started in 1961, is still ongoing.
[102] See Huber. "The Unification of the Globe by Disease?".
[103] Ackerknecht, Erwin H. "Anticontagionism between 1821 and 1867". *Bulletin of the History of Medicine* 22 (1948): 562–593.
[104] This interpretation is masterfully summarized by Peter Baldwin. Baldwin, Peter. *Contagion and the State in Europe, 1830–1930*. Cambridge: Cambridge University Press, 1999, 12.
[105] Baldwin. *Contagion and the State in Europe*, 7. Huber. "The Unification of the Globe by Disease?", 456–457. Huber. "Pandemics and the Politics of Difference", 398–399.

identifying how various interests, not only purely political ones, converged on this disease[106]. Ackerknecht was actually aware of this rather varied scenario. However, in an attempt to find an explanation for health policies of the central decades of the 19th century, he oversimplified an issue that can only be understood in terms of its geographical, temporal, and scientific intricacies.

Ackerknecht's insight, on the other hand, had the merit of introducing the problem that epidemic control was not only, and perhaps not even primarily, a health issue. Even medical discoveries, upon their initial conception, had to navigate a very complex environment wherein factors were extremely diverse. It must be acknowledged that the year 1854 was marked not only by John Snow's connection between the dissemination of cholera in London and the management of its water resources, but also by the inaugural identification of the cholera bacillus by the Florentine scientist Filippo Pacini. He was unable to isolate it, but he observed and described the vibrio decades before Koch's studies in Egypt and India which, as already mentioned, did not resolve the dispute surrounding the origin of cholera[107]. As Peter Baldwin has explained so well, Ackerknecht has been

> criticized for an overly manichean division. […] Nonetheless, if we pass from the narrow issue of etiology to the broader one of basic and perduring differences in public health strategies, his fundamental idea of a connection between political ideology and preventive tactics has proven enormously fruitful, widely accepted and, indeed, often implicitly assumed by many observers.[108]

In an introductory examination of the emergence of a proper international collaborative system on health issues, such as this one, it is precisely the weight of politics that is of interest, or rather how the cholera problem became part of a growing process of constructing a relatively stable framework of international relations. The widespread occurrence of that disease – and John Snow's discoveries – did not necessarily undermine the theories through which contagion, in the sense we give to it today, had been interpreted since the 14th century, and this should be emphasized here. As with the plague, the disease spread from East to West. Although there was no agreement on the cause of cholera, many public authorities responded as they had done for health hazards in previous centuries: by establishing quarantine measures, the severity of which was influenced by specific commercial and manufacturing interests[109]. By the 19th century, the international political scenario had reached a level of complexity and maturity that enabled a diplomatic dialogue to reach agreement on such initiatives.

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[106] Bynum. "Policing Hearts of Darkness", 428–429. Hamlin. *Cholera: The biography*, Chapter IV. Harrison. *A Question of Locality*, 135.
[107] Huber. "The Unification of the Globe by Disease?", 465. Ogawa, Mariko. "Uneasy Bedfellows: Science and Politics in the Refutation of Koch's Bacterial Theory of Cholera". *Bulletin of the History of Medicine* 74, no. 4 (2000): 682–683. https://doi.org/10.1353/bhm.2000.0193.
[108] Baldwin. *Contagion and the State*, 15–16.
[109] Harrison. "Disease, Diplomacy and International Commerce", 206.

1.2 Health diplomacy from the mid-19th century to the mid-20th century

The idea that health should be treated as an issue of international governance had spread along with the gradual structuring of international forums where mediation between different interests took place. This was a trend that took hold in the early decades of the 19th century and also spread to health policies, especially when they would later become inextricably linked with cholera. A very insightful interpretation of the context that made it possible is offered by Harrison, who links it to the diplomatic horizon that emerged from the Congress of Vienna in 1815. In the years after the Congress of Vienna, European powers moved toward resolving conflicts through diplomacy rather than warfare – at least, they tried for a while. In such a system, quarantine lost its usefulness as a political tool and, actually, became a breeding ground for potential new tensions. Quarantine abuses continued, but even though this issue was not addressed in Vienna, agreements on free navigation were motivated by economic concerns, not solely for their own merit but also because cooperation within this domain was regarded as a conduit for peace. The 'conference system' which followed almost immediately the Congress of Vienna was organized around smaller meetings, both in terms of the number of participants and the objectives, which were mainly practical: a format that was perfect for reaching agreement on health policies. These primarily pertained to the Eastern Mediterranean, which was, not coincidentally, also a point of international friction between the 1830s and 1840s[110].

The Levant had long been considered the crossroads of epidemics, through which danger passed from Asia to Europe. However, it is significant that the first experience in establishing a stable entity for the governance of disease control measures did not come from the European and colonial powers, but from Egypt, which, along with the Napoleonic army, had also been subjected to the plague in the military campaign that gave rise to the new colonialism of the 19th century, and later to imperialism. In fact, Muhammad 'Alî had become *wâlî* – governor – of the land of the pharaohs in 1805, on behalf of the Ottoman Empire. But he immediately pursued a policy of complete independence from Istanbul and began modernizing the country, which was in decline as well as the whole empire. In this process, the example set by the European powers, including their science and medicine, became a model for progress. 'Alî began to impose restrictions upon shipping from foreign ports stricken by the plague, and to isolate the infected and those who had been in contact with them within his own territories. It may seem paradoxical that this was considered an expression of progress and creation of a modern state architecture, in which control over public health is entrusted – at least officially – to the central government and its technical agencies: liberal tendencies favorable to free trade were gaining ground in major world centers such as London and Paris after Louis Philippe's accession to the throne and

[110] Harrison. "Disease, Diplomacy and International Commerce", 209.

quarantine practices were influenced by these opinions. However, a complex mosaic of interests in European countries meant that attitudes toward 'Alî's measures remained fluctuating, because they also had positive implications[111].

The situation changed dramatically in 1831, both politically and in terms of health framework. 'Alî invaded Syria, sparking a direct war with the Sublime Porte that would last a couple of years. This also reignited tensions between the European powers that were trying to expand their influence in the declining Ottoman Empire, particularly Russia, France, and Great Britain. Furthermore, significant French and British interests traversed Syria, and for London, it functioned as a gateway to its Indian possessions. In the same year, cholera also arrived, becoming intertwined with the intricate diplomacy of the conflict between Cairo and Istanbul. In that same year, 'Alî established the Consular Commission of Health, which brought together representatives from all the three European countries previously mentioned, as well as Austria. The new institution was entrusted with the responsibility of establishing sanitary regulations and building a lazaretto in Alexandria. It obtained also the monopoly on all matters pertaining to quarantine and quarantine taxes. The Commission was unable to prevent the plague epidemic of 1835. However, the importance of such an institution was its highly political nature. It was confirmed when, in 1839, 'Alî resumed military operations against the Ottoman Empire and decided to replace the Commission with an entirely Egyptian administration, which nevertheless adopted all the principles and measures used by its predecessor. Nevertheless, there was a discernible tendency toward the international management of epidemic hazards. In fact, just one year earlier, in 1838, a similar commission was established in Istanbul. The sultan requested the support of Austrian officials with expertise in quarantine to define his own health program[112]. However, this trend could not have led to any stable agreement without the backing of the major European powers.

In 1829, shortly before the liberal-oriented Louis Philippe consolidated its position on the throne of Paris, France initiated the process of colonizing Algeria. Its presence on both sides of the Mediterranean and its growing ties with the Levant were intertwined with the optimism generated by the early forms of international regulation of disease control measures, experienced in Alexandria and Istanbul. The initial outcome was the publication by Pierre de Ségur-Dupeyron in 1834 of a report on the various quarantine regimes adopted in the Mediterranean ports. The aim of the report was also to recommend an international meeting to harmonize and rationalize the use of such measures. Only in

[111] Harrison, Mark. *Contagion. How Commerce Has Spread Disease*. New Haven–London: Yale University Press, 2012, 67–68. Harrison. "Disease, Diplomacy and International Commerce", 207. Sylvia Chiffoleau has devoted a detailed analysis to Muhammad 'Alî's scientific policies in the opening pages of her book mentioned above. Chiffoleau. *Genèse de la Santé Publique Internationale*, 19–45.

[112] Harrison. *Contagion*, 69–74. Harrison. "Disease, Diplomacy and International Commerce", 207–210. Chiffoleau. *Genèse de la Santé Publique Internationale*, 28–31.

1838, when the diplomatic situation made it feasible, the French finally proposed the convening of a conference of various Mediterranean countries. Anyway, the concurrent outbreak of a new conflict between Egypt and the Ottoman Empire, as previously indicated, put everything on hold. Meanwhile, there was also growing support for an agreement on quarantine in the Mediterranean among several British politicians. In the late 1830s, the United Kingdom concluded important trade agreements with the Sublime Porte, as did other countries, to open other areas of the empire to foreign merchants, while trust between London and Cairo was waning. But the problem was not only commercial: there was already a significant flow of people between India and Great Britain at that time. It was essential for the management of Queen Victoria's crown dominions[113].

In summary, there were multiple factors that during the 1840s contributed to the exploration of the potential for an international meeting on the control of epidemics, meeting the French and British expectations, but every gathering was repeatedly postponed. Eventually, even Metternich and Austria stopped procrastinating, and in 1851 a French proposal led to what would become known as the first International Sanitary Conference (ISC), held in Paris. After that first meeting, 13 more Conferences would be held by 1938 (9 in the second half of the 19th century). Summarizing the content of each ISC is beyond the scope of the present work[114]. In these pages, the focus is rather on synthesizing some pivotal accomplishments achieved during these global summits. However, the historiographical reconstruction presented here does not aim to retrace the history of the evolution of sanitary measures. Rather, it aims to outline the forms and context in which health issues became part of foreign policies. In this work, it is particularly advantageous to accentuate the elements that have characterized nearly a century of health diplomacy and how they shaped its profile, as it will be explored in the course of this research.

The first point to highlight is that these conferences debated on a limited pool of diseases, but the main concern of each meeting was cholera. In any case, it should be remembered that the impetus for this international convergence was based on measures – quarantines – that had been developed against the plague, still an actual threat at the time. Although the last major outbreaks had occurred in Europe about a century before the first International Sanitary Conference, the plague had passed through Corfu in 1815–16, reappearing on the coast of Puglia, and the Ottoman Empire experienced

[113] Harrison. *Contagion*, 70–78. Harrison. "Disease, Diplomacy and International Commerce", 207–215. Howard-Jones, Norman. *The scientific background of the International Sanitary Conferences. 1851–1938*. Geneva: World Health Organization, 1975, 11.

[114] Howard-Jones' work, even though was written half a century ago, is certainly the most comprehensive study on the subject. Howard-Jones. *The scientific background of the International Sanitary Conferences*. But there are several other texts that address the most diverse details and issues that emerged from the 14 conferences – starting with the literature cited in this thesis.

an epidemic between 1835 and 1838. Then, during the 1890s, the third great plague pandemic spread from China, claiming millions of lives worldwide. Between 1892 and 1897, five international conferences were held. The last one, held in Venice, focused exclusively on plague. During the first half of the 20th century, other diseases began to be discussed at the conferences, particularly typhus and influenza. After World War I, the former ravaged Eastern Europe, while the Spanish flu killed millions and millions of people worldwide. Yet, it must be noted that the history of the International Sanitary Conferences is essentially a history of cholera, which was *the* disease of the 19th century, especially after the second wave in Europe at the end of the 1840s made governments aware that the disease was a constant threat.

