The Global Governance of Health Emergencies

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By

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Abstract

This dissertation examines the global governance of health emergencies, using an interdisciplinary lens that combines political, sociological, and historical perspectives. The research is guided by four primary objectives: to identify, describe, and analyze the structure, dynamics, characteristics, and shaping drivers of contemporary health emergency governance; to illuminate how this field has evolved and emerged; to clarify the relations between health emergency governance and global health governance, and between health emergency governance systems and the global health security system; and to revisit the theoretical and conceptual debate about "emergency" in the social sciences.

The dissertation aims to disentangle the coalescence of "health" and "emergency" in a distinct field of governance centered on health emergencies, and does so by focusing on four questions: How did a distinct global governance field that is centered on health emergencies emerge? What is the relationship between health emergency governance and the social construction of disease? What are the boundaries of health emergency governance? When and how does a health emergency event begin and end? To answer those questions and study the dynamic and heterogeneous contemporary assemblage that is health emergency governance, a multi-sited ethnography is conducted in sites and nodes of activity where health emergency governance actors work and interact. To gain a comprehensive understanding of the phenomenon, the research follows a flexible approach that allows pivoting between sites and nodes, but also anchors the work in primary sites – involving the World Health Organization, the European Commission and the European Centre for Disease Prevention and Control, and the German global health community.

A genealogy of health emergency governance offers crucial context and insights into its contemporary formation, showing how health emergency governance evolved through the coalescence of health governance elements and emergency management practices, ideas, and technologies. This genealogy also highlights the significance of rapidity and (coordinated) flexibility in the historical development and current operation of health emergency governance systems.

Three case studies empirically deepen and ground the research. The first focuses on the resurgence of measles (2017-2020) and the management of this disease in Europe, showing how the rise of health emergency governance has allowed the collective construct in the management of this

technically solvable health problem to transform, and how the resurgence of measles in Europe has been constituted as an emergency of "regression". The second delves into the governance of the problem of antimicrobial resistance and the ongoing process of rendering this problem into a "silent" health emergency. This case study reveals that perceived velocity and eventfulness are key for a problem to become a health emergency. The third centers on COVID-19 as a health emergency event with a beginning and end, analyzing the complex processes and dynamics involved in the constitution of the event and the shaping of its contours. This case study shows how systems of health emergency governance produce multiple coexisting variations of the event and argues that the ending of the event plays a crucial political role as it fosters change within and to governance.

This work establishes that health emergency governance is a distinct field separate from global health governance. However, it also underscores their intricate relationship and argues that the expansion of global health governance has been driven by the evolution and emergence of health emergency governance. Similarly, it establishes that while health emergency governance systems are distinct from the global health security system, they remain significantly interlinked by shared elements and qualities. Further, this work proposes the notion of *perpetual spirals* to understand and conceptualize the structure and operation of the contemporary assemblage of health emergency governance. It also suggests that scale and velocity are critical in this assemblage, both as embedded concerns and as issues that calibrate systems, their problem perception, and intervention. A possible implication of the growing dominance of health emergency governance, then, is that governmental problems may be increasingly prioritized and addressed based on perceived velocity and scale.

Lastly, the dissertation challenges the prevailing and highly influential conceptualization of emergency as an exception or permanent exception. Instead, it emphasizes the dynamic, complex, and multifaceted quality of (health) emergency as a form of governance, and sheds light on the basic amplifying, magnifying, and augmenting power of emergency, thus also demonstrating its analytical benefit.

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1. Introduction

And who by fire, who by water/
Who in the sunshine, who in the night time/
Who by high ordeal, who by common trial/
Who in your merry merry month of May/
Who by very slow decay/
And who shall I say is calling?

And who in her lonely slip, who by barbiturate/
Who in these realms of love, who by something blunt/
Who by avalanche, who by powder/
Who for his greed, who for his hunger/
And who shall I say is calling?

And who by brave assent, who by accident/
Who in solitude, who in this mirror/
Who by his lady's command, who by his own hand/
Who in mortal chains, who in power/
And who shall I say is calling?

(Leonard Cohen, "Who by Fire")

1.1. What is "global" about governance? What is "health emergency"?

> What is a global health emergency? It's an idea, right? It's a construct. If you call something a global health emergency, it calls for certain kinds of action from people…. How is it that the North Korean death camps aren't a global health emergency? How is it that the migrant crisis in the US, or in Europe, isn't a global health emergency? What defines it as global?… That it affects a certain number of people? Does it affect a certain number of countries? Does it have to cross a certain moral threshold? To me, the climate crisis is a global health emergency, the burning of the Amazon was a global health emergency, the breaking off of icebergs in the Antarctic is a global health emergency… a lot of that answer is also caught up in politics. What happens when we say something is a global health emergency? What does it compel us to do? What does it require that we do? What kind of collective response…? What is in it for us not to declare something a global health emergency? (Vera Farham, October 2019)

In this dissertation, I present a study on the global governance of health emergencies from a political, sociological, and historical lens. My intention is neither to compare, measure, or rank processes of governance, to examine their effectiveness, or to propose alternative standards for good governance; nor to investigate causal links between social determinants and health in emergencies, socio-cultural mechanisms that drive behavior during health emergencies, or the effectiveness of policies for dealing with health emergencies. Instead, I wish to shed light on a

distinctive, contemporary, and emerging governance landscape. To identify the contours and characteristics of that governance, explore its dynamics and drivers, and examine its formation.

The general aim of the dissertation is to unpack and illuminate the relationship and coalescence between "health" and "emergency" in global governance. In this regard, it is important to highlight from the onset: by referring to governance as "global" I do not mean that the global exists in itself as an actual, physical object or space, or that something can be defined as such based on a particular set of characteristics. I am also not referring specifically to what has been called "globalization". *As I use this term* throughout the dissertation in relation to governance, I simply refer to an analytical lens. One that is not brought as a contrast to the "local", "national", or "international", but also more than a frame that incorporates diverse, heterogenic, and interdependent *actors* across scales and highlights 'emergent properties' (Mansbach & Taylor 2013: 9). Instead of employing the kind of actor-focused analysis that has been especially common in studies of global health governance and politics, the analytical approach that I use here (see below) is problem-focused and oriented to the examination of governmental formations or systems that compose a distinct and contemporary assemblage of health emergency governance.

To explain the study subject in simple terms, health emergency is a domain of global governance that involves a multiplicity of systems, activities, and processes that are linked by a general problematization or concern with "health emergency". Vera Farham, one of my interviewees who has a social science background, reflexively pointed out that a health emergency is a construct that calls for action on a collective level. Indeed, there is no exact or essential meaning to the term. However, more than a construct or a command for action, I use "health emergency" as a conceptual tool. As Wittgenstein had taught, language is used within the context of an activity and just as there are multiple kinds of activities, a particular term can have multiple meanings (which are never fixed and may change over time). Similarities between, and intersections of different meanings of a particular term constitute a 'complicated network' of connections or what he called 'family resemblances' (Biletzki & Matar 2021; Wittgenstein 2009). "Health emergency", in my use of the term as a conceptual tool in the context of this study, is less about the term itself and more about the kind of activities that it pertains to. In other words, I use this conceptual tool to capture multiple coexisting and interconnected meanings that are sometimes encompassed in the

term "health emergency", but at other times in terms such as "public health crisis", "epidemic emergency", and "health disaster".

I therefore avoid giving an exact or overly general definition for "health emergency", and only suggest a minimal conceptualization that refers to activities that involve a health-oriented lens or outlook (i.e. principally highlighting health or medical aspects, or interpreting and defining through those terms) on collective problems as other-than-usual, negative or negating events that must be acted upon, and addressed more robustly, substantially, or intensively – whether in terms of attention, resource allocation, or use of special measures.

Across the disciplines of global political studies, sociology, and history, as well as within global health scholarship, the governance of health emergencies has not received significant attention as a distinct area or form of governance and researched comprehensively as such. That is not to say, however, that there has been no research that is indicative of the phenomenon or provides insight into it. There has been, of course, countless research on specific events that were formally defined as global health emergency events – epidemics and pandemics involving specific disease such as Ebola, Zika, and Severe Acute Respiratory Syndrome (SARS). There has also been some research on the construction of public health emergencies in the light of specific infectious disease outbreaks such as in the case of West Nile Virus in New York City (McCormick & Whitney 2013), and the role of specific global and public health governance actors in relation to health emergencies, for example the World Health Organization (WHO) (Hanrieder & Kreuder-Sonnen 2014). Moreover, there have been several studies on global health governance that referred to and discussed notions of crisis or emergency (e.g. Davies & Bennett 2016; Wenham 2019), though these concepts have usually remained undeveloped in those studies. Beyond those, a number of works have focused on particular aspects of the global governance of health emergencies, such as preparedness for future emergencies in the context of global health (Lakoff 2017), and research and development of biomedical solutions like vaccines (Kelly 2018).

The significance of the present research for the scholarly literature and in general, then, is that it illuminates and provides insights into the phenomenon of health emergency governance, its structure,[1] dynamics, characteristics, and drivers; in that it critically attends to the relationship between health and emergency, and interrogates their amalgamation in governance; and in that it paves new (interdisciplinary) paths for research in the study of health governance, politics, and

policy; the sociology of health and illness; and the history of medicine and public health. Furthermore, this research contributes to the conceptualization of and theoretical debate on "emergency" in the social sciences. Below, I situate my research and present my arguments in relation to the literature within those two broad clusters of scholarship.

1.2. Global health

The definition of "global health" has been the subject of continuous debate in both global and public health literature (Beaglehole & Bonita 2010; Fried et al. 2010; Koplan et al. 2009), and social scientific literature (Biehl 2016; Ng & Ruger 2011: 2). Within the social scientific research on global health that emerged in recent decades across a variety of disciplines, but perhaps most notably – in anthropology, sociology and geography, and global political studies, global health has been conceptualized and approached in several ways.

Global health has been defined as a 'collection of problems' rather than a discipline (Farmer et al. 2013: 2); a 'broad framework' (Biehl & Petryna 2013: 10); a multiplicity of local projects or 'projectifications' (Reynolds Whyte et al. 2013); a field of research and practice that brings together the broad concern for health – as the resource for life and well-being, with diverse, complex, dynamic, and fragmented global assemblages (Janes & Corbett 2009: 169). Assemblages that consist of partnerships and settings for cooperation that link states and non-state actors, as well as the pharmaceutical industry (Biehl & Petryna 2013: 6).

Global health has also been understood as a field of governance that aims to address health issues caused by growing interdependencies in the international environment (Kickbusch 2005); and a political space for addressing health issues that transcend national borders and the capacity of states to handle them, and therefore, also a space wherein power relations impact population health (Lee 2001; Lee et al. 2002). Global health as an arena of global politics has also often been understood and studied as an answer to a general political problem of 'constructing the will to act' in the light of questions of 'sovereignty and power over space, whether a state's territory, an individual's body, or a mandate of an international organization' (Harman 2012: 143-144). In other words, the problem at the heart of global health is:

> how to force people, states, and communities to act in their own health interests whilst maintaining their own right to determine what their own interests are. This is the crux of what global health governance is about: contention over what is the

right or best way of promoting better health outcomes, behavior, and the balance between multiple interests, actors, and knowledge.

Global health as such is a political field that involves dynamics and interactions between rational actors that both pursue what they perceive as their own and others' interests, and negotiate and clash over the rules and terms of engagement themselves. And all of that in relation to health and through processes that balance between generalized scientific research and expertise and considerations that are contingent upon context-specific social, cultural, and ethical issues.

While useful and instructive to some degree, such scholarly attempts to define global health often tend, as Brada (2011: 286) claimed, to overlook the conditions that enable the continuous generation of this field – with all its institutions, contentions, and technoscientific knowledge. We should not take the "global" in global health as self-evident and constantly question how this field is produced (Brada 2011: 307). In that regard, King and Koski (2020) provided a particularly useful account where they conceptualized global health as 'public health somewhere else', and used that conceptualization to reflectively point out the normative assumptions of the field. According to them, "global health" is a distinct field not because of its 'aspirations, methods of research and practice, intervention strategies or even geographical area' (King & Koski 2020: 1), but because of the embedded relationship between its 'practitioners' and 'recipients'. That is to say: 'a person engages in global health when they practise public health somewhere – a community, a political entity, a geographical space – that they do not call home'.

Indeed, the empirical evidence from my research suggests that, to a large extent (though, not to a full extent), "global" health problems are those that are perceived by governmental actors as essentially alien, exterior, marginal, secondary in importance (at best), or pertaining to "others". Furthermore, their perceived significance often resides in the potential future impact they might have on "us". That defining aspect or scaling rationale that distinguishes global health from public health has been key in the design and operation of contemporary health emergency governance systems as a kind of "hereditary" pattern or element (see Chapter 2, where I examine the central role of global health in the emergence of health emergency governance). This is particularly evident in the case study on the COVID-19 emergency (Chapter 5): as European regional and national governmental actors' perception and narrative of the threat suddenly shifted from a

"global" conceptualization of scale to a more domestic or interior conceptualization, so did the response – which became a higher priority, broader in scope, and more intense.

However, there is more to the story than what (initially) meets the eye. The field of global health is dynamic. People within this field learn, revisit their own assumptions, and adapt. That much became crystal clear to me when, during an interview with a German public health official, we sidetracked into a long conversation about Bruno Latour's work and the ramifications of health securitization. Furthermore, global health is a field that has typically fostered a close relationship between practice and academia, including in some areas of social science. This has mainly been in relation to quantitative academic research from fields such as economy and psychology, but in recent years there appears to be more engagement with and an increasing influence of anthropologists and sociologists on the field of global health. Various projects, initiatives, and collaborations that apply anthropological and sociological insights and tools in support of global health efforts can testify to that (Martineau et al. 2017; Stellmach et al. 2018; Wilkinson et al. 2017). Also testifying to that is the European Union (EU) funded social science project in the area of infectious disease preparedness and response, Sonar-Global, which I followed for a certain period as part of this ethnographic research project.

Regardless of the (presumably limited) significance and directionality of influence between them, social scientific research has been intertwined with global health practice. A part of what "global health" is about, for that matter, has been driven and shaped by a central line of inquiry in relation to global health in the social scientific literature. This line of inquiry has focused on critical appraisal of social and structural problems that underly or have become pervasive in global health, and relatedly, on ways to improve this field from within (e.g. Farmer et al. 2004, 2013; Herrick & Reubi 2017).

Aligned with health sociologists' general interest 'in the dialectic interaction between social life and specific diseases', that is, in 'how social processes affect the severity or course of diseases and how, in turn, specific stages of disease affect social relationships, work, neighbourhood, or family life' (Timmermans & Haas 2008: 661), sociologists and geographers have showed how, within global health, certain problems, populations, and spaces are rendered viable for intervention while structural issues that relate to political-economic processes are set aside or neglected (Brown & Moon 2012; Brown et al. 2012). Moreover, following the pioneering interventionist work of Paul

Farmer and others (Farmer 1997, 2001, 2004; Farmer et al. 1996; Nguyen & Peschard 2003; Pfeiffer & Nichter 2008), anthropologists have analyzed and criticized structural violence, inequalities, and inequities in global health, and particularly how these pertain to the global allocation and distribution of health resources, personnel, and biomedical research and technologies (Adams et al. 2005; Kangas 2002; Lock & Nguyen 2018; Petryna 2009; Maternowska 2006). Anthropologists have also provided profound ethnographic critiques on issues such as global health initiatives and their (often unintended) consequences for care, as well as global health systems and governance and the social, political, and economic processes that shape them (Biehl & Petryna 2013: 4-6). Meanwhile in global political studies, feminist researchers (for example) have shown how global health policies not only impact women but also reproduce their neglect (Wenham 2021), and provided the global health community with recommendations on how to better promote gender equality (Davies et al. 2019).

Reflecting the rise of critical global health studies (Adams 2016), that important and transdisciplinary line of inquiry has turned attention to, provided insights into, and promoted interventions upon the problematic sides of global health. While sympathetic to that cause, and though I have similarly sought to engage within the field to better understand the 'complexities of the context and content of interventions' in global health (Biehl & Petryna 2013: 10), my research is less about intervening upon the field itself or improving policies within it, and more about forms and rationalities of governance that different kinds of interventions express.

In other words, my research on the global governance of health emergencies does not complement or join the effort of global health actors themselves to improve and protect the health and well-being of the suffering other (Butt 2002), the people at the receiving end of global health governance interventions. It is also not based on the assumption that the governance of health emergencies is simply part of the field of global health or its governance. Instead, this research examines how actors engage in the global governance of health, but only to the extent that those engagements overlap with and connect to the governance of health emergencies. The question, then, is not what particular view of "global health" is correct, but what aspect or dimension of this field would best serve the purpose of this research?

1.3. The governance of global health

If there is one theme or observation that appears throughout the multidisciplinary literature on global health and is particularly relevant to a study that focuses on governance, it is that this field has grown substantially and rapidly in recent decades. Indeed, studies have repeatedly indicated that multiple kinds of actors have become part of global health – states, international organizations, transnational corporations, pharmaceutical companies, philanthropies, academic institutions, and non-governmental organizations (Ng & Ruger 2011); and showed how they engage with each other through partnerships, collaborations, and projects to achieve specific normative objectives (Biehl & Petryna 2013). That rapid appearance of various new global health actors and the increasing cooperation between them through governance schemes or partnerships is also what Tine Hanrieder (2015a) pointed to in her conceptualization of global health governance as an 'orchestra', wherein the WHO has assumed the role of orchestrator that initiates, designs, maintains, and hosts global health partnerships.

Thus, scholars have generally agreed that global health is a field in which an expanding range of actors with multiple and often competing rationales and perspectives engage to address an increasing amount of health problems that transcend national and geographic boundaries, or the capacity of states to address them alone (Youde 2012: 3-8); a field that involves a highly diverse and expanding group of actors that operate on various levels and have multiple aims (McGoey et al. 2011: 2-3). That expansion, they further found, has not only been accompanied by increasing funding, but also by new constellations of work between actors. Together with the growing number of actors engaging in the global health arena, a plethora of new problems, frameworks, projects, activities, and practices have been developed and introduced within it.

That expansion of global health has been one of the core characteristics or defining features of its governance. Nevertheless, the enabling and driving forces and dynamics of this expansion have largely remained overlooked or implicit in the literature. In my research, I identify and examine such force and dynamic of expansion. Particularly in Chapter 2, I suggest that entanglements and links between global health governance and the evolution and emergence of health emergency governance have enabled and fostered transformations and instigated changes that, in their accumulated effect and over time, have gradually expanded the boundaries of global health governance. Specifically, I show how those entanglements and links have highlighted problems of

scale and velocity within global health governance, thus enabling and driving the assimilative expansion of global health into neighboring fields, particularly medical humanitarianism.

1.4. Globalization and securitization

Although global health has been considered a relatively peripheral site of investigation in studies of international politics and global affairs (Stoeva 2016),[2] scholars in that and allied fields (e.g. politics and government, political sociology and geography) have been at the forefront of social scientific research on its governance. In this scholarship that focuses on various aspects of global health governance, especially political, policy, institutional, and legal aspects, the focus has generally been on studying 'the relations between different actors in the world, the characteristics of those relations, and their consequences' (Kaarbo & Ray 2010: 3).[3]

Global health governance as such has mainly been understood and approached through two overarching perspectives or lenses: globalization and securitization. While the two are not necessarily opposed or mutually exclusive, they represent different assumptions and ways of studying global health governance, both analytically and historically.

Global health governance as a matter of globalization focuses attention on the implication of globalization for health outcomes, on how a global field of health governance emerged in response to globalization and its effects on health, and on assemblages that form in pursuit of specific normative objectives in the context of health. Scholars argued that globalization, in general – processes of change in human interaction across spatial, temporal, and cognitive scales that relate to accelerated developments in social, political, technological, economic, environmental, and other domains since the 1980's-1990's at least, has affected health and its determinants (Lee 2001). Globalization has prompted new challenges as it directly (e.g. increased migration) or indirectly (e.g. economic crises) disrupted states' ability to provide sufficient healthcare and created health problems that transcend states' territorial boundaries (Lee et al. 2002: 5-6). As traditional national level health systems, with their focus on population health within their own countries, have been unable to deal with those challenges, new transnational mechanisms emerged to address them (Collin et al. 2002). Correspondingly, global health policy emerged as the actors, processes, and contexts involved in health policymaking, and policies themselves changed to accommodate the impact of globalization on health (Lee et al. 2002: 3-4, 10-11).

Global health governance as globalization largely involves three key aspects and kinds of explanatory frameworks. Those can be portrayed through what Lee and Kamradt-Scott (2014) identified as three general conceptualizations of global health governance in the literature. The first is *globalization and health governance*. A globalized world means health-oriented institutions govern collective responses to health issues that are global in scope. Existing arrangements between global health institutions are therefore revised and reformed to tackle those global health issues, from cross-border epidemics to social determinants of health. The second is *global governance and health*. Enhanced global trade and investments since the 1990's and non-health global governance institutions have had a major impact on social determinants of health. Accordingly, institutions that are not primarily health-oriented such as the World Bank and the International Monetary Fund design policies and allocate resources assuming economic development will result in better public health outcomes. The third is *governance for global health*. Governance frameworks and institutional rearrangements are set by normative imperatives in the health context, for instance health as a human right, and towards achieving specific global health goals such as Universal Health Coverage and Primary Health Care.

Understood through the impact of globalization on health and its governance, global health is distinct from international health in that the former 'defines itself through a complex interplay between state and non-state actors and through new organisational mechanisms that allow for their involvement' (Kickbusch 2005: 970). Whereas international health governance operated through interstate mechanisms and international organizations (mainly, the WHO), global health governance is more pluralistic, fosters increasing privatization, and thus involves multiple kinds of actors and mechanisms of cooperation such as public–private partnerships. Global health governance, from that perspective, has been studied as 'a qualitative shift from intergovernmental relations to a more complex global assemblage' (McInnes et al. 2014: 3) that is rooted in the international political environment of the end of the Cold War. That environment witnessed the rise of neoliberalism in international policymaking, of global elites and global epistemic communities, of civil society groups with global agendas, and of various non-state actors with a substantially more active role in governance.

That shift from international to global health has also been portrayed as a structural transition. According to David Fidler (2004), for most of the 20th century the international politics of health

were organized under the 'Westphalian' model, with principles of 'sovereignty, non-intervention, and consent-based international law' (Fidler 2004: 47). However, with the increasing challenges that globalization and cross-border infectious disease posed to the state–centric public health model, by the early 21st century the 'post-Westphalian' global health governance model emerged. A model that employs 'a strategy that seeks to build stronger governance roles for non-state actors in international relations' (Fidler 2004: 116), and promotes the idea of 'global public goods for health' (Fidler 2004: 50).

Overall, then, conceptualizations of global health governance as globalization enable us to capture changes in political power structures and examine how those are linked to the governance of health and disease. In that sense, they also have an underlying assumption: that global health governance has indeed marked a certain transition or emergence that began around the middle to late 20th century or early 21st century. However, as indicated by several historical studies, that assumption is problematic since it is unclear to what extent global health governance (as globalization) expresses a novel phenomenon or fundamental change.

Indeed, Heidi Tworek (2019) found that the sharing of health information, a fundamental component of global health governance, has been part of international health at least since the early 20th century establishment of the League of Nations Health Organization. Further, historians suggested that the supposed transition from international to global health can be traced to the period between the two World Wars (Bashford 2006). One of the most important features of global health governance as globalization – the rise of non-governmental actors such as the Gates Foundation, can be seen in earlier periods – with the Rockefeller Foundation playing a significant role in shaping international health already a century before the Gates Foundation was established (Birn 2014; Birn & Fee 2013; Cueto 1997). Overall, as Berridge, Loughlin, and Herring (2009: 3) argued, while often considered as the 'defining feature of the transition from international to global health governance', the appearance of multiple new actors, especially non-state actors (and the formation of new schemes of cooperation between private and public actors), the dominance of some of those new actors, and even the implications of globalization for health in themselves 'are not new but recognisable from the past'.

Conceptualizations or explanations of global health governance as globalization are useful as they point to particular kinds of changes, especially in relation to the accelerated transnational

circulation of stuff, people, and disease. Changes that reflect a different temporal rhythm rather than a different quality. However, there are certain limitations to this lens and that has significant implications for how global health governance is analyzed, and what kind of relationships and issues become central in the analysis. This lens attends to or highlights only those things that validate or accommodate its premise. That means, in the best case, that narratives of globalization are superimposed upon global health governance; and in the worst case, that global health governance is arbitrarily delimited (whether historically or analytically). Perhaps even more problematically, though, is that this lens positions the researcher as an external observer of global health governance. As if the scholarly writing about global health governance as globalization has not been intricately tied to and interwoven with how people within the field have conceptualized and understood it. As if the study of global health governance is not an act that produces and shapes this phenomenon.

Although the globalization of health and health securitization are sometimes bundled together (e.g. Ingram 2013), global health governance as a matter of securitization generally does not so much involve any particular underlying view about the origins of the field or its essence. Instead, and in a much more self-conscious manner, it is about probing the premises of this field (whichever way construed), attending particularly to how actors construct various kinds of health problems as threats and work to (in)secure populations and individuals.

Scholars have identified, examined, and discussed the 'securitization' of health and disease (e.g. Abraham 2011; Elbe 2006; Hanrieder & Kreuder-Sonnen 2014; Ingram 2013; McInnes & Lee 2006; Peterson 2002; Rushton 2011),[4] and the related emergence of health security systems both globally (Davies et al. 2015; Weir & Mykhalovskiy 2010), and regionally (Bengtsson & Rhinard 2019). They have examined and discussed the re-problematization, re-framing, and introduction of health issues as problems of security and foreign affairs; how that has brought increased political attention to these issues and moved them higher on the policy agenda; and the risks, consequences, and by-products of the construction of health problems as security threats that call for new or unprecedent measures (see: Brown et al. 2012; Rushton & Youde 2014;).[5] In that regard, for instance, Adam Kamradt-Scott and Colin McInnes (2012) showed how pandemic influenza has been 'securitized' through its framing as an existential security threat and explored how this has affected public policies; and Anne Roemer-Mahler and Stefan Elbe (2016) identified links between

processes of global health securitization and pharmaceuticalization in the international response to the 2014 West African Ebola epidemic.

As some scholars pointed out, there have been multiple different conceptualizations of, and divergent views on health security (Aldis 2008). However, the securitization of health has largely been traced to the 1990's and early 2000's, when western states, spearheaded by the US and followed by international organizations including the WHO, began to approach emerging and reemerging infectious disease (e.g. HIV/AIDS) and the potential use of biological and chemical weapons for terrorist action as health security threats or risks (King 2002; Kittelsen 2009; Lo Yuk-ping & Thomas 2010; Weir 2012).[6] The rise of health as a security problem, in that sense, has been seen as related to the 'emergence of new infectious diseases and the spread of existing diseases to new geographical areas' and particularly to significant infectious threats such as HIV (McInnes 2009: 46). In response to the problem of health security, those prominent actors developed techniques and tools, initiated instruments for surveillance and international cooperation, and built global health mechanisms. However, according to various scholars, that newly formed global health security system was designed to protect the interests and populations of the global north above all else (Elbe 2006). That is, it has put 'western fears of an outbreak reaching them above the prevention of such outbreaks in the first place', and has prioritized the 'protection of western states from disease contagion' (Davies 2008: 295). On the other hand, scholars have also suggested that this structural power imbalance has been contested in various ways (Elbe 2010a; Jappah & Smith 2015; Stephenson 2011).

The formation of health emergency governance systems has, to a degree, been tied to and enabled by the entanglement of health and security. The development of health emergency governance systems would be unlikely if it were not for the health security surveillance and monitoring tools, legal and political frameworks, and cooperation mechanisms that have been established over recent decades. Especially at the international level, the governance of health emergencies has relied upon these and therefore also "inherited" some of the qualities of the global health security system.