In fact, the International Sanitary Conferences were conceived as collaborative opportunities aimed at safeguarding the Old Continent from the threat of cholera. The physician Adrien Proust, an important member of the French delegations in the last quarter of the 19th century, in 1893 published a book entitled *La défense de l'Europe contre le cholera*: for colonial powers whose imperial interests spanned far beyond their national borders, this was the spirit that informed the conferences. The issue of epidemics continued to be viewed within the interpretative paradigm of an East that was a harbinger of exotic diseases and a West that had to protect itself from them. At that time, many regarded health conferences as a means of civilizing the social and political realities of the Levant, which experienced a very particular political and cultural dialectic. In a sense, the conferences sought to 'externalize' to the Middle East the development of barriers against cholera, which was spreading from India. This placed the Ottoman Empire – including the rebellious Egypt, still under Istanbul's control – in the international spotlight. Concurrently, the conferences were directed by the European empires, which persistently infringed upon the sovereignty of Sublime Porte.

In response, the rulers of the Levantine regions devised various countermeasures. For instance, only in 1938 (at the last ISC), after decades of complaints, Egypt finally succeeded in obtaining the dissolution of the *Conseil sanitaire maritime et quarantenaire* based in Alexandria. This institution was established in 1881, and its actions were directed by a council of delegates from several countries, including European powers, the Sublime Porte and the USA. While formally tasked of the control of the sanitary control on the marine traffic in the Red Sea and the Suez Canal, it also interfered in Egyptian and Ottoman internal affairs, *de facto* weakening their sovereignty. At the same time, even though Eastern states at international conferences kept reiterating their differences from European powers, in a sort of identity-building process, science also became a terrain for asserting equality in relationships. When 'germ theory' finally became established, at the turn of the 19th and 20th centuries, some Ottoman scholars began to present themselves as belonging to this transnational bacteriological

movement, and to consider themselves part of a broader scientific community. However, the International Sanitary Conferences consistently exhibited a predominantly Eurocentric perspective, and the involvement of the United States in some forums since 1881 did not alter this orientation. Regarding epidemic dangers, this issue can be seen in the lack of attention given to discussions on yellow fever. Historically, this disease was considered a threat for the Americas, or at most limited to European ports. An anecdote that clearly illustrates that phenomenon occurred at the twelfth conference, held in Paris between 1911 and 1912. Henrique de Figueirado Vasconcellos of Brazil, arguing about whether or not there should be a distinction in sanitary convention between European and non-European countries, stated that the US, because of their political importance and strength, were "with justice already considered as a European country".

The observation that the International Sanitary Conferences were focused on Europe and those countries bordering the Mediterranean leads to such an inevitable conclusion: the term international actually refers to a rather small group of countries and their global interests, especially in the early meetings. The first conference convened representatives of 11 European countries and the Ottomans, while later meetings expanded to over 50 countries, with a more equitable distribution between the Old Continent and the rest of the world. The tendency towards the internationalization of health issues is therefore undeniable, albeit from a Eurocentric perspective. This process is also evident in other similar events. However, in order to avoid oversimplifying the international expansion of the health debate, it is necessary to delineate precisely the function of the International Sanitary Conferences and the specific features that distinguished them from other types of meetings. 1851 is a pivotal year for the formation of an international arena for scientific experiences as well as for development of new technologies, despite nascent inter-imperialist competition and diplomatic tensions. That same year the Great Exhibition took place in London. This event is widely considered to be a major inflection point in the ongoing discourse between scientists and scholars from diverse geographical regions. Moreover, it also served as a catalyst for the establishment of subsequent international forums, fostering further collaboration and knowledge exchange among researchers worldwide: for instance, at the London Great Exhibition the International Statistical Congress was founded. In the following years, gatherings of experts from all over the world multiplied. In just over a decade, meetings were convened on statistics, hygiene, demography, ophthalmology, and veterinary medicine. The first international medical congress was convened in 1867, and its seventh edition in 1881 attracted more than 3,000 participants from over 70 countries. Although these assemblies were not without nationalistic interests, the difference in the number of participants compared to the ISCs lies in the primarily political aims of the latter.

The ISCs were not intended as venues for knowledge sharing and dissemination, nor they adopted a scientific agenda. These meetings served to keep epidemics – and especially cholera – out of Europe and, in implementing the necessary measures to do so, to achieve a peaceful settlement of the foreign policy interests of the European powers. However, the medical debate was unavoidable, though at the first conference it was stated otherwise, and science relevance would only increase with the establishment of the germ theory. Nevertheless, the frequency and duration of these meetings, as well as the subjects addressed, were contingent and deeply interconnected with the international balance of power. At the 1851 forum, each nation was represented by a medical professional and a diplomat. A lot of time was dedicated to organizational aspects and decision-making methodologies, but the resulting convention was only ratified by France, Portugal, and the Kingdom of Sardinia, and later the latter two countries withdrew from it. The second meeting was held in 1859, and only convened diplomats: this conference, however, yielded outcomes comparable to the previous one. Even when doctors gained greater influence at conferences and some important scientific discoveries pushed for agreement to eliminate the heterogeneity of measures against cholera, imperial reasons prevailed. The 1885 Rome Conference is a perfect example. During those years there were many rivalries, the most famous of which was undoubtedly that between Louis Pasteur and Robert Koch (on the authorship of certain discoveries and on laboratory methodologies). However, it must be acknowledged that the meeting failed primarily due to tensions following the Franco-Prussian War of 1870 and the ability of the British and Indian delegation to effectively block the proceedings, because of their concern about the restrictions that would be imposed on trade through the Suez Canal.

Consequently, the initial phases of this 19th century health diplomacy are frequently perceived as a failure, but such a simplistic evaluation is not accurate. All the events described, despite exposing setbacks of a complex dialectic, reveal both an inclination toward the acknowledgment of particular medical notions and, secondly, a progression toward the establishment of an international framework for the governance of infectious diseases. From the 1890s onwards, proceedings of the conferences became more professional and institutionally mature, while quarantine measures imposed arbitrarily were gradually phased out. The European ruling classes were moving towards greater standardization of practices and liberalization of intercontinental transit. The spread of microbiology – as developed by the seminal research of Pasteur and Koch – played a significant role in fostering this process, underscoring the imperative for international collaboration in addressing the threat of pandemics. The idea was to devise a system that would facilitate the movement of people and goods, while ensuring the containment of any invisible pathogens they might carry. This significant shift in global trends is underscored by the fact that it was precisely the conference following the one in Rome that marked a pivotal advancement in health diplomacy. The 7th International Sanitary Conference, held in Venice

from January 5 to 21, 1892, emphasized the importance of bacteriological testing and sanitation, even though there were doubts about the usefulness of some measures concerning the Suez Canal and the Hajj, the annual pilgrimage to Mecca, which had been another recurring theme at health conferences for decades. However, the final version of the 1892 convention contained the contemporary concept of cholera germ and was ratified by all 14 participants at the meetings. The agreement only covered maritime quarantine due to cholera for ships sailing from East to Europe. It was a limited achievement in terms of the countries involved and the scope of its action, and there were no provisions to enforce its implementation, but it was a turning point: 41 years had passed since the first International Sanitary Conference, and finally, the first actual international treaty on health was approved[115].

The abuse of health regulations continued, for instance, with regard to the management of the plague. Only the third pandemic that struck the entire world in the 1890s, and the identification of the plague bacillus by Alexandre Yersin in 1894, would lead to a coherent international response to the disease[116]. The International Sanitary Conferences that followed the 1892 gathering contributed to the further development of this international regulatory framework, which was eventually extended to encompass other diseases. The frequency of these meetings declined during the 20th century, but the conventions that were ratified proved to be more widely accepted and effective. Bynum identifies three primary reasons for this phenomenon. The first motivation pertains to the gradual abandonment of quarantine, which was supplanted by "policies regulating sanitation, inspection, segregation, pest control, and disinfection, as well as vaccination for cholera and plague". These practices could be as stringent as quarantine, but were undoubtedly less destabilizing for both commercial and foreign policy interests, and could be more easily accepted by people and governments. The second reason was the broad agreement on the science backing such practices, although there was an emerging awareness of the role of the improvement of socio-economic factors in reducing the burden of

[115] The reconstruction of the issues concerning the 14 conferences and all the *Conseils* was carried out through: Howard-Jones. *The scientific background of the International Sanitary Conferences*. Chiffoleau. *Genèse de la Santé Publique Internationale*. Birn, Pillay, and Holtz. *Textbook of Global Health*. Baldwin. *Contagion and the State in Europe*. Harrison. *Contagion*. Bynum. "Policing Hearts of Darkness". Huber, Valeska. *Channelling Mobilities. Migration and Globalisation in the Suez Canal Region and Beyond, 1869–1914*. Cambridge: Cambridge University Press, 2013. Huber "The Unification of the Globe by Disease?". Huber. "Pandemics and the Politics of Difference". Hardy. "Cholera, Quarantine and the English Preventive System". Aue, Luis. "Establishing the Health Governance of Flows: Authority Performances and Expertise at the International Sanitary Conference of 1892". *International Political Sociology* 18, no. 4 (2024): 1–20. https://doi.org/10.1093/ips/olae037. Ersoy, Nermin, Yuksel Gungor, and Aslihan Akpinar. "International Sanitary Conferences from the Ottoman Perspective (1851–1938)". *Hygiea Internationalis* 10, no. 1 (2011): 53–79. https://doi.org/10.3384/hygiea.1403-8668.1110153. Javier Martínez, Francisco. "International or French? The early International Sanitary Conferences and France's struggle for hegemony in the mid-nineteenth century Mediterranean". *French History* 30, no. 1 (March 2016): 77–98, https://doi.org/10.1093/fh/crv035. Capocci, Mauro. "Uno spazio sanitario coloniale. L'Italia nel Conseil Sanitaire Maritime et Quarantenaire di Alessandria d'Egitto (1895-1910)". *Zapruder* 60 (2023): 14–34.

[116] Harrison. *Contagion*, 173. In this case, it must be emphasized the fact that a medical discovery served as a direct catalyst for political action, culminated in the 1897 ISC in Venice.

infectious – and especially tropical – diseases. This issue was not usually addressed within the ISCs, whose objectives, as Bynum wrote, were rather limited and concerned the protection of Europe or, at most, industrialized countries in general. Thirdly, the phenomenon of internationalization had become increasingly prevalent within the political system of that time. The establishment of permanent international agencies and the activities of philanthropic institutes created a new medical landscape in the first half of the las century[117].

The International Sanitary Conferences of the 20th century will still play a role in later part of this work. In this section, it is more beneficial to focus on the landscape just mentioned, and on the development of medicine in areas outside the Western countries. At the turn of the 19th and 20th centuries, there were significant changes in medicine in colonized areas, once again closely linked to imperialism. The powers of the time were about to reach the peak of that new colonial wave, which began with Napoleon's Egyptian campaign, according to Chiffoleau. The year 1885 was pivotal, because of three important conferences. The first debated the status of the Suez Canal, and the second was the International Sanitary Conference in Rome, which became bogged down precisely on the issue of that waterway. That same year there was also the Berlin Conference, marking the onset of the 'scramble for Africa' and imperialism in its modern configuration[118]. This period was defined by fierce competition among various nations to acquire territories and markets, legitimized under the guise of a mission to civilize. Medicine, too, participated in this endeavor of conquest. As the malariologist Ronald Ross remarked – and Bynum reported –, "the best kind of international race is that in which nations compete to benefit humanity"[119].