Indeed, as seen in Chapter 5, perceptions of the threat posed by COVID-19 and the narratives and governmental emergency responses that followed exhibited a familiar kind of security-oriented emphasis on the protection of western states from an exterior infectious disease and concern for importation leading to domestic spread. The more robust and inward-facing governmental

responses to COVID-19 that replaced the earlier, weaker responses to the "global" threat could, in that sense, be interpreted as the dynamics of health securitization in an actual global health emergency. That is, global health security during emergency promotes a sharp turn towards nationalism and sovereignty, temporarily removing the "global" façade that masks the prioritization of western interests. Nevertheless, and while there is considerable weight to this argument, my analyses in that and the other chapters provide an alternative explanation for such shifts and the seeming exacerbation of fragmentation that accompanies them. An explanation that primarily has to do with scale.

Scale is a central issue in the governance of health emergencies. Health emergency governance systems embed specific, and distinct conceptions of scale; scale is a key factor that shapes and plays into perpetual processes of (re)calibration of health emergency governance systems. That is, specific conceptions of scale significantly affect the timing, extent, and form of governmental intervention on and in health emergencies.

This explanation derives from the distinction that I make between health emergency governance systems and the global health security system. First, as Chapter 2 on the genealogy of health emergency governance clearly shows, they are historically distinct (even if very much tied and interwoven). Further than that, they are distinct in terms of operation. Whereas health security is usually focused on threats or risks, health emergency is primarily concerned with events,[7] and that results in differences in both policy and practice. For example, preparing for a threat is not the same as preparing for an event. A threat is usually specific as it points to a source or cause, and therefore promotes tailored and vertical interventions. An event tends to be more generic as it largely concerns kinds of eventualities or effects, and thus calls for a horizontal approach. To put it in concrete practical terms, governmental preparedness for a health security threat involves stockpiling vaccines against a particular virus or variant, while preparedness for a health emergency event involves more training to increase the healthcare workforce.

To be clear, that distinction and example serve an analytical purpose. Health governance frameworks usually combine both kinds of strategies, and an emergency event usually contains a threat just as a threat usually implies an event. The question is, what kind of strategy is prioritized and emphasized within a given context? Where on the spectrum between the two poles is a given project or policy located? While primarily focused on health emergency strategies, my research

suggests a complicated and nuanced picture. Largely, there is a gap between formal rhetoric and practical action, where sometimes health security strategies are more dominant at the former level while health emergency strategies are more dominant at the latter level, and *vice versa*. Complicating this even further, shifts from one kind to the other may occur depending on whether we are currently in preparedness mode or response mode.

Another difference is that while in health security the conceptualization of threat is highly determinative of governmental action, in health emergency – as the case studies indicate – multiple aspects, including threat perception and the narrative tied to it, but also formal and informal emergency discourses and spectacles, conceptions of scale, and temporalities, are equally (if not more) determinative. Further, in contrast to the more fixed and stable self-reinforcing effects of the global health (in)security system, systems of health emergency governance produce effects that can be quite dynamic and versatile. Generally, in the contemporary governance of health emergencies an actual emergency event is by default a highly problematic occurrence and, as such, calls for, enables, and drives processes of change not only within health emergency governance systems, but also to them. Health emergency responses and declarations serve as indications or admissions that something had gone terribly wrong. If there is a health emergency and a designated system was activated to respond to it, it means that existing capacities and resources were either exhausted, or worse – insufficient to begin with. That, in turn, helps to explain why processes of "post-hoc" scrutiny do not necessarily start towards the end of the event, but almost as soon as there is an event to scrutinize, as described in Chapter 5.

The distinction between health security and health emergency is illuminating and important because it turns our attention to, and allows us to analyze and better understand previously overlooked phenomena. Indeed, "emergency" in the context of global health governance as analyzed through the lens of securitization (and globalization) has largely been associated with emerging infectious disease. However, the scope of health emergency governance itself is broader than that. Although for the most part health emergency governance is still focused on *emerging* infectious disease, Chapter 3 (on the resurgence of measles in Europe) suggests that the commonplace emerging disease worldview or narrative may also be subverted or overridden in the context of this governance. Further, as noted in Chapter 2 (on the genealogy of health emergency governance), by now it is not uncommon to see established global health governmental and non-

governmental actors address and work on emergencies of various kinds (e.g. floods, earthquakes, wars) through a health-oriented lens. As illustrated by the following quote from a newsletter that I received from the Wellcome Trust (a key philanthropic actor in the governance of health emergencies) in May 2022:

> Did you know that more than four in 10 disasters worldwide are associated with flooding? Drowning might be your first thought when considering the health risks of flooding. But after the water has cleared, the health impacts go on. From injuries and hypothermia to animal bites, infectious diseases, undernutrition and mental health problems – the effects are complex and cascading. (Wellcome Trust 2022)

Here, one kind of emergency – flooding, is primarily understood through its health-related aspects. What health emergency governance is about, at the core, is a problematization that makes sense of health as a matter of emergency, and reformulates emergency as a matter of health.

1.5. Conceptualization of emergency

1.5.1. The state of exception

The contemporary theoretical and conceptual debate on "emergency" in the social sciences begins with Carl Schmitt's (2010) (in)famous claim that the sovereign is he who has the power to decide on the state of exception (a general concept within his theory of the state), that is, the ability to suspend law in protection of the nation state from an immediate threat. For Schmitt, emergency is key in regard to the 'state of exception' because it arises unanticipated and unpredicted, and is therefore a legally uncodified situation: 'The precise details of an emergency cannot be anticipated, nor can one spell out what may take place in such a case' (Schmitt 2010: 6-7). Therefore, in order to eliminate the emergency, there is 'necessarily' a need for unlimited 'jurisdictional competence'. Importantly, the decision regarding whether public order and security are disrupted or restored is a matter of sovereignty and appears differently in accordance with the type of legal order set in place (e.g. militaristic bureaucracy) (Schmitt 2010: 9-10). Thus, not every decree of emergency constitutes a state of exception, which is more about a characteristic of 'unlimited authority' that can suspend the existing order. Emergency as a state of exception involves the separation of 'legal' and 'order', and the destruction of norm. Schmitt claims that, as the sovereign has 'the monopoly' to decide whether or not there is order, it is in such states of exception, when legal norm no longer applies, that 'the essence of the state's authority' is revealed in full (Schmitt 2010: 12-13).

Schmitt's conceptualization of emergency has been highly influential in the social sciences and humanities. Indeed, securitization theorists of the Copenhagen School have viewed emergency as a mechanism of exception that suspends normal procedures and law by constructing a specific issue as a cause of insecurity. That is, by presenting something as an immediate threat to security, which thus requires decision and urgent action via exceptional (emergency) measures (Buzan et al. 1998). Bringing that lens to bear in their analyses, scholars have shown how emergency powers represent, drive, and stimulate health securitization processes (Hanrieder & Kreuder-Sonnen 2014; Ventura 2016).[8] For instance, Bengtsson and Rhinard (2018) drew upon the conceptualization of emergency as exception in their analysis of the EU's health security agenda, and argued that the securitization of European health has been tied to the rise and proliferation of an all-hazard emergency approach at the EU level.

Schmitt's conceptualization has also been influential in that a large portion of the contemporary debate on emergency has represented a backlash against him. In that regard, scholars have often echoed, directly drawn upon, and taken inspiration from Walter Benjamin's claim that:

> The tradition of the oppressed teaches us that the "emergency situation" in which we live is the rule. We must arrive at a concept of history which corresponds to this. Then it will become clear that the task before us is the introduction of a real state of emergency; and our position in the struggle against Fascism will thereby improve. (Benjamin 2001: VIII)

Focusing on the oppressed to point attention to the 'real state of emergency' (though not explicitly defining the problem as such), Giorgio Agamben (2005) conceptualized emergency in relation to the 'no-man's-land' that is located between public law and political fact, between juridical order and life. According to Agamben, the state of exception is the means for establishing 'a legal civil war' that enables the literal destruction of those who exclude themselves, or are excluded from, the political system. Agamben has claimed that, in what he views as an unfolding 'global civil war', the state of exception had become a constant: the measures of exceptionality turned into dominant techniques of government. The state of exception, in that sense, is the space of undecidability between democracy and absolutism (Agamben 2005: 1-3). A paradigm of (liberal) government that establishes gray zones and blurry spaces neither internal nor external to the law and normal procedure. In those spaces of 'inclusive exclusion', which he initially identified in the context of the 'war on terror', life is stripped bare into mere biological existence. Such 'bare life'

has been studied (for instance) in the context of refugee camps and secret interrogation facilities where, as anthropologists asserted, living in crisis or emergency is a chronic condition that constitutes a context in itself (Brun 2016; Vigh 2008). When exception becomes the rule and emergency becomes permanent, that not only affects how those who are placed within the space of emergency are viewed and treated, but also shapes in specific ways the experiences and temporalities of those living and working in contexts of emergency.

Like Agamben, various scholars have sought to direct our attention towards "real" emergencies by deconstructing or critiquing situations where emergency is the rule. They have identified a problematic and violent 'hypermodern' emergency, a permanent state of exception that represents a development in international and domestic law, and that began to be established in the light of the September 11 attacks in 2001 and the ensuing "war on terror" (Armitage 2002). Meanwhile, for others emergency as a permanent state of exception does not represent a novel development or fundamental change, but historical continuity. The supposedly new developments of the 21st century simply reinforce that state of emergency (Neocleous 2006), defining it by law and enacting it in emergency interventions that are justified in the name of universal values (Hardt & Negri 2001).

Whether it points to an entirely novel phenomenon or not, the conceptualization of emergency as exception or a permanent or chronic state of exception has been repeatedly employed by scholars, though less often in the context of health governance (however, see: McCormick & Whitney 2013) and more in analyses of international governmental interventions in humanitarian settings. Scholars have investigated perceptions, discourses, and actions around humanitarian emergencies as socially constructed imaginaries (Calhoun 2004); and showed how emergency is used (often interchangeably with terms such as catastrophe and disaster) to demarcate exceptional, disruptive, unpredictable occurrences that call for urgent action (Calhoun 2010). They also showed how the pervasiveness of the emergency imaginary and temporality in global governance has played into the mobilization of 'humanitarian reason' towards the legitimization and justification of acts of power on an international scale (Fassin & Pandolfi 2010); and suggested that, a 'benevolent dictatorship' of humanitarian government has risen in spaces of permanent state of emergency as a therapeutic form of legitimate social domination that shuns political action and debate (McFalls 2010).

Despite the clearly widespread adoption and continuous application of the conceptualization of emergency as exception or permanent exception in the social sciences and humanities, the contemporary debate on emergency has also seen a growing opposition to this idea and, relatedly, alternative conceptualizations of emergency.

1.5.2. Emergency politics and forms of governance

Broadly, scholars have pointed to two kinds of problems with the conceptualization of emergency as a (permanent) state of exception. First, that it obviates and rules out the political; and second, that it is understood *sui generis* (as one of a kind, unique).

For the most part, scholars have not so much rejected the idea that emergency as permanent exception has been a defining feature of our time, as much as they have sought to recast the problem in political terms. Indeed, political theorists such as Bonnie Honig (2009) and Elaine Scarry (2011) are not outright dismissive of the idea of emergency as exception, but instead suggest that the problem with the idea of emergency as exception is that it rejects the possibility of democratic politics. For Scarry, the pervasiveness of the permanent state of exception poses a challenge, but not one that cannot be overcome. Just because emergency calls for urgent action does not mean that we should not be able to think, deliberate, and set up institutional mechanisms that ensure a democratic response to such situations. Meanwhile, Honig demonstrated that democratic politics not only can but also do in fact appear to persist and even prosper in some emergencies. Honig invites us to shift our focus from 'the paradoxical state of emergency as Schmitt and Agamben give it to us – the legal suspension of law', towards thinking of emergency through 'the paradox of politics… a fundamental problem of democracy in which power must rest with the people but the people are never so fully who they need to be (unified, democratic) that they can be counted upon to exercise their power democratically' (Honig 2009: xvi). In that, she seeks to draw attention to and reconceptualize emergency through its political, ordinary aspects; to understand how its 'plural elements' operate as part of 'ordinary democratic politics'.

Correspondingly, in his critique of Schmitt and Agamben, Jef Huysmans (2008) argued that their idea of exception disregards and disallows a political conceptualization of the social, and thus, neutralizes the social – a category that is key in liberal democratic politics. In contrast to Agamben, Huysmans furthermore proposed, we must include society in the analysis, particularly by focusing on practices, technologies, and relationships involved in the biopolitical government of life. In

other word, by considering emergency as governance and examining the politics and administration of that governance from inside.

Taking a Foucauldian governmentality approach, scholars have not only analyzed emergency as governance (e.g. Kaufmann 2016), but also critiqued the assumption in the idea of emergency as exception that the contemporary (liberal) governance of emergency is solely limited to the 'technique or paradigm' of exception (Adey et al. 2015: 4). Given its context-specific etymology, emergency appears in various and very exact ways (Adey et al. 2015: 6). From that perspective, therefore, emergency is not merely a complex mechanism of exception (Huysmans 2008; Williams 2011), but a multitude of governmental forms and relations that shape structures. Exception is only one of multiple coexisting and dynamic forms of emergency governance. Indeed, even emergency as exception may have 'morphed and been transformed as it is brought into contact with different events and as assemblages of authority and rule are transformed' (Adey et al. 2015: 7).

Thus, several questions arise: How do specific definitions and interpretations of emergency come about? How are emergency events rendered actionable? How are emergency interventions justified? And what techniques are used for that purpose? In answering those questions, scholars have identified and examined forms of emergency governance beyond exception. McCormack (2015) identified multiple kinds of emergencies at play in the production of affects in the context US economic policy and post-World War II price increases. Furthermore, Collier and Lakoff (2015) showed how the practice of emergency management expanded in the US during the 20th century, not as part of exceptional emergency, but as part of the regular operation of state administration. Indeed, as they further claimed in their book on 'emergency government' in the US:

> emergency government today is not an exception to the normal operation of the state. Rather, it encompasses the management of unfolding emergencies and ongoing preparedness for future emergency situations as permanent functions of normal government (Collier & Lakoff 2022: 5).

The scholarly literature on emergency as governance has thus highlighted and focused on heterogenous ways in which various governmental practices, technologies, and strategies are deployed as part of emergency preparedness and response (Adey et al. 2015; Rabi et al. 2022; Samimian-Darash & Rotem 2019). In that regard, for instance, Rabi and Samimian-Darash (2020) identified in the context of the United Kingdom (UK) a governmental configuration of

'emergency-preparedness' that manages hazards by addressing problems of 'emergency' and 'preparedness' simultaneously, reconfiguring such problems (e.g. in terms of whether they are internal or external) by exchanging between their initial temporal orientations.

In the present dissertation I follow the abovementioned line of inquiry on emergency governance, and specifically identify, examine, and discuss what I suggest is representative of a particular form of emergency governance: health emergency governance. As I show in my genealogical investigation of health emergency governance, that form has emerged through the convergence between elements of emergency management and health governance. The structure and operation of health emergency governance, and the dynamics and effects of its systems, are both the consistent patterns and contingent features that make up that emerging assemblage (see Chapter 6: "Discussion"). Instead of a sovereign decision on the state of exception, there are evidently much more complex and nuance-filled sets of processes, elements, and powers at play here, as clearly demonstrated by the three case studies that I examine: the (re)construction of a regional (European) measles epidemic as an emergency of regression; the ongoing process that has rendered the problem of AMR into a silent health emergency; and the multiple vectors constituting the COVID-19 health emergency as event(s) with a beginning and end. Thus, the dissertation sheds light on different developments and facets of that emerging yet increasingly influential form of governance, and in doing so also underlines that the conceptualization and idea of emergency as exception or permanent exception is not only problematic because it blinds us exactly to the kind of complexity and nuance that are most useful for understanding contemporary phenomena, but also impedes our analysis due to its critical limitations (see Chapter 6: "Discussion").

1.6. Research Questions

The coalescence between "health" and "emergency" in the emergence of a field of governance that is centered on health emergencies raises two general questions that are at the heart of this research: What does this coalescence mean for the global governance of health? And what does the emergence of this field of governance suggest in relation to the concept of emergency?

More specifically, the research revolved around four sets of questions:

1. How did a distinct global governance field that is centred on health emergencies emerge?

1.1. How did that field evolve and what are the key factors that enabled and shaped this evolution?

1.2. In what ways are contemporary health emergency governance systems affected by or expressive of the historical development of the field?

2. What is the relationship between health emergency governance and the social construction of disease?

2.1. How does the emergence of health emergency governance play into established processes and views in the context of infectious disease management?

2.2. Does a practical shift towards managing a disease as a health emergency necessarily imply a change in the categorization or conceptualization of that disease?

3. What are the boundaries of health emergency governance?

3.1. How do problems come to be thought of, and acted upon as health emergency problems?

3.2. What kinds of processes or elements are key to the rendering of problems into health emergency problems?

3.3. Beyond prioritization and resource allocation, what are the implications of a problem becoming a health emergency problem?

4. When and how does a health emergency event begin and end?

4.1. What processes, forces, and dynamics are at play in the constitution of a health emergency event? How are health emergencies produced or generated as events with beginning and end points?

4.2. What determines how systems of health emergency governance construe and respond to health emergency events?

4.3. Beyond practical and health implications, what is the significance of the ending of a health emergency event for governance?

The four main chapters in this dissertation represent an attempt to answer those questions through a multi-sited ethnographic research (see methodology below). While each one of the topics that were researched and appear in the four chapters (the genealogy of health emergency governance; measles; AMR; COVID-19) could be used to provide answers to more than one set of questions, the dissertation was designed in such a way that each chapter focuses on a single set of questions that I found to be most appropriately or clearly answered by it.

1.7. Approach and concepts

1.7.1. *Problematization, practice, governmentality*

> [W]e all belong to one society which is public health. We speak the same language, we know the profession. You know, you take a public health person from here, you place him in another country and he can work there. He will immediately understand what's going on…. The principles are the same. (Public health expert Max Cohen, January 2020)

To understand how those people who belong to the 'one society' of global public health have come into interaction with others in a new field of health emergency governance, three interrelated analytical concepts that Michel Foucault developed in his work are key: problematization, regimes of practice, and governmentality.

Foucault developed the concept of "problematization" in the context of his work on the history of thought as a powerful analytical tool. Problematization, as he reflected in an interview with Paul Rabinow, is key to analyzing the history of thought. Thought is a problematizing practice in that it is about:

> what allows one to step back from this way of acting or reacting, to present it to oneself as an object of thought and to question it as to its meaning, its conditions, and its goals. Thought is freedom in relation to what one does, the motion by which one detaches oneself from it, establishes it as an object, and reflects on it as a problem (Foucault 2003: 23).

As this implies, the Foucauldian concept of problematization refers, on the one hand, to something that is done in practice and can therefore be traced and analyzed; and on the other hand, to an analytical tool that can be employed. In other words, when we research a certain subject our work either plays into and reiterates an existing problematization, prompts a new problematization, or promotes a re-problematization. Bringing the concept of problematization to bear, therefore, not only enables us to capture such acts of thought and to place them front and center in political-historical analyses, but also recognizes (and therefore, makes us aware) that in studying problematizations we also engage in an act of problematization.

A central aim in my research and dissertation is to develop an understanding of the global governance of health emergencies through an analysis that centers on problematizations that have driven and shaped this domain, and in doing so, to problematize the global governance of health

emergencies. That is, to render this domain of governance visible and set it 'free' from existing conditions.

Instead of a single answer, an all-encompassing theory, or an ultimate methodology, what an analysis through the lens of problematization provided me with was a way to interrogate 'the development of a domain of acts, practices, and thoughts that… pose problems for politics' (Foucault 2003: 20). Drawing on Foucault's analytical concept of problematization, I primarily focused on practices in the governance of health emergencies. Problematization does not simply refer to representations of existing or newly generated objects that are created discursively. Instead, it refers to thought as a kind of work, therefore calling for the identification of 'the ensemble of discursive and non-discursive practices that make something enter into the play of true and false and constitute it as an object of thought' (Foucault 2003: xviii). A problematization is prompted through 'contingent intersection of a complex array of practical activities that form a kind of basis for both the elaboration of newer practices and the destabilization of older practices' (Koopman 2013: 105). Contingencies are key as problematization occurs as something happens to make a familiar object 'uncertain' or unfamiliar, provoking 'a certain number of difficulties around it' (Foucault 2003: xviii).

Problematization, however, is not simply an expression or result of a set of difficulties, but a response to them. A response that may appear in multiple and contradictory forms. That kind of practical dialectic between different responses is also key because it allows us to trace the particular point 'in which their simultaneity is rooted… the soil that can nourish them all in their diversity and sometimes in spite of their contradictions' (Foucault 2003: 24). That point is where we can find the 'general form of problematization' that enables the appearance of a set of responses and trace how the process whereby a set of difficulties turned into a general problematization. The specific difficulties and the general problematization establish the object of response and the range of possible responses.

In my research, I identified, traced, and examined various actions, activities, and developments that have constituted responses to specific difficulties, obstacles, and challenges that revolve around the general problem of governing health emergencies. Following Foucault's genealogical approach, the historical processes that have fostered and made it possible to systematically think of, and approach health emergency as a problem of governance, are presented in Chapter 2, on the

genealogy of health emergency governance. Bearing in mind that such an investigation is not only about gaining understanding but also a work of problematization, I sought to show 'the way in which… series of truths were produced, sustained, and revised over the course of a particular historical period' (Koopman 2013: 45). As I inquired into that which made possible the conditions for systematically thinking and acting through the lens of a general health emergency problem, I untangled and delineated axes that, in their entanglement and coalescence, fostered the emergence of a contemporary field of governance. What has been (problematically) taken for granted, embedded in, and promoted by this field, I had found, is an emphasis on rapidity and flexibility.

At this point, it is important to clarify another key concept that appeared in Foucault's work: practices. Upon reflection on his earlier work, Foucault highlighted that the goal of his analysis was not to discern or trace institutions, ideologies, or theories. Instead, his aim was to understand practices and the conditions that enable them. Practices, as Foucault explained (1991:75), are 'places where what is said and what is done, rules imposed and reasons given, the planned and the taken for granted meet and interconnect'. As such, practices 'possess up to a point their own specific regularities, logic, strategy, self-evidence and "reason"'. Analyzing a 'regime of practices' as he further suggested, is about the analysis of 'programmes of conduct which have both prescriptive effects regarding what is to be done (effects of "jurisdiction"), and codifying effects regarding what is to be known (effects of "veridiction")'. Following that idea, my research did not focus, for instance, on the WHO as an institution or the ideologies that drive its work. Instead, it focused on patterns that express practices and regimes of practices across a range of activities within the global governance of health emergencies.

Throughout the dissertation, I frequently refer to practices and technologies (that is, social technologies) as "governmental". In that regard, I draw on Foucault's conceptualization of governmentality which largely refers to the ends, means, and knowledge that comprise a certain form of governance. In his historical-political analyses of governance forms and problematizations that were presented as part of his lectures at the Collège de France in the late 1970's, Foucault (2007) described a certain evolution in power that began to unfold in 18th century Europe. Focusing on historical changes in three areas – the town, scarcity, and epidemics, he described what he eventually conceptualized as 'governmentality' as an emergence of 'apparatuses of security', and contrasted this form of governance with two other main forms: 'sovereignty' and 'discipline'.

While distinct, the three forms are not mutually exclusive. The concern with space within each form provides a particularly useful example for the differences between them.

The sovereign form (or interchangeably, the legal mechanism) is mainly concerned with ensuring that functions (e.g. economic) operate effectively within the territory. The sovereign system encloses circulation within the bounded territory of its legal rule in order to capitalize on it, thus creating an intense circulation of ideas, wills, orders and commerce within that sovereign space (Foucault 2007: 29-30). Meanwhile, the disciplinary form or mechanism is mainly concerned with isolation and confinement of a designated empty (or emptied) space where its power (disciplinary power) can operate without limitations. Within this centripetal and protectionist space, multiplicities are constructed and organized around the centre in accordance with hierarchy, power relations, and required functions. Discipline seeks to prevent unwanted events from happening and addresses any breach in discipline (whether big or small). This system therefore excessively codifies things into 'forbidden' and 'obligatory' as it seeks to regulate everything (Foucault 2007: 32, 67-70). Finally, the security apparatus or form is mainly concerned with the milieu. In Foucault's words, this form of governance is about:

> The ensemble formed by the institutions, procedures, analyses, and reflections, the calculations and tactics that allow the exercise of this very specific albeit complex form of power, which has as its target population, as its principal form of knowledge political economy, and as its essential technical means apparatuses of security. (Foucault 2003: 244)

Unlike the disciplinary mechanism, security generally refrains from forceful interventions and does not seek to prohibit or prescribe. Instead, it encourages behavior that would be more beneficial on average and seeks to calculate relative cost and benefit. To put it abstractly, the security apparatus works to grasp the 'effective reality' of things, operating from within a reality in an attempt to link its different functions while also responding to that reality by erasing it from existence (Foucault 2007: 67-70). Those things include material givens (e.g. flows of water, islands), as well as quantities (e.g. of people and things). The aim of security is not control or reconstruction of things to achieve total elimination or perfection (as in discipline), but a maximization of positive circulation and minimization of risky circulation. Its main problem is not the present construction of a static and perfectly functioning system, but an uncontrollable and dynamic future that escapes measurement because it involves indefinite series of mobile elements,

future events, units that will accumulate, etcetera. Responding to this problem, the security apparatus fabricates, organizes, and plans a milieu in such a way that it can be regulated through an adaptable framework. It is through the milieu that the security apparatus may articulate the resulting effects of series of events, possibilities, and uncertainties that are produced by the natural and artificial givens within it. Historically, an important part of this story is the 'population' (Foucault 2007: 34-36).

The rise of the (biopolitical) security apparatus is historically linked to the appearance of 'population' through statistical techniques. As Foucault described, during the 18th century, health and sickness were problematized through a 'noso-politics' that inscribed certain challenges related to 'the sickness of the poor' upon a broader problem concerning 'the health of populations' (Foucault 2003: 342). In response to the governmental problem of population health, population technology was used to generate knowledge on individual bodies and populations, and as a result, the population eventually became 'a cohort of biological individuals' (Dillon & Lobo-Guerrero 2008: 267) managed by a 'biopoliticized' security apparatus. As a particularly instructive example, it is worth to briefly consider Foucault's illustration of the security apparatus in the context of epidemics.

In his discussion of epidemics, Foucault (2007: 88-89) described a transformation in forms of governance. In 17th and 18th century (European) medicine a prevailing disease was associated with a particular place or a group of people. Subsequently, however, and as quantitative tools were applied, prevailing disease began to appear in association with a distribution of cases within a specific population. The term 'cases', in that regard, was (and still is) key in the production of knowledge and governmental interventions on disease incidence. It has allowed to individualize disease incidence from the collective and to collectivize it from individuals. The transformation in forms of governance may also be understood in terms of the kind of practices and interventions that are associated with each one. If disciplinary public health practices such as quarantine seek to restrict circulation and isolate those who are ill, security public health interventions such as vaccinations ensure the continuation of circulation while minimizing harm. The transformation to security was therefore also about the emergence of a preventative public health approach, with governmental technologies of risk allowing the calculation and identification of different levels of risk for morbidity and mortality on the basis of specific variables, and accordingly, governmental

regulation of and interventions upon bodies that are categorized into different risk groups (Lakoff 2008: 403; Lupton 1995).

While the three Foucauldian concepts that I presented here are useful and potent in their own right, I wish to supplement them with additional and relatively more recent concepts that are key for approaching a phenomenon that is not only historical, but also contemporary and emergent; that does not merely involve national or even international actors as units of analysis, but dispersed and complex networks, activities, and processes on and across different levels; and that specifically involves an emerging field of governance within which forms of power and expertise, and heterogenous knowledge, practices, and technologies are constantly moving and changing.

1.7.2. The contemporary, assemblages, systems

> One might say: "Let's go to Chernobyl, but don't leave Weber behind." Of course, Weber is not going to tell you directly what's going on there – that would be ridiculous to expect. But surfing the Internet is not going to tell you what is significant, either. For that we need other tools, other methods, and a different ethos. (Rabinow et al. 2008: 59-60)

As indicated throughout the dissertation and demonstrated in Chapter 2, the governance of health emergencies is not only a distinct phenomenon, but also a relatively recent and still emerging one. It is therefore insufficient and possibly even problematic to apply existing concepts or theories that are grounded in or reflective of older phenomenon to understand and analyze this contemporarily emerging phenomenon – whether through Weber's diagnosis of the spirit of capitalism, the instigation of emergency in Nazi Germany as the state of exception, or the securitization of emerging disease during the 1990's. Indeed, as Paul Rabinow suggested, examining a new phenomenon that has not yet consolidated and is still in the making, an emerging phenomenon, requires new analytical tools that do not merely work to reproduce existing theories, concepts, and knowledge, but instead allow us to discern and inquire into that which is in the process of being created. That is, to 'learn to become familiar with what's unfolding, to live with it' (Guyer 2016: 375). For that purpose, he proposed the concept of 'the contemporary'.

Much like Foucault's analytical concept of "problematization", in his conceptualization of "the contemporary" Rabinow refers both to something that can be identified and analyzed, and to an analytical device. Nevertheless, the contemporary is neither about the uncovering of the hidden

logic of discourses or practices – as it was in Foucault's "archeology of knowledge", nor about the genealogy of power and the historical evolution of subjectivities and forms of governance – as it was in Foucault's "history of sexuality" and lectures on "governmentality" (most visibly). Instead, the contemporary is about three interrelated aspects: emergence, temporality, and remediation.

The contemporary points to the breaking down, de-clustering, or decomposition of 'emergent phenomena… into different elements' that constitute them (Rabinow et al. 2008: 58), and the reconfiguration or remediation of those elements. In that process of reconfiguration, both old and new elements may be brought to bear. Whether as a mode of action or analysis, the contemporary is therefore not about 'destruction or deconstruction' and not about 'reform or revolution', but instead about 'reevaluation' and 'remediation' (Rabinow 2007: 3). The contemporary as such, moreover, does not simply point to the present (or the past), but to a relational temporality that, as Rabinow explained, involves 'moving through the recent past and near future' and indicates 'a mode of historicity whose scale is relatively modest and whose scope is relatively short in range' (Rabinow et al. 2008: 58).

Moving from a genealogical analysis of the present to focus on the contemporary, as Rabinow noted (following Nietzsche), does not imply that historical conditions are not important and illuminating. However, historical conditions are not 'everything'. While there is certainly 'a great deal of contingency and under determination in most situations… retrospectively one can always create narratives about what happened that are plausible' (Rabinow et al. 2008: 56). Working through the contemporary is also not a call to reject or deny the present, but to take 'a critical distance' from it (Rabinow et al. 2008: 59). The point is to form a new kind of relationship with the present, one that allows us to critically observe and examine the various moving elements of emergent phenomena from an adjacent position.

Employing the contemporary mode of analysis to study the global governance of health emergencies, I sought to discern that emergent phenomenon through 'different elements that are assembled into one form constitutive of the phenomenon in question' (Rabinow et al. 2008: 58). Throughout the research in general and in each of the three case studies specifically, then, I sought to identify, describe, and analyze assemblages that constitute the global governance of health emergencies.

The term "assemblage" is particularly appropriate and useful for this research, not only because it accommodates 'the various hybrids of material, biological, social and technological components that populate our world' (Acuto & Curtis 2014: 2), but also because it captures and allows an analysis of 'the heterogeneous within the ephemeral' while retaining 'the image of structure' (Marcus & Saka 2006: 102). In this sense, it is a highly useful analytical concept. As developed and used by scholars following the conceptualization of the term by Deleuze and others (Deleuze & Guattari 2003; Deleuze & Parnet 1987), assemblage basically refers to 'parts that are fitted together' rather than a 'uniform' whole, and to the 'relations' that are established between those parts and hold them together; relations that are (usually) 'extrinsic', that is, they are 'like the air that exists between [the parts] transmitting influences that connect them but do not constitute them' (DeLanda 2016: 1). Beyond its distinct parts and relations, an assemblage also has 'virtual' (real though not actual) properties, tendencies, and capacities that make up 'the structure of the possibility space associated with an assemblage's dispositions', or 'diagram'. The diagram is also what 'connects an assemblage with other diagrams, and with a cosmic space in which diagrams exist free from the constraints of actuality' (DeLanda 2016: 4).

The concept of assemblage points to something that is more elusive and abstract than the network in Actor Network Theory (Marcus & Saka 2006: 102) and the Foucauldian "security apparatus" (Rabinow 2003; Samimian-Darash & Stalcup 2017), but more concrete and situated than broad categories and charged concepts such as "the state" and "neoliberalism" (Acuto & Curtis 2014: 2). Indeed, assemblages are 'secondary metrices from within which apparatuses emerge and become stabilized or transformed' and it may take years or decades for them to dissolve (Rabinow 2003: 56). Assemblages can also exist simultaneously. Specific components of an assemblage X are assemblages in themselves, just as assemblage X is a part of a broader assemblage. In that sense, for example, "security" can be analyzed as an assemblage that consists of forms of governance that express particular forms of security action (Samimian-Darash & Stalcup 2017: 70).

Assemblages are 'inherently unstable' and are about 'movement and change' (Marcus & Saka 2006: 102). They have a 'contingent relationship' with 'grander problematizations' (Rabinow 2003: 56) and involve 'multiple determinations that are not reducible to a single logic', an emergent temporality, and 'forms that are shifting, in formation, or at stake' (Ong & Collier 2005: 12). Accordingly, the concept of assemblage provides a way to analyze 'shifting relations and

emergent conditions of spatially distributed objects of study in the contemporary period of so-called globalization' (Marcus & Saka 2006: 106; also see: Ong & Collier 2005). Instead of analyzing homogenous, stable, rigid, and fixed products (or "stratums", in Deleuze's terms), then, this concept enables us to analyze heterogenous, temporary, emergent, and evolving processes that are 'everywhere, multiplying in every direction, some more viscous and changing at slower speeds, some more fluid and impermanent, coming into being almost as fast as they disappear' (DeLanda 2016: 5).

The main effort in this dissertation is dedicated to the discernment of "health emergency governance" as an assemblage that consists of multiple and interlinked forms that I largely refer to as "systems", or "health emergency governance systems". Each one of those systems could, technically, be analyzed as an assemblage. However, I use the term "systems" to maintain clarity regarding the level of the object of analysis (assemblages within the grand assemblage of health emergency governance) and because this term seems more appropriate in some specific contexts, where an object (which has not consolidated into an apparatus) is more cohesive, complex, and systematic in its operation than what one might expect of an assemblage. The "grand problematization" that links those systems, and activities and processes that are tied to them, within the assemblage of health emergency governance has to do with a concern with health in the face of hazardous and negating events, mainly (yet not exclusively) those involving infectious disease. Lastly, rather than the assemblage of health emergency governance itself, it is systems that make up the assemblage that are composed of technologies and practices (discursive and non-discursive) – legal, bureaucratic, biomedical, epidemiological, humanitarian, technoscientific, political, etcetera; actors – institutions and organizations that are governmental and non-governmental, dominant and peripheral, and international, regional, national, and local; and various mechanisms that establish and sustain both short-term and long-term action, funding, knowledge production, and technological development – programs, platforms, projects, initiatives, and frameworks.

Having said all that, I wish to emphasize that my aim here is not to name, delineate, or document any specific systems, to map their components, or to make any claims about their effects (though I do all of these in practice throughout the dissertation). What I am most interested in, and what my exploration of sets of systems and related activities and processes is supposed to achieve, is understanding of the "diagram" of the assemblage. That is, I wish to articulate the assemblage's

virtual (structural) features and patterns of operation, which also bring it into relationship with other diagrams.

1.8. Methodology

> Dr. Victor Fineman greeted me with a warm handshake as I entered his office. We sat down and Dr. Fineman, a senior Ministry of Health official, university professor, and highly experienced international health expert, leaned back in his chair and asked me to tell him more about what I was doing my doctorate on. As I began to answer that the subject is the global governance of health emergencies, he immediately stopped me and said that the subject is too broad and should be more focused. He also said that this kind of 'usage of emergency' is not good. That it only serves as another way to get more money, a 'PR [Public Relations] machine… a business of NGO's and even local elites that profit from it and are not even interested in developing the country'. What is an emergency then, I asked? According to him, emergency is only related to natural disasters and conflicts. I pressed: What about cross-border pathogens? He replied: 'it's obviously an emergency, but it should be managed by the state, and this can only be achieved through long-term development – infrastructure, technology, resources, and knowledge'. This is what I should study, according to him. 'What matters is development. But not like people coming for a year or two to some place in Africa and expecting to change the world. It doesn't work like that. Changes are slow. There are no magic-bullet solutions'. (Personal fieldnotes, February 2019)

The research project presented in this dissertation is about a contemporary assemblage that centers on governing health emergencies, and the systems, activities, and processes that it consists of. The research started in late 2017 and concluded in late 2022. During this period, I collected, generated, and analyzed a rich variety of materials. Despite some obstacles and challenges along the way (see above and below), eventually the main problem was not the broad scope of the topic, the slow pace of changes, or even the ability to find sources for empirical data (as it was initially). The main problem had to do with screening data, and gathering and organizing the most relevant and useful data.

At first, and in accordance with what I had planned before beginning the research, I explored the subject and mapped relevant activities and actors. Simultaneously, I started to investigate the genealogy of health emergency governance (Chapter 2). In the light of that initial exploration, I decided to focus empirically on two case studies that appeared relevant (explanations for the selection of the cases appear in each of the chapters): the resurgence of measles in Europe around the year 2017 (Chapter 3), and the persistent problem of Antimicrobial/Antibiotic Resistance

(AMR/ABR) (Chapter 4). In early 2020, as the COVID-19 emergency unfolded, I could not but turn my attention to this significant development. Eventually, I decided to add it as a third case study (Chapter 5). Overall, the employment of a case study strategy (Blatter 2008) helped me to focus and ground the research empirically, to identify both common and distinct patterns within the field, and to gain a better understanding of the research subject through in-depth examinations of concrete and specific manifestations of the phenomenon in question.

1.8.1. Ethnographic methods

As indicated above, this research is qualitative. Qualitative research provides rich insight and is particularly useful for understanding complexities, perceptions, and specific contexts (Denzin & Lincoln 2011; Ritchie et al. 2013: 2-4). In this qualitative research, I employed ethnographic methods as a way to study the field from within and to understand who are the people active in it, their experiences, and culture (Cunliffe 2010), and to gain insight into the complexities and specific qualities of everyday life in the field (Ybema et al. 2009). Through participation and partial immersion in the field, and observation of and engagement with people and activities within it for an extended period, I was able to achieve a more 'comprehensive and complete picture' of the study subject (Fetterman 2008: 289). The specific ethnographic methods that I used to generate and collect data were observations, interviews, and document analysis.

As part of the research, I conducted participant observations to understand how people in the field go about their daily life, engage and interact in routine activities, and work in practice (Baker 2006; Spradley 2016). That mainly involved work at the WHO and its Health Emergencies Programme (WHE) (see below), where I took part in regular work and meetings at the office, engaged in casual conversations and informal meetings, participated in daily and weekly briefings for staff, as well as in various exercises and workshops.

Further, I conducted observations at various events, conferences, gatherings, and other settings (McKechnie 2008; Schensul 2008: 522). From early 2020 onwards, that mostly involved digital observations in what are often called "webinars" or online/virtual events, workshops, panels, talks, sessions, and discussions. Overall, I conducted 140 observations (see appendix 3). During fieldwork and observations, I documented my experiences, thoughts, and remarks in fieldnotes that were used routinely to think and reflect on the research subject and my engagement in the field (Emerson et al. 2011).

To gain an understanding of the global governance of health emergencies through the experiences, perspectives, and knowledge of experts, key personnel, and other people who have been active or engaged in this area, I conducted semi-structured in-depth interviews (Ayres 2008; Schensul 2008: 523-524). A medium sample size of 38 people was sufficient for the purpose of the research. Recruitment was done using a snowball strategy. That is, I asked interviewees and contacts to refer me to, or provide me with contact details of colleagues or other relevant people who they know. Potential interviewees were contacted by Email (see example of generic Email message in appendix 6.).

Some of the interviews provided knowledge and insight, and were particularly useful for the purpose of mapping and demarcating nodes or domains of health emergency governance, and the processes, connections, developments, activities, and forces operating within them. Other interviews were more targeted and focused on specific issues or subjects that are of relevance to the research, especially in the context of the three case studies (measles, AMR, COVID-19). A relatively smaller number of interviews were with key, hard-to-reach officials and experts who have been at the center of certain domains of activity in the global governance of health emergencies, and therefore provided unique and significant insights.

A list of questions was prepared in advance, with open-ended questions that were designed to foster dialogue and to allow interviewees to openly share their experience and raise other issues (see example in appendix 5). This list was revised and modified repeatedly as the research progressed and was occasionally also tailored for specific interviewees and what I had set to achieve in the specific interview. Most interviews were approximately an hour and a half long, during which I took notes and recorded the conversation. The recordings were stored on a secure electronic device and later transcribed. Interviewees signed a consent form for participation in the research (see appendix 7). Most of the interviews were conducted digitally (usually via "Zoom" or "Skype"), particularly from February 2020 onward (due to the COVID-19 pandemic).

Research participants, most of whom are from or currently living in Europe, have worked for, with, and in a wide range of organizations, institutions, and locations; often having experience working for more than one of those which are relevant for this study (e.g. previously for the ECDC and the WHO, currently for the German Ministry of Health). Also, they represent a diverse range of professional orientations, perspectives, specific fields of expertise or knowledge, and kinds of

experiences (see appendix 4). In all but one case (where an interviewee insisted that I use his actual name), research participants' names were changed to pseudonyms to ensure their anonymity.

Throughout the research process I routinely collected and analyzed documents and other textual, visual, and audiovisual materials (Bowen 2009; Prior 2008). Overall, through regular and repeated engagements with different (primary and secondary) sites and resources (see appendix 2), I manually collected and analyzed hundreds of items of various kinds: technical and policy documents; plans and strategies; protocols, reports, and assessments; legislations, regulations, and resolutions; brochures and itineraries; newsletters and news media publications (i.e. articles, stories, reports, updates, opinion columns); contents from official Internet websites and social media pages (Facebook, Twitter, YouTube); speeches, announcements, press conferences, and advocacy videos. Furthermore, I collected and read relevant articles and commentaries that were published in scientific journals, especially in the fields of global and public health, medicine, and infectious disease (e.g. *Science*; *British Medical Journal*; *Nature*; *The Lancet*; *Clinical Infectious Diseases)*. In this case specifically, I searched, screened, and found items by entering keywords into search engines (Google Scholar, ProQuest) and via citations that appeared within articles.

The basic set of criteria for inclusion of textual data was: (1) relevance for the general topic of the research and research questions, for specific issues being studied, or that it comes from or has to do with health emergency-related activity of one of the key actors that the research had focused on (see primary sites in appendix 2); (2) that it is in a language that I understand – English or Hebrew (the latter was very rarely needed); and (3) that it comes from a credible source such as an official governmental publication or large media outlet.

The second set of inclusion criteria varied depending on whether the data was collected as part of the research in general, for the genealogical investigation, or for a specific case study. For each context there was a need for slightly different inclusion criteria (further details on the empirical focus that determined the specific criteria are provided in the chapters). The criteria consisted of: (1) a timeframe. For example, texts from 2020 onward were included for the case study on COVID-19, and texts until 2020 were included for the case study on measles; and (2) a location. For example, texts for the research in general included those produced by organizations, institutions, publications, or people located in the geographical area of Northern and Western Europe, while

texts for the genealogical investigation and the case study on AMR also required the inclusion of those originating from the United States of America (USA).

The third set of criteria for inclusion was: (1) representativeness in terms of different perspectives, to the extent that different perspectives existed around a certain issue and excluding unusual or marginal perspectives that are not representative – for instance, vaccine-sceptic scientists; (2) reflection of different kinds of discourses and sources – such as news media, scientific, and governmental, and opinion columns, news reports, journal articles, policy documents, and speeches; and (3) significance in terms of influence or impact (for example, highly cited articles and editorials in prominent scientific journals), or alternatively – usefulness in terms of accurately or very clearly conveying or capturing a common idea, sentiment, view, or narrative.

The collected and generated data was analyzed systematically throughout the research (Fetterman 2008: 291). I undertook a recursive and inductive process in which I repeatedly reviewed, evaluated, triangulated, organized, and synthesized the data; extracted and classified themes and sub-themes; and identified patterns. With every iteration of the process, my initial general questions and observations became more focused and specific; and I revised, modified, and sharpened my interpretations and explanations while consulting with empirically and theoretically relevant literature.

1.8.2. Strengths and challenges

> Dr. Fineman pointed to the multiple diplomas hung up on the wall behind him, as if providing me with evidence as he told me about his experience and training in international public health and, as it turned out, in medical anthropology. I shared with him some initial themes and insights from the field and he, for his part, insisted that I should focus on development. That is, if I want to research 'something that will make a difference, that will be useful'. (Personal fieldnotes, February 2019)

The main strengths of ethnography are its flexibility; attunement to nuance, specific conditions, and context; insight into everyday life; and that it draws on multiple sources of data (Hammersley & Atkinson 2007). Moreover, ethnography is particularly suitable for researching phenomenon 'in the making' without prior knowledge and thus also without assumptions (Latour 1987: 13-17). All those strengths made ethnography a particularly appropriate methodological choice for a political, sociological, and historical research on the global governance of health emergencies. A research

that seeks to illuminate an emerging and relatively new phenomenon that has not been conceptualized and analyzed distinctively or studied comprehensively to date.

However, that is not to say that there are no limitations and challenges to ethnography (Reeves et al. 2008: 514). Ethnographic methods require a significant amount of time, which is not always available. Indeed, time constraints posed a serious (though not critical) issue throughout the research. Another issue had to do with converting the research into written form: a challenge of finding the right balance between communicating the richness and complexity of the field and the need to concisely articulate insights and ideas for potential readers. Although it was not only for this particular reason, what helped to overcome that challenge was the case study strategy. The case studies focused and grounded the research in concrete and specific contexts, and enabled me to explore, demonstrate, and discuss the researched phenomenon in a coherent and structured manner.

Beyond all that, a very challenging issue was gaining and maintaining access to the field. In some sites and nodes of health emergency governance, access was outright denied. In other cases, when I did manage to gain access into a particular site or node, this access was usually either partial, limited, or temporary. Indeed, even as I became relatively more immersed in the field, there were many uncertainties and unexpected developments that appeared, demanding constant adaptation.

The main challenge of gaining and maintaining access to the field and the people who are active within it had to do with "studying up". That is, studying up the social ladder, focusing on elites or other powerful actors in society such as scientists, bureaucrats, policymakers, and executives (Gains 2011; Gusterson 1996; Kuus 2013; Lie 2013; Nader 1969). Studying those who are involved in the global governance of health emergencies, similarly to studying those who are involved in global health governance (see: Bourrier et al. 2019: 1-2) means not only studying the powerful, but also studying powerful and highly mobile "global" elites (Gille & Riain 2002). Most of them are just as educated as I am, if not more; and many of them either held or hold important or influential positions, for instance, in government, public institutions, NGO's, international organizations, and academia (usually, in more than one of those). I needed them to cooperate but all I could largely do was appeal to their good will or intellectual curiosity.

Whether it is in relation to state bureaucracies, international organizations, business corporations, or laboratories, there are major obstacles when studying up. People in position of power are often

reluctant to engage or share information voluntarily. This is generally the case with experts and practitioners when one has no formal training or experience in their field; but even more so in my research – where people in the field (whether bureaucrats and policymakers, experts and scientists, or activists and journalists) often operate in institutional or organizational settings that have strict rules, definitions, and procedures in place when it concerns any engagement with an "outsider", especially when that person wants to conduct research that (presumably) focuses on their work or area of expertise. That issue is complicated further when it comes to organizations that are extremely concerned with public image and sensitive to outside criticism (such as the WHO). On an individual level, reasons for reluctancy to engage can generally be divided into what seemed like genuine lack of interest or time; "gatekeeping" or simple suspicion and hostility; and adherence to internal institutional or organizational codes, regulations, and limitations preventing them from sharing information or speaking with me. While there are some ways to overcome those challenges, such as collaborating with insiders or getting gatekeepers to cooperate (Boyer 2008; Coleman & von Hellermann 2012; Gustavson & Cytrynbaum 2003; Marcus & Fischer 2014), the problem cannot be easily, necessarily, or fully resolved. My response to this obstacle, whenever it appeared during my research, was simply to pivot to a neighboring site or node connected with the one I was currently focusing on. That was the advantage of studying a broad, complex, and networked field.

A final important note in relation to the challenges of studying up: a research that studies the powerful also emphasizes their perceptions, and therefore carries a certain risk for internalization and perpetuation of those perceptions. However, it is exactly the 'invisibility' of the powerful that is 'part of their privilege' (Gusterson 1996: 115). Studying up means a better understanding of the form, operation, and dynamics of power. That, in turn, can potentially serve those who seek to intervene in the field or scrutinize and challenge those in positions of power. In this research, however, I am less interested in the powerful themselves as much as I am interested in what they do in practice and what their views represent in the broader scheme of things in the context of governing health emergencies.

1.8.3. *Pivoting (I): Multi-sited ethnography*

> I walked into the wide main lobby of the Robert Koch Institute building on Seestrasse 10, Berlin. The place reminded me of a smaller version of the entrance lobby to the UN City building in Copenhagen, particularly the spiraling staircase. I sat down across from the entrance and looked around as I waited for my contact to come. People were walking up and down the spiral staircase. The first time I was there it was late afternoon (around 16:30-17:00) and people were quickly crossing the lobby and rushing out the doors to go home. This time it was morning (around 10:00) and people were slowly trickling into the building to start another day of work. A small group of people in what seemed like a guided tour (in German) passed by. My contact eventually came and as we walked up and crossed long hallways, I briefly saw people working in their offices, hunched over their computers. There was something uncanny about it all. (Personal fieldnotes, November 2019)

In late 2017 I initiated my research and traveled to Copenhagen (Denmark), where I conducted three months of fieldwork at the WHO Regional Office for Europe (EURO), specifically as an intern in (what was then) the organization's new Health Emergencies Programme (WHE). About a year later, in late 2018, I returned to the same location to continue my fieldwork, this time as a non-paid ("one-dollar contract") consultant (for additional details on this phase of the research, see appendix 1).

What became clear to me during that period was that the phenomenon I was studying is highly dynamic, dispersed, and mobile. Everything and everyone seemed to be constantly on the move (myself excluded). Various people from different parts of the organization and from outside the organization would arrive and leave on a regular basis: experts and scientists, policymakers and bureaucrats, consultants and researchers, activists and journalists; they would attend meetings, consultation, workshops, exercises, and gatherings of all sorts that took place alongside the routine flow of work. Multiple projects, plans, and initiative would be mentioned, discussed, and built – sometimes disappearing without notice; occasionally, but not always, returning after a while. It seemed that WHE staff members were not often present simultaneously all together at the Copenhagen office. Usually, at least one staff member, if not more, was somewhere else, whether a meeting in Istanbul or a workshop in Geneva. That constant movement of different parts is something that characterizes the global governance of health emergencies, and perhaps also global health and global governance in general. Officials from London and Paris meet in New York or Geneva as new alliances and initiatives are formed and launched in Brussels; epidemiologists in

Copenhagen and public health officials in Berlin become alarmed as a market in Wuhan closes down and people are hospitalized with a mysterious pneumonic disease.

I understood that research in such volatile, dispersed, and shifting setting calls for the use of multi-sited ethnography. By that I do not simply refer to fieldwork in delocalized settings. That is, in multiple localities. But more broadly, to a flexible and open-ended framework to explore and experiment with innovative methods, that is sufficiently structured to allow organized and effective work, and that enables inquiry into connections, networks, and simultaneous movements between and within them (Marcus 1995, 2007).

Thus, in the light of my exploration of the research subject, especially the initial fieldwork at the WHO's emergency programme, I redesigned the research to make it more flexible and adaptive. The idea was that research process would develop in accordance and together with the field itself, and my movements and interactions within and between specific sites and nodes. Pivoting to this design proved particularly advantageous from early 2020, as on-site data gathering and face-to-face interviews (and traveling in general) became largely impossible.

The research was to continue in two additional (and connected) sites that appeared to be key: Germany and the EU. In the former case, I wanted to mainly focus on the Robert Koch Institute (RKI), the central public health agency of Germany and a rising global health actor; and in the latter case, on the European Centre for Disease Prevention and Control (ECDC), the EU's public health agency. Those organizations were also to serve as "anchors" as I moved around and across the networks that constitute the complex domain of governance that is the subject of this research. In other words, I collected data not only from the three main sites of the research (WHO, RKI, and ECDC), but also from other sites that are connected to the three primary sites, which I followed, in a more limited capacity, as secondary, minor sites (see appendix 2).

Importantly, due to the location of the three main "anchors", but also as a strategic choice, I sought to concentrate as much as possible on collecting data that pertains to or is produced by actors, bodies, or entities that are based in Europe. Therefore, the research is on the global governance of health emergencies but is centered on what is largely a European level or experience, which is a representation or dimension of this governance. It should also be noted, however, that the focus on Europe was not absolute. The networked and complex nature of the field, the dynamic and flexible design of the research, and the genealogical approach to studying the historical development of the

field meant that attention had, at several points, turned to occurrences, instances, issues, and actors beyond Europe, and especially to those in the USA.

Concrete plans to begin fieldwork at the RKI were already in the making after I visited Berlin in November 2019 and interviewed key personnel from the institute (who expressed enthusiasm for the prospect of such fieldwork taking place). Then came 2020 and COVID-19. Everything stopped and I had to pivot.

1.8.4. *Pivoting (II): Conducting ethnographic research on the governance of health emergencies during the health emergency of COVID-19*

> It's becoming increasingly difficult to do the research. A while ago a potential interviewee finally answered my reach-out Email and we corresponded until yesterday she wrote to me, saying that: 'Unfortunately, at the moment, my time is fully occupied with several active outbreaks, and I won't be able to speak with you in the immediate future'. Such replies have become more frequent in recent weeks. To make things worse, today I received an Email from a key contact in the RKI. He wrote that he is very sorry but at the moment there is 'no chance' to move forward with the plan to conduct fieldwork at the RKI, especially because their units are busy now with the new coronavirus. (Personal fieldnotes, January 2020)

As the COVID-19 pandemic (or what would eventually turn out to be a pandemic) began to unfold, it soon became clear to me that something important was happening and that I needed to add this as a case study. At first, as information trickled, I collected every piece of data I came across and followed any open source of information I could find as a way to track developments and discourses concerning this event that was in the making. Then it poured. I was showered with an endless and excessive amount of information that seemed to come from every direction.

Despite being overwhelmed by that abundance of data, I was motivated to continue my research. In a way, the pandemic reasserted and provided me with confirmation that I was "onto something" when I decided to study the governance of health emergencies back in 2017. On the other hand, I was also discouraged. Traveling abroad for fieldwork was no longer possible and interviews could only be conducted virtually. Thus, one of the key elements of ethnographic research largely became irrelevant – the kind of personal relationship and network building that demand sustained engagement and interaction in the field.[9] Even worse, some of the contacts that I had in the field and worked so hard to develop a relationship with simply evaporated. Those working in and around the governance of health emergencies were preoccupied, to say the least. Then, they became

overwhelmed by the endless work involved in efforts to respond to the pandemic. That, in turn, also resulted in fatigue. For those same reasons, getting in touch with new contacts and recruiting new interviewees proved extremely difficult.

At the same time, and much like life itself during the pandemic, the kind of ethnographic data that became not only more available, but also more relevant and important, changed: it was less about physical presence and personal relationships, and more about impersonal, digital interactions. Less about getting access by knowing the "right" people, and more about knowing where to look in order to follow the activities people in the field are engaged in. To an extent, ethnographic research done digitally, whether we broadly refer to it as "netography" (Nind et al. 2013) or specifically refer to the use of "eFieldnotes" (Sanjek & Tratner 2016), is limited because it only captures the dimensions that the technical means and forms of communication involved in such work include. Nevertheless, during the pandemic even those few parts of our public existence that have not yet moved to the digital dimension finally caved. It seemed that the world of health emergency governance moved in many ways to the digital realm.