In this context, tropical medicine transitioned into colonial medicine, which can be understood as a domain that the imperial administration itself assumed through the establishment of institutes dedicated to this purpose. The founding moment of tropical medicine as a proper tool of imperialism is commonly identified as 1898, when the physician and parasitologist Patrick Manson persuaded the British Colonial Office to establish specific schools for this discipline. In that same year, the Liverpool School of Tropical Medicine was established, followed the subsequent year by the London one (today the London School of Hygiene & Tropical Medicine). This transition was definitively completed with the birth of the Royal Society of Tropical Medicine and Hygiene, in 1907[120]. Manson, delivering an

[117] Bynum. "Policing Hearts of Darkness", 432–434.
[118] Huber. *Channelling Mobilities*, 87–88.
[119] Bynum. "Policing Hearts of Darkness", 424.
[120] To learn more about the early stages of tropical medicine as a discipline, its links with colonialism, and its institutions, see Neill, Deborah. *Networks in Tropical Medicine: Internationalism, Colonialism, and the Rise of a Medical Specialty, 1890–1930*. Stanford, CA: Stanford University Press, 2020, and Cook, Gordon C. *The Rise and Fall of a Medical Specialty: London's Clinical Tropical Medicine*. St Albans: TROPZAM, 2014.

address to students at St. George's Hospital in London in 1897, argued that the need for tropical medicine as he was conceptualizing it in his mind was based on two particular claims: Great Britain had become the center of a growing tropical empire, and tropical diseases were "widely different from the diseases of temperate climates"[121]. Once again, the unbridgeable gap between pathologies in warm areas and those in Europe was reiterated, despite the acceptance of the 'germ theory'.

Actually, in Manson's pivotal 1898 book *Tropical Diseases: A Manual of the Diseases of Warm Climates*, climate appears just as an indirect cause of disease. The physician considered germs as the agents of most infections but, at the same time, distinguished the tropical ones from the "cosmopolitan diseases, such as leprosy and plague, diseases which, properly speaking, do not depend in any very special way, or necessarily, on climatic condition"[122]. The infection cycle and the interplay of pathogen vectors, therefore the ecology of tropical diseases – whose aetiology was mostly identified in worms and protozoans – nevertheless allowed for differentiation[123]. Manson's ideas were not universally shared, and there is considerable debate as to whether he can truly be considered the 'father of tropical medicine', but his imperialistic approach to health in colonial areas became a pillar of the new discipline. In addition to the schools in Liverpool and London, similar institutes were also established in Portugal (Instituto de Higiene e Medicina Tropical), Belgium (Antwerp's Institute of Tropical Medicine), and Germany (Hamburg's Bernhard Nocht Institute for Tropical Medicine)[124].

Medicine of imperialist entities adopted the hallmarks of contemporary microbiology, thereby concurrently contributing to the advancement of microscopy and immunology. Operationally, these disciplines were developed inside the framework of public health campaigns, as well as private and philanthropic ones. These campaigns linked research and experimentation carried out in metropolitan centers with observations and interventions in the field in colonial regions, or in general peripheral areas[125]. This tropical medicine was not solely the domain of institutions established by public decree. Other foundations also played a role, each in their own manner. A salient example, although all the specific details must be noted, is that of the Pasteur Institute. The successful treatment of a rabies infection in 1885 prompted Louis Pasteur to pursue the establishment of an anti-rabies center. His idea was to create a place where the sick could be cared for. In 1886, the Académie des Sciences authorized the initiation of an international public subscription to raise funds for this endeavor. Eventually, approximately 2.5 million gold francs were raised in just few months, with prominent

[121] Arnold. *Introduction*, 3.
[122] Manson, Patrick. *Tropical Diseases: A Manual of the Diseases of Warm Climates*. London: Cassell and Company, Ltd, 1898, XVI.
[123] Capocci, Cozzoli. *Introduction*, 13.
[124] Birn, Pillay, and Holtz. *Textbook of Global Health*, 180–181.
[125] Arnold. *Introduction*, 4.

donors – not exclusively French – such as Tsar Alexander III of Russia and Emperor Pedro II of Brazil[126].

However, by the time the center was established, Pasteur's method had already been exported abroad, both on the initiative of doctors and governments. In 1891, a Pasteur Institute was founded in Saigon (now in Vietnam): it was the first one built in the colonial world and, in general, the first of a long list of similar laboratories that were developed in the years following, outside France. The history of the network of institutes bearing the name of one of the fathers of microbiology is a unique case study. The center of Saigon was the result of the extensive lobbying effort by Émile Roux, one of Pasteur's closest collaborators, among other key figures. So, it was conceived to be a node of a centralized, pan-imperial system. However, the role that medicine could play in the empire was not always shared by the colonial governors. Pasteur's approach to both science and politics may appear contradictory at first glance, but it was not in his medical practice. The French scientist argued both for the universal significance of the bacteriological revolution, and for the loyalty that every scholar owed to their own country and, in his case, to the state that was financing the flourishing of the institutes beating his name. The hegemonic cultural influence that France would gain from the transfer of Pasteurian medicine was rooted in the humanitarian implications of such an advance[127]. Anne Marie Moulin emphasized that the establishment of Pasteur Institutes overseas

> offers an intriguing case: a scientific imperialism which, although supported by colonialist lobbies and strongly flavoured with French chauvinism, was not a mere by-product of 19th century expansion in Africa and Asia. Two characters demonstrate the relative autonomy of this phenomenon. Firstly, the network of the Pasteur Institutes was initially established in both French dominions and foreign countries. Secondly, the network successfully outlived the toll of colonialism.[128]

Actually, before 1914, the Pasteur Institutes did not form a real network. They were scattered throughout the world, in colonies or independent countries such as the United States, Russia, and Brazil, and their situations varied greatly. The name 'Pasteur Institute' served as a cover but did not indicate a unified organization. A centralized research policy did not exist, nor was there consistency in relations with political authorities. Each institute sought to maintain its autonomy, often running

[126] Marchand, Marie-Hélène. *The Story of the Pasteur Institute and Its Contributions to Global Health*. Newcastle upon Tyne: Cambridge Scholars Publishing, 2019, 9 and 17.
[127] Information gathered from Moulin, Anne M. *Patriarchal Science: the Network of the Overseas Pasteur Institutes*. In Petitjean, Patrick, Catherine Jami, and Anne M. Moulin, ed. *Science and Empires. Historical Studies about Scientific Development and European expansion*. Dordrecht: Springer Netherlands, 1992, 308–309. Moulin, Anne M. *The Pasteur Institutes between the two world wars. The transformation of the international sanitary order*. In Weindling, Paul, ed. *International health organisations and movements, 1918–1939*. Cambridge: Cambridge University Press, 1995, 246–248. Velmet, Aro. *Pasteur's Empire: Bacteriology and Politics in France, its Colonies, and the World*. Oxford: Oxford University Press, 2020, 20–26. Velmet's book offers the most comprehensive and recent summary of the history of the Pasteur Institutes and their role in international health policies.
[128] Moulin. *Patriarchal Science*, Patrick, 307.

its own journal and preferring just a vague patronage from Paris rather than being part of a larger subnetwork. Over time, the Pasteur Institutes began to share common features: they became centers for prevention of diseases, especially rabies, smallpox, and diphtheria. 'Vaccination' was used as an umbrella term under which these tasks were conceived. The policies of the overseas institutes combined this principle and pragmatism, while exploring 'novel diseases' of tropical climates. Just before the outbreak of World War I, many of the institutes outside the French sphere of influence had disappeared, and the survivors were mostly within the French colonial empire[129]. During the interwar period, Pasteur's research set in motion a novel dialectic between medicine, colonizers, and colonized peoples. For instance, the role of campaigns against tuberculosis and yellow fever, as well as the function of health 'techniques and science' in the French empire, have been thoroughly examined by Aro Velmet[130]. It would be a futile exercise to provide a summary of his work in this context, as it would not do justice to the scholar's contributions.

While the Pasteur Institutes "displayed in 1919 an active and bold policy of scientific imperialism" and then had to face "the contradictions between their nationalistic ideology and the consequences of their international practice", the international healthcare landscape had been enriched by new actors. One of these organizations was the Rockefeller Foundation, which exhibited numerous similarities with the Pasteur Institute: "both were active in medical and biological research, and considered medicine as the cornerstone of progress in our civilisation. Both refined programmes for the eradication of diseases in the world. Both developed techniques for influencing governments", as Moulin has summarized[131]. It is therefore not surprising that the US institution is just as important as the French one for this historiographical reconstruction. It was the result of a scientific movement driven by philanthropy, guided by prominent figures such as Andrew Carnegie. The idea was to bring about more systematic social improvements rather than simply providing charity, but this approach was not independent of economic and political interests. The potential efficacy of international health intervention in fostering positive relations between colonial powers and local elites, supplanting the diplomacy of arms, opening new markets, and promoting the expansion of capitalism[132], is a subject to be taken into account: it links the Rockefellers' effort to the underlying rationale of this research.

The oil tycoons' dedication to healthcare was so profound that, in 1964, the esteemed physician George Corner devoted an entire book to exploring the history of the Rockefeller Institute for Medical

[129] Moulin. *The Pasteur Institutes between the two world wars*, 247–248.
[130] See Velmet. *Pasteur's Empire*, from chapter 4 to chapter 7.
[131] Moulin. *The Pasteur Institutes between the two world wars*, 251–252.
[132] Birn, Anne-Emanuelle, Elizabeth Fee. "The art of medicine: The Rockefeller Foundation and the international health agenda". *The Lancet* 381, no. 9878 (2013): 1618–1619. https://doi.org/10.1016/s0140-6736(13)61013-2. Birn, Pillay, and Holtz. *Textbook of Global Health*, 26–27.

Research, founded in 1901[133] (not without a propagandist aim). Despite its central role as a training and research center that attracted scholars from around the world, providing them with substantial scholarships for decades[134], the focus of the following paragraphs will be on other initiatives, developed about ten years later. As early as 1902, the General Education Board was created to promote higher education, particularly the medical one, in the United States. In the context of public health, between the end of 1909 and the beginning of 1910, the Rockefeller Sanitary Commission for the Eradication of Hookworm Disease was founded and began its activities. The entrepreneurial and Baptist culture, of which the Rockefellers were some of the most prominent exponents, was characterized by a profound conviction that

> contagious diseases, and particularly anaemia caused by hookworm disease affecting a huge population of miners, [was] a key factor to explain the backwardness of the southern states of the Union, a weakening endemic factor and an impediment for modern industrialization of wide regions of the country[135].

The theme of sanitary intervention as a means of expanding capitalism, which was previously mentioned, is emphasized here by Josep Barona. However, from the perspective of the Commission's executive secretary, Wickliffe Rose, this initiative also served to advocate for the establishment of a permanent public health infrastructure. Moreover, even the theme of tropical diseases also reemerges in the context of the early imperialist campaigns of the United States. It was through the occupation of Puerto Rico in 1898 that US doctors became aware of the problem of hookworm infection, caused by *Ancylostoma duodenale* or *Necator americanus*. The Commission began work in 1910 in Virginia. However, it soon became evident that hookworm infections were not confined to the southern states of the US but rather constituted an issue that extended far beyond national borders. Equatorial zones were particularly affected, and migration from countries of those regions posed a significant threat to the United States. Consequently, the necessity of international intervention gained traction. The year 1913 was a pivotal moment in the history of international health. Finally, the Rockefeller Foundation (RF) was officially established, and almost simultaneously, its International Health Commission was also created. The latter would have been responsible for the work in Latin America, in British colonies in the Far East and in the West Indies. However, at the end of 1914 the Sanitary Commission, which

[133] Corner, George W. *A History of the Rockefeller Institute. 1901–1953. Origins and Growth*. New York: The Rockefeller Institute Press, 1964.
[134] For a general overview of the subject as well as more specific information about the Rockefellers' programs, it is useful to consult Fee, Elizabeth, and Roy M. Acheson, ed. *A History of Education in Public Health*. Oxford: Oxford University Press, 1991, and Tournès, Ludovic, and Giles Scott-Smith, ed. *Global Exchanges. Scholarships and Transnational Circulations in the Modern World*, New York–Oxford: Berghahn Books, 2018.
[135] Barona, Josep L. *The Rockefeller Foundation, Public Health and International Diplomacy, 1920–1945*. London: Routledge, 2015, 19.

had been left with the task of controlling the southern United States, was disbanded[136]. Then, in 1916, its responsibilities were took over by the International Health Board (IHB), which in 1927 would become the International Health Division (IHD)[137].

There are other initiatives promoted within the Rockefeller philanthropic galaxy – for instance, the birth of the Johns Hopkins School of Hygiene and Public Health (abbreviated simply as JHSPH) in 1916[138]. They all had a decisive impact and a profound influence on the evolution of international health during the first half of the 20th century. Here, the fundamental elements of the role played by the Rockefeller Foundation will be delineated. Clearly, the meaning and reception of its initiatives carried out abroad varies by location and time. The RF was involved in many ways during World War I, in particular with IHB program to combat tuberculosis among French soldiers, who were considered "permanently disabled" rather than wounded in action; and also during World War II, when Frederick Soper, whom journalist Malcolm Gladwell has called the "General Patton of Entomology", prompted an anti-malaria campaign in British Egypt. However, the Foundation also helped its future enemy, the Italian fascist regime, by providing a significant boost to its public health system. The RF even funded the establishment of the Istituto Superiore di Sanità (ISS), which remains the primary public research center for the Italian health service. Actually, beyond alliances, convergences as well as reasons for tension and competition, both administrative and scientific, emerged between the so called "medical barons" of the Foundation and other actors on each occasion in which the RF was involved, not only in Italy. The Rockefellers' financing of sanitary programs was deeply rooted in humanitarian aims and was backed with the universal value attributed to scientific progress. At the same time, it was also a means of establishing the dominance of a specific organizational model of public health, conveying a certain cultural hegemony through it[139]. A model that will be pivotal in the third chapter.

Given the similarities with the Pasteur Institute's mission, it is not surprising that the perception of interference in the sovereignty of other countries came into play. This also depended on the IHD's

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[136] A sufficient account of the history of the Sanitary Commission is given in Ettling, John. *The Germ of Laziness: Rockefeller Philanthropy and Public Health in the New South*. Cambridge, MA: Harvard University Press, 1981.

[137] Farley, John. *To cast out disease: A history of the International Health Division of the Rockefeller Foundation (1913–1951)*. New York: Oxford University Press, 2004, 3–5 and 27–31.

[138] While it will not be discussed in the same level of detail as other institutions, the Johns Hopkins School of Hygiene and Public Health must be mentioned, as it will frequently be a part of the training of the key figures in international health movement outlined here. Funded by the Rockefeller Foundation, since 1916 it played a foundational role in defining the content and methodology of public health, training some of the most prominent scientists of the time. Many of them went on to lead international multilateral health institutions, shaping their work according to the model they learned at Johns Hopkins School. See Fee, Elizabeth. *Disease and Discovery: A History of the Johns Hopkins School of Hygiene and Public Health, 1916–1939*. Baltimore, MD: Johns Hopkins University Press, 1987. Lin, Yi-Tang. *Statistics and the language of Global Health: Institutions and experts in China, Taiwan, and the world, 1917–1960*. Cambridge: Cambridge University Press, 2022.

[139] Farley. *To cast out disease*, 45–53, 141–143. Stapleton, Darwin H. "Internationalism and nationalism: The Rockefeller Foundation, public health, and malaria in Italy, 1923–1951". *Parassitologia* 42, no. 1–2 (2000): 127–134.

particular approach to health issues. The scope of its initiatives was national, even beyond the borders of the United States: the Division did not work on health issues on an international scale, but rather on national threats that could spread to several countries. The IHD used to establish, for short periods of time, a "cooperative program with all nations involved, on a national basis, and not by international cooperation", maintaining strong control over its involvement[140]. And yet, despite its different aims, the Rockefeller Foundation's work was instrumental in the development of one of the most important multilateral institutions of the last century, the League of Nations Health Organization (LNHO), and in the formation of a relatively homogeneous network of international health experts. To a certain extent, the IHD played a central role in the development of a new international health system, but it struggled to find its place within that framework and was eventually dismantled after World War II[141]. There were new institutions to oversee international public health programs.

1.3 The emergence of health multilateralism

In the cases previously summarized, international health has been presented as the examination of medical problems arising from contact between Europeans and other continents, whether through trade or colonial domination. Concurrently, it has been regarded as diplomatic gatherings, convened at specific times and among a few actors to address issues that have been clearly delineated. It should be said that, to a certain extent, the Pasteur Institutes and the Rockefeller Foundation participated in the effort of providing a stable framework for international health, but it was, however, still driven by national institutions and rooted in national approaches. This research focuses instead on the World Health Organization, a multilateral agency whose origins can be traced back at least half a century before its establishment, or earlier. In 1874, at the fourth International Sanitary Conference, the proposal for creation of the first permanent international health bureau was discussed. All the countries at the meeting, except Great Britain, voted for the establishment of the Permanent International Sanitary Commission, that would be tasked with the purely scientific task of studying epidemic diseases, particularly cholera. Eventually, this institute never came into operation. At the Conference held few years later in Washington, the proposal to establish a Sanitary Agency of Notification was reiterated, envisaging for the establishment of two branches, one in Havana for the Americas and one in Vienna for the other continents. Its function was the collection of epidemiological information. The agency would have had its own budget, to which all participating countries would have contributed according to their population and the tonnage of their merchant

[140] Barona. *The Rockefeller Foundation*, 40–41.
[141] Farley. *To cast out disease*, 273 and 279–280.

fleets. Despite the fact that the majority of the attending states approved its formation – with Great Britain once again absent from the vote –, the institute never came into being[142].

The prevailing political climate of the last thirty years of the 19th century, characterized by significant tension and rivalry among imperial powers, hindered the establishment of such an international institution. The choices were driven by colonial and commercial policies. Therefore, it is no coincidence that at the 1874 Conference another proposal was the establishment of an International Health Council in Persia, similar to those already operating in Alexandria and Constantinople. Although this initiative met with a failure, it still shows a preference for this other colonial and East-oriented type of institution, as it is the *Conseil sanitaire maritime et quarantenaire*, established in 1881. After the subsequent occupation of Egypt by British troops, the history of the institution would demonstrate the interaction of conflicting colonial interests. This became apparent in the assertion of the council's international status, and, above all, expressed the opposition between Paris and London, each advocating for different sanitary models with regard to the management of epidemics, particularly for transit through the Suez Canal. Although the reform decided at the Venice Conference of 1892 enshrined in international law the character of the council, it would prove that this status, as well as to a certain extent for the other cases that will be examined, is the result of continuous negotiation between its prerogatives and those of state sovereignty[143].

However, it is evident that the paradigm of international health was changing, as the birth of two institutions confirmed: in 1902, the International Sanitary Bureau (ISB), and in 1907 the Office International d'Hygiène Publique. Although the initial efforts to establish a coordinated international health policy occurred in the 19th century Europe, the first international organization dedicated to this domain was established in the Americas. As was the case in Europe, health measures in New World regions were also very uneven and often arbitrary, and this was regarded as a threat to the commercial domination that the United States was assuming in the Americas. At the beginning of the 20th century, the construction of the Panama Canal (of which connections to tropical medicine and US imperialism have been already discussed) was the proof of this hegemonic position. Washington's projection onto the Americas had to be sanctioned not through immediate colonial conquest, but through other means. The way forward was found in the establishment of the International Union of American Republics in 1890. This bureau embodied a pan-Americanist vision, which, in the thinking of the US Secretary of State James G. Blaine, held together "peaceful relations among the countries, diplomatic mediation of disputes, the reduction of European influence in the Americas, and increased US exports". It must

[142] Howard-Jones. *The scientific background of the International Sanitary Conferences*, 33, 39–41, and 45.
[143] Chiffoleau. *Genèse de la Santé Publique Internationale*, 164–168.

be said that this manifestation of Pan-Americanism, which was subject to substantial criticism from various Latin American voices, reveals the isolationist horizon of the Monroe Doctrine. Its Roosevelt Corollary, in 1904, was the actual declaration of the Americas as the White House's area of influence, in which health was a pivotal component.

Between 1901 and 1902, the Second International Conference of American States led to the establishment of the First International Sanitary Convention of the American Republics. In December of 1902, the International Sanitary Bureau was founded with the objective of formulating regulations to harmonize the interests of all participating nations. These provisions sought to replace the existing, fragmented quarantine systems, on the basis of modern microbiology and epidemiology, prioritizing sanitation over measures that impeded trade. The shift to a novel paradigm of epidemic risk management was based on guidelines that were regarded as technical, as they were the consequence of scientific advancement. At the same time, it was evident that the domain of asepsis presented a series of interventions that, despite their implications in daily lives of thousands of people, superseded the enforcement of mutual constraints on the borders. This did not mean that previous practices were suddenly abandoned. For instance, the contrasts between Cuba and the United States, once again on yellow fever, are a further proof that behind formal agreements there is always tension between national sovereignty and regional integration, let alone when a governance meant to be global is involved. It is therefore no coincidence that, partly due to the attention focused on the First World War, the various military interventions carried out by the United States in Central America, between 1912 and 1920, resulted in the interruption of all international health meetings.

However, the foundations for health cooperation in the Americas had already been established, and this would ultimately result in the drafting of the Pan American Sanitary Code in 1924. It provided detailed guidelines and standardized procedures. Above all, it was the combined provisions of Articles 37 and 55 that represented a qualitative leap forward for this type of instrument. The former stipulated the implementation of sanctions and penalties for those found to be in noncompliance with the code, to be imposed by "the country within whose jurisdiction the offense is committed". The latter determined that the Pan American Sanitary Bureau (PASB, as the ISB was renamed in 1923) would serve as the primary agency responsible for coordinating the health policies of the member countries of the Pan American Union (the new name of the Union of American Republics). This reinforced the American identity of this particular institution, while the "Good Neighbor" foreign policy that Washington had implemented since 1928 aimed at the mitigation of the imperial image of the US. During the 1930s, the White House wanted to secure its leadership of the Americas through culture and science. Health diplomacy, promoted by Washington through the PASB, played a key role in this

process, which aimed both to strengthen US influence and reduce that of Europe. Therefore, PASB leaders regarded the health section of the League of Nations with suspicion, as its aims reflected the new situation that had arisen in Europe, following the First World War[144].

In 1903, one year after the establishment of the ISB, the 11th International Sanitary Conference was held once again in Paris. Article 181 of the convention signed reiterated the proposal for the establishment of an international health organization, but this time it would be successful. Few years later, in December 1907, an international conference was convened in Rome to create this institution. The meeting debate was based on a draft presented by the French, using the Bureau International des Poids et Mesures as a model for the new organization. Twelve countries participated in the event, including the United States, Brazil, and Egypt (the only non-European countries), and the notable absence of Austria-Hungary and Germany. In just few days and with minimal alterations, the creation of the Office International d'Hygiène Publique in Paris was ratified. The Office (officially opening in 1909) was endowed with its own staff, its own budget[145], and a variety of membership levels that corresponded to different levels of contributions and voting rights. The institute's mandate was to gather information on all the subjects with regard to public health "and especially relating to infectious diseases, notably cholera, plague, and yellow fever". Its task was to disseminate this information to its constituents via periodic publications and targeted reports. By 1933, when the OIHP turned 25, the members were 51 (not all of them were sovereign states), as the conference held in Rome had admitted countries that had not ratified the 1903 convention.

This was a clear commitment to the internationalization of health policy, with the objective of situating the Office at the nexus of these efforts. This phenomenon can be also illustrated by the fact that one of the primary issues addressed by the OIHP was yellow fever, a health concern that was traditionally considered exclusive to the Americas and rarely became the subject of the ISCs. And it happened despite the fact that the agency was not being initially assigned the duty of notifying the emergence of disease outbreaks, due to concerns about potential delays in passing through an intermediary body. Within a short time, it would extend its interests to typhus, malaria, tuberculosis, and even non-communicable diseases and other public health issues. However, a comprehensive review of the extant literature reveals a consensus among scholars that the flaws of the International Sanitary Conferences, from which the Office originated, were far from being overcome. The OIHP

[144] The overview of the Pan American international health policies and institutions was compiled based on the first three chapters of Cueto, Marcos. *The Value of Health: A History of the Pan American Health Organization*. Washington, D.C.: Pan American Health Organization, 2007.