1.9. Summary and overview of the chapters

To summarize, the research involved a multi-sited ethnography in a dynamic, evolving, complex, and heterogenous assemblage that has emerged through the coalescence of elements of health governance and emergency management practices, ideas, knowledge, and technologies (see Chapter 2), thus constituting a field or landscape of governance that is centered on health emergencies. I therefore opted for an approach that allowed me to flexibly move together with and through sites and nodes in that field, and to pivot when needed. This approach provided me with a horizontal, bird's-eye view of the phenomenon, and that in turn allowed me to explore the relations between the rise of health emergency governance and global health governance, and to engage in the scholarly debate around the conceptualization of emergency (See Chapter 6: "Discussion").

Relatedly, the first of the four main chapters (Chapter 2), on the genealogy of health emergency governance, provides much needed historical context, background, and insight into the contemporary phenomenon in question. In this chapter, I show how a distinct assemblage and field of global governance that is centred on health emergencies formed and emerged, and identify and discuss key factors that enabled and shaped its evolution. I suggest that rapidity and coordinated

flexibility are key issues and features in contemporary health emergency governance systems, and argue that they are rooted and entrenched in the historical development, evolution, and formation of the field.

The other three main chapters, consisting of three case studies, allowed me to ground and focus the research empirically, to investigate it in a more in-depth (vertical) manner, and to comprehend, present, and discuss particular aspects of the researched phenomenon. In the chapter on the resurgence of measles and the management of the disease in Europe (Chapter 3), I unravel the co-constitutive relationship between health emergency governance and the social construction of disease. Specifically, I show how the emergence of health emergency governance plays into, and even (to an extent) may challenge predominating processes, constructs, and narratives in the governmental management of infectious disease. I suggest that the European measles emergency expresses a particular kind of health emergency, where a persistent yet technically solvable problem is rendered into a harbinger or indicator of impending deterioration and disaster. An emergency of regression. Furthermore, I argue that a shift in the practical governmental management of the disease and the construct associated with this management, at least in the case of this (medium scale) health emergency, does not depend on or reflect a change in the categorization or conceptualization of the disease.

In the chapter on the governance of the persistent problem of AMR (Chapter 4), I identify and discuss the boundaries of health emergency governance. I show how this problem has been partially rendered into a ("silent") health emergency and discern key processes involved in that rendering. Specifically, I argue that the problem of AMR has not only undergone a process whereby it became temporally situated as a "crisis", but that the time-space of the problem has been undergoing a process of compression. A process where the future catastrophe of AMR has been reconstituted as an alarming present reality that consists of increasingly frequent events and calls for an urgent response. Thus, I suggest that for a problem to be thought of and acted upon within the contemporary governance of health emergencies, it must first be perceived as eventful and understood through an issue of velocity. Based on that, I further suggest that as problems are increasingly rendered into health emergencies, there is a possibility that governance more generally may become inclined to emphasize and prioritize problems in accordance with their perceived velocity and scale.

Finally, in the chapter on COVID-19 (Chapter 5), I focus on the constitution of this health emergency as an event with a beginning and end. I explore and articulate the multiplicity of processes, forces, and dynamics at play in that regard by analytically distinguishing and examining specific key "vectors" for the constitution of the event. I show that systems of health emergency governance produce multiple coexisting variations of the event, and how the produced event(s) and governmental response is shaped and driven by particular perceptions of scale. I argue that health emergency as an event has no actual end point (or beginning point). However, the ending of the event has a highly significant political role to play in the context of governance. The ending of the event opens up a liminal space between the event and its aftermath. In that, it enables and fosters processes of reflection, change, and transformation within and to governance.

2. The Genealogy of Health Emergency Governance

2.1. Background

In this chapter I present a genealogical study of health emergency governance. Following Foucault's genealogical approach (see "Approach and concepts" section in Chapter 1), the investigation focused on identifying that which made possible the conditions for systematically thinking and acting on problems in the contemporary world as essentially matters of health emergency. The questions that guided the investigation were: How did the governance of health converge with practices, technologies, and ideas of emergency management? How did public and global health institutions and organizations come to actively and routinely manage and address health emergencies? And to what extent and how do contemporary governmental strategies and activities that focus on health emergencies differ from the past?

Here, I trace the emergence of health emergency governance to three key developments. First, the historical evolution of emergency management at the intersection of civil defense, civil protection, and disaster research. Second, the migration of emergency management into public health, humanitarianism, and global health, and its proliferation within those fields. Third, the emergence of a global health emergency governance assemblage in recent years as previously scattered practices and activities of emergency in relation to health, especially in global health, have become more elaborate, organized, systematic, and interlinked.

The empirical focus in my description of the first and second developments is in large part on the United States (US) and, in my description of the third development, on the WHO. One reason for this is that the US and the WHO were central and highly significant in the respective developments. The US was a primary location in which emergency management evolved and migrated into new domains, and US government agencies such as the Federal Emergency Management Authority (FEMA) and the Centers for Disease Control and Prevention (CDC) have been major sources of influence in the adoption and use of emergency management around the world. Further, the WHO has played a prominent role in global health in general and a key role in shaping systematic efforts to govern health emergencies, particularly in its capacity as the international body responsible for declaring, coordinating, and managing responses to Public Health Emergencies of International Concern (PHEIC). A second, related, reason is that most of the existing scholarly, professional,

and grey literature about emergency management, its evolution, and proliferation and adoption in public health has focused on the US, and in the case of emergencies in global health – on the WHO. While I draw on and correspond with this considerable body of work, I also attempt to move beyond it by considering some parallel or overlapping developments in other contexts.

I argue that while the emergence of health emergency governance has been tied to and shaped by developments in global health governance, and indeed – there is still much overlap between them, the governance of health emergencies should not be mistaken for a subfield of global health governance. Further, I suggest that the dynamics between them, particularly as they pertain to the issues of rapidity and (coordinated) flexibility have enabled and driven the expansion of global health governance.

2.2. Emergency management

Emergency management is a distinct professional field, discipline, and expertise that involves programs and trainings, organizations and institutions, knowledge and discourses, and practices and technologies that have developed in and through different contexts (e.g. academia, public health, government) and locations around the world.

There has been a continual challenge in defining emergency management since its scope has changed from time to time (Bullock et al. 2008: 1), and its boundaries tend to expand (Waugh 2015: 17). However, experts and scholars in the field generally refer to emergency management as 'the discipline dealing with risk and risk avoidance' and as an integral part of everyday security (Bullock et al. 2008: 2). Emergency management is about risk management, making it possible to 'live with known and unknown natural and man-made hazards' of different kinds (Waugh 2015: 6).

Emergency managers are experts who studied emergency management or people who have practical experience in this field. The field is very diverse and involves multiple practical orientations such as planning, engineering, finance, logistics, negotiation, and communication. Accordingly, its knowledge is also diverse and consists of works from a range of disciplines, from technical reports in engineering to sociological studies. While practice in the field has been traditionally dominated by a military culture and style of work (e.g. command-and-control), the professionalization of emergency management has led to the adoption of other cultures and styles

of work. This professionalization is expressed by the appearance of multiple professional organizations and associations for emergency management practitioners, such as the International Association of Emergency Managers and the International Emergency Management Society. Such professional associations have, in collaboration with governmental institutions and organizations, developed standards of qualification for certified emergency managers (Waugh 2015: 14-16).

Contemporary emergency management activities, discourses, and practices are organized by several core ideas and notions, but most importantly: the four-phase model that consists of mitigation (occasionally replaced with similar terms such as prevention), preparedness, response, and recovery; and the all-hazards approach in which the four-phase model is applied through generic processes to manage various kinds of hazards. Ideas such as the four-phase model and the all-hazard approach are essential to emergency management. They may occasionally appear in slightly different variations, but they still fulfill the same task – providing 'flexibility' and allowing 'adaptation' to many specific situations (Waugh 2015: 11-12).

Emergency managers work through mitigation, preparedness, response, and recovery towards the aim of reducing, minimizing, or containing disasters and their impacts. Mitigation includes, for instance, changing building regulations to prevent construction in certain hazardous areas or introducing policies that require mandatory use of steel reinforced concrete in construction. Preparedness includes, to mention just a few activities, identifying and mapping risks, writing plans, conducting exercises, and developing and maintaining resources. Response involves functions or activities that can be generally divided into four kinds: first, assessments on the basis of knowledge about the past and present, as well as projections into the future; second, technical operations that focus on the hazard itself to contain impact or prevent further deterioration; third, protection measures that focus on the affected population (e.g. evacuation, providing shelter); and fourth, incident management which involves the allocation and mobilization of resources and general oversight of the response effort. Finally, recovery includes different actions and interventions on issues such as housing and psychological treatment. Recovery solutions, whether long-term or short-term, are deployed in an attempt to restore or re-establish social, economic, and political 'routines' (Lindell 2013: 802-812).

A commonplace narrative in emergency management about the emergence of the field divides between historically age-old attempts by individuals and communities 'to do something' about

disasters, and more 'organized attempts' of complex societies to address disasters in later 'modern history' (Bullock et al. 2008: 1). Such organized attempts in the context of the US, for instance, have been traced back to local governments' efforts to address fire hazards in the 19th century (Waugh 2015: 10), and to new national policies and legislation during the 1930's, albeit these were in very specific areas (mainly, flood control) or in highly limited ways (disaster recovery loans for the reconstruction of certain public facilities) (Bullock et al. 2008: 2). Viewed in that light, emergency management has been understood as 'the quintessential governmental role… for which communities were formed and governments were constituted in the first place' (Waugh 2015: 3). While different kinds of actors are involved in emergency management, from academic institutions to voluntary and philanthropic organizations, a widely held view in the field is that emergency management is foremost the business of government. Emergency management has therefore developed as a government-centered practice and, relatedly, it has also become taken for granted that 'government bears responsibility for continuously anticipating and preparing for emergencies' (Collier & Lakoff 2021: 2).

Having said all that, both scholarly and grey literature largely associate the emergence of emergency management as a specific and distinct field with a certain shift from national civil defense efforts that were focused on preparing the home-front for war, especially a potential nuclear war, to a broader concern with multiple kinds of hazards that include wars, but also earthquakes and floods. Here, I join Collier and Lakoff in revisiting the historical narrative on emergency management by employing a genealogical approach. However, whereas they focus on how, in the US context, a governmental apparatus that initially formed in response to economic depression and industrial mobilization for war turned into a particular kind of 'emergency government' during the mid-20th century (Collier & Lakoff 2021: 5), I focus on the development of emergency management knowledge and practice more generally, and trace this development to the interlinked emergence of both civil defense, civil protection, and disaster research.

2.2.1. Civil defense

The concern with civil defense in the 20th century is linked to technological developments, their military applications, and implications for warfare. Historical accounts on civil defense generally identify its early emergence as a response to the use of aerial bombardments against civilian populations during the First World War and Second World War. Total war, in-which civilians were

not only mobilized for war efforts but also became military targets, created a new front. The realization of this front fostered the development of new technologies (e.g. air raid warning systems), and led governments to fund, coordinate, and establish programs and agencies that focused on civil defense planning and preparedness, occasionally with the involvement of volunteers (Homeland Security National Preparedness Task Force 2006: 4-6).

After the Second World War, governments established and launched civil defense projects to prepare the military and the entire population for a total war that would potentially involve nuclear weapons. These projects underlined the importance of bringing different kinds of actors to work together. Thus, military personnel, bureaucrats, scientists, and others (e.g. architects) were brought together to work on a vast array of issues concerning security threats. As part of this work, studies were carried out, plans were written, exercises were conducted, and bunkers were built. However, countries' civil defense endeavors differed in scope, scale, and aims. For example, whereas Switzerland built a fortified network of bunkers for its entire population, the United Kingdom (UK) built a much smaller network of bunkers for key military and political officials, and only provided the population with information about the potential effects of a nuclear attack and advice on how to protect the household in such circumstances (Deville & Guggenheim 2018). Meanwhile, West Germany's early Cold War civil defense strategy focused on mass evacuation, shelters, and post-attack rescue and recovery (Steneck 2005).

In the US, the responsibility for civil defense moved between different departments and levels of government, and different Administrations advanced different civil defense policies (Homeland Security National Preparedness Task Force 2006). Nevertheless, civil defense became pervasive in everyday life over time. By the 1950's, most states and communities across the US had an official who was responsible for civil defense, usually a retired military personnel (Bullock et al. 2008: 3). Further, as part of the US' early Cold War deterrence strategy, civil defense planners sought to increase the population's survivability in such war by preparing the home front (Oakes 1994: 7). Towards that end, civil defense interventions instilled the population with a new 'Cold War ethic' (Oakes 1994: 7), an attempt to normalize nuclear war and rationally manage the public's fear from it (Masco 2009: 14). Thus, during the Cold War, architects were recruited to design physical spaces for the needs of civil defense (Monteyne 2011); advertising experts, psychologists, and military planners were mobilized to create affective mass media campaigns for civil defense

that encouraged citizens to build fallout shelters in their homes (Masco 2009: 19-21); citizens and civil servants came to imagine and enact nuclear war scenarios as they watched and participated in civil defense exercises (Davis 2007), nuclear detonations, city evacuations, and duck and cover drills (Masco 2008: 363).

Civil defense, in other words, became a centerpiece of US culture and society during the Cold War, forming a 'new social contract' based on 'the national contemplation of ruins' (Masco 2008: 361). US civil defense was also tied to the emergence of a new ethic of preparedness: 'a novel way of understanding and intervening in potential future events' (Lakoff 2008: 400), and to a governmental problematization of 'system vulnerability' and an assemblage of apparatuses that aimed to secure 'vital systems' (Collier & Lakoff 2015, 2021).

2.2.2. Civil protection

In regard to civil protection, I found it useful to focus on the works of the sociologist Enrico Quarantelli, who was one of the founders of disaster research and a highly prominent scholar in the field of emergency management. I first became aware of Quarantelli's work and its foundational significance for the field of emergency management in January 2018, while conducting observations at the "International Preparedness and Response to Emergencies and Disasters" (IPRED) conference in Tel-Aviv. Quarantelli's work is particularly relevant and important here not only because of his theoretical and practice-oriented work, for instance, on the concept of disaster (Quarantelli 1985a), on disaster recovery (Quarantelli 1999), and on organizational behavior in disasters and its implications for disaster planning (Quarantelli 1985b); but also due to his reflections, historical accounts, and insights on the development and state of research on and actual management of disasters.

While some scholars and experts identify 'civil defense' and 'civil protection' as historically and qualitatively distinct fields (Quarantelli 1987), their development (in different countries and in various ways) was intertwined (see examples in Quarantelli [2000: 9-13]). Much like civil defense, civil protection mainly developed after the Second World War and was driven by governmental investments in scientific projects that addressed military-oriented threats. However, according to Enrico Quarantelli (2000), civil protection emerged as a unique profession and distinct governmental responsibility to address disasters of all kinds. A responsibility pursued through designated government organizations or specific functions.

Quarantelli's historical account of how civil protection emerged associates the development of this field with a shift in both societal perception of disasters and collective responses to them.[10] According to Quarantelli, during the 20th century, disasters increasingly came to be viewed as acts of people rather than acts of "god" or "nature". If disasters are perceived as resulting from human action, then 'A hazard at most can only set the stage for an actual disaster; a disaster as a social happening… created by and manifested by dysfunctional human and group behaviors' (Quarantelli 2000: 4). Respectively, because disasters are about people's actions (as individuals or societies), they can be mitigated or managed (Quarantelli 2000). On the other hand, this also means that 'we will have more disasters in the future than in the past, and that their effects… are likely to be greater than before' (Quarantelli 1985b: 2). Correspondingly, he advocated that disaster preparedness planning should rely less on past experience and more on future-oriented thinking and flexibility. This conclusion regarding preparedness is another significant connection or overlap between civil protection and civil defense.

Civil defense and civil protection shared some fundamental ideas about what should be done in practice. However, the distinction between their development usefully points to different issues in the evolution of emergency management and accordingly, to different solutions and discourses within it. Whereas civil defense was tied to issues concerning the preparedness of the population for a nuclear war, civil protection was tied to issues concerning collective or organized action in the face of disastrous events (e.g. natural hazards, accidents). A central debate in the context of civil protection, accordingly, was about what kinds of hazards should be addressed within the scope of this field. Eventually, according to Quarantelli, consensus emerged around the generic all-hazard approach. That is, that the different source or agent of a given disaster is less important than the 'non-agent dimensions that affect responding behavior' (Quarantelli 2000: 6). Dimensions that include, for example, the possibility of forewarning and the duration of impact.

Another important issue in the context of civil protection was temporal. As Quarantelli explained, those who studied disasters, mainly social scientists, differentiated them from other kinds of social problems in the following way:

> Disastrous crises are marked by a sense of *urgency*, a need for a *prompt reaction*, and for *quick action* to prevent a further *immediate*, often *instant*, deterioration of the situation. They stand in contrast to more diffuse and continuous social pathologies such as poverty, unemployment, crime, drug use and other similar

negatively viewed phenomena that sociologists usually treat as part of the social problems of a society (Quarantelli 2000: 5; emphasis added).

Civil protection thus focused on *prompt* and *quick* (*re*)*action* to *urgent* and *immediate* problems. Problems that are not about a population affected by disaster, but about human action in the light of disasters. Indeed, concerns in (civil protection) disaster preparedness and response were mostly directed at responding organizations rather than victims. Organizations mandated with managing collective response to emergencies were seen as insufficiently coordinated and prepared to act (Quarantelli 2000: 19), and perceived to mistakenly understand disaster as a 'minor emergency' on a large scale rather than as a qualitatively different kind of event that requires a different approach (Quarantelli 1985b: 5).

Overall, *civil defense* represented a lens or kind of activity that largely emerged in relation to a governmental concern that focused on securing populations and vital systems from nuclear and other kinds of (mostly) war-oriented threats. Meanwhile, *civil protection* represented a lens and kind of activity that largely evolved from a joint professional or multidisciplinary interest in (non-military) disasters such as mass casualty accidents or natural hazards. Further, civil defense formed in an attempt to secure the population from external (nuclear) threats and involved interventions that often aimed to change people's perception or behavior. Meanwhile, civil protection formed in an attempt to improve collective action in the face of internal disastrous events through a better understanding of people's behavior and ethic.

Finally, the sometimes-overlapping activities of civil protection and civil defense had a similar need for applicable knowledge. This common pursuit of knowledge was a key driver in their development. It enabled and sustained not only government investment in research for both civil defense and civil protection, but also a space of interaction and exchange that contributed to their mutual growth and, in turn, to their eventual amalgamation (with disaster research) into emergency management.

2.2.3. Disaster research

Disaster research has been key to the development of emergency management knowledge. This is both in terms of defining what disasters are, understanding their physical and social impacts, and understanding how these impacts relate to pre-existing conditions (e.g. vulnerabilities), kinds of responses, and recovery efforts (Lindell 2013).

Disaster studies largely emerged in the social sciences, especially in sociology. Some of the first known sociological accounts on disaster include, for example, a study of the 1917 Halifax explosion (Prince 2011 [1920]), and a theoretical model for social change based on the sequence-pattern of disasters (Carr 1932). However, as an organized and distinct sub-field, the sociological study of disasters largely began to form in the 1950's-1960's. During those years, a small number of sociologists from the US advocated disaster research in both academic and policy-making circles (Quarantelli & Dynes 1977: 38). Those researchers were involved in significant government sponsored projects such as the US Strategic Bombing Survey, and were employed by bodies that influenced policy-making in the US, such as the Committee on Disaster Studies of the National Academy of Sciences – National Research Council; and the National Opinion Research Center at the University of Chicago (e.g. Fritz & Marks 1954).

Soon, students who were trained by those researchers conducted similar research in institutions across the country; research on disasters appeared with increasing frequency in sociological and interdisciplinary journals and in reports by research centers; newsletters, edited collections, and books dedicated to the subject were published; new professional journals for disaster research, such as *Mass Emergencies: An International Journal of Theory, Planning and Practice* were established; and international conferences, seminars, and meetings for disaster researchers were initiated (Quarantelli & Dynes 1977: 41). By the 1970's and 1980's, then, a disaster research community with a distinct discourse had formed. In the years that followed, this community flourished and produced increasing amounts of knowledge. Established disaster research centers in the US, such as the Disaster Research Center at Ohio State University (which later moved to the University of Delaware) and the Natural Hazards Information and Applications Center at the University of Colorado, were soon joined by new disaster research centers that opened around the world. Moreover, an increasing amount of universities began to offer degrees and certificate programs in emergency management (Waugh 2015: 16-17).

The disaster research community created a shift in how disasters were approached as objects of knowledge and, ultimately, of intervention. Instead of only focusing on how disasters affect individual-level behavior or psyche, as was commonly done in the years following the Second World War (e.g. Janis 1951), the early sociology of disasters turned attention to responses to disaster at the collective or 'social systems' level (Form et al. 1956: 180). Relatedly, this

sociological research began to theorize disasters (Moore 1956), and thus turned the focus away from 'the unusual, the dramatic, and the abnormal' aspects of disaster behavior to focus more on 'general, typical, and recurrent forms of behavior found in disasters' (Fritz & Williams 1957: 42). In this regard, sociologists of disasters also refuted some of the widely held assumptions (largely rooted in theories about the psychology of the masses) on people's behavior in disasters, such as the idea that 'psychological disturbances render the population of the stricken area completely dependent and helpless' (Fritz & Williams 1957: 45). As disaster researchers turned their attention to learn how people actually respond to disasters, they found that after a brief period of delay due to 'normalcy bias', they tend to adapt to the new situation and protect others in their environment (Lindell 2013: 806).

In turn, this shift in understanding had implications in terms of what was to be done in practice. For example, research suggested that disaster warnings should be issued for the population, that these warnings must be 'clear', 'specific', 'accurate', and reach the whole public, and that action must be taken to ensure that the public does not receive additional information which 'contradicts or distorts' the warning message (Fritz & Williams 1957: 43). Another implication was a greater emphasis on understanding and working in accordance with how people seem to behave in disasters, for instance, with people's tendency to seek safety and protect others in their 'immediate environment' (especially family members) (Fritz & Williams 1957: 44). The problem in managing disasters was, in that sense, no longer that people may topple over each other as they flee the disaster scene, but that 'within minutes following most domestic disasters, thousands of persons begin to converge on the disaster area…' (Fritz & Williams 1957: 46). Further, sociological works on disaster that identified and distinguished between different 'stages' or 'phases' of disaster included in this division the aftereffects of disaster. Accordingly, post-disaster activities, reforms, and reorganization were to focus on returning to 'normal living' (Moore 1956: 737).

By creating knowledge and advocating policy changes, disaster researchers significantly re-problematized disasters as an object of governmental intervention: the problem being no longer about people's irrational, panicked, self-serving, or exploitative response to disasters and the potential havoc such behavior entails; but instead, about people's often good-willed attempts to assist that cause disorganization and damage. That is, a concern with the effective organization of a timely and rapid response and coordination of collective action. This problem subsequently led

to developments in the context of emergency management. For example, in recent decades 'vulnerability' emerged as a central concept that displaces previous notions that people affected by disasters are "victims" in need of saving and focuses on broader social dynamics that make certain populations and individuals more vulnerable to disasters and their impacts (Lindell 2013: 813; McEntire 2005).

Importantly, both civil protection, civil defense, and disaster research embedded an emphasis on rapidity and flexibility. In civil protection, it was in a more technical-practical sense. In civil defense, it was in a more strategic sense. In disaster research, it was in a more epistemological sense. Eventually, those three senses came together in what became emergency management. Thus, as practices, technologies, and ideas of emergency management traveled into new contexts and areas of work, so did the embedded emphasis on rapidity and flexibility.

2.3. The migration and proliferation of emergency management

After initially appearing in the context of civil defense preparedness for nuclear war, techniques such as catastrophe modeling, vulnerability mapping, coordination in emergency planning and response, and scenario-based exercises were integrated into broad emergency management frameworks for various kinds of emergencies, usually under a designated national institution, agency, or unit (e.g. US FEMA; the UK's Civil Contingencies Secretariat) (Anderson & Adey 2012; Collier & Lakoff 2008, 2015). Meanwhile, civil protection and disaster research brought into emergency management the all-hazard approach and the emergency cycle.

The emergency cycle is a theoretical model now commonly used in emergency management. The distinct stages of the emergency cycle or the four phases of disaster (e.g. mitigation, preparedness, response, recovery) largely emerged in the 1970's in the work of disaster researchers who developed the idea that disasters have different stages. In the following decades, this model for understanding and working on disasters was widely adopted by emergency management authorities across the US, mainly after a project commissioned by the U.S. National Governors' Association on state level emergency planning introduced a typology based on a similar idea for distinguishing between the different stages of disaster (Quarantelli 2000: 17).

Towards the end of the 20th century, the migration and proliferation of emergency management accelerated. One driver for this was the US' dominance in the international system which meant

that emergency management, as applied by US government authorities, was adopted around the world. The US Federal Emergency Management Authority (FEMA) was 'recognized as the preeminent emergency management system in the world' and therefore 'emulated' in various countries (Bullock et al. 2008: 12). A second driver for the proliferation of emergency management during that period was the increasing amount of academic institutions that offered emergency management programs and degrees (Quarantelli 2000), and that emergency management became 'a respected, challenging, and sought-after profession' (Bullock et al. 2008: 13). A third driver for this proliferation was emergency management experts who moved into new organizations and fields. Over the years, emergency management practices, technologies, and concepts migrated with those experts into new contexts, including that of health, and into various governmental and non-governmental organizations that operate on international, regional, national, and local levels. A fourth driver was international organizations. By the late 1990's emergency management was adopted by governmental international organizations such as the UN's Department of Humanitarian Affairs (later replaced by the UN Office for the Coordination of Humanitarian Affairs [OCHA]) (Quarantelli 2000), as well as by international non-governmental humanitarian organizations (see below). The international adoption and implementation of emergency management in this period was especially driven by the UN General Assembly decision in 1988 that the international community should focus on Natural Disaster Reduction in the coming decade (UN General Assembly 1988).

A specifically representative example for how the proliferation of emergency management on the international level came about during the 1990's and 2000's is the UN's Inter-Agency Standing Committee (IASC). The IASC was established in 1991 as a forum of different UN organizations to coordinate policies, strategic priorities, and responses in 'humanitarian crises' (IASC n.d.). This forum, and more specifically – the IASC secretariat and working groups, promoted the use of emergency management practices and techniques internationally through guidelines (IASC Reference Group on Contingency Planning and Preparedness 2001), implementation guidance documents (UN ISDR & UN OCHA 2008), tools (IASC 2005), and as I learned in an interview with one emergency exercise expert who worked for governmental international organizations during that period – also through training programs and workshops (also see, for example, IASC Task Force on Training 2004).

In parallel to all of those development, in the light of particularly significant events that occurred in the first decade of the 21st century, such as the 9/11 attacks, emergency management not only became more concerned with specific issues such as terrorism, but also started to migrate into new domains, for example: homeland security and public health in the US (Collier & Lakoff 2008; Lakoff 2008); This was accompanied by institutional restructuring as evident, for instance, in the incorporation of the US Federal Emergency Management Authority (FEMA) into the Department of Homeland Security (DHS) in 2002 (Bullock et al. 2008: 13- 21); structural reforms in UK civil protection with the Civil Contingencies Act of 2004 (National Archives 2004); and the creation of a new national emergency management system in China following the 2003 SARS outbreak (Lim 2020). It was also accompanied by the emergence of new regional and global systems that have addressed potential emergencies that transcend and disrupt boundaries – whether disciplinary, administrative, or geopolitical.