[145] To which British India contributed equally to the United Kingdom. *International agreement respecting the creation of an International Office of Public Health: signed at Rome, December 9, 1907*. London: Printed for H.M.S.O., by Harrison and Sons, 1909, 5.

staff was responsible for ensuring the application of the agreements concluded within the ISCs and for proposing any necessary amendments. Its other functions included coordination, scientific analysis, information sharing, and recommendations to governments, but its powers were generally quite limited. The first article of the document establishing the institution asserted: "the Office may not interfere in any way in the administration of the different states". What the OIHP could actually do was providing technical advice, while its activity was not politically binding. The prevailing interests of the imperial powers exerted a profound influence on the organization, whose approach can be likened to that of colonial medicine. Its character remained deeply Eurocentric, with a discernible French influence manifesting in its personnel, headquarters in Paris, and the exclusive utilization of French. Albert Wu has written: "the OIHP and Parisian medical science became mutually constitutive, as it gave France international medical prestige". Ultimately, the Office's primary objective was the protection of Europe from the spread of communicable diseases, which were widely believed to originate from Eastern regions. This remained the fundamental framework behind the OIHP's initiatives, even after the concept of Europe was expanded to include the Americas, in the 1912 convention: the "dispositions spéciales aux pays situés hors d'Europe" became the "dispositions spéciales aux pays d'Orient et d'Extreme-Orient"[146].

> Even though the OIHP defended the interests of European empire, it established a new model for international collaboration in the realm of global health. The organization facilitated an unprecedented amount of information sharing and concerted data collection. It created an infrastructure for disease surveillance, allowing the signatory powers to alert each other to cases of cholera, plague, and yellow fever. The Office's *Bulletin Mensuel* became an essential resource for public health officials to keep abreast of the most recent scientific and technical literature on disease prevention, and the conferences became grounds for the establishment of the most up-to-date bacteriological consensus. The OIHP set an important precedent as a site of possible international cooperation in the realm of global health.[147]

Despite the problems identified, Wu's observations underscore the transformative impact of the Office in shaping a novel architecture for international public health, thus laying the foundations for the activities of another institution that would compete with it, namely the League of Nations Health Organization (LNHO). Founded in 1919, the League of Nations immediately saw healthcare as one of the central areas of its activity. In April 1920, its Epidemic Commission was created as a response to the terrible typhus epidemic that, since the World War I, was ravaging Eastern Europe in particular.

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[146] The literature consulted for this brief summary is Howard-Jones. *The scientific background of the International Sanitary Conferences*, 85–86. Chiffoleau. *Genèse de la Santé Publique Internationale*, 221–226. Lin. *Statistics and the language of Global Health*, 98–99. Wu, Albert. *World War I, the Paris Peace Conference, and Conflicts Over Global Health Governance*. In Wu, Albert, and Stephen W. Sawyer, ed. *The Making of a World Order: Global Historical Perspectives on the Paris Peace Conference and the Treaty of Versailles*. Abingdon, Oxon: Routledge, 2024, 219–221. Borowy, Iris. *Coming to Terms with World Health: The League of Nations Health Organisation 1921–1946*. Frankfurt: Peter Lang GmbH, Internationaler Verlag der Wissenschaften, 2014, 27–28.

[147] Wu. *World War I*, 221.

Despite its brief operational duration, spanning a mere three years, and encompassing only five countries, it proved to be a fair success in the realm of international health. The Commission not only paved the way for but also contributed to the establishment of the LNHO. But its birth was anything but a linear process of international consensus. It was rather the result of a dynamic interaction between new sanitary approaches, internationalist ambitions of a small circle of scholars involved in the intricacies of contrasting foreign policies, and persistent national interests and institutional inertia. Article 23 of the Convention of the League of Nations stated that the organization was authorized to coordinate global health initiatives. Furthermore, the following article also stipulated that it could direct "all international bureaux already established by general treaties if the parties to such treaties consent". The decisive impetus for the creation of the LNHO came directly from the newly formed Ministry of Health of Great Britain. The opportunity provided by Article 24 was regarded as a British attempt to assume greater centrality with respect to the French scientific world represented by the OIHP, which would be incorporated into the new institution. The US would also end up in this confrontation: it had no particular preference for any organization but defended the independence of the OIHP after deciding not to join the League of Nations, thereby making it unable to allow its jurisdiction over a body of which it was a member.

Notwithstanding, a Temporary Health Committee was established in 1921: it would become the initial nucleus of the permanent health agency, the LNHO. Its mandate was vague and malleable, and it also lacked roots or a stable framework. Although this ambiguity may seem a weakness, it proved to be an essential resource for the LNHO, granting it both considerable freedom of action and self-definition, and allowing internal actors to shape the organization according to the emerging needs and pragmatic opportunities. The LNHO acted as a vehicle for political change, often concealed behind a facade of technicality. Politicians were more willing to cooperate on what they considered technical matters, and LNHO staff skillfully exploited this perception to justify and promote their activities and ideas, subtly pushing the boundaries of international cooperation and state sovereignty. The category of 'technical' became a fundamental diplomatic tool to circumvent political resistance. A significant number of the LNHO officers understood the importance of soft power strategies, related to seemingly apolitical scientific and professional collaborations. Thanks to them, they wanted to bypass political animosities, foster trust, build transnational networks of experts, and subtly influence national policies and loyalties toward internationalist goals. This marks a crucial distinction from the traditional health diplomacy centered on negotiations between states of the 19th century, and this revolution was driven not only by the horrors of World War I, but also by the training of a considerable number of scholars who would form the backbone of the LNHO's activities. As previously mentioned, many came from the same institutions, such as the Rockefellers' ones or the Pasteur Institute, thereby constituting an

international intellectual élite, strongly influenced by the humanitarian and universalistic conceptions of science of those institutions. Medicine was given a role of unification and progress, which can also be seen in changes in the approach to diseases.

The Polish bacteriologist Ludwik Rajchman was the first Director-General of the LNHO, and aimed to persuade national health administrations to integrate standardized methods and instructions for data collection and biological preparations. The program on the latter domain was instrumental in integrating German scientists into the international community after being ostracized following the First World War[148]. But it was the LHNO work on statistics that represented the real turning point in international health. The organization created an Epidemiological Information Service that expanded rapidly: by 1931, it was covering 72% of the global population. The agency established the Far Eastern Bureau in Singapore in 1925, which served as a branch of the Geneva headquarter. The global projection of the LNHO that emerged from the organization of these services instigated the conflict with the OIHP, that manifested in a battle for the control of epidemiological intelligence. The Paris Office was the traditional hub of international health information exchange, but its operations were severely disrupted by World War I. The LNHO, thanks to its funds, coverage and staff, emerged as a formidable rival in this sector. The OIHP based its authority over epidemiological data on the Rome Agreement signed in 1907 but, eventually, an agreement was reached in 1927. It stipulated that the Singapore station would collect data under the OIHP's authorization, but also that the data would be sent to both organizations. In the next chapters, epidemiological surveillance will be explored in greater detail.

The LNHO strategically expanded its mandate to include diseases such as malaria, cancer, and sleeping sickness, thereby pushing the boundaries of what was considered relevant to international health problems and justifying broader engagement. Unlike 19th-century sanitary conventions, which focused on epidemic containment to facilitate trade and reflected an imperialist approach, the LNHO adopted what should be called a socio-medical approach. This perspective implied broader economic, social, and political transformations to address health issues. The LNHO's focus on social medicine, particularly in rural hygiene and nutrition, implicitly asserted that all people had similar needs and were in fact equal, and that health differences depended on the context rather than race. This was a noteworthy stance in an era of increasing racism. For instance, the LNHO's 1935 report on nutrition, while focused on health, explicitly stated that improving nutrition might require the redistribution of wealth and called for policies such as sufficient minimum wages, social regulations, school meals for

[148] In particular, see the history of the International Research Council in Fox, Robert. *Science Without Frontiers. Science without Frontiers Cosmopolitanism and National Interests in the World of Learning, 1870–1940.* Corvallis: Oregon State University Press, 2016.

the poor or all the children, and other similar measures. The LNHO also committed itself to establish or reform national health systems, demonstrating an innovative conception that intertwined public health, domestic politics, and diplomatic relations. For instance, significant programs of reformation were devised for Greece, Bolivia, and China. In the latter case, it led to the birth of the Chinese National Quarantine Service in 1930. A key feature of this approach was the exchange of health personnel, as well as of knowledge, in the hope of fostering a genuinely homogeneous international health community. But the LHNO could not produce a global prescription for all its activities, because national contexts and existing scientific expertise dictated different solutions.

The LHNO's work went far beyond traditional public health interventions and touched upon fundamental issues of economic and social justice, representing a radicalization of its diplomatic role, which was not always appreciated. Moreover, the advent of the Great Depression and escalating geopolitical tensions in the 1930s exposed the financial and political vulnerability of the organization. In response to financial difficulties, the LNHO cut its costs and shifted towards a more advisory and less interventionist role. Rajchman's assistance to China in its anti-Japanese efforts in Manchuria, and his contacts with Moscow ultimately led to his dismissal in 1938. Eventually, World War II disrupted the international system of epidemiological intelligence. The League of Nations declared its neutrality in the conflict: far from being an ideological choice, it was in fact a pragmatic strategy for operational survival. However, even health information was soon militarized. Epidemiological data could reveal critical strategic information, such as troop movements, supply lines, and population vulnerabilities. As the number of reports received by LNHO decreased, the organization often relied on data copied from the OIHP, then located in Nazi-occupied territory, or the PASB. The tragic situation proved that national security imperatives were prevailing over health objectives, leading to the suppression of vital data sharing. In that period, the claim that information exchange was just a technical and not a political act became untenable[149].

This was further exemplified by the Allies' initiative to establish the United Nations Relief and Rehabilitation Administration (UNRRA). Although it was not the first organization designed to assist victims of conflict (a notable example is the Red Cross[150]), UNRRA had certain distinctive features. Firstly, it was "the creation of a military alliance. To join the United Nations and its relief organization,

[149] This brief historiographical reconstruction about the LHNO is based on Sealey, Patricia A. "The League of Nations Health Organisation and the Evolution of Transnational Public Health". Doctoral dissertation, Columbus: Ohio State University, 2011. http://rave.ohiolink.edu/etdc/view?acc_num=osu1306338169. Lin. *Statistics and the language of Global Health*. Wu. *World War I*. Borowy. *Coming to Terms with World Health*. Balińska, Marta A. *Assistance and not mere relief: the Epidemic Commission of the League of Nations, 1920–1923*, and Dubin, Martin D. *The League of Nations Health Organisation*. In Weindling, ed. *International health organisations and movements*, 56–108.
[150] See the contributions of John F. Hutchinson and Bridget Towers in Weindling, ed. *International health organisations and movements*, 17–55.

countries had to declare war on Germany and Japan and offer material support for the war and rehabilitation effort". As part of a broader strategy that viewed healthcare and socio-economic support as the responsibility of the victors of World War II, UNRRA received substantial government funding. During the period of its operations, which spanned from 1943 to 1948, the organization employed a total of 10,000 people from 43 countries and, above all, initiated its own collection of epidemiological data, periodically requesting them from the LNHO without offering a similar reciprocal gesture. As Patricia Sealey has emphasized, its officers "saw epidemiological intelligence as a means to their end, however, not as part of a cooperative global venture"[151].

UNRRA was another rival in the complex arena of international health organizations that have been explored in these pages. It was a component of a broader system of diplomatic agreements and international assemblies that ultimately led to the establishment of the United Nations Organization (UN). Its Charter, adopted at the end of the San Francisco Conference in 1945, included the necessity of creating a health agency, largely at the instigation of some UNRRA staff members such as Szeming Sze, from China, and Geraldo de Paula Souza, from Brazil, in coordination with other leading public health figures of the time such as the Norwegian Karl Evang[152]. This is how, in the aftermath of World War II, the World Health Organization (WHO) came into existence.

1.4 A few words about the WHO (and the FAO)

The formation of this institution occurred during a period of profound global desire for peace and international cooperation. However, from its inception, the agency exhibited tensions between various institutional, political, and scientific poles that could not always be reconciled. The very name of the organization was an articulation of the conception of its function. It was the Canadian doctor Brock Chisholm who proposed to use the word "World" instead of "International". Shaped by his experiences in World War I, Chisholm specialized in psychiatry, rose to the highest position for a doctor in the Canadian army, and then became deputy minister of the country in 1944. In his view, the term "world" was intended to reflect an anti-nationalistic stance. Those who would be part of the WHO should embrace a certain ethos, akin to that of an international civil servant who felt part of a global movement toward overcoming national interests in favor of general progress. Anyway, those who were at Geneva's offices to defend specific national interests had various means to maintain their influence in the organization's decision-making processes. For instance, the election procedures for the Executive Board, one of the main bodies of the WHO, stipulated that the World Health Assembly

[151] Sealey. "The League of Nations Health Organisation", 255–269.
[152] Cueto, Marcos, Theodore M. Brown, and Elizabeth Fee, *The World Health Organization. A History*. Cambridge: Cambridge University Press, 2019, 36–38.

(WHA) would not directly elect its members, but only the states that would be part of it, in accordance with a criterion of equitable geographical distribution. It is evident that the door was left open to purely political choices[153].

Another challenge that emerged from Chisholm's aspiration was the absorption of all the other organizations of a similar nature. OIHP had resisted pressures from the League of Nations, and the French leadership wanted to maintain its existence and restore its hegemony over its activities. However, this proposal was met with opposition from both the British and the Americans, leading to Paris's eventual acceptance of the termination of the OIHP. Conversely, the PASB had a completely different story, eventually agreeing to serve as the American branch of the WHO. There, Washington's influence was sufficient to force special mediation to find a solution that would protect its hegemonic instruments within the newborn global agency[154]. The issues of regional structuring within the WHO, which will be addressed using specific cases subsequently, were also associated with the fate of colonial empires, over which the imperialist centers sought to assert again their jurisdiction. According to the most recent historical reconstructions, Rajchman was definitively sidelined on this issue, as had already happened a few years earlier in the LHNO. Among his proposals there was the creation of a unit that would exercise control over the colonial domains, a plan strongly opposed by the British[155]. The legacy of the LNHO with respect to its diplomatic instruments and approaches also entered into the dialectic that would shape the WHO. The vision that Chisholm and other scholars brought to the new agency was that it could overcome political obstacles by dealing with technical issues, as had previously been hypothesized within the LNHO. In this particular instance, however, the expectations were elevated to an even greater extent, if we consider the functionalist interpretation that Siddiqi indicates as having had a significant influence on the WHO Secretariat:

> an international welfare community represents the ideal of human organization because it actively undermines those social and economic inequities which are the basic causes of war; this ideal may be realized by establishing international functional organizations, which deal with 'non-political' issues such as public health, illiteracy and hunger more adequately than individual states can possibly do. The cooperation built up in the functional or 'non-political' sphere is ultimately expected to 'spill over' into the frankly 'political' sphere of human interactions, eventually rendering peaceful relations between nation-states the only viable and inevitable outcome.[156]

This scenario never came true: technical commitment and particular health concepts, linked to the WHO intervention model, would inevitably end up affecting the foreign policy of all the agency's

[153] Farley, John. *Brock Chisholm, the World Health Organization, and the Cold War*. Vancouver: University of British Columbia Press, 2009, 1–6 and 73–75.
[154] Farley. *Brock Chisholm*, 11.
[155] Cueto, Brown, and Fee, *The World Health Organization*, 40.
[156] Siddiqi, Javed. *World Health and World Politics: The World Health Organization and the UN System*. London: Hurst & Company, 1995, 45.

members, as well as the opposite, as it will be argued. The history of the WHO has been characterized by a dual tendency, albeit with varying nuances: on the one hand, toward social medicine, as seen in the activities of the LNHO, and on the other, toward a technocratic, biomedical perspective. The former is defined as horizontal and multi-sectoral, the latter as vertical and mono-focal. The former faces the socio-economic roots of diseases, the latter considers epidemics just as biomedical phenomena to be tamed, even evoking the memory of the 'civilizing mission' mindset[157]. The actual implementation of the technical assistance offered by the WHO has significant implications for this research, and a more thorough examination of this topic will be reserved for future chapters. However, it is worth noting that the WHO constitution already incorporated a concept of health with profound diplomatic impact. Even today, the wording of the first sentence of this text is the same as that drafted at the International Health Conference in New York in 1946, proving how advanced the principles on which the WHO was founded were for that era: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"[158].

The definition encompassed not only a mention of psychological health, but also a reference to "social well-being", which was explicitly associated with the social medicine idea discussed with the LNHO, far from a purely biomedical approach. The inclusion of the phrase "not merely the absence" appears as a response to other unstated opinions, thereby revealing a depth inherent in this definition that has been thoroughly explored by Lars Larsen. He has meticulously reconstructed the genealogy of the definition, tracing its origins to the work of the Swiss and then naturalized US citizen, medical historian Henry Sigerist, who paid tribute to the communist sanitary conception in his book *Socialized Medicine in the Soviet Union* (1937). The wording of the WHO constitution was authored by Raymond Gautier, a prominent member of the LNHO. Gautier, cautious in light of Rajchman's experience, successfully managed to conceal Sigerist's and social medicine influences. Despite the ideological pushback of the US leadership in the context of the mounting Cold War, the definition was approved, thanks to a combination of a favorable political window and the reservations that the US Congress nevertheless placed on ratification of the constitution[159].

The events reconstructed here are only the beginning of the WHO's history, but for the purpose of this chapter they are sufficient. The genealogy of the initial words of its constitution summarizes many of the political as well as scientific issues that have characterized not only the history of this multilateral institution, but also much of the history of international health to date. The following

[157] Cueto, Brown, and Fee, *The World Health Organization*, 2.
[158] "WHO Constitution", *World Health Organization*. https://www.who.int/about/governance/constitution, 16/06/2025.
[159] Larsen, Lars T. "Not merely the absence of disease: A genealogy of the WHO's positive health definition". *History of the Human Sciences* 35, no. 1 (2022): 111–131. https://doi/10.1177/0952695121995355.

decades of the WHO have been addressed in greater detail by other scholars, while here the aim was to make only a few references to it, which are instrumental in advancing this research. For the same reason, a few lines will also be devoted to the Food and Agriculture Organization (FAO), or rather, to the multilateral dimension that also concerned the intertwining of animal and human health. After the First World War, the danger of the international spread of animal diseases was addressed by the Office International des Épizooties. Its history has been recently analyzed by Cornelia Knab[160], but as written in a previous contribution co-authored with Amalia Ribi Forclaz, the Office and other agencies were confined to the role of "platforms for intergovernmental negotiations"[161]. Anyway, the interconnection between the agricultural and rural sphere, and the preservation of public health, emerged as a matter of ongoing significance on the global agenda. After its establishment in 1945, FAO was then entrusted with a pivotal responsibility in this regard. A useful study of its history, at least in its early decades, is Ruth Jachertz's "To Keep Food Out of Politics", because the author highlights a central theme for this research: the burden of politics, and especially of Cold War, in FAO's activities[162].

FAO and WHO have a long story of joint meetings and committees on various issues. One of the most important of these was the management of zoonoses, which obviously included influenza. The first recommendations of a joint expert group date back to the end of 1950[163], and later the disease here studied became more and more important. In 1969, the 22nd World Health Assembly (which will be mentioned several times in this research) passed Resolution 35. It asked WHO and FAO to jointly prepare shared methodologies and criteria to assist in the conduct of surveys and the implementation of control programs for zoonoses. As the Director of the WHO Western Pacific Regional Office wrote in a document that year, the Resolution promoted the development of fundamental parameters "to be used in carrying out the necessary surveillance and evaluation"[164] of zoonoses. 'Surveillance' is a pillar of the elaboration of this thesis, and the protagonist of the next chapter.

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[160] Knab, Cornelia. *Pathogens Crossing Borders: Global Animal Diseases and International Responses, 1860–1947*. New York: Routledge, 2022.

[161] Knab, Cornelia, and Amalia Ribi Forclaz. "Transnational Co-Operation in Food, Agriculture, Environment and Health in Historical Perspective: Introduction". *Contemporary European History* 20, no. 3, Special Issue: *Transnational Cooperation in Food, Agriculture, Environment and Health in Historical Perspective* (2011): 253. https://doi.org/10.1017/S0960777311000300.

[162] Jachertz, Ruth. *"To Keep Food Out of Politics": The UN Food and Agriculture Organization, 1945–1965*. In Frey, Marc, Sönke Kunkel, and Corinna R. Unger, ed. *International Organizations and Development, 1945–1990*. Basingstoke: Palgrave Macmillan, 2014, 75–100. See also Pernet, Corinne A., and Amalia Ribi Forclaz. "Revisiting the Food and Agriculture Organization (FAO): International Histories of Agriculture, Nutrition, and Development". *The International History Review* 41, no. 2 (2019): 345–350. https://doi.org/10.1080/07075332.2018.1460386.

[163] WHO. *Joint WHO/FAO Expert Group on Zoonoses. Report on the First Session*. Technical Report Series, no. 40, 1951.

[164] FAO Archives. *WHO/FAO Expert Committee on zoonoses*. AN 19/14, 24 November 1969.

Conclusion

At the beginning of the 1980s, the WHO influenza surveillance had significantly stretched its reach in comparison to its starting point. The Global Influenza Surveillance Network could properly be called 'Global'. But if this is a horizon that was achieved only in the 1980s, there is an asymmetry to be discussed: the space between a system that wanted to be global since its inception and the actual process behind its expansion. This thesis tried to follow this path, emphasizing how the main issues of international arena in the first four decades after the Second World War crossed with influenza and its surveillance. Nevertheless, there is another asymmetry that has been mentioned all along the thesis, but it has not been articulated in detail: that of a "game of scale" on influenza political management and a global threat, such as a pandemic. I have chosen the phrase "game of scale" for the title of this contribution because I think it suggests correctly the idea that, for a proper understanding of influenza surveillance, we must consider an heterogeneous set of dimensions – geographical and scientific, as well as political and infrastructural/technological – that must be aligned (in our analysis before that in reality) to build or reconstruct a functioning 'economy of scale' of surveillance of a phenomenon that is intrinsically global as a pandemic is, that is to say a network that can counter such a threat.