In the case of the European Union (EU), a regional system emerged through the Civil Protection Mechanism that was established in 2001 (initially under the European Commission's Directorate-General Environment). As a European Commission (EC) official who is familiar with the history of the mechanism explained to me, at first, the mechanism aimed to provide a structured way to coordinate between EU member states in emergencies and to 'set the role for the European Union, for the [European] Commission, and for DG ECHO [Directorate-General for European Civil Protection and Humanitarian Aid Operations]' in this context. The establishment of such a mechanism was related to a realization among EC staff that there is a need to coordinate between and support member states in emergencies. However, as 'limitations were noticed', in subsequent years 'there was a gradual development'. In 2007, a monitoring and information center was established and 'led to more active interaction between member states and the commission'. This, in turn, demanded a more 'structured and predictable cooperation between member states and the commission'. Furthermore, 'lessons learned' from emergencies that occurred pointed to some 'deficiencies in the way the system was set up'. Thus, by 2013, the Union Civil Protection Mechanism (UCPM) and emergency response coordination center took their 'proper' form.

Nevertheless, the EC official continued to explain, lessons learned from the 'unexpected' forest fires in Europe in 2017-2018 not only reiterated the need for better coordination, but also pointed to certain issues in the UCPM, mainly its reliance on limited resources and capacities that are

voluntarily provided by member states, usually on an ad hoc basis. Therefore, in addition to increased financing and a new 'voluntary pool' (later, named 'civil protection pool'), a new component was introduced to the mechanism: 'rescEU', which has allowed the EC to manage the UCPM resources and to decide on deployments (with the agreement of member states). This component has furthermore involved a 'European reserve of resources', including firefighting planes and helicopters, medical evacuation planes, and 'a stockpile of medical equipment and field hospitals that can respond to health emergencies, and chemical, biological, radiological, and nuclear incidents' (European Commission 2021c). Indeed, according to the EC official, the mechanism has been undergoing additional changes recently in the light of the COVID-19 pandemic, which reiterated and exposed the mechanism's 'limitations' in a situation where multiple emergencies occur and affect member states simultaneously. One aspect of those changes is an effort to improve planning and preparations for future emergencies through the introduction of new components such as 'disaster resilience goals for the whole Union' and 'scenario building and planning for the mechanism'. Another aspect has involved the development and strengthening of medical-oriented capacities in the mechanism, such as medical expertise, medical stockpiles, and medical evacuation.

The evolution of the EU's Civil Protection Mechanism illustrates how regional emergency elements emerged to eventually become a system through institutional procedures that worked to address an issue of coordination. It also illustrates how the emergence of the system was tied to processes of learning. That is, the system is not only mandated to address emergencies, but also to comprehend and learn from them. Thus, the system and its environment are repeatedly modified, and their activities and responsibilities are gradually expanded, in the light of emergencies.

2.3.1. *Emergency management and public health*

In recent decades, emergency management has been integrated into public health and adapted for this specific context. The emergency management cycle of mitigation, preparedness, response, and recovery has become an essential part of public health and traditional public health actions and practices such as vaccinations have been categorized by and addressed through the different phases of the cycle (Rose 2017: 127-128). An important factor in this process has been biosecurity. Scholars have shown how the problem of emerging and re-emerging diseases as well as the malicious weaponization of pathogens (Armstrong 2017; King 2002; Cooper 2006), has driven the

rise of global and national biosecurity assemblages (Collier & Lakoff 2015: 43-44; Lakoff & Collier 2008; Samimian-Darash 2009). Those assemblages have adapted and modified a variety of emergency management techniques, practices, and concepts for the public health context, as seen for example in pandemic exercises, antivirals stockpiling, and syndromic surveillance (Armstrong 2012; Fearnley 2008; Lakoff 2008; Rose 2008; Samimian-Darash 2013; Schoch-Spana 2004).

The engagement between elements of public health and emergency management within biosecurity assemblages has been continued and sustained by government funding for health security preparedness activities that involved and were often led by national health institutions or agencies (e.g. the Public Health Emergency Preparedness program led by the US CDC). Correspondingly, the relationship between those elements has been defined in technical documents and guidelines, and institutionalized through new legislation and policies (e.g. the UK's 2004 Civil Contingencies Act). Moreover, engagements on the professional level were routinized through designated working groups and joint committees at international, national, and local levels; peer reviewed journals (e.g. *Health Security*; *Disaster Medicine*); and academic programs and centers (Rose et al. 2017: 127).

As public health emergency management has become increasingly standardized (although different standards exist) and professionally distinct, global and public health organizations were internally reshaped to accommodate a whole new infrastructure that supports the implementation and use of Incident Management Systems, Emergency Operation Centers, emergency operations plans, information technologies, risk communication plans, communication and surveillance systems, routine trainings and exercises, and logistical operations (Rose et al. 2017: 128-132). In parallel, ideas, practices, and technologies of emergency management in public health have been modified and reshaped in accordance with specific challenges, knowledge, and expertise of public health.

2.3.2. *Humanitarianism, global health, and emergency*

Before I move on to show how emergency management was taken-up and accommodated in global health, there is a related and important juncture in this evolution that needs to be considered: that which involves humanitarianism. While there are many conceptualizations of humanitarianism, perhaps the most influential kind is that which views it as an apolitical endeavor to aid those who

suffer. Humanitarianism's self-perception as 'an essentially benevolent and beneficial action targeting anybody in distress and need' (Sørensen 2006: 15), was foundational for humanitarian thought. Accordingly, humanitarianism has been understood by many as the 'impartial, independent, and neutral provision of relief to those in immediate danger of harm', which had also become associated with human rights, the provision of medicine, economic development, and governance (Barnett 2005: 724). On a basic level, then, contemporary humanitarianism largely developed as a general ambition to alleviate suffering. However, the history of this development is complex and can be traced back, for instance, both to the emergence of certain 'moral sentiments' in Western societies starting from the 18th century (Fassin 2012: 4), and to 18th-20th century European colonialism (Rostis 2016: 6-7).

Humanitarianism and emergency management have been entwined in more than one way, especially due to their shared interest in similar kinds of disastrous situations or emergencies. Humanitarian actors at both national and international levels have long been a part of disaster response activities – arriving at disaster sites to provide relief (Ticktin 2014: 280-281). Moreover, as disaster research recognized the role that humanitarian motivations and actors play in disasters (whether in the form of pre-existing voluntary organizations or spontaneous actions of individuals) (Quarantelli et al. 1966; Shaskolsky 1967), emergency management has included a dimension of interaction with such actors (see Bullock et al. 2008; Waugh 2015). Further, as indicated above, towards the end of the 20th century, government agencies and institutions that had established emergency management capabilities for domestic disasters began to send designated disaster relief teams abroad to assist in international humanitarian interventions (Russbach 1990). Those teams (usually as part of a broader military or international development mission) have joined transnational nongovernmental (humanitarian) organizations such as Médecins Sans Frontières (MSF) in what has been described as an 'established apparatus for crisis response' (Redfield 2005: 343).

From around the 1990's and early 2000's, humanitarianism as a discourse, practice, and form of reasoning became an important factor and driver in both national and international politics. During those years, humanitarian interventions began to appear as 'an integral part' of international responses to conflicts, especially due to Western governments' strategy 'to transform conflicts, decrease violence and set the stage for liberal development' (Duffield et al. 2001: 269). However,

such interventions in war-ridden areas were not merely justified or framed as humanitarian. More broadly, they indicated a form of 'humanitarian government' (Fassin & Pandolfi 2010), consisting of a military-humanitarian logic of intervention aiming to rescue human lives in various emergency situations such as hurricanes, earthquakes, epidemics, and conflicts through the means of technical experts. According to Didier Fassin, this humanitarian government which focuses on 'suffering and misfortune' emerged in response to a new moral economy premised on 'humanitarian reason' (Fassin 2012: 7), and as global humanitarian action was increasingly institutionalized by states and international organizations. Indeed, as McFalls (2010) suggested, while during the Cold War humanitarian interventions were relatively autonomous and separate from state and international powers, during the 1990's and early 2000's they became increasingly ingrained with them. This change was driven by increasing cooperation between humanitarian organizations and military forces, multiplying connections between nongovernmental humanitarian organizations and states and international organizations both financially and organizationally, and cadres of experts constantly moving between those different types of institutions and organizations.

The convergence of (national and international) governmental and nongovernmental actors in global crisis response and the blurring boundaries between humanitarianism, development, and military in that context led to exchanges of knowledge, practices, and techniques between different actors (e.g. Goldschmidt & Kumar 2016; McEntire 2004; Stenchion 1997). In turn, elements within the global crisis response apparatus increasingly employed emergency management practices and techniques as part of their work. This is evident in humanitarian and development organizations' various efforts to (for example) develop 'surge' or 'emergency' capacity (Braun 2004; Emmens & Houghton 2008); reorganize their structure while designating specific departments for disaster management (Samii 2002: 1-2); and publish emergency preparedness and response manuals (CRS 2002).

In recent decades, that apparatus has been increasingly entwined with global health. That entanglement has been expressed in what Lakoff observed as 'humanitarian biomedicine' being one of (at least) two regimes or rationalities that are now dominant in global health:

> If global health security focuses on protecting nation-states, especially in the advanced industrial world, from the social and economic threat posed by emerging diseases, humanitarian biomedicine emphasizes the need to save all lives,

regardless of political boundaries, from treatable but deadly maladies as malaria, tuberculosis, and HIV/AIDS. (Lakoff 2017: 10)

The humanitarian biomedicine regime and the global health security regime of global health are both biopolitical but have different aims. Whereas the latter aims to protect nation-states and their populations, the former attempts to protect human life in general. Lakoff's analytical distinction thus points to a particular kind of concern within global health, a humanitarian-biomedical concern for human life.

To conclude, emergency management practices, technologies, and ideas were introduced into global health governance through two distinct (but possibly overlapping at times) pathways. One involved emergency management as it evolved in the context of biosecurity assemblages and their public health elements. The other involved emergency management as it evolved in the context of a global apparatus of humanitarian emergency interventions.

2.3.3. Global health emergency management

The WHO has been one of the most significant actors driving the proliferation of emergency management in global health governance. While the WHO employed the term "emergency" on various occasions during the 20th century, for example, in regard to Tuberculosis (WHO Global Tuberculosis Programme 1994), it was not until around the turn of the century that the organization started to engage with techniques, practices, and principles of emergency management. One such engagement was related to the WHO's technical work in planning for medical aspects of radiation emergencies – the development of the 'Joint Radiation Emergency Management Plan of the International Organizations', which was led by the International Atomic Energy Agency (IAEA 2000). Another was the WHO's engagement with other international organizations as part of the Inter-Agency Standing Committee (see above). More importantly, however, the introduction of emergency management to the work of the WHO and into global health governance more generally was made possible by the revisions of the International Health Regulations (IHR).

The IHR of 1995 and the resolutions adopted by the World Health Assembly (WHA) in 2001 and 2002 expanded the WHO's legal mandate and responsibility to engage in activities such as early detection and rapid response to public health threats (Gostin & Katz 2016). Next, the revised IHR from 2005 compelled WHO member states to undertake emergency preparedness and response

activities. Accordingly, as Rose et al. note (2017: 131), public health emergency management soon became a 'prominent fixture in global health initiatives'.

Significantly influenced by lessons from the 2002-2003 SARS (Severe Acute Respiratory Syndrome) epidemic, the revised IHR of 2005 emphasized transparency and prompt reporting (Gostin & Katz 2016: 266-267), and introduced significant changes that promoted emergency-oriented components, most importantly: member states would be required to notify WHO of 'events that may constitute a public health emergency of international concern according to defined criteria,' and procedures were set in place whereby the WHO director-general may declare a Public Health Emergency of International Concern (PHEIC) (WHO 2005: 1). PHEIC was broadly defined as 'an extraordinary event' that constitutes 'a public health risk to other States through the international spread of disease' and could 'potentially require a coordinated international response' (WHO 2005: 9). Thus, the scope of emergencies in the IHR was not limited to a specific set of disease nor to infectious disease in general. An event can stem from any 'illness or medical condition, irrespective of origin or source, that presents or could present significant harm to humans' (WHO 2005: 1).

One implication of that was that the WHO started to routinely monitor member states' implementation and use of emergency management, for instance, by surveying countries' health-sector emergency preparedness (WHO 2008). Another implication, as Hanrieder and Kreuder-Sonnen argued, was that the revised IHR gave the WHO new emergency powers, supposedly: the authority to decide on the state of exception which effectively allows the WHO director-general 'to shift to a quasi-autocratic style of decisionmaking during a state of emergency' (Hanrieder & Kreuder-Sonnen 2014: 338). More than this, the WHO now also had the mandate to practically address and work on a broad range of *events* that affect health across borders, rather than a specific disease or population. The WHO therefore became increasingly proactive and engaged in high-profile disaster events. In the WHO's Western Pacific Region, for instance, that included events such as the 2011 earthquake in New Zealand and the 2011 earthquake, tsunami, and nuclear accident in Japan (WHO Regional Committee for the Western Pacific 2011). The significance of the shift lied in that it invested the WHO with legal-procedural powers to manage emergency events and provide solutions to emergency-related problems, which in turn enabled the organization to undertake emergency management activities of its own.

Following the H1N1 pandemic in 2009, 'the first Public Health Emergency of International Concern' (WHO 2011a: xiii), the WHO began to undertake emergency management activities in practical, interventional terms. This was after a Review Committee, assigned to evaluate the effectiveness of the IHR and scrutinize the WHO's response, identified problems in the event and suggested an array of solutions:

> Influenza pandemics will continue to occur, if history and science are any guide. In this sense, influenza is grossly predictable. However, exactly when, where and how severe the next influenza pandemic will be, no one can predict… at present, lack of certainty is an inescapable reality when it comes to influenza. One key implication is the importance of flexibility to accommodate unexpected and changing conditions. The ability to take action in the face of uncertainty and to adapt rapidly to new circumstances are hallmarks of sound public-health practice and emergency management. (WHO 2011a: xv)

In what can be seen as a post-hoc account or scrutiny, the experts in the review committee analyzed the international response to the influenza pandemic in a way that echoed some of the basic principles of emergency management, namely – that there will be another emergency but the time, location, and scope of this emergency are uncertain; and that flexibility and rapidity are therefore required. Further, the committee promoted ideas that are rooted in emergency management by linking them to existing frameworks and activities. The committee concluded that the world should be better prepared for health emergencies by advancing the implementation of the core capacities specified in the IHR, as well as research, work across sectors, improved health-care systems and health status, and economic development. Most importantly, at the same time, the committee recommended that the WHO 'strengthen its internal capacity to respond to a sustained Public Health Emergency of International Concern, such as a pandemic', by creating an internal capacity to 'carry out its role in coordination and global support', establishing an event management structure, and ensuring the availability of a trained workforce (and the organizational mechanism to sustain this workforce) that 'will be automatically released from their normal duties for an unspecified duration' (WHO 2011a: xxii).

In addition to that workforce, the WHO and its member states should build on the existing Global Outbreak and Alert Response Network (GOARN) to collaboratively develop and establish a 'Global Health Emergency Workforce' (WHO 2011a: xxv),[11] a cohort of experts and public health practitioners to be mobilized in response to health emergencies (at the request of countries for

assistance). Moreover, according to the Committee, member states should start a contingency fund (of 100 million USD at least) to support the WHO's response to emergencies (WHO 2011a: xxv). Some of these recommendations were soon implemented while others would have to wait.

Post-hoc analyses, such as that in the light of the H1N1 pandemic, have driven the proliferation of emergency management in global health governance and shaped the gradual evolvement of the WHO's emergency work. Soon, the WHO not only internally routinized the use of emergency management practices, technologies, and knowledge, but also assumed the role of global coordinator in health emergencies, for example, as part of the UN health cluster in 'humanitarian emergencies' (WHO 2011b: 7), and as a leader in 'the international response to public health emergencies' (WHO 2011b: 21).

The WHO increasingly engaged in emergency management activities through joint UN programs and projects, especially the 2005-2015 Hyogo Framework for Action, and accordingly embraced emergency risk management tools and collaborated with disaster risk reduction experts to develop a Health Emergency Risk Management (HERM) Framework based on a 'multisectoral whole-of-government, whole-of-society approach across all-hazards' (WHO 2013a: 1). Indeed, in the WHO's 2013 pandemic influenza risk management guidance (WHO 2013b), the all-hazards emergency risk management approach was introduced for pandemic influenza risk management, and that became linked to existing activities in the context of emergencies such as capacity strengthening (in accordance with the IHR).

In parallel to the use of emergency management practices of risk mitigation and the all-hazards approach, the WHO also became concerned with vulnerabilities in health emergencies: not merely vulnerability to pandemic influenza, but also to chemical and nuclear incidents; not merely in relation to the direct impact of disasters on health, but also in relation to secondary hazards (e.g. cholera outbreaks caused by floods); not just the impact of emergencies on health systems, but also how those emergencies destabilize health systems (WHO 2013b: 11).

As the WHO developed its organizational and technical capacities, building resources, knowledge, and expertise to address emergencies, emergency management practices were soon not only employed but also promoted by the organization. The proliferation of emergency management in global health was therefore driven, for example, by the WHO's work to support countries in developing capacity, strengthening systems for surveillance, response, and preparedness, and

building 'more resilient health care institutions' (WHO 2011b: 7); and by interventions to ensure the inclusion of the health sector in national emergency and disaster risk management programmes (WHO 2015d: 7). Another noteworthy actor in that regard is the US CDC, which engaged in similar kinds of activities (both in collaboration with the WHO and separately), supporting the development of public health emergency management capacity in countries around the world (Brencic et al. 2017; Rose et al. 2017: 131).

2.4. From global health emergency management to the governance of health emergencies

During the second decade of the 21st century, emergency work in global health governance evolved, becoming more than merely a scattered use of emergency management practices, technologies, and ideas. That evolution has been driven by a combination of developments that were also tied to a process wherein the boundaries of global health governance have expanded and the meaning of health has undergone change.

In the light of highly salient "global" emergencies that occurred in the early 21st century, global health has been expanding into neighboring domains such as humanitarianism. This is evident not only in the large number of global health professional out of those who I met and interviewed that have work experience in humanitarian NGO's, but also in that, as a prominent humanitarian and biomedical expert told me: 'global health is in everything and it is shifting constantly'. An impression that certain areas of humanitarian action are becoming part of global health. Indeed, as humanitarian practitioners, emergency medicine experts, and others launched new projects and initiatives that aimed to regulate, standardize, and professionalize health emergency interventions, those endeavors have often become the primary responsibility of global health actors or a part of frameworks that are hosted or led by global health actors.

A particularly significant development in that regard was in the aftermath of the 2010 earthquake in Haiti, which saw new attempts to improve medical relief in global emergencies and to make it part of a broader, more professional and organized interventional scheme. This ambition was driven by experiences of healthcare teams (mainly from North America and Western Europe) who were deployed in Haiti, particularly the experience of a team from New York that was shared in a widely circulated letter, in the news media, and in a journal article.

> We thought the plan was a good one. We were incredibly naïve. Disaster management on the ground was nonexistent.… we had no clue the medical infrastructure of the country was so poor.… The hospital was forced to undergo lockdown closing its gates to the outside and outside crowd becoming angry.… Jamaican soldiers with M-16 were necessary to escort us out with our luggage as the crowd outside saw us abandoning the hospital. (Jones 2010)

The letter by Dr. Dean Lorich, a member of the team that was led by Dr. David Helfet, describes a situation that effectively amounted to a lack of governance in emergency. Under those unruly circumstances, healthcare provision and biomedical humanitarian aid were highly ineffective.

> Still, nobody with a clear plan is in charge, and care is chaotic at best. Doctors are coming into the country with no plan of what they are going to do, and nobody directing them how to do it. Surgeons who expect to show up and operate will be mistaken.… Our role back in New York is to expose the inadequacies of the system in the hopes of effecting change immediately. (Lorich et al. 2010)

To be sure, what matters is not whether this perception of the situation is accurate or biased, but that it echoed a certain sentiment or notion that multiple health-oriented professionals, practitioners, and humanitarian workers had at a particular moment, and that it marks a growing understanding among them that there is a problem with how emergencies are governed. In other words, a problematization that enables and provokes responses. In this case, the response to that problem embarked on the military-humanitarian nexus or logic of emergency intervention, but also promoted a shift away from it:

> Nongovernment organizations (NGOs) like PIH [Partners in Health] and Doctors Without Borders are generally able to move quickly into a disaster zone but lack their own security force and are each a small part of a larger relief effort. Military-associated organizations like International Medical Surgical Response Team (IMSuRT) have the advantage of a predefined plan and a built-in security force. Any such US government/military-supported groups, however, have the disadvantage, as happened in Haiti, that the political ramifications of a rapid US military influx can be seen as a threat to a nation's sovereignty. This can delay their deployment when they are needed most.… A model for the next large-scale disaster response would best integrate the rapid response of NGOs with the large-scale logistical and security support of military-associated organizations. There needs to be a real chain of command—and a "General Patton" in charge! (MacIntyre et al. 2010: 201)

From that point of view, emergencies as the one in Haiti would be better addressed through a new approach, an organized and possibly hierarchical structure that has the advantages of both military organizations and humanitarian NGO's.

Such ideas were subsequently taken up in a meeting (hosted by the Karolinska Institute and the Pan American Health Organization/WHO Regional Office for the Americas) that was held in Cuba in December 2010. Participants in the meeting, which included not only professionals and experts in health and humanitarianism, but also WHO personnel and representatives of national governments, discussed the Haiti response and how to standardize and coordinate between 'Foreign Medical Teams' (FMT's). As a result of the meetings, a small working group on FMT's was formed under the Global Health Cluster (part of the cluster system of the UN Inter-Agency Standing Committee) with the aim of improving medical operations in emergencies through standardization of work and qualification of response teams.

In a meeting in late 2011, the working group identified a need for a mechanism that would register teams and ensure their quality. In 2013, the working group published a document that made a first step towards the establishment of such a mechanism: 'Classification and minimum standards for foreign medical teams in sudden onset disasters' (Norton et al. 2013). While initially it was only hosted by the Global Health Cluster (that is led by the WHO), by 2014 the working group turned into a programme that was integrated into the WHO's work on emergencies.

Within the WHO, the programme was at first limited to the production of policy papers for international medical teams in natural disasters, but quickly grew to encompass all-hazards and activities that concern operational aspects, such as the coordination of missions, certification processes, exercises, and trainings. The 2014 Ebola epidemic in West Africa was of particular importance to this development. While the WHO strictly relied on GOARN in the early phase of its response, at the height of the epidemic the organization coordinated the deployment of 58 FMT's. In February 2015, a global meeting of FMT's in Geneva that focused on the Ebola epidemic also resulted in plans to further develop the initiative. By July, the WHO established the classification and registration mechanism for FMT's. In a global meeting in Panama in December, the governance structure and goals of the initiative were set, and the programme was renamed 'Emergency Medical Teams' (EMT's) (WHO 2015d: 8, 2016c: 10-11).

Another significant development was in the area of health security. The Global Health Security Agenda that was first introduced in 2014 in the light of a series of health emergencies – SARS (2002), H1N1 influenza (2009), MERS-CoV (2012), H7N9 influenza (2013), and Ebola (2014), prompted emergency-related work and activities that sought to 'enhance country capacities to prevent, detect and respond to infectious diseases', mainly through 'multi-sectoral engagement and collaboration' and 'common, measurable targets' (Global Health Security Agenda n.d.[a]). Activities in that regard have included, for example, support for the establishment of national public health Emergency Operations Centers (EOCs) (Rose et al. 2017: 131).

Correspondingly, the WHO established a network of public health EOC' as well as an array of EOC's across its regional and headquarter offices (WHO 2013d). The organization then created knowledge on EOC's and began to standardize them (WHO 2014a, 2015c). By 2018, the WHO published its *Handbook for Developing a Public Health Emergency Operations Centre* (WHO 2018). Further, the WHO began to classify and differentiate between kinds of emergency events (WHO 2011b: 6), on which an event grading system and a complementary hazard-classification table were based later on (WHO 2017c: 66).

Thus, systems of health security have played a role in the development of health emergency governance systems and played into learning processes. That can be seen specifically in relation to how the WHO and the EU developed in-house expertise and began to work systematically on health emergencies.

Health securitization processes in the EU (see: Bengtsson & Rhinard 2019) contributed to the formation of regional health emergency governance systems. An array of new surveillance technologies, institutional structures, legislation, and information-sharing platforms for health security were key in that regard. For example, the *European medicines regulatory network* is a coordination mechanism that facilitates the regulation of medicines at the EU level. It links national authorities that regulate medicines within member states of the European Economic Area (EEA); the European Commission (EC); and the European Medicines Agency (EMA). National authorities provide experts to the EMA's scientific committees and working groups. The EMA, the EU's regulatory agency responsible for providing science-based information, assessments, and recommendations about medicines, is the central actor in the network and coordinates between the national authorities. The EC uses the recommendations of the EMA to make decisions involving

medicines (for the EU), for example, whether to authorize the marketing of a certain medicine (European Medicines Agency 2016).

Health emergency work thus no longer merely means emergency management applied on an ad-hoc basis or in a scattered fashion. A new area of interconnected, organized, and systematic governmental activity has evolved, that revolves around a broad concern with health emergencies as a problem of governance. A particularly significant moment in that evolution was the international response to the 2014-2016 West African Ebola epidemic, a highly politicized event that was constructed as a crisis (McInnes 2016). Especially given widespread criticism of the international system's "failed" response to this crisis, that event not only resulted in the reverberation of lessons from previous PHEICs, but also in reforms, activities, and policies that effectively carved out a new landscape for governing health emergencies.

For example, in the area of health products, reflections on the Ebola epidemic identified a need to create incentives to overcome market failure that prevents the production of new medical treatments for neglected diseases. Drawing on experiences from the response to Ebola, the solution suggested to this challenge was the facilitation of collaborations between scientists, pharmaceutical companies, and regulators –

> to vastly compress the time needed to develop and approve Ebola vaccines, medicines, and rapid diagnostic tests. In future, this ad hoc emergency effort needs to be replaced by more routine procedures that are part of preparedness. (WHO 2015a)

The routinization and sustainment of collaborative efforts to speed-up processes of research, development, and manufacturing of health products through emergency preparedness activities indicates an increasing tendency in global health to turn to 'pharmaceutical logics and responses' (Roemer-Mahler & Elbe 2016: 490). Further than that, however, the focus on speed optimization, resource mobilization, and concerted action suggests that activities were being reorganized to systematically address health emergencies.

Following the Ebola epidemic, the systemization of efforts to address health emergencies were apparent in activities that began as part of the response to the epidemic and the development of various new initiatives. For example, as part of the international response in West Africa, organizations such as MSF, the International Red Cross, and the WHO mobilized social science

researchers (especially anthropologists) to assist on the ground with research and community engagement. In that regard, Molly Gore, an anthropologist from the UK who has worked in global health, told me: people from these and other bodies (e.g. UK Department for International Development) found social science interventions during the epidemic 'very useful' and sought for ways to continue and further develop this sort of engagement in emergencies. In turn, that led to funding that enabled the appearance of initiatives such as 'Sonar-Global'.

As Molly explained to me, this initiative, has been 'sort of a continuation to the various social science and anthropology platforms established during the 2014 Ebola epidemic'. Funded by the EC as part of the EU's Horizon 2020 research and innovation programme, Sonar-Global was established as a platform that aims to better integrate social science expertise into public health responses by creating a sustainable international network 'to engage the active participation of the social sciences in preparedness and response to infectious threats, including AMR' (Sonar-Global n.d.). In that sense, as Bonnie Held, a researcher who was involved in Sonar-global from its early days and attended its launch meeting, told me, 'the governance challenge is important'. The overarching question for them was 'how to engage social science in governance'. Sonar-global thus represents a specific respose to a challenge concerning collaborations in health emergencies, and points to a broader systematic effort to govern health emergencies.

Another useful example is the post-Ebola development of 'WHO systems for rapid staff deployments, data collection and reporting, expansion of laboratory services, logistics, and coordination' (WHO 2015a). Reforms and policy changes in pursuit of ways to address health emergencies in the years following the 2014-2016 Ebola epidemic also meant that actors in this context were to re-organize and recalibrate activities for that purpose. In the WHO specifically, reforms involved rearrangements in activities and organizational restructuring. In that way, health emergency was set apart from other kinds of areas that the WHO focuses on.