And yet, the 'global' was not a constitutive element of the elaboration, while was rather its point of arrival. I have called my work a transnational history of science and science diplomacy, a sort of intersection between these two, but it could be called also a global history of influenza, as long as it is not defined in this way because of a simplistic use of categories and metaphors such as "mobility", "connectivity", "networks", "circulation", or "flows"[795]. The thesis is for sure filled with these words, and it addresses connections and phenomena that occur globally without doubt, but I felt it was more stimulating and also an appropriate approach that of problematizing how the disease was effectively managed while crossing countries, which remain the key players of international arena as said in the Introduction. At this point, the WHO sources are not anymore just a heuristic expedient, but they become the traces of crystallization into a specific governance and discrepancies of its actual implementation, when it comes to the interrelationship between countries and a third actor, with its own agenda, such as a specialized agency of the UN multilateral system. Anne Sealey, writing about the 1926 International Sanitary Convention, concluded: "Global systems, composed of so many local circumstances, are contingent and contested, and therefore reveal important insights about the intellectual, geographic, and political contexts that produce them"[796]. As in this thesis, the 'global' is

[795] See Gänger, Stefanie, and Jürgen Osterhammel. *Introduction. Rethinking History, Globally*. In Gänger, Stefanie, and Jürgen Osterhammel, ed. *Rethinking global history*. New York: Cambridge University Press, 2024, 4–5.
[796] Sealey, Anne. "Globalizing the 1926 International Sanitary Convention". *Journal of Global History* 6, no. 3 (2011): 455. https://doi.org/10.1017/s1740022811000404.

not monolithic, as well as the dynamics that shape it. It is not a background for the analysis, but it is the product of that. It can be said about the GISN history as well – and the Global Influenza Surveillance and Response System (GISRS), as renamed recently. The history of a global surveillance of viruses that cannot be controlled without global efforts is the history of how the interest in cooperation established itself as a driver for internationalizing activities on the disease. The WHO intervention on that was devised with this awareness in mind. Payne wrote in 1953 that

> This, then, is the objective of the WHO influenza programme: first, to plan against the possible recurrence of a pandemic; second, to devise control methods to limit the spread and severity of the disease; and lastly, to limit the economic effects of an epidemic. Which of the three is regarded as the most important depends on the point of view.[797]

Each time, influenza experts have formulated pragmatic, specific, and actionable responses to achieve these objectives, even when the practice of surveillance over time has raised new issues and necessitated a reconfiguration of the system itself. However, this was not a condition inherent in the advancement of virological knowledge and practices concerning influenza. The features of the viruses imposed an international effort, but the sharing of information and strains was the result of continuous negotiation, commensurate with the actors involved and the context in which such negotiations could achieve concrete results. Friction was no longer inhibition from knowledge or technologies, but their flows negotiated by each country to serve its own national interest in a pragmatic and global horizon. The examination of WHO influenza surveillance fits with Jessica Wang's analysis of how scientific internationalism was redesigned in the late 19th and early 20th centuries. It was "a pragmatic realm of interstate practice"[798]. In general, the dissertation draws a picture of WHO influenza surveillance that aligns with Fa-ti Fan's problematization of circulation of knowledge:

> what is called "circulation" may have been really a series of negotiations, pushes and pulls, struggles, and stops and starts. The image of circulation tends to impose too much unity, uniformity, and directionality on what was complex, multidirectional, and messy. It also tends to substitute a general metaphor for a careful examination of what actually happened.[799]

WHO influenza surveillance, as it has been demonstrated in this research, operated historically on the basis of largely autonomous logics, even beyond the perimeter established by the UN agency system. We can say that the actual configuration of both GIP and GISN responded to the negotiation of scientific endeavors, while WHO mirrored a diplomatic one. Anyway, these dimensions were not

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[797] Payne, Anthony M.-M. "The Influenza Programme of WHO". *Bulletin of the World Health Organization* 8, no. 5-6 (1953): 756.

[798] Wang, Jessica. *Knowledge, State Power, and the Invention of International Science*. In Krige, John, ed. *Knowledge Flows in a Global Age. A Transnational Approach*. Chicago–London: The University of Chicago Press, 2022, 57. https://doi.org/10.7208/chicago/9780226820378-002.

[799] Fan, Fa-ti. "The Global Turn in the History of Science". *East Asian Science, Technology and Society: An International Journal* 6, no. 2 (2012): 252. https://doi.org/10.1215/18752160-1626191.

isolated from each other, as has been widely demonstrated in the thesis, but rather they were entangled and resulted, according to my opinion, to what Simone Turchetti defined as multi-track diplomacy[800]. In some cases, decisions and indications were respected, sometimes they were circumvented through unofficial channels and were observed only on paper. At other times, the circumvention was promoted with the will of encouraging more comprehensive surveillance. On other occasions, the maintenance of links on influenza control and research became a tool for dialogue when the dialogue could not be made public. WHO influenza surveillance serves as a privileged lens through which studying how a global scientific network has been truly built, even in times of high international tension. Moreover, it shows how contact was legitimated by the necessity of expanding surveillance activities on a global scale and collecting and disseminating reports and information on strains, to counter the effects of an omnipresent disease, while it was entirely a political decision, in a broader sense.

It has been repeatedly emphasized throughout this research that the epidemiological features of influenza have played a crucial role in shaping its surveillance, as well as the sharing of information and strains to counter the disease. Influenza was understood as a highly contagious disease originated by a pathogen constantly changing. However, these characteristics have also entered into a dialectical relation with the political and diplomatic approaches that have involved the pathogens. This had led to the conception of an intrinsically transnational surveillance model, even before the Second World War. However, any teleological assessment that the global scale of the problems humanity faces will naturally lead to increasingly open global governance systems must be avoided. This is an error that can occur when attempting to delineate the global history of a phenomenon: the removal of borders' role. Since the 1926 ISC, governments showed they were keen to keep narrow control over influenza data, when it was not useful to share them. It was upon them when and how to disseminate them: it was an assertion of sovereignty. Even during the second half of the 20th century, any commitment to a fruitful health diplomacy was a deliberate choice, and it was made in light of strategic considerations formulated about relations happening at the borders. Their role, in influenza history, was embedded with the question of whether influenza could become a biological weapon or not, and it was answered in the negative. The development of a rather liberal network for sharing strains and information was predicated on this awareness: it is the absence of a threat to the state as an actor of the international arena that made it possible.

It was not the fact that the virus does not find any real obstacle in borders that imposed proper international cooperation. On the contrary, it was just one of many problems that political power had

[800] Turchetti, Simone. "A Diplomacy Turn? Writing the History of Science in the Context of International Relations". *Physis* 57, no. 1 (2022): 225–244. https://doi.org/10.1400/289120.

to face. In their confrontation, governments shaped relations across borders, those complex systems, which are not only geographic limits[801], and organized them in order to ease transition of influenza knowledge when needed. Between the 1940s and the beginning of the 1980s, in the context of Cold War and decolonization, the influenza border encompassed the whole world – although there were commercial competition, scientific rim and political exploitation – because health authorities came together around the idea of an epidemiological policy built on that dimension, also commensurate to its epidemiological hazard. It was in this process that WHO influenza surveillance became global. In fact, this model entered into crisis not because of scientific revolutions, but because of how science could be used in the call for a more equitable order, voiced by the developing countries. The issue of 'being global' simply changed subject. It moved from negotiations on geographical expansion to the supply of strains for manufacturing vaccines and implementing immunization programs, revealing a growing contrast between the interests of big pharmaceutical companies and public health goals. This dialectic has become particularly evident in relation to increasingly advanced developing countries, which nevertheless do not have a biotechnology industry capable of producing vaccines.

The controversy that exposed the contradictions of this system began toward the end of 2006, when Indonesia decided not to share some influenza A virus (H5N1) samples with WHO. Indonesia's decision was based on the Convention on Biological Diversity (CBD), signed in 1992, and originated from its reaction to development of an avian influenza vaccine by an Australian company, which had received an Indonesian strain from the WHO, while Jakarta received no doses. Indonesia argued that this case exposed the inequities of the global influenza surveillance system. The negotiation process on the resumption of the sharing of biological material would lead to the creation of the PIP (Pandemic Influenza Preparedness) Framework, launched in 2011. And yet, substantial asymmetries remain and undermine truly global surveillance coverage, when it comes to its evolution directed to the capacity of containing a hypothetical pandemic through immunization. Synthetizing a 2019 Michelle Rourke's article, it can be said that the system still favors access to genetic resources at the expense of certainty of tangible benefits for the providers. Thus, little has changed from the previous mechanism in which "biological resources flowed from low- and middle-income countries for research and development in richer ones", as Sam Halabi wrote in another article, that same year. These events have brought up a complex debate, which has revolved around the category of 'viral sovereignty'. It clearly challenges the idea of a global system, but on political grounds and not scientific ones.

[801] Borders are "an historically evolving assembly of institutions and policies mobilized by the state, and politically aligned social actors, that have the authority to impede or to facilitate traffic across them". This is how they are described by Krige, John. *Introduction: Writing the Transnational History of Knowledge Flows in a Global Age*. In Krige, ed. *Knowledge Flows in a Global Age*, 4. https://doi.org/10.7208/chicago/9780226820378-001.

Besides that, influenza diplomacy is also following a parallel channel. This latter is an emerging regime for sharing information, based on "scientific etiquettes", as Fearnley called them, and that can be also described as "bioinformational diplomacy", using Stefan Elbe's words. The GISRS – the new GISN name after the adoption of the PIP Framework – has historically been shaped in a 'Westphalian' geopolitical architecture, hierarchical and based on nation states sharing samples and data. This new diplomacy has been established on the possibilities offered by molecular biology, which transformed the foundations of life into information. Genetic sequences have revolutionized this scenario without doubt. They can be used for surveillance and classification of viruses, for developing diagnostic kits (as happened in Germany during the Covid-19 pandemic), and also vaccines. In order to prevent the circumvention of the obligations to share research benefits, a pivotal matter in the formulation of the PIP Framework as well, the WHO is still refining the Global Initiative for Sharing All Influenza Data (GISAID). Born in 2008, made a new model of data licensing emerge in bioinformatics to overcome the issue raised by the GenBank. It cannot be considered neither "public" nor "private". It is a system that facilitates the rapid sharing of information, but at the same time users must publicly acknowledge the originating laboratory and make every effort to collaborate with it, and refrain from sharing data outside the platform or attempting to claim intellectual property rights[802].

Science diplomacy on influenza has developed and can further evolve on these complementary paths, as well as an historical problematization on them. The analysis on this disease engages with related topics and other scholarly contributions. Selene Greco and Gerardo Ienna have provided a sociological analysis of the production, supply, and logistics of the vaccines developed against Covid-19[803]. The utilization of scientific principles to transform a biological emergency into an intellectual construct, manageable through biotechnological intervention, thereby transforming it into dossier to

[802] The references used for these paragraphs are: Halabi, Sam F. "Viral Sovereignty, Intellectual Property, and the Changing Global System for Sharing Pathogens for Infectious Disease Research". *Annals of Health Law* 28, no. 1 (2019): 101–126. https://lawecommons.luc.edu/annals/vol28/iss1/3; Rourke, Michelle F. "Access by Design, Benefits if Convenient: A Closer Look at the Pandemic Influenza Preparedness Framework's Standard Material Transfer Agreements". *The Milbank Quarterly* 97, no. 1 (2019): 91–112. https://doi.org/10.1111/1468-0009.12364; Halabi, Sam F., and Rebecca Katz, ed. *Viral Sovereignty and Technology Transfer: The Changing Global System for Sharing Pathogens for Public Health Research*, Cambridge: Cambridge University Press, 2020; Fearnley, Lyle. "Viral Sovereignty or Sequence Etiquette? Asian Science, Open Data, and Knowledge Control in Global Virus Surveillance". *East Asian Science, Technology and Society: An International Journal* 14, no. 3 (2020): 479–505. https://doi.org/10.1215/18752160-8698019; Elbe, Stefan. "Bioinformational diplomacy: Global health emergencies, data sharing and sequential life". *European Journal of International Relations* 27, no. 3 (2021): 657–681. https://doi.org/10.1177/13540661211008204. For a broader overview of the subject, see also: Rourke, Michelle F., and Marc Eccleston-Turner. "The Pandemic Influenza Preparedness Framework as a 'specialized international access and benefit-sharing instrument' under the Nagoya Protocol". *Northern Ireland Legal Quarterly* 72, no. 3 (2021): 411–447. https://doi.org/10.53386/nilq.v72i3.881, and Elbe, Stefan. "Who Owns a Deadly Virus? Viral Sovereignty, Global Health Emergencies, and the Matrix of the International". *International Political Sociology* 16, no. 2 (2022): 1–18. https://doi.org/10.1093/ips/olab037.

[803] Greco, Selene, and Gerardo Ienna. *Egemonia vaccinale e Soft Power: la strategia di immunizzazione in Europa e le ombre nel rapporto pubblico-privato*. In Nobile, Stefano, ed. *L'altra pandemia. Un'analisi sociologica dell'emergenza sanitaria e delle logiche di governance*. Milano: Franco Angeli, 2025, 43–79.

promote a foreign policy agenda, is exemplified in Nick Cullather's *The Hungry World*, on the issues of hunger and development[804]. Finally, Kaushik Sunder Rajan explored, from an ethnographic point of view, how genomics, understood as an information-based science, has become inextricably linked to market forces in the co-production of a new capitalist technoscientific regime, to be interpreted as an epistemic reconfiguration of life sciences[805].