Prior to the reforms, the WHO had worked on an array of emergency-related issues that included, for example, specific and ad-hoc topics such as hospital emergency response in all-hazards (WHO 2011c), and treatment of people with disabilities in multiple kinds of emergencies (e.g. transport crashes, food insecurity, conflicts) (WHO 2013c: 11). However, following the reforms, the scale, magnitude, and intensity of the organization's involvement in health emergencies changed

dramatically as that involvement became part of a broader systematic effort to govern health emergencies, with the WHO at the center.

The reforms emphasized the need for capacities to manage emergencies of all kinds, including their humanitarian aspect. Further, they emphasized that the WHO should be able to directly manage them in certain occasions:

> The international community expects WHO to be able to mount a comprehensive and rapid response, whenever and wherever an emergency that impacts public health arises that outstrips national capacity. (WHO 2015b: 2)

While reiterating some of the recommendations that followed previous health emergencies such as the 2009 H1N1 pandemic, the recommendations that followed the Ebola epidemic finally enabled the implementation of such previous recommendations. This meant that the WHO had to undergo significant change in its work on emergencies. Accordingly, by 2017, as the WHO published its new *Emergency Response Framework*, the organization had set a new and official definition for the term 'emergency':

> a situation impacting the lives and well-being of a large number of people or significant percentage of a population and requiring substantial multi-sectoral assistance. For WHO to respond, there must be clear health consequences. (WHO 2017c: 8)

This very expansive definition implies the WHO should manage a wide range of events with negative health consequences, including 'events that have not yet lead to disease in humans but have the potential to cause human disease through exposure to infected or contaminated food, water, animals, manufactured products or environments' (WHO 2017c: 7). Importantly, the broad focus on threats other than infectious diseases as health emergencies has not always or persistently been pursued by the WHO. Indeed, both through fieldwork and interviews I learned that staff and even senior officials in the organization have different views on whether it should be.

In either case, the WHO rearranged and introduced activities through a new framework that aimed to address health emergencies. A framework with 'common WHO-wide emergency processes for risk assessment, incident management, health emergency information management, and rapid financial disbursements' (WHO 2016a). Previously scattered and loosely connected practices and techniques were brought under an organized, sustained, and stable structure as the reforms in the

WHO's work around emergencies were also linked to reforms in planning and prioritization processes, governance, and management (WHO 2017a: 24-25). Hence, the establishment of a 'single Programme, with one workforce, one budget, one set of rules and processes and above all one clear line of authority' (WHO 2016a). The health emergencies programme has operated in a way that the regional level is overseen by headquarter level and therefore breaks from or at least bypasses the unique 'federal' structure of the WHO (Hanrieder 2015b), wherein the regional offices have historically had relative autonomy from headquarter.

The work of the WHO emergencies programme has involved an array of practices, technologies, and ideas that are rooted in emergency management. Indeed, some of the key aims of the programme expressed the core assumptions of emergency management. For example, the programme was to be:

> [C]omprehensive, addressing all hazards, flexibly, rapidly and responsively… It will work synergistically with other WHO programmes and partners to address the full cycle of health emergency preparedness, response and recovery. (WHO 2016a)

As the adoption of the all-hazards approach to the emergency cycle indicates, emergency management was integrated into the programme. Moreover, central elements in emergency management – flexibility, coordination, and rapidity – were now also significant priorities in the WHO's work. Correspondingly, a new kind of activity became central in that context:

> WHO's institutional identity has traditionally been driven by its normative and highly technical work. However, these overarching emphases have resulted in a culture that resists embracing operations, an essential element of emergency response. As the Organization expands its role in emergency response, it must also expand its approach to give equal priority to developing and maintaining operational expertise (WHO 2015b: 3)

Traditionally a technical actor, the WHO has embarked on a process of change whereby the organization is prioritizing, developing capabilities, and assuming a more prominent role in the operational dimension of health emergencies. As WHO staff members told me on several occasions, such operational capability to respond to emergencies did not previously exist in the organization but has developed and become central in recent years (that is, between 2010-2019).

The new programme initially included four main areas of work (aside from the administration and communication area): Infectious Hazards Management (IHM); Country health emergency Preparedness and IHR (CPI); Health emergency Information Management and risk assessment (HIM); and Emergency Operations (EMO) (WHO 2016b: 7-12; 2017b: 4). As I observed during my fieldwork, these areas of work are not only divided into units by a formal organizational structure but also represent different kinds of activities (although in practice there are some overlaps and shared responsibilities).

Infectious Hazards Management mostly involves traditional technical activities that the WHO has been carrying out in the context of infectious diseases, especially pandemic influenza. For instance, technical support for preventing and controlling epidemics in countries, trainings for national laboratory staff, and setting norms and standards in infectious disease management. Furthermore, this area includes activities that aim to strengthen expert systems and networks (e.g. Global Influenza Surveillance and Response Network), create and maintain public-private partnerships, transfer technical knowledge, build global strategies, strengthen governing mechanisms of global vaccine stockpiles, and anticipate epidemics.

Country health emergency Preparedness and IHR mostly involves activities concerning the regulation and implementation of components that are set in the IHR and that the WHO had previously struggled to carry out. These activities include developing and promoting tools and guidelines to support countries' preparedness efforts, helping countries to develop plans and to conduct health emergency simulation exercises (or, sometimes, practically organizing such exercises for them), organizing Joint External Evaluation (JEE) missions to countries, and monitoring countries' progress in implementing the core capacities specified in the IHR.

Health emergency Information Management and risk assessment mostly involves activities that rely on a combination of epidemiological expertise, risk techniques, and surveillance measures. These activities include routine detection and verification of information regarding potential health emergencies, and risk assessments for potential and new events. They also include regularly monitoring and evaluating the effectiveness of public health interventions, and publishing reports on ongoing emergency events.

Finally, Emergency Operations mostly involves activities that focus on material issues and physical conditions, often those that have been traditionally addressed by humanitarian

organizations. These activities include the development, maintenance, coordination, and mobilization of expertise, resources, and tools; and direct oversight and management of response operations. Specific projects and initiatives undertaken as part of that include, for instance, the coordination of 'partners' as the designated Health Cluster lead of the Inter-Agency Standing Committee (IASC), the mobilization of GOARN members, and managing the Emergency Medical Teams initiative that provides a standardized qualification process and deployment procedure for teams that respond to health emergencies.

What all the above means in practice is, for example, that the WHO has routinely carried out and produced risk assessments and recommendations for managing emergencies (e.g. WHO EURO 2017); intervened in events such as flooding, engaged with national health authorities to reflect on these events, and developed tools to assist countries in preparing for future events (e.g. Reinicke & Enderlein 2018); and supported countries in emergencies through the WHO Country Offices around the world and by deploying Incident Management Teams to work where emergencies occur (WHO 2017c: 11).

The role of the WHO has therefore not been merely to coordinate international responses or to facilitate global frameworks of action, but also to regulate and standardize practice in health emergency management, and to monitor, oversee, and execute operational interventions in health emergencies.

To be sure, the emergence of the global health emergency governance landscape is not restricted to the sphere of international organizations. Germany's increasingly dominant role in global health governance in recent years (see Kickbusch et al. 2017) has corresponded with and overlapped the country's significant involvement in the global governance of health emergencies. Since 2015, the German government has intervened in health emergencies through the German Epidemic Preparedness Team (SEEG). SEEG draws on a pool of (mostly biomedical, public health, and epidemiological) experts from various German government and non-government institutions such as Bernhard-Nocht-Institute for Tropical Medicine, Charité Universitätsmedizin Berlin, Friedrich-Loeffler-Institut (FLI), and RKI. The new initiative, much like the reforms of the WHO, was launched in the light of the 2014 West African Ebola epidemic, and has aimed to support countries 'at short notice, flexibly and worldwide, by deploying experts' (GIZ 2021). By August 2020, SEEG was deployed on 25 different occasions in various countries to intervene on health

emergencies caused by infectious diseases such as Zika, Lassa fever, Ebola, and COVID-19 (German Federal Government 2020). Overall, that initiative provides a platform or node that effectively concentrates dispersed resources (expertise) and connects different actors (within Germany) to intervene on health emergencies (around the world).

At the intersection of overlaps between the spheres of public and global health governance, humanitarian biomedicine, and emergency management, a particular problematization of governance and an array of developments enabled and fostered the emergence of a new space of global, governmentally orchestrated activity that centers on health emergency events. An assemblage of global health emergency governance has emerged.

2.5. The expansion of global health governance

> Promoting and protecting global health has gone from being important to being absolutely essential. *Without health there is nothing else* [Applause]. There is no economy, there's no society. (European Commission Director General of Health and Food Safety [DG SANTE], Sandra Gallina, during the World Health Summit [2022b]; emphasis added)

The above comment and the crowd's enthusiastic reaction to it reflects an important process wherein the concept of "health" has been undergoing transformation. From the "Health in All Policies" approach to the "One Health" paradigm, health is being repositioned and reconceptualized as foundational to a growing array of political spheres (e.g. economy, foreign affairs), and construed as the ultimate objective of society.[12] Health as such becomes a problem that is, on the one hand, effectively external to political affairs (whether in the sense of conflict or cooperation), which means that the dominant paradigms for thinking and acting on it are not to be questioned or challenged. And on the other hand, a premise of politics. That is, health not as another problem competing with others for attention and resources, but as the ultimate end of society towards which all political activities should be directed. The potential implication of this process, whatever its actual extent (which, to be sure, is still negligible), goes beyond the ascendance of health on the international political agenda, as it was with the securitization of health.

As indicated throughout this chapter, and particularly by the entanglements between the emergence of health emergency governance and global and public health governance, the convergence of "health" and "emergency" has played into and fueled this transformative process. Specifically, the

combined effect of various intra-organizational restructuring and repeated additions of new responsibilities, activities, collaboration frameworks, cooperation schemes, and initiatives that center on health emergency has been the gradual expansion of the boundaries of global health governance and the repositioning of health as a more central domain of global governance. The general dynamic of that expansion can be illustrated through a description that was provided by one interviewee:

> In global health circles, everyone was talking about the disease X and that it will come someday. But outside of this inner circle, let's say, people weren't aware that this could be a possibility, and not everywhere in the world, and not at the same time, and not in this intensity. [The COVID-19 pandemic] was quite shocking, especially for foreign policy actors that haven't been prepared at all for this. Of course, also the health ministry hasn't been prepared for this. No one has been prepared. (Health policy researcher and adviser Annike Weber, July 2021)

The interviewee described how an overall unprepared governmental system was 'shocked' by the COVID-19 pandemic, especially as governmental actors did not expect that there would be such 'vast negative effects… in different policy fields'. That, according to her, has led to growing involvement and interest by various governmental actors in public and global health. In other words, she observed how the health emergency broadened the circles of global health governance.

That the convergence of "health" and "emergency" has played a key role in the expansion of global health governance points to another important finding: alongside that expansion, there has been an increasing inclination to focus on problems, and adopt solutions that prioritize rapidity and (coordinated) flexibility. Consider, for example, initiatives such as GOARN's Operational Research (OR) that attempt to speed-up what are usually slow processes: 'Outputs from OR are needed immediately to inform current operations. How to fix a machine that is going on the track already. Slow research is not applicable in health emergencies' (Lina Moses, lead of research at GOARN; during Global Meeting of GOARN Partners 2021 [Topical Webinar 4: Exploring the role of operational research]).

Contemporary liberal emergency governance, as several scholars showed (Adey et al. 2015: 10–11; Samimian-Darash & Rotem 2019), has an embedded sense of time-limited action. Such embedded sense, as Adey (2016) showed, tends to render practices of mobility (e.g. immigration) into acute or urgent problems, and others (e.g. rapid response mechanisms) into solutions. Similarly, in the current context, rapidity and flexibility as issues that undergird the governance of

health emergencies have infused in global health governance a tendency to define problems and formulate solutions in relation to their velocity and scale. That is, based on a judgement or assessment of the rate at which escalation or deterioration occurs, how much a response is lagging, or how complex or transboundary the event seems. In turn, a growing concern with, and emphasis on issues of scale (e.g. to achieve better coordination) and velocity (e.g. to improve the timing and speed of response) in the light of health emergencies have operated as a catalyst for the assimilation of activities, initiatives, and experts from other fields, such as humanitarianism, into global health.

3. "Canary in the Coal Mine": The Resurgence of Measles in Europe

3.1. Background

> [W]hen we have a measles case in a community, we know that that measles is finding people who are not immunized. It's essentially the canary in the coal mine, it's the pathfinder or the identifier, the litmus test, of people who are not vaccinated, and that means that they're probably not vaccinated to other diseases as well, and are at risk of getting other vaccine preventable diseases that they're not immune to. (Dr. Kate O'Brien, WHO Director of Immunization, Vaccines and Biologicals; WHO 2019)

Measles is an unlikely choice for a case study to examine the global governance of health emergencies, and even less likely for a research that mainly focuses on this topic in the European context. However, as I went through my notes from the six months that I spent at the WHO's Health Emergencies programme in the Regional Office for Europe between 2017-2018, it became clear that measles was a highly significant concern for the WHO's newly established emergency prgoramme at the time. To my surprise, the resurgence of measles in Europe appeared as a central issue – repeatedly discussed and closely monitored by the WHE staff. The significance of this resurgence, however, did not simply lie in the direct threat that the disease posed to the health and well-being of populations. Instead, as the quote above indicates, it lied in what the resurgence of measles in Europe signaled, indicated, and symbolized. A disastrous reality that is not (yet) immediately and clearly evident but nonetheless imminent, measles resurgence in Europe was constituted as a health emergency in a unique way that goes beyond notions of exception or emergence.

In this chapter, I enquire into the management of measles in Europe and the resurgence of the disease between the years 2017-2020. I analyze policies, assessments, strategies, and interventions, mainly by the WHO and the WHO Regional Office for Europe (EURO), the ECDC, and specific European countries such as Germany and the UK. The WHO's decision to classify the spread of measles in Europe as a Grade 2 emergency is used here as an anchor for the investigation because it provides the clearest expression of how the resurgence of measles in Europe was rendered a health emergency. That the EU and specific European countries did not officially declare or classify measles as an emergency does not necessarily mean that it was not practically addressed or understood as such. For example, in 2017 the European Commission approved the Romanian

government's request to apply 'emergency procedures' allowing them to suspend vaccine exports due to the severe measles epidemic in the country (Neagu & Morgan 2017), and by May 2019 (at least) the ECDC determined that measles poses a 'serious cross-border threat to health in the EU' and assessed 'there is a high risk of continued widespread circulation of measles in EU/EEA in the near future, as long as significant immunity gaps and suboptimal vaccination coverage remain' (ECDC 2019: 1).

My purpose here is to illuminate the relationship between the emergence of health emergency governance and the collective construct at the core of the management of an infectious disease – measles in this case, and to examine how that relationship plays out in the governmental perception of, and action on that infectious disease. Through an investigation of the governmental management of measles in Europe, I show how the collective construction of the disease in this context transformed. First, I show that hope for, and progression towards measles elimination has been at the core of the governmental management of measles in Europe in recent decades. I then further show how, when measles resurged in Europe in 2017-2020, that construct transformed. The future horizon of a measles-free Europe faded and hope was relocated into action towards the revival of progress itself. In that sense, I suggest, the resurgence of measles in Europe has been reconstituted as an *emergency of regression*.

Based on the analysis, I argue that governmental strategies and interventions in the context of infectious disease are not only shaped by bureaucratic categorizations and expert conceptualizations of the disease, but also by the emerging assemblage of health emergency governance. I engage with scholarly works, particularly from sociology and critical security studies, but also geography and anthropology, in which scholars have showed the rise to prominence of the idea of "emerging" or "re-emerging" disease in early 21st century global public health, and the way in which this idea has been problematically used as a separate category from "tropical" or "neglected" disease. Those scholars examined how governmental interventions and strategies are shaped and influenced by the categorization of a disease as either tropical/neglected or emerging/re-emerging, particularly by drawing attention to how the bureaucratic categorization of a disease impacts the conceptualization of the disease itself. The present case contributes to that scholarly literature by addressing the increasingly influential role of health emergency governance

in changes to how the event (rather than the disease itself) is understood, categorized, and addressed.

3.2. Measles

Measles is an extremely infectious disease that spreads easily in the community, even if less than 10% of people within it are susceptible. Measles virus (or Measles morbillivirus) infects primates but is exclusively endemic in humans and it is estimated that the virus evolved from a zoonotic virus that spilled-over to humans thousands of years ago. The existence of this virus is solely maintained by its continued transmission between humans (Düx et al. 2019; James 2017; Moss 2017). The virus is transmitted from person to person through droplets or discharges that reach the mouth, nose, throat, and eyes, then replicating in the body's cells and spreading in the body through the bloodstream (an incubation period of 8-12 days). Next, as the virus continues to replicate and the infected body's immune response is triggered, signs of fever, weakness, and loss of appetite develop, followed by respiratory symptoms and a rash. While the symptoms usually last several days and recovery establishes long-term protection from reinfection, the virus itself may induce severe chronic conditions that eventually result in death or, as it is more often the case, induce suppression of the immune system which leads to death (by other microbial diseases) (James 2017; Oldstone 2010: 140–42).

A live attenuated vaccine for measles became available in 1963 (the combined Measles-Mumps-Rubella [MMR] vaccine came into use during the 1970's). Nevertheless, during the 1960's, in the US alone, over 500,000 people were infected with measles annually. Of those, over 400 died each year. It was nearly another decade before measles vaccination became routine in the US (in the mid-1970's) and another few years before compulsory primary immunization and secondary inoculation was introduced for school children. Measles infection rates then sharply decreased in the country (Oldstone 2010: 135). During the 1960's, other countries similarly began to use these vaccines, 'and immediately identified their use as highly cost-effective' (WHO 2012: 10). Measles vaccines have been inexpensive and two doses of the vaccine are effective at preventing infection. Further, a very high measles vaccination coverage rate in the population largely results in long-term immunity in that population. Thus, and given that measles has no other known reservoir but humans, this virus soon became a leading candidate for eradication (Hopkins et al. 1982; James 2017; WHO 2011d). Nevertheless, not only has measles never been successfully eliminated in

many parts of the world, it has even been reintroduced into countries where it was previously eliminated, infecting infants who have not yet been vaccinated, children and adults who were not vaccinated, and those with weak or waning immunity (Oldstone 2010: 154–56).

3.3. Disease eradication

The idea of disease eradication first appeared around the early 20th century. To be sure, the emergence of bacteriology, its knowledge of micro-organisms that cause disease, and resulting developments in inoculation meant that by the late 19th century scientists hoped that some of the deadliest human diseases would eventually disappear. Indeed, important figures in the early development of vaccines such as Edward Jenner and Louis Pasteur superficially considered this potential (Fine 1993: 267). However, concrete and implementable plans for disease eradication only began to form in the early 20th century.

The Rockefeller Foundation was an early proponent of disease eradication. It introduced the first plan for disease eradication – the 1910-1914 hookworm eradication campaign in the US, and was involved in a variety of eradication campaigns around this period (e.g. yellow fever in Latin America, malaria in Sardinia) (Birn 2011). Moreover, during this period, the possibility of disease eradication started to appear in scientific discourses that focused on the prevention of specific disease agents, especially smallpox (e.g. Schenck 1914). At the same time, during the first half of the 20th century disease eradication increasingly turned into a governmental problem that prompted public policies, funding, and interventions that targeted population health. The most prominent course of action that governmental interventions took in this regard was the national mass vaccination campaign.

Importantly, in parallel to the early development of governmental interventions to eliminate diseases through vaccinations, the knowledge to support the feasibility of disease eradication programs became available. Hopes for the complete eradication of a disease were initially directed at a vector-borne disease – malaria (rather than at any disease that could be prevented by vaccines) (Fine 1993: 267). Sir Robert Ross, who won the Nobel prize for his work on malaria, contributed substantially to the propagation of these hopes. In *The Prevention of Malaria*, Ross not only detailed several strategies for eradicating malaria but also argued that it could be eradicated if the number of mosquitoes is reduced and supported this argument with mathematical models (Bacaër

2011; Ross 1910, 1929). His calculations of the threshold required for the eradication of malaria were so widely accepted in the scientific community that they eventually led to the first ever attempt to completely eradicate a disease – the WHO's malaria eradication campaign that was launched in the 1950's (Candau 1956; WHA 1955; also see Fine 1993: 267). This effort eventually failed and by 1969 the WHA proposed that in the many areas where eradication is unlikely to be achieved in the foreseeable future, malaria eradication programs should return to malaria control. In that regard, historian Randall Packard (1997: 280) noted that the hopes for malaria eradication were 'unfounded', and argued that many of the technical and organizational problems in the eradication campaign were related to the social, economic, and political climate of the post- Second World War period. Ideas and strategies for eradicating malaria and other diseases were connected to post-colonial 'development' and modernization efforts that were facilitated by Westerners and targeted Latin American and tropical countries suffering from severe socio-economic problems (Packard 1997: 281).

Then, in 1967, the WHO announced its plan to eradicate smallpox within 10 years, and by 1980 smallpox was eventually eradicated. This effort was guided by the rationale that eradication could be achieved through vaccine-derived herd immunity (Fine 1993: 273). While some scholars have critiqued the supposed 'triumph' of the smallpox eradication campaign and highlighted its problematic implications for the future of public health (Birn 2011),[13] it has been more widely and frequently celebrated and praised, becoming a classic example for success in international public health (e.g. Henderson 2011).

The eradication of smallpox through the strategy of mass vaccination campaigns and herd immunity, as the pinnacle of international public health, fostered and reinforced an increasingly dominant collective construct both in the public sphere, and in the fields of public health and infectious disease. The effective mobilization of scientific knowledge and technological developments to realize and actively pursue an international public health campaign for smallpox eradication coordinated by the WHO, offered hope for a future in which (some) infectious disease no longer threaten human life. As shall be demonstrated below in relation to measles elimination efforts in the late 20th and early 21st century, that envisioned future translated into action based on the understanding that scientific and technological advancement, together with strong

transnational public health governance mechanisms, will free humankind from (at least some, but ideally all) infectious disease.

3.4. Progress towards elimination: Surveillance, verification, and the management of measles in Europe

> By the year 2000, there should be no indigenous measles… in the [European] Region…. Today, satisfactory technology is available to establish systematic and effective surveillance and vaccination programmes based on primary health care that would make it possible to eliminate measles… (WHO EURO 1985: 36-37)

In 1984, the WHO EURO first introduced the target of regional measles elimination as part of its 'Health for All' regional strategy.[14] As the quote above indicates, the hope to eliminate measles from the European region was tied to an understanding that existing techno-scientific capabilities make this a feasible option.

Within that and other, subsequent policies and plans that deal with regional measles elimination, a specific technology – surveillance, appears as critical for the sustained comprehension of the problem.[15] In the WHO EURO (2013) *Package for Accelerated Action: 2013–2015* towards measles and rubella elimination, surveillance is one of six main activity areas (including e.g. vaccination, outbreak preparedness and response, and communication and advocacy) that demand action. This particular area focuses on improving aspects of quality, integration, and risk management in surveillance within Member States (WHO EURO 2013: 11-13). Further, surveillance is at the heart of what disease elimination and eradication mean. According to the WHO's definition, disease elimination is 'the absence of endemic measles or rubella cases in a defined geographical area for a period of at least 12 months, *in the presence of a well-performing surveillance system*. Regional elimination can be declared after 36 or more months of the absence of endemic measles or rubella in all Member States'. In a similar way, disease eradication is defined as 'worldwide interruption of measles or rubella transmission *in the presence of a verified, well-performing surveillance system*' (WHO EURO 2014: 1; emphasis added).

In the decades since the elimination target was initially set, hope to eliminate measles had become a deeply entrenched construct in the governmental management of this disease in Europe, and the abovementioned technology played a central role in that. In 1996, European Commission (EC) proposed to create an epidemiological surveillance and control network for communicable diseases in the European Community (European Commission 1996), and this proposal was adopted in 1998

by the European Parliament and Council (European Parliament and Council of the European Union 1998). In accordance with that decision, the EC made an agreement with the Danish Statens Serum Institut (SSI) that its Department of Epidemiology would coordinate (together with Italy's Istituto Superiore di Sanità [ISS]) a European surveillance network for vaccine preventable diseases (EUVAC.NET), including measles. The project was launched in 1999 and effectively linked surveillance institutions from EU Member States and others (Iceland, Norway, and Switzerland) (Glismann et al. 2001).

Importantly, a central aim of the network was to assist in reaching measles elimination in Europe, and towards that end, the network also collaborated with WHO EURO and ECDC. Then, in 2011, the network's activities were integrated into the ECDC (specifically, into the work of ECDC's Vaccine Preventable Disease group [VPD]) (ECDC n.d.[a]). What all those developments indicate, is that strategic efforts set towards the elimination of measles from Europe were intricately tied to the formation of increasingly complex links between surveillance systems, which eventually became more institutionalized and integrated.

That institutionalization can be seen in another primary surveillance tool in the continuous management of measles towards its elimination from Europe – the European Surveillance System (TESSy), which is hosted and operated by ECDC.[16] Through this system, ECDC receives measles surveillance data from countries every month. Data is then also shared with WHO EURO. Complementary to this tool, ECDC's Epidemic Intelligence (EI) group routinely screens official sources such as websites of national public health institutes and monitors potential problems related to measles through media sources (Nicolay et al. 2020). Regional measles elimination is therefore not only a target of surveillance, but also a problem that has shaped and undergird a regional governmental apparatus.

In December 2011, national managers of Vaccine-Preventable Diseases Surveillance and national experts responsible for measles, rubella and congenital rubella syndrome (CRS) surveillance from countries in the WHO European Region attended a meeting in Bonn. The meeting, organized by the WHO Regional Office for Europe, with support from Germany's Robert Koch Institute and Federal Ministry of Health, was set to discuss ways to strengthen national surveillance systems towards the strategic aim of measles (and rubella) elimination in the European region. One way in which the meeting was supposed to pursue this goal was by establishing 'a common understanding

and commitment for the implementation of priority strategies to strengthen surveillance capacities by strengthening epidemiological and laboratory cooperation' (WHO EURO 2012: 3), a challenge that would later also appear in the WHO EURO (2013) *Package for Accelerated Action: 2013– 2015*.

The meeting brought together different elements of the European disease surveillance apparatus, maintaining its consolidation and cohesion through the hope for elimination.

> Overall, significant progress has been achieved in the European Region towards better control of measles but the rate of progress is levelling off, as high incidence rates and several outbreaks were reported in several European countries since 2009. (WHO EURO 2012: 5)

As expressed here in relation to the regional status (reviewed as part of the meeting), lower incidence and more control of measles mean that hope for elimination remains. This hope is sustained through the notion of 'progress'.

Occasions such as this meeting, that both embark upon and perpetuate the construct of hope and progress towards elimination of measles in Europe, are tied to political processes that similarly draw upon and promote that construct. In 2010, the WHO Regional Committee for Europe adopted a resolution titled *Renewed commitment to elimination of measles and rubella and prevention of congenital rubella syndrome by 2015 and Sustained support for polio-free status in the WHO European Region* (Regional Committee for Europe 2010). The resolution reaffirmed the hope that regional measles elimination will be achieved (by the year 2010) in setting up a new target date for reaching that goal – 2015, and in calling on the Region's Member States to commit to taking a number of specific actions towards that end (as had been done once again when elimination was eventually not achieved by 2015).

In line with the recommendations of the WHO EURO, the resolution further instructed member states and the WHO Regional Director to establish measles and rubella elimination verification commissions on both national and regional level (respectively) as a way to 'document progress towards elimination' (WHO EURO 2010: 1). Established in 2011-2012, the Regional Verification Commission for Measles and Rubella Elimination (RVC), which has mainly included public health experts, determines member states' elimination status based on a review and evaluation of

countries' epidemiological situation, vaccination coverage, and surveillance data as received from national verification commissions.

Hope for measles elimination has been embedded in the RVC's 'ultimate goal' of declaring that 'measles and rubella has been eliminated from the Region' (WHO EURO 2015: 5). Indeed, in its design, the RVC has been contingent upon both the maintenance and fulfillment of that hope as it is supposed to dissolve three years after regional elimination is achieved. Thus, the RVC has served as a regional level mechanism that is rooted in, and reflective of hope for measles elimination and progress towards that end.

The collective construct of hope for, and progress towards regional measles elimination has therefore been at the core of the governmental management of measles in Europe. As such, it has also played a formative role. An explanatory video on the importance of reaching 95% vaccination coverage in populations, produced by the ECDC (n.d.[b]), illustrates that in an audio-visual way.

Figure 1: Screenshot from the ECDC's video – '95% vaccination coverage for a Measles-free EU'

> *Narrator*: [T]he countries in the EU and in the WHO European Region have all committed to eliminate measles by 2015.... Eliminating measles in the EU is only possible if each member state achieves at least 95% vaccination uptake in all population groups. To protect our citizens and improve public health in Europe, we should eliminate measles from the EU by 2015.

Figure 2: Screenshot from the ECDC's video – '95% vaccination coverage for a Measles-free EU'

The animated video, which features simultaneous sketching and narrating, begins with the epidemiological status of measles and the vaccination coverage in the region, continues with a brief explanation of the medical implications of the disease, and then connects those with the hope for a measles 'free' Europe by 2015 and the concrete effort needed to progress towards this target of elimination (95% vaccination coverage). Hope and progress are especially vivid as they are visualized in the movement or spread of the 'measles free' label from the Americas (which was measles free at the time) to Europe, and in the shielding effect of the '95%' label.

For the most part, that construct of measles elimination has continued to be central and dominant in the governmental management of measles in Europe. In her comment in relation to the resurgence of measles in 2017, a senior official who was involved in this management, the Director of the WHO European Region, Dr. Zsuzsanna Jakab, highlighted that 'This short-term setback cannot deter us from our commitment to be the generation that frees our children from these diseases once and for all' (quoted in *BBC News* [2018]). Here, the resurgence of measles was framed as a 'short-term setback', that is, from the overall progress towards measles elimination. That still expresses hope in progress towards elimination that would free future generations of Europeans from measles. Nevertheless, in parallel to the worldwide resurgence of measles around 2017, a transformation began to unravel both in the management of the disease and the collective construct at its core.

3.5. Measles as a Grade 2 emergency

Corresponding with and adding to the European regional goal of measles elimination by 2015, in 2012 the WHA adopted the Global Vaccine Action Plan, aiming to eliminate measles in five (out of six) WHO regions by 2020. Eventually, not only was this goal not met, but in fact, by 2020 none of the regions had achieved or maintained elimination status.

Since 2016, measles resurged as incidence and mortality steadily increased. Measles had gone up from 132,490 cases in 2016 to 869,770 cases in 2019, the highest number since 1996. The resurgence of measles that accelerated in 2017 and 2018 occurred in all WHO regions, with the sharpest increases in reported cases in the African region (1,606%), region of the Americas (19,739%), and the European region (2,282%) (Patel et al. 2020). To an extent, the construct of hope and progress for elimination once again revitalized governmental action. The governmental failure to effectively eliminate measles by the deadline once again resulted in new strategies and new targets for elimination. Nevertheless, something changed profoundly this time.

During an interview with Simone Rollan (July 2019), an infectious disease and global health expert working for a European public health institution, I asked her to explain (by comparing measles and Ebola) why some infectious disease events are classified as emergencies while others are not. After a quick look at Annex 2 of the International Health Regulations (which details the process of declaring a Public Health Emergency of International Concern), she replied that:

> Measles… is a threat for public health in different countries, but contrary to Ebola, we all know how to deal with measles. There is a vaccine, it's there, it's available in sufficient quantity.

The existence and availability of an effective vaccine, the ultimate public health solution, means that there is no need to use additional measures, such as those that are deployed in emergency. She continued to explain that a further difference is that in resourceful, wealthy countries, there is no reason to declare the kind of emergency that would entail international intervention:

> It's not like you say, so measles is in France, measles is in Italy, so it's not like France or WHO has to call the world to say, "Please, come and help France fight the measles epidemic," because France has the means and the capacity to deal with itself, so you cannot bring and call for international action in France and around France to do this. You'll need to call for other type of actions, which will be coordination, better thinking between countries, partnership with countries…

Regardless of how severe the measles situation is *in Europe*, for her it is not an emergency since *specific European countries* have the 'means and capacity' to respond to it without exterior or international assistance.

However, the WHO did classify the epidemic of measles – specifically in Europe, as an emergency. Not as a Public Health Emergency of International Concern (PHEIC), since this was not a situation where solutions or capacities did not exist at all, but as a graded emergency. In May 2019, the WHO classified the spread of measles in Europe as a Grade 2 emergency, defined by the WHO as follows:

> A single country or multiple country emergency, requiring a moderate response by WHO. The level of response required by WHO always exceeds the capacity of the WCO [WHO Country Office]. Organizational and/or external support required by the WCO is moderate. (WHO n.d.[a])

Measles resurgence in Europe could be defined a Grade 2 emergency because it involved multiple countries and required a 'moderate' level response from the WHO as the needs exceeded the capacity of one or more of the WHO Country Offices in the region. The aim of the WHO's decision was to intervene on the 'dramatic resurgence of measles compared to previous years, which reveals persistent gaps in immunization coverage in the Region and demands an enhanced response' (WHO EURO 2019c: 3), by mobilizing additional resources and tools that were made available as a result of the classification (WHO EURO 2019b: 4).

The WHO's intervention in that situation was channeled through the WHO Country Offices, but was to be 'coordinated by an Emergency Coordinator in the Regional Office' and by an 'Emergency Officer from the WHO headquarters' (WHO n.d.[b]). The WHO's emergency grading system in that sense was calibrated by scale: the perceived scale of the event determined the scale of response. Thus, it was not simply the resurgence of measles itself that prompted the WHO to resort to an emergency response.

3.6. A matter of scale

> The measles situation in Ukraine is *connected to the entire region…* not to the emergency in east Ukraine. (Fieldnotes from morning meetings at the WHO EURO Emergency Operation Center, October 2018)

In September 2018, eight months before the WHO's decision to classify the resurgence of measles in Europe a Grade 2 emergency, I attended a daily meeting of the WHO emergency programme staff in the EURO. We sat in the Emergency Operation Center (which also served as a meeting room) and John, the staff member who ran the meeting on that day, started by updating us on a measles outbreak in Moldova which reportedly occurred among 'unvaccinated Roma children'. He then updated us about the ongoing measles epidemic in Ukraine, an event which had been regularly monitored and frequently mentioned in the daily meetings both before and after that day. Currently, he told us, there are over 29,000 cases of measles in Ukraine and no deaths reported in the last week. He noted that those infected were getting medical treatment, but it remains unclear what other actions are being taken. The decision to classify measles as an emergency was by no means sudden or abrupt. The WHO was regularly and intensely monitoring this issue through its newly established emergency programme.

The ongoing international interest in the spread of measles in Ukraine was especially driven by an understanding that this particular epidemic played a major role in the resurgence of the disease across Europe. As expressed by a *Science* news report from February 2019: 'Measles cases more than tripled across Europe in 2018, and one country drove much of the surge: Ukraine' (Wadman 2019). The news report then goes on to describe various issues and factors that have led to this situation in Ukraine and how the appearance of some similar issues, specifically vaccine skepticism, in other countries 'has given the virus an opening'.

When one of the WHE staff at the meeting pointed out that the measles situation in Ukraine is linked to a regional event and not to the conflict between Ukraine and the Russian-backed separatist militias in the Donbas region of Ukraine, this was not to say that the conflict was not contributing directly and indirectly to the spread of measles in the country – something that everyone at the meeting were well aware of. Instead, it was to emphasize that the event itself is regional. In a similar way to the *Science* news report, there was an understanding of the Ukrainian measles epidemic as being part of a broader scale regional event.

After John finished the formal update and the attention of those in the room turned from measles outbreaks within specific countries to the problem of measles in the European region as a whole, Dan, one of the staff members, told us that in a high-level meeting earlier that week they discussed the (emergency) grading process for measles in the region. A senior staff member (heading one of the units) then added that the meeting focused on developing an 'algorithm' for that grading. Those preparations for grading measles in Europe as an emergency indicated that the WHO's assessment of the risk posed by, or of the need for intervention upon the spread of measles in Europe changed (WHO 2017c: 15). The decision to classify the spread of measles in Europe a Grade 2 emergency relied on an understanding of the event as a regional-level problem. As such, it was not only a technical issue, but also a political one.

The meeting in the WHO Emergency Operation Center continued and a discussion began about the timing of the emergency grading. The WHO communication specialist that attended the meeting explained that 'politically speaking' the timing of the grading process, just before the Regional Committee is convening, could be useful. By contrast, another staff member suggested that the political sensitivity of the issue meant 'It's a bad idea to go out with something like that now'. In reply, the communication specialist explained that grading is 'a big weapon'. The 'political implications' of grading can be beneficial (in terms of action) if 'pushed' correctly with countries in the region.

The WHO's decision to formally classify the spread of measles in Europe as an emergency event was not the result of an immediate or automatic reaction, but of a prolonged process of deliberation and monitoring accompanied by both technical and political calculations. However, it is important to remember that even those were significantly shaped by a prior conception of the scale of the event and problem.

In 2015, the 53 Member States of the (WHO) European Region endorsed the European Vaccine Action Plan 2015–2020 in a strategic effort to eliminate measles and rubella. That same year, according to WHO data,[17] over 25,000 cases of measles were reported in that region. This represented a significant and stable decline in reported cases: from more than 492,000 in 1980, to 154,000 in 1995, and to 37,000 in 2000. Despite the strategic plan to eliminate the disease, though, measles resurged in Europe as over 82,000 cases were reported in 2018 and over 100,000 cases

were reported in 2019, when the WHO classified the spread of measles in Europe a Grade 2 emergency.

> On 6 May 2019, WHO activated an internal Grade 2 emergency response to measles circulation in the European Region, scaling up its response through an operational platform to accelerate support to affected countries. The decision followed an assessment of the measles situation in the Region based on the growing number of children and adults affected by and dying from the disease, and the persistence of pockets of non-immunized or under-immunized individuals in many countries fuelling the continuing spread of measles. (WHO EURO n.d.)

In 2019 over 873,000 cases were also reported globally, among those around 618,000 in Africa. Nevertheless, measles was not classified by the WHO an emergency in Africa or globally, but only in the European region.

3.7. A European event

During an interview with Tia Rosen (November 2019), a public health expert from RKI, she explained to me that Germany is located 'right in the center of Europe' and therefore has a problem 'with controlling infectious diseases when we have so many people coming in and out of the country'. Furthermore, according to her:

> It makes sense that there is some integration or some joint effort in Europe because it's really hard to control the spread of disease if you can't control where people are going. In Europe, people can go where they want, so we have migrant workers coming from Eastern European countries. They might come and go in one year, and then if you have an outbreak, you always have the risk of bringing that in again.

From that perspective, people's ability to move and migrate freely within Europe means that the problem of measles is a primarily regional rather than domestic or national problem (or a global problem).

In the ECDC's Rapid Risk Assessment on measles in the EU/EEA from 23 March 2018, the background for the 'event' of measles resurgence was described as follows:

> Between 1 January 2017 and 31 December 2017, 14 600 cases of measles were reported by EU/EEA Member States to the European surveillance system (TESSy). The total number of cases was more than triple the number of reported cases in 2016 (4 642) and 2015 (4 000). Furthermore, 2 239 cases have been

reported by the Romanian Institute of Public Health for 2017 which are not yet submitted to TESSy. (ECDC 2018b: 2)

Generally, the comprehension of the resurgence of measles in Europe as a regional-scale, European event relied on the infrastructure created through enduring processes of European institutional development and integration, particularly in the context of public health surveillance. During 2017 and 2018, as the European surveillance system for measles (described earlier) continued its routine operation, data from across the region that was compiled and analyzed not merely showed a rise in incidence of measles within different European countries, but also on a regional level, thus enabling an interpretation of the event as a regional problem.

It is quite obvious that reports by the EU's expert public health body, the ECDC, manifested such European-focused understanding of the event. However, that perception has also been much more widespread than that, as a news report by *Vox* exemplifies:

> Europe is in the midst of a massive measles outbreak, with more than 41,000 cases reported in the first half of this year. The deadly virus has spread to 21 out of 30 countries in the region, and the World Health Organization says cases have hit a record high, with more than Europe's annual total during the past five years. (Belluz 2018)

While countries remain an important factor and are considered in the news report, the rising case count and the event as a whole are presented as a European problem. Indeed, such reports and commentaries about Europe's measles problem often clarified that the scope of the problem significantly varies between countries and even areas within countries. For instance, a blog post in the 'Outbreak Observatory' website of the Johns Hopkins' Center for Health Security noted that: 'Although Europe has witnessed a record number of cases in 2018, the picture varies dramatically by country' (Snyder 2018). Nevertheless, the author of this blog post portrayed the event as a European event, for example, by employing the notion of 'risk' to underline that this is not a problem that is limited to a small group of countries within the region:

> With Europe reporting record high rates of measles, European nations need to step up their response to the measles epidemic—in conjunction with the WHO, ECDC, and others… While countries in southern and eastern Europe—including Greece, Italy, Ukraine, and Russia—are experiencing the brunt of the outbreak, abnormally high cases in non-endemic countries, such as the UK, demonstrate that all nations are potentially at risk. (Snyder 2018)

A regional framing was also used in explanations for the event and its drivers. The *Vox* news report, for example, found that: 'In the press, Europe's measles problem has been attributed mainly to parents refusing vaccines for their kids… [however] an underfunded public health infrastructure may be more to blame' (Belluz 2018). Similarly, the interpretation of the broader meaning of the event expressed an understanding of the event as regional:

> The measles problem that's surfaced across Europe might mean that even more vaccine-preventable diseases — rubella, mumps, diphtheria, hepatitis — could begin to rise, since measles is typically the first to start spreading when people aren't getting their shots…. But Europe's vaccine problems are much larger than anti-vaxxers. And the story of measles may be the canary in the coal mine for an infectious diseases problem that's even more dire than it appears right now. (Belluz 2018)

A primarily European event and problem, the resurgence of measles is portrayed here as an indicator for or warning from a larger disaster that will materialize in the not too distant future. The metaphor of measles resurgence as *'The canary in the coal mine for an infectious diseases problem'* is indicative of a change in the collective construct surrounding the management of measles: the future horizon of a measles-free Europe is replaced with a dire future reality in which various vaccine-preventable diseases resurge.

3.8. A problem of vaccination coverage

> We must all sit up and pay attention to ECDC's data and analysis on the spread of measles in Europe. Measles is gaining pace in an increasing number of EU countries. This demonstrates that vaccine-preventable infectious diseases do not respect borders and one country's immunisation weakness puts the whole Union at risk. Cooperating in this area is in all our interests. The Commission will this week put forward an initiative for strengthened cooperation against vaccine preventable diseases, calling for joint action to increase vaccination coverage and ensure that everyone in the EU has access to vaccination, thus bridging inequalities and gaps in immunisation. (Dr. Vytenis Andriukaitis, EU Commissioner for Health and Food Safety; quoted in ECDC [2018a])

As this quote demonstrates, the increasingly widespread perception of the resurgence of measles as a regional, European problem was entangled with another noteworthy problem: vaccination coverage. Whereas the governmental management of measles in Europe has traditionally focused on low-scale issues characterized by an epidemiological concern confined to the borders of specific

countries, by 2017-2020 this management had become increasingly focused on social-behavioral issues at the regional level.

In many of the daily meetings that I attended in 2017 and 2018 at the WHO EURO Emergency Operations Center in which the spread of measles in the region was discussed, knowledge, especially epidemiological knowledge, was essential. During those meetings the event was comprehended epidemiologically through data (e.g. case numbers, genetic relations between cases), graphs, and maps. However, in addition to that, social and behavioral knowledge would often be sought or brought into the discussion. Particularly in relation to another (albeit related) problem that was gaining importance: vaccination coverage. As public health expert Tia Rosen (November 2019) noted, 'If people don't want to [get vaccinated], it's not about understanding measles, but it's about understanding why people don't want to'. The use of social science expertise to generate 'behavioral insight' therefore became increasingly important, especially as public health actors in Europe sought to better understand and address 'skepticism' and 'misinformation' around vaccines. This represented a 'kind of an acknowledgement – It's not enough if we have only infectious disease epidemiologists and laboratory people, but we also need the people who are able to work on the social science part'. The WHO, ECDC, and Germany's Robert Koch Institute, according to her, have made efforts both separately and cooperatively towards that end. As an example, she mentioned an ECDC working group composed of participants from various national public health institutions (from Europe) that has focused on ways to increase vaccination coverage in the region, mainly in relation to measles.

An important driver that brought the problem of vaccination coverage to the center stage in 2019 was that European countries which previously achieved measles elimination were losing this status. As a report from the 'Technical consultation for establishing oversight mechanisms for Measles and Rubella testing laboratories' held by the WHO EURO in November 2019, noted:

> Common to all the laboratory reports from this year is that countries with measles elimination status are reporting an increase in reported cases of measles infection and some even lost or are at risk of losing their elimination status. (Ministry of Health [Israel] 2019: 4)

That year four European countries which previously eliminated measles endemicity had lost their elimination status. On 12-14 June 2019, the European RVC met to evaluate WHO EURO Member States' annual status updates for 2018 and concluded that Albania, Czech Republic, Greece, and

Britain lost their elimination status due to 'continuous transmission for a period longer than 12 months during 2017 and 2018' (WHO EURO 2019a: 4). Commenting on this, the Chair of the RVC, Günter Pfaff, warned that 'If high immunization coverage is not achieved and sustained in every community, both children and adults will suffer unnecessarily and some will tragically die' (UN News 2019). In terms of the management of measles, the loss of elimination status signified, as a news article in *The Guardian* had put it, 'that progress on measles has deteriorated' (Davis 2019).

Accordingly, the loss of elimination status had significant implications. In the UK, the loss of this status only three years after it was achieved prompted Prime Minister Boris Johnson to order 'Urgent action to boost the number of children and young people receiving life-saving vaccinations' (Prime Minister's Office 2019). The UK government thus devised a strategy to deal with a particular problem that was about 'a small but steady decline in [MMR vaccination] coverage in recent years'. In that regard, furthermore, the Head of Immunization of Public Health England, Dr. Mary Ramsay, was quoted as saying: 'Losing our "measles-free" status is a stark reminder of how important it is that every eligible person gets vaccinated. Elimination can only be sustained by maintaining and improving coverage of the MMR vaccine'. Although the resurgence of measles in the UK did not become an official national emergency, the loss of national elimination status provoked the urgent use of extraordinary measures. A central aim of using these measures was to address the problem of vaccination coverage, rather than only the problem of measles spread.

Indeed, even public health experts who were less alarmed by the loss of elimination status (observing that the epidemic was under control), such as Maria Theodoridou, the Chair of the National Vaccination Committee of Greece, largely considered the problem as one that has to do with insufficient vaccination coverage in specific populations like the Roma in Greece and accordingly proposed that the intervention should focus on vaccinating 'these populations, who do not go to the doctor alone. The doctor must go to them to vaccinate them' (Michalopoulos 2019). Whereas interventions associated with the epidemiological problem of measles spread target the circulation of the disease in a population composed of the sick and the susceptible, interventions in relation to the social-behavioral problem of MMR vaccination coverage (or the "immunity gap") characteristically target the non-immune or potentially non-immune population. This is also

expressed, though in more general-technical terms, in the ECDC's Risk Assessment for measles in the EU and the European Economic Area (EEA) from May 2019:

> We estimate that four-and-a-half million people born since 1999 of an age eligible for vaccination are potentially non-immune to measles due to missing one dose of vaccine and never experiencing a primary infection.… when the immunity gaps are too large in a community and vaccination coverage over time has been suboptimal, then if outbreak response is not timely and comprehensive, the virus will circulate first in pockets of vulnerable individuals, then in large proportions of communities, and eventually spread to other countries. This is the current scenario in the EU/EEA – the result of inadequate vaccination coverage over the past years in most of the Member States. (ECDC 2019: 14-15)

That over four-and-a-half million people in the EU are non-immune to measles is not only an obstacle in the way to reaching regional measles elimination (and therefore, to the actualization of the potential of disease eradication), but also results in that endemic measles transmission could be reestablished 'in countries that have already eliminated measles' (ECDC 2019: 15).

The EU's response to the problem of vaccination coverage included an effort by the European Commission to produce knowledge about the state of vaccine confidence in the EU (Larson et al. 2018), followed by a European Council call for enhanced cooperation in the area of vaccine-preventable diseases (European Council 2018), and stemming from that, the development of capacities within the ECDC to address issues such as misinformation and vaccine hesitancy (ECDC 2021). In that context, furthermore, the European Commission and the WHO launched the Global Vaccination Summit in September 2019 to address issues that are 'putting hard-won public health gains at risk', including 'unequal access to vaccines and waning public confidence in vaccination' which are responsible for the erosion of vaccination coverage rates (European Commission & WHO 2019).

Other governmental responses included, for instance, efforts to improve routine childhood immunization mechanisms, targeted interventions to vaccinate unvaccinated adults of certain groups (e.g. health-care workers, women who are pregnant or considering pregnancy), and collaborations between countries with similar vaccination coverage issues (WHO EURO 2018). For its part, the WHO sought to address both 'immediate gaps and needs' and 'long-term technical' aspects, by drawing on 'emergency resources within WHO and partner organizations… such as the European Centre for Disease Prevention and Control (ECDC); Gavi, The Vaccine Alliance;

and UNICEF', and working with countries on more systematic issues related to logistics, legislation, surveillance, and training of healthcare workers (WHO EURO 2019c: 6). Thus, the WHO provided support to counties in the WHO European region (e.g. Ukraine) in implementing and establishing immunization activities (WHO EURO 2019d); facilitated and assisted in the organization of training courses for healthcare workers; conducted After Action Reviews of previous measles outbreak responses in cooperation with countries and helped countries revise plans accordingly (WHO EURO 2019f: 2-4). Furthermore, the WHO sought to strengthen Kyrgyzstan's response to an ongoing measles outbreak and to facilitate preparedness for the continued spread of the disease within the country through a simulation exercise and workshop aimed at practicing and reviewing operational plans and procedures (WHO EURO 2019e).

Meanwhile, in Germany another kind of governmental response unraveled in that context: the adoption of mandatory vaccination legislation. A senior German public health official pointed out this development during an interview:

> Measles now is also a big topic in German politics because there was just recently an announcement by the Ministry [of Health] that they want to somehow launch a legal obligation to be vaccinated for measles and you know that in Germany having this kind of legal obligation, so vaccination, that's really, really, really difficult because the German population is quite critical about that. (Johan Kurtz, July 2019)

The problem of vaccination coverage has troubled German public health authorities for some time, particularly in relation to measles. Professor Reinhard Burger, President of RKI, expressed that concern in noting the increasing prevalence of measles in Germany's 'pool of unvaccinated individuals' that includes adults and schoolchildren, as well as members of anthroposophic and Roma communities (WHO 2012: 3-4). Germany's intervention in this regard traditionally largely focused on ensuring accessibility to vaccination and dialogue with communities (WHO 2012: 4). However, in 2017-2019 there was a political momentum that enabled German policymakers to push forward legislation to effectively increase measles vaccination coverage. A public health expert from RKI described the background for this shift during an interview:

> There's been an ongoing discussion in Germany about mandatory immunization. It has been going on and on and on, and every now and then, there's a newspaper article, and then the political parties are either pro or against… It has also been specifically focused around measles in the last years. (Tia Rosen, November 2019)

Explaining the reason that the public debate on mandatory vaccination policy in Germany has focused on measles, the RKI expert further noted: 'If we don't vaccinate, then we have huge outbreaks again, like we see now with measles. That is like one example, but actually, it's the one example, because we don't have that so much with other infectious diseases right now'. A window of opportunity thus opened by mid-2019.

As stories on measles outbreaks in schools and childcare facilities repeatedly appeared in the media, the idea of mandatory vaccination was taken up once again in the German public discourse. Correspondingly, there was a political debate between members of the coalition parties (e.g. CDU/SPD) who supported making MMR vaccination mandatory, and members of the opposition (e.g. the Green party) who insisted that the best approach is to invest in education and persuasion of the public (Zinkant 2019). In November 2019, the German Bundestag finally adopted the Act on Protection against Measles and Strengthening Vaccine Prevention (Measles Protection Act) that requires children who attend kindergarten or school, and adults working in such places or in healthcare facilities, to be vaccinated against measles (Federal Ministry of Health [Germany] 2019). The Act entered into force in March 2020, and in August 2022 the constitutional court ruled to uphold the new law because 'while the mandate interfered with the rights of children and their parents, this was justified due to the high infection risk with measles and potential for serious illness' (*Reuters* 2022).

Interestingly, epidemiologically speaking the circulation of measles in Germany at the time represented an improvement, as in 2017-2020 there were less cases of measles in Germany than in 2013-2015 (National Verification Committee for Measles/Rubella [Germany] 2020). Indeed, as the public health expert from RKI told me:

> [S]ometimes when I read articles, I get frustrated because I feel-- At least you should get the facts right – saying that the vaccine coverage is still pretty good, and the outbreaks are not so big. If you look at the cases over the last decades, they have been going down and down and down and down. But then I think it was just a political momentum, so somebody really wanted [the new legislation to pass]. A minister wanted it, and then all parties also were in, and the general public was also in. (Tia Rosen, November 2019)

The political momentum that enabled the adoption of the new legislation was not strictly tied to a worsening epidemiological situation within Germany, but to a perception that 'A measles infection is an unnecessary threat in 2019' as the German Minister of Health, Jens Spahn, said in his

justification of the new legislation (quoted in Connolly 2019). A similar view was expressed by the International Federation of Red Cross and Red Crescent Societies (IFRC) Europe Regional Director, who stated in relation to the Red Cross campaign to address the resurgence of measles in Ukraine that: 'It is hard to believe that children are dying of measles in Europe in 2019… This disease is almost completely preventable' (IFRC 2019). The threat posed by measles at that point in time, in which an effective and widely available vaccine exists, is unacceptable. However, while Germany's effort to act on this threat focused on it domestically, the understanding of measles as a growing threat itself was related to the resurgence of the disease beyond Germany.

> I think the situation has changed a little bit insofar that the outbreaks have been growing bigger and bigger in the last years, but for Germany in itself, the situation is not so bad, the vaccine coverage is pretty good. We do have outbreaks, but they're relatively small. (Tia Rosen, November 2019)

Tia's comment points to something important: the political momentum that renewed the public discourse around, and enabled the adoption of mandatory vaccination measures was entangled with an understanding that measles outbreaks are becoming worse in recent years, though this worsening situation is not in Germany. As Jens Spahn expressed in an opinion article presenting and justifying the new legislation:

> [C]ontrary to the widespread narrative [measles] are not a "harmless children's disease"! In fact, *globally*, measles cases even doubled in 2018. In Germany, a large number of children, young people and adults are still not vaccinated against measles. This means that they can shed and spread the pathogen, causing repeated outbreaks. We cannot let this go unchallenged…. Between August 2018 and late July 2019, more than 13,000 measles cases were reported *across Europe*. In Germany, as many as 485 cases were registered by early September of this year. (Spahn 2019; emphasis added)

In this way of framing the situation in Germany through the epidemiology of measles on the global and regional level, Spahn promoted an understanding of measles as a growing threat, despite its decline in Germany.

The management of measles in Europe was undergoing a transition. Responses to the resurgence of measles sought to implement and add new measures, or boost existing interventions. In these responses, however, expressions of hope for measles elimination and concrete or explicit steps to achieve this end were scarce. As the governmental management of measles in Europe was turning

to focus on regional level medium-scale issues, the collective construct of hope for, and progress towards elimination was mutating.