In conclusion, three contributions that provide important insights for future studies on this topic will be mentioned here. In 2003, David Fidler described SARS virus as the "first post-Westphalian pathogen". This interpretation was rooted both in the active role that the WHO took on, undertaking initiatives that extended beyond the scope of its responsibilities as delineated in its constitution and the IHR, and the importance given to the concept of Global Public Goods for Health (GPGH). They are public goods and services regarding the health field that "exhibit non-excludability and non-rivalry in consumption across national boundaries". Today, what are the prospects for these seeds of transformation of the Westphalian framework, considering the crisis – both of legitimacy and financial – of multilateral institutions and what we have experienced during Covid-19? John Krige and Sabina Leonelli have analyzed the response to that pandemic and how the persistence of specific political interests and the power of Big Tech, keen to gain access to the huge user base of tracing apps, undermined a coordinated control of the disease. They also emphasized the role of scientific organizations, in particular the Research Data Alliance (RDA), in providing useful tools against the pandemic, overcoming the restrictions imposed by national and private restraints, in order to offer a more equitable circulation of knowledge and, again, understood as a common good. The RDA represented a transnational system that was not built on the "imposition of an imperial top-down order", and it brings us back to the issue of data diplomacy. In a recent article, Turchetti argued that the transnational scientific data networks that were established during the second half of the 20th century benefited developed countries and, at least in the sciences, their asymmetries shaped also the postcolonial dependencies, in a sort of "imperialism of knowledge"[806].

The question of whether this new "bioinformational diplomacy" will follow a similar trajectory is open to debate. A 2006 article by Sheila Jasanoff on biotechnology, though focused on agricultural

[804] Cullather, Nick. *The Hungry World. America's Cold War Battle against Poverty in Asia*. Cambridge, MA: Harvard University Press, 2010.
[805] Sunder Rajan, Kaushik. *Biocapital. The Constitution of Postgenomic Life*. Durham: Duke University Press, 2006.
[806] Fidler, David P. "SARS: Political Pathology of the First Post-Westphalian Pathogen". *Journal of Law, Medicine & Ethics* 31, no. 4 (2003): 485–505. https://doi.org/10.1111/j.1748-720X.2003.tb00117.x; Krige, John, and Sabina Leonelli. "Mobilizing the Transnational History of Knowledge Flows. COVID-19 and the Politics of Research at the Borders". *History and Technology* 37, no. 1 (2021): 125–146. https://doi.org/10.1080/07341512.2021.1890524; Turchetti, Simone. "Data Rules: What the History of Scientific Data Can Tell Us about the Asymmetries of Global Governance in the Twentieth Century". *Global Perspectives* 5, no. 1 (2024): 1–13. https://doi.org/10.1525/gp.2024.121640.

production and food, can be extended to the whole field. She demonstrated how, in the post-Cold War world, biotechnology "may increase the power of metropolitan centers of science and technology in relation to people at the periphery". Biopower of modern state and its corporations still use the same rhetoric on progress and civilization to promote new forms of empires[807]. Scientists often participate in the process of empire-building without being even aware of that. Seye Abimbola recently argued that research contributions concerning global health frequently lack "a theory to which we may align how we value, produce and use knowledge", and the result is that their claim to universalism "stems partly from its biomedical and colonial origins"[808]. But it is Covid-19 that has also prompted profound reflections on various systemic issues. Gilberto Corbellini has drawn upon Mirko Grmek's category of pathocenosis (the totality of diseases present in a population during a specific period and within a specific society) to argue that, when an ecological and social perspective on diseases is adopted, the pandemic characteristics become the result of a biological and historical dynamic even predictable, to a certain extent[809]. Other authors have further developed John Bellamy Foster's Marxist ecological theory based on the "Metabolic rift" from an epidemiological perspective, to hold capitalism itself accountable for pandemic hazards[810].

The clear emergence of developing countries at the stage of this diplomatic history hints at the theme of inequalities. In short, the idea behind the thesis was to provide an exhaustive picture of all forms and ways in which influenza surveillance was politicized, with particular attention to the first 35 years of the WHO. Following the Royal Society's 2010 pamphlet, it is an inquiry on how influenza fulfilled the three functions that are considered to be constitutive of scientific diplomacy: science in diplomacy, diplomacy for science, science for diplomacy[811]. However, all the main historiographical scholarships of this field have highlighted how this definition bears itself 'inequalities'. Actually, it allegedly overlaps science diplomacy and 'soft power', a hegemonic approach that mirrors the weight of Anglo-Saxon view in diplomacy *tout court*, as can be inferred from the introduction to the 2021 Special Issue of Centaurus mentioned in the Introduction. While this dissertation elaborates on "the complex relations connecting archival sources found in scientific institutions, personal papers, and

[807] Jasanoff, Sheila. "Biotechnology and Empire: The Global Power of Seeds and Science". *Osiris* 21, no. 1 (2006): 273–292. https://doi.org/10.1086/507145.
[808] Abimbola, Seye. "The uses of knowledge in global health". *BMJ Global Health* 6, no. 4 (2021): 1–7. https://doi.org/10.1136/bmjgh-2021-005802.
[809] "Patocenosi di Covid-19: un tributo a Mirko Grmek, di Gilberto Corbellini", *Scienza in rete*. https://www.scienzainrete.it/articolo/patocenosi-di-covid-19-tributo-mirko-grmek/gilberto-corbellini/2020-05-09, 17/02/2026.
[810] Perlman, David C., and Ashly Vigneault. "Epidemics and Social Metabolism. Nature, Capitalism, and Rifts". *Monthly Review* 77, no. 8 (2026): 20–46. https://doi.org/10.14452/MR-077-08-2026-01_2.
[811] The Royal Society. *New Frontiers in Science Diplomacy*, 15.

governmental and non-governmental agencies"[812], it does not overcome the burden also highlighted by other scholars on different sides of the studies[813]: the Western-centric, and in this case even the British-centric point of view adopted, and documentary collections used.

The epistemological and scientific framework employed in this work originated and developed in the laboratories of the major Western powers. While it is accurate that multilateral collaboration within the WHO, through which influenza research has been investigated in its internationalization process, has developed on an eminently Western scientific basis, the vectors of this inquiry mostly move in a direction "from Global North to Global North" or "from Global North to Global South". Elements from which a Global South's point of view can be observed rarely emerge, nor any proper problematization of how and with what goals scientific engagement has been used by its countries to position themselves in the international arena. It is only in the final stages of the thesis that an internal constraint on the mechanisms of influenza surveillance here presented, due to the evolution of forms of intellectual property and commercialization in recent decades, became an evident tool of a system intrinsically unbalanced towards the interests and profits of Western pharmaceutical companies. From the stretch of such a constraint Indonesia expressed and asserted a different form of sovereignty for developing countries against the inequalities of the WHO model. However, this sovereignty is subject to challenges and re-evaluations, as contemporary diplomacy on strains and data shows.

Nevertheless, it can be said that tension between the two poles of transnational cooperation and sovereignty is not less characterized by a political use of science than it was during the era of colonial empires. It should be also said that the awareness of the close connection between politics and science is perhaps even greater than it was at that time. Again, the Royal Society offered a good example of that precisely on influenza, with a joint publication with the Academy of Medical Sciences. It stated that "there is scope to improve the extent to which scientific evidence is used in policymaking [while] there is insufficient dialogue between government departments and scientists on the use to which scientific advice is put"[814]. What is also evident and indisputable is that, as Fidler has already noted in 2005[815], foreign policies devote more and more attention to health. There is a salient case that raises

[812] See Adamson, Matthew, and Roberto Lalli. "Global perspectives on science diplomacy: Exploring the diplomacy-knowledge nexus in contemporary histories of science". *Centaurus* 63, no. 1 (2021): 1–16. https://doi.org/10.1111/1600-0498.12369.
[813] See Aronova, Elena, and Simone Turchetti, ed. *Science Studies during the Cold War and Beyond. Paradigms Defected*. London: Palgrave Macmillan, 2016; Krige, John. *Decentering the Global North*. In Krige, ed. *Knowledge Flows in a Global Age*, 333–343. https://doi.org/10.7208/chicago/9780226820378-012. Barrett, Gordon, Claire Edington, Aya Homei, Kate Sullivan de Estrada, and Zuoyue Wang. "Concluding conversation: decentring science diplomacy". *The British Journal for the History of Science* 57, 2 (2024): 273–285. https://doi.org/10.1017/S0007087424000475.
[814] The Royal Society. *Pandemic influenza: science to policy*. London: The Royal Society, 2006, 1.
[815] See Fidler, David P. "Health as Foreign Policy: Between Principle and Power". *Journal of Diplomacy and International Relations* 6, no. 2 (2005): 179–194. https://scholarship.shu.edu/diplo_ir/vol6/iss2/15.

questions about present days: a NATO Advanced Research Workshop, held in May 2003. The subject was the civil and military cooperation in influenza pandemic preparedness. The Russian Academy of Medical Sciences hosted the event in St. Petersburg, and helped in organizing the meeting, along with the United States Air Force. When Randall Hyer, then the WHO Medical Officer and Military Liaison and recently involved in the rollout of Moderna vaccine against Covid-19, opened the proceedings, he stated: "we are here because the problem of influenza goes beyond just one country, just one sector and its solution requires an inter-national and inter-sectoral approach. We are here to explore, present, and discuss the science behind the global response to pandemic influenza"[816].

What is, today, the resonance of the spirit embodied by these words? At the end of 2017 a new pragmatic framing of science diplomacy was proposed in an article in *Science & Diplomacy*[817]. Last year, the Royal Society and the American Association for the Advancement of Science have updated their 2010 pamphlet in a similar version, which was more consistent with "an increasingly fragmented and dangerous world". It presented the transition from a three-dimensional theoretical framework to a two-dimensional practical one. It must be flexible enough to describe how science and diplomacy interact, when science diplomacy is used by various actors to pursue their interests[818]. Both of them seem more effective at describing the international dynamics concerning influenza. Investigating how research on and surveillance of the disease actually unfolded in the past, identifying which scientific elements do not fuel political conflicts, and which structural problems instead give rise to tensions, makes historiographical reconstruction a tool to aid in the formulation of thoughtful interventions on the conditions in which science and politics can interact in addressing the danger of an influenza pandemic, in this era in which imperialisms have returned (but never really left) as actors of history. The WHO Global Health Histories Project already plays a similar role[819]: this research has been conceived to follow on this path.

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[816] See Neville, James, and Oleg I. Kiselev, ed. *Strengthening Influenza Pandemic Preparedness through Civil-Military Cooperation*. Amsterdam: IOS Press, 2005.

[817] Three new categories for science diplomacy were envisioned: actions designed to directly advance a country's national needs; actions designed to address cross-border interests; actions primarily designed to meet global needs and challenges. Gluckman, Peter D., Vaughan C. Turekian, Robin W. Grimes, and Teruo Kishi. "Science Diplomacy: A Pragmatic Perspective from the Inside". *Science & Diplomacy* 6, no. 4 (2017). https://www.csescienceeditor.org/sites/default/files/pragmatic_perspective_science_advice_dec2017_1.pdf.

[818] The Royal Society. *Science diplomacy in an era of disruption*. London: The Royal Society, 2025.

[819] See Bhattacharya, Sanjoy, Alexander Medcalf, and Aliko Ahmed. "Humanities, criticality and transparency: global health histories and the foundations of inter-sectoral partnerships for the democratisation of knowledge". *Humanities and Social Sciences Communications* 7, no. 1 (2020): 1–11. https://doi.org/10.1057/s41599-020-0491-7.

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