3.9. An emergency beyond emergence

> Measles outbreaks are a sign of immunization gaps that must be addressed to prevent further spread of the virus and future outbreaks. Based on the continued need for an enhanced, tailored response to increase population immunity, on 25 November 2019 the emergency activation was extended for another 3- month period, when it will be reassessed. (WHO 2019f: 1)

When the WHO decided to extend the emergency grading of measles in Europe, the rationale for this was that the event has continued to pose a significant problem that requires the organization to respond with 'enhanced' measures to increase vaccination coverage. An exact number of vaccination coverage rate or countries in the region achieving elimination would be sufficient to end the emergency is not provided here. Instead, the WHO subtly introduces the measles emergency as an event that marks, signifies, or indicates a problem of vaccination coverage that extends beyond measles.

The importance of the WHO's continued classification of measles resurgence in Europe as an emergency and the implications of the rationale guiding that decision cannot be overstated.

> We are aware that the highest measles incidence is just a few hundred kilometers away from us, which is in Serbia. The problem is really big, but we don't really engage in measles specifically that much because this is one of the high-ranked and prioritized topics of WHO. (Johan Kurtz, July 2019)

As expressed by that German public health official that I interviewed, the WHO has been a very prominent and central actor in the management of this disease on multiple levels.

The meaning of the WHO's rendering of measles resurgence (in Europe) into an emergency event that signifies a problem of vaccination coverage beyond measles can be illustrated in the forward to the *Strategic Response Plan for the measles emergency in the WHO European Region: September 2019–December 2020* '[18] In this document, the WHO's Acting Regional Emergency Director explained that 'The resurgence of measles in the Region is occurring because of a build-up over time of susceptible individuals in communities and countries with suboptimal immunization coverage' (WHO EURO 2019b: 3).

Whereas emergency is usually thought of as a sudden, abrupt, or rapidly deteriorating event involving an emerging or re-emerging disease threat, the emergency of measles resurgence shows that it can also be conceptualized as a gradual development that has reached a critical point or moment before rapid deterioration. What enables the WHO to render this resurgence into an emergency, in that sense, is a prospective projection of the future through epidemiological reason combined with the social-behavioral problem of vaccination coverage. As furthermore expressed by the Acting Regional Emergency Director: 'If outbreak response is not timely and comprehensive, the virus will find its way into more pockets of vulnerable individuals and potentially spread to additional countries within and beyond the Region'. The rationale for addressing the accelerating spread of measles through extraordinary means and resources that are made available by the identification of the event as an (grade 2) emergency is that the present situation envelops a future prospect where measles spreads even more uncontrollably, thus potentially rendering the problem into a global-scale event.

That measles resurgence as emergency brings together the broad problem of vaccination coverage with predictive epidemiological reasoning means that, as further noted, the problem of measles resurgence goes beyond this specific disease: 'the spread of measles, often likened to the proverbial canary in the coal mine, reveals gaps in the broader health system and may presage the appearance of other vaccine preventable diseases'. Indeed, as the report itself suggested:

> The vast number of measles outbreaks in the European Region are driven by a high rate of unvaccinated children, adolescents and adults. This trend indicates broader health system weaknesses, whereby measles could be the herald of other vaccine-preventable disease outbreaks, such as pertussis, diphtheria and rubella.
> (WHO EURO 2019b: 5)

If measles vaccination coverage is an indicator for vaccination coverage in general and health system strength, then the resurgence of measles in Europe 'reveals' that vaccination uptake is declining and health systems are weakening. A specific present problem foreshadowing a general disastrous deterioration in the near future, measles resurgence is portrayed and understood as a 'canary in the coal mine' or 'indicator', as an alarm for the coming disaster that cannot yet be fully grasped. Both the resurgence of measles in Europe and Europe itself become the harbinger for global health deterioration, for a shift from progression to regression.

That rendering of measles resurgence into an emergency points to a transformation in the collective construct of its management: from an issue of moving forward towards the end of elimination, to an issue of reversing regression. When WHO official Kate O'Brien spoke about the drivers of measles resurgence in Europe, specifically misinformation and weak health systems, and warned that: 'We are backsliding, we are on the wrong track' (quoted in Nebehay 2019), she expressed exactly that notion of regression.

Thus, the practical turn in the governmental management of measles in Europe to emergency measures was accompanied by a change in the collective construct that surrounds that management. Clearly, this did not mean that the notion of progress towards and hope for measles elimination, and especially *global* elimination, was completely overridden or displaced. Indeed, for the Acting Regional Emergency Director: 'Measles is under global elimination, but it is resurging in Europe at a most alarming rate. Changing this course requires urgent and coordinated action…' (WHO EURO 2019b: 3). While the hope for measles elimination remained, a certain change appeared as the hope for 'changing the course' of the event became more dominant. In other words, hope towards the end of reestablishing progress itself. As the WHO hopes to reestablish progress, it seeks to intervene upon the event of measles resurgence in Europe, understood as the source of regress or 'backsliding', through 'urgent and coordinated action'.

3.10.   An emergency of regression: Measles in the light of COVID-19

Once again, it is important to emphasize that the collective construct of measles elimination did not disappear. Far from it, this construct has remained key in the management of measles in Europe, where responses to the problem of vaccination coverage in the light of the COVID-19 pandemic have focused on reigniting efforts to reach the 95% vaccination coverage rate towards the end of eliminating measles (e.g. Geddes 2022), as they had in the past (e.g. ECDC 2019). Nevertheless, and while the two constructs are coexistent, the COVID-19 pandemic contributed to the denaturalization and problematization of the construct of measles elimination.

An opinion article on measles in the context of the COVID-19 pandemic by members of the Institute for Health Metrics and Evaluation (IHME), University of Washington, expresses that in stating: 'The COVID-19 pandemic has clearly demonstrated that controlling disease spread requires a global effort, and *progress at one point does not guarantee progress forever*' (Sirull &

Rogowski 2021; emphasis added). Progress towards the elimination of measles, in that sense, is not a given but something that has to be perpetually maintained through action as the disease may resurge.

The COVID-19 pandemic that began in 2020 has increased and added to concerns with regard to the potential exacerbation of the global spread of measles. Among the identified causes for that potential exacerbation were, for instance, the reallocation of resources and efforts to address the pandemic. As a report by the ECDC suggested, the seeming decline in the number of measles cases in EU and European Economic Area (EEA) countries, and the UK between January and May 2020 was likely a result of under-reporting and under-diagnoses, rather than an effect of physical distancing and other public health measures that were implemented during this period (Nicolay et al. 2020). Generally, public health experts and practitioners alarmed that the pandemic, whether because of the burden on public health systems or the effects of public health measures on people's behavior, may have dire consequences for vaccination efforts.

Similarly, in a correspondence in *Nature Medicine* (Durrheim et al. 2021), the chairpersons of the six Regional Measles and Rubella Elimination Verification Commission warned of 'the profoundly negative effects of the pandemic on childhood immunization coverage', noting that immunization activities have been disrupted across all WHO regions. Measles in particular, they argued, 'is unforgiving of immunity gaps and is certain to resurge after the COVID-19 pandemic, with a resultant catastrophic impact on young lives'. The problem of vaccination coverage combined with predictive epidemiological reasoning has thus continued to play an important role in constituting measles as an emergency of regression, both in Europe and beyond.

Correspondingly, the hope to reestablish progress as the dominant collective construct surrounding the management of measles has persisted and been further reinforced in the global governance of health emergencies. Most recently, the WHO's Strategic Advisory Group of Experts (SAGE) on immunization alarmed that as a result of 'backsliding' in national immunization programmes during the COVID-19 pandemic, there has been an escalation of measles outbreaks across the world. As the WHO's Dr. Kate O'Brien, in her role as a member of the SAGE, stated:

> We are seeing an escalating in measles outbreaks. They're escalating in number, they're escalating in the number of countries, and they're escalating in the size of

the outbreaks. And so we're watching the fire coming towards and this… will result in a large number of deaths unless action is taken. (Cullinan 2022)

A call to act on issues of backsliding means a call for intervention upon regression by addressing its specific sources, with the hope to reestablish progress. Simultaneously, the notion of escalation, explained as a consequence or effect of this backsliding, promotes a perception that provokes urgency around the prospect of further deterioration into disaster. Thus, the 2017-2020 European measles epidemic is an emergency of regression.

3.11.   Subverting the emerging disease worldview

> I think it's getting more clear that diseases, no matter where the outbreak, can also have global effects. There was, for example, one measles outbreak in Latin America from a person traveling with measles from Germany to Latin America. It's not only the low-income countries [that] bring disease to high-income countries, it's also the other way around…. narrative is changing. (Health policy expert and consultant Clara Vogel, August 2019)

During the 1990's, the use of the term "emerging infectious disease" as a category or classification became increasingly commonplace in public health discourses. The 'campaign' that mainstreamed the use of the term, as Nicholas King explained, was driven by experts and scientists from biomedicine, public health, and national security, as well as popular science authors and the mass media, and promoted the idea that

> recent political, economic, and technological changes were giving rise to "emerging diseases": newly discovered pathogens such as the Ebola and Hantaviruses, and newly resistant strains of bacteria such as Mycobacterium tuberculosis and Streptococcus pneumoniae. With increasing international commerce and travel, emerging diseases could be rapidly transmitted from one country to another, thus constituting a global threat that demanded immediate response. (King 2004: 63)

Emerging disease as such is a concept that refers to pathogens that are either novel or at least newly introduced. Moreover, it implies an explanation for how such pathogens emerge and circulate: globalization. Thus, the threat of emerging diseases is directly linked to efforts to comprehend and respond to the effects of globalization in the field of public health through solutions that contain or prevent problems from spreading from the "local" to the "global" level. Accordingly, this category has played a critical, even paradigmatic, role within the field of global public health as it formed around the early 21st century. Indeed, the idea of emerging disease was a driving force

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behind important developments such as the revision of the International Health Regulations (Davies 2008). Further, as King (2002) explained, the emerging disease 'worldview' succeeded existing international health logics that are rooted in colonial-era ideologies of medicine and public health, not so much displacing these ideologies as much as inheriting and adapting some of their (problematic) features.

Correspondingly, while the emphasis on disease emergence as a threat to national security and international trade resulted in more funding and public attention for public health, it also meant that some issues, seemingly less "urgent" than emerging diseases, have often been sidelined. The definition or classification of specific diseases as "emerging"/"reemerging" or as "tropical"/"neglected" has implications for how they are perceived, prioritized, and acted upon as health problems as these concepts are rooted and embedded in distinct histories, rationales, and political and economic tensions (Jackson & Stephenson 2014). Further, the classification itself relies on structures of inequality (e.g. in the production of scientific knowledge) and perpetuates inequalities (Farmer 1996). Accordingly, when diseases are perceived to pose a threat to the affluent West they are conceptualized as an "emerging" or "global" problem and when they are perceived to pose a threat to poor nations they are conceptualized as a "tropical", "neglected", or "local" problem.

Ebola provides a particularly illuminating instance in that regard. As Lakoff (2017) showed in the case of the 2014 Ebola epidemic in West Africa, during the epidemic global health interventions shifted from an approach that he distinguished as 'humanitarian biomedicine' to an approach that he distinguished as 'global health security'. He suggested that this shift and its practical implications, namely a turn from containment to preparedness, resulted from a change in the administrative-political categorization of Ebola, which turned from a 'neglected' disease into an 'emerging' disease. This change in the classification and conceptualization of Ebola was linked to perceived failure to properly address its virulence and transmissibility, a situation that had been in fact exacerbated by the collapse of the public health infrastructure in West African countries (Lakoff 2017: 156–167). That emphasis on virulence and transmissibility rather than on containment furthermore reflected a shift away from the strategic "othering" of Ebola to prevent panic towards a more fear-provoking framing of the disease (see: Ungar 1998).

The WHO's construction of the resurgence of measles in Europe as a regional, medium-scale emergency event could, in that light, be seen as a subversive act. As noted earlier, measles resurgence, especially in Europe, was not considered an emergency by many due to the existence and availability of effective vaccines, as well as in-country capacities to deal with this issue. Health emergencies as a category of events that occur "locally" but are of "global" interest, from this perspective, largely refer to the circulation of newly known or introduced diseases that "emerge" in non-Western parts of the world and pose a potential threat to the West. The conceptualization of health emergency is thus intertwined with the narrative of emerging disease. However, when the WHO rendered the resurgence of measles in Europe into a regional health emergency, albeit by placing it in the "softer" category of Grade 2 emergency, that dominant narrative or worldview of emerging disease was challenged and disassociated from emergency.

The emergency event, in this case, involved a well-known disease that re-emerged in Europe, despite there being vaccines and technical capacities in place to address it. What enabled the understanding of measles resurgence in Europe as an emergency, given that the situation was exactly the opposite from what is considered an emergency as far as the emerging disease worldview goes, was the governmental increased interest in the social-behavioral problem of vaccination coverage. The subtle and partial shift from the predominant focus on epidemiological issues of measles spread allowed a certain rethinking of measles resurgence to take place. While the question of whether vaccines are available and whether countries have capacities to respond and vaccinate their population remained central, some of the people involved in the management of measles in Europe became increasingly concerned with the broader implications and meaning of the measles situation in Europe. In terms of the prospect of global measles spread and other vaccine-preventable diseases. In turn, this future-oriented thinking about the resurgence of measles in Europe could be mobilized (particularly by the WHO) to promote and sustain action on the event as an emergency.

In contrast to the abovementioned scholarly works, in the present case the practical shift or development in the governmental management of the disease (the use of emergency measures) did not relate to, or result from a change in the categorization or conceptualization of the disease. It was also not so much the result of a perceptual change regarding who the disease poses a threat to. Instead, the shift to emergency was related to an array of processes and developments that enabled

change in the way the event is conceptualized and classified. Most importantly, as I showed in my analysis, the key to understanding this change and the related practical shift is in the dynamics and collective construction surrounding the management of the event.

Simply explained, traditionally and before 2017 governmental action on measles in Europe (and internationally) was largely driven by and focused on the end of elimination. Then, when the resurgence of measles happened, governmental action on measles in Europe gradually became connected with health emergency governance and, hence, notions such as urgency and high-risk threat.

Through my analysis, I showed how the collective construct of hope for, and progress towards measles eradication/elimination worked to repeatedly reset the target date of elimination. I then showed how in the new construct hope was relocated from the end of elimination to the end of reviving progress itself. This new end is not translated into a specific date, but into a demarcated event that represents a critical moment for action to reverse regress. That is, an emergency of and by regression.

The analysis of how health emergency governance affects the dynamics of collective constructs can similarly be applied to a wide range of cases to provide valuable insight. Indeed, such an analysis may help to make sense of governmental action and changes in it, even in the absence of changes in the categorization or conceptualization of disease. Furthermore, the role of health emergency governance in driving transformation in collective constructs points not only to how problems are turned into health emergencies, but also to how the boundaries and meaning of what constitutes a health emergency can undergo change as a result of those problems.

4. The (Incomplete) Rendering of Antimicrobial Resistance into a Silent Health Emergency

4.1. Background

In late 2019, I arrived in Berlin (Germany) for a series of meetings and interviews with experts, policymakers, practitioners, and scholars who's work revolves around health emergencies. One of the interviewees, Sheila Hess (a public health expert who at the time was working as a consultant for Germany's Agency for International Cooperation, GIZ [Deutsche Gesellschaft für Internationale Zusammenarbeit]), explained to me why she thinks that Antimicrobial Resistance (AMR)[19] is 'definitely' an emergency: 'Because it's getting out of control. Because you have an increasing number of cases, of fatalities of different pathogens. And there is no cohesive, comprehensive strategy to deal with it'.

Several weeks earlier, as I was planning my visit to Germany, I contacted an official from the Global Antimicrobial Resistance Research and Development Hub, a partnership that was established in 2018 and operates from the German Centre for Infection Research. In my Email to the official, I presented my research and asked to meet him for an interview. To my surprise, the official declined my request and answered that the work of the Hub 'is not really related to dealing with Global Health Emergencies'. When I then asked him to clarify what he meant by that, he replied:

> AMR is no doubt a global emergency. It is an emergency that is very slow in developing. When talking about emergencies at least my understanding is that is relates to events that unfold reasonably quickly, such as the Ebola crisis. There are mechanisms to deal with these kind of "emergencies". (Personal communication, 23 October – 6 November 2019)

While for some people, such as the public health expert that I interviewed, AMR is certainly an emergency, for others it is not (or at least not fully). Underlying those different perceptions regarding the problem of AMR and emergencies is a certain way of reasoning. As indicated in the former example, the development of the problem of AMR may be understood as something that is accelerating, inflating, and growing beyond our ability to manage it, something that is *getting out of control*. By contrast, as expressed in the latter example, the problem of AMR is *very slow in developing* and can be managed with different means than rapidly evolving events.

The contrast between the two sentiments towards, or understandings of the problem reflects the uncertain status of AMR as an emergency.[20] That status is exactly what makes the problem of AMR an excellent case study for an examination of the boundaries of the contemporary assemblage of health emergency governance. As such, it also provides an opportunity to highlight taken-for-granted assumptions about what health emergencies are.

Importantly, while the two people in the examples above reached different conclusions as to whether AMR is an emergency, in both cases there is an underlying notion that *emergency itself* refers to an accelerating and increasingly unmanageable, rapidly deteriorating event. Views on whether or even when a certain problem is an emergency, a partial emergency, or a non-emergency are therefore tied to how the problem is understood, and as I will show in this chapter, among the various things that are included in that understanding, perhaps the most crucial in relation to emergency is an understanding of the problem through event(s) and rapid deterioration. This highlights the centrality of eventfulness and velocity in the contemporary global governance of health emergencies.

To clarify, my purpose in this chapter is not to examine or to make an epistemological claim regarding whether AMR should or should not be defined as a health emergency. Instead, it is to enquire into the dynamics at play in the ontological indetermination and implicit contestation concerning the status of AMR as an emergency. By that, I do not mean that my focus is on different perceptions or ontologies of health emergency and AMR *per se*, but instead on how the problem of AMR has been, at least to an extent, "emergencized". In other words, I identify and examine processes or fundamental aspects that enable a particular governmental problem to be thought of and acted upon as a health emergency.

In the analysis, I identify three processes or aspects that have been key for rendering the problem of AMR into a health emergency. First, a process whereby the (largely technical) problem of AMR turned into a "crisis", a break in history that situates the present as a decisive moment of action that precedes a possible future catastrophe. Second, a related process of emergence where the global governance of AMR has formed as a routine, interconnected, and organized endeavor to manage the problem through governmental apparatuses. And third, a process where the time-space of the problem of AMR has undergone compression. Certain discourses, technologies, and strategies have created an effect that compresses the time-space of the problem of AMR,

reconstituting it as an alarming present reality that consists of increasingly frequent events and calls for an urgent response.

In what follows, I briefly introduce the case and explain the specific focus of this chapter. Next, I historically contextualize the case and analytically distinguish between two kinds of rationales or ideas that undergird the governance of AMR. I then present a three-part analysis and discuss my findings in respect to the literature on AMR in sociology and Science and Technology Studies (STS).

4.2. AMR and its governance

> Antibiotics: a class of substances that can kill or inhibit the growth of some groups of microorganisms….
>
> Antibiotic Resistance: a property of bacteria that confers the capacity to inactivate or exclude antibiotics or a mechanism that blocks the inhibitory or killing effects of antibiotics. (U.S. Congress Office of Technology Assessment 1995: 173)

On a technical level, AMR and more specifically Antibiotic Resistance (ABR) refers to the ability of bacteria to *resist* to antimicrobial drugs. Resistance as such is understood biologically, as a natural process and response to antibiotics. As stated in a report by the Infectious Diseases Society of America:

> Antibiotics and other antimicrobial drugs have saved millions of lives and eased patients' suffering. Although they have been dubbed "miracle drugs," antibiotics are not always effective. Over time, bacteria can develop resistance to existing drugs, making infections difficult if not impossible to treat. (IDSA 2004: 3)

Antibiotics are highly important medical interventions in themselves and also because they allow a wide range of other medical interventions (e.g. surgeries). However, they become less effective as microbes evolve and acquire qualities that make them less vulnerable to existing antimicrobial drugs.[21] The technical-biological understanding of AMR and ABR developed over time, as scientists identified various kinds of "resistance mechanisms" and explained how they appear (see Kapoor et al. 2017).

From a more critical historical perspective, AMR and the general problem it involves can be described as follows:

Antibiotics kill by selective toxicity, disrupting microbial structures or processes that do not exist in human cells. Their production is driven by theories of antibiosis: a human leveraging of substances microbes create in mutually antagonistic battles for space and resources. Humans make antibiotics by farming microbes, chemically tinkering with microbial metabolites, and mimicking them with synthetic antibiotics. Antibiotic resistance arises when microbes gain the capacity to evade these drugs. (Landecker 2016: 20)

More than merely a metaphor or technical term, "resistance" in the specific sense that it now has refers to qualities that render antibiotics ineffective, but also to the role of humans in driving and accelerating the development and spread of such qualities.

From a social-cultural perspective, AMR can also be understood through its intricate relation to the tendency in global health to extend social and medical power through technical and market integration (Hinchliffe 2022). Further, on a symbolic level, AMR is a sobering, constant reminder of the limits of modern medicine (cf. Chandler 2019). This has been expressed frequently by experts and policymakers, for instance in statements such as 'we are further away than ever from "closing the book on infectious diseases"', referring ironically to the famous quote '[it] is time to close the book on infectious diseases and declare the war against pestilence won' (Spellberg et al. 2008: 156). A quote that is attributed to US Surgeon General William H. Stewart, but presumably reflective of a general sentiment in the medical community during the 1960's.

For the purpose of this study, though, I am less concerned with the complex task of defining AMR and more with the equally complex task of mapping its governance. The global governance of AMR involves many actors of different kinds – governmental and non-governmental, that operate on different levels – international, regional, national, and sub-national, and do so both jointly and separately through collaborative initiatives, cooperation frameworks, policies, and plans. The first challenge I had to overcome in analyzing AMR governance was therefore an empirical challenge – on what to focus? This then prompted an additional challenge – how to balance between examination of the main focus area and the broader environment or context?

The analysis in this chapter is largely focused on the nexus of science (as expertise) and policy. While there are obviously other loci of interaction that are potentially relevant for the purpose of this chapter, such as the biomedical-financial or the academic-philanthropic, in my initial exploration of the case I found that this nexus is the most central and significant dimension in the governance of AMR, and that to a large extent it affects, shapes, and drives other loci of interaction.

If the history of AMR, as Hannah Landecker (2016: 22) suggested, 'ruptures assumptions about divisions between human history… and natural history', then the governance of AMR ruptures assumptions about divisions between science and policy. AMR governance is seemingly a story about the relationship between scientific expertise and policymaking, about researchers and public health institutions that produce knowledge, and politicians and bureaucrats that use this knowledge to devise and implement solutions. However, in practice, the story of AMR governance is also about blurred lines and amalgamations, of policymakers who are scientists by training and scientists who develop and promote policies, of bureaucrats and politicians that enable and shape knowledge production, and of researchers and public health practitioners that create solutions and affect political processes.

As I enquired into that amalgamated science-policy nexus of AMR governance, the specific sites of activity that I eventually came to focus on largely involved the World Health Organization (WHO) and the broader United Nations (UN) system, the United States of America (USA), the United Kingdom (UK), the European Union (EU), and to a lesser extent Germany. As in most areas of global health governance, the WHO and the USA have also been influential and central in the governance of AMR, the former particularly in the last two decades and the latter especially in the second half of the 20th century. The significance and centrality of those actors, as well as that of the UK, in the governance of AMR has been documented in earlier scholarly works (e.g. Gradmann 2013; Kahn 2016; Podolsky 2015). The UK has been a particularly central site of activity in that context since, alongside the USA, its government was one of the first countries to strategically address AMR in national policies and has been a significant and influential proponent for action on AMR at the international level. As one interviewee, a consultant for the German Ministry of Health who specializes in AMR policy, noted:

> Actually, a lot of it [the global governance of AMR] is being driven just by a very, very small set of people, generally from the UK, and including the Wellcome Trust. That's something to be mindful of.… The number of reports and things that are coming from the UK on this topic are reflective of that, of their role in the whole thing. (Emily Morrison, January 2020)

Indeed, the highly influential O'Neill report was commissioned by the UK government, and some of the most prominent advocates in the global governance of AMR are from the UK, for instance former Chief Medical Officer for England, Sally Davies, and the director of the UK-based

philanthropic organization the Wellcome Trust, Jeremy Farrar. At least until the country exited from the EU, the UK also played an important role in shaping the EU's approach to AMR. Nevertheless, the EU's governance of AMR is worthy of attention in itself due to the EU's regional and international influence. Furthermore, as in the case of global health more generally, in recent years Germany has become a dominant force in the global governance of AMR as well. Therefore, I focused on Germany to a limited extent in this case, mainly to understand recent developments.

4.3. How did AMR become a governmental problem?

Historical accounts on AMR often begin with a reminder: that humans have always lived alongside bacteria, antibiotics, and the phenomenon of AMR, or ABR more specifically (Aminov 2010). Such narratives occasionally also begin with or include some of the technical and scientific developments that enabled the eventual identification of antibiotics and resistance to them. Those are usually described as the rise of the 'modern antibiotic era' (Aminov 2010): a series of developments and discoveries in the chemical, biological, and biomedical fields, largely starting with Paul Ehrlich's experimentation with synthesized chemical compounds to create a 'magic bullet' drug that would attack microbes that are responsible for diseases.[22] Even more frequently, historical accounts (e.g. Bud 2007) begin with the identification of ABR during the early 1940's (Abraham & Chain 1940) in direct relation to Alexander Fleming's (1929) publication of his observation of antibacterial activity in mold and the experiments that followed (Chain et al. 1940), and the subsequent mass production of penicillin that started by 1945 (see Landecker 2016).

Having said that, as Overton *et al.* (2021) showed in their analysis of international AMR policy reports from between 1945-2020, AMR had only risen on the international policy agenda during the 1990's, whereas before it was largely seen as a problem of the 'Global North' that can be addressed through interventions that encourage "rational" drug use and the imposition of some restrictions. It thus took several decades until AMR came to be seen as a 'major threat to human health', and only recently it had turned into a top priority problem (Gröndal 2018), that increasingly attracts funding and attention (Podolsky 2018).

To establish an understanding of how AMR went from a promising technoscientific-biological solution to (also being) a persistent governmental problem, I will briefly present the historical emergence of AMR as a governmental problem through two main drivers or axes of development.

My purpose is not to demarcate or distinguish between different historical periods (cf. Podolsky 2018), but to identify the kinds of challenges and solutions that have undergird AMR knowledge production and policymaking, particularly as they appeared in the period between the development and initial mass production of penicillin and the emergence of AMR as a policy problem on an international scale.

4.3.1. *Research, development, and industry*

One main class of challenges and solutions in AMR governance has revolved around the industrial, especially pharmaceutical, utilization of scientific developments. While the mass production and use of antibiotics resulted in 'more health, more meat, more fruit, more surgery, less death, more fertility, in everything from in vitro embryos cultured in antibiotics to fish farming' (Landecker 2016: 20), it was soon realized that there is a flip side to this as '[t]he scale of production is also the scale of resistance'. As historical accounts have repeatedly noted, Fleming and some of his contemporaries warned that if people would be treated with a dose too small or for too short a time, there is a potential for resistance to penicillin (Aminov 2010), and microbiologists soon found that excessive use of antibiotics leads to antibiotic resistance in bacterial strains (Kunin 1997: 240).

During the 1950's scientists found that hospitals using excessive amounts of penicillin were plagued with disease caused by resistant strains of Staphylococcus aureus, and only a year after methicillin (semi-synthetic penicillin) was introduced to hospitals (in 1960) as an alternative, scientists found evidence of resistance to it (U.S. Congress Office of Technology Assessment 1995: 3). Hospitals, as the main space in which resistance was expected to be found, and indeed identified and recorded, therefore began to appear 'as dangerous environments where attempts to combat infectious diseases had instead created hothouses of disease evolution' (Gradmann 2018).

Another important development during the 1950's-1960's was that scientists grew increasingly worried of the possible implications of resistance to antibiotics as they started to understand how specific resistance mechanisms work and how resistance develops, and found that multidrug resistance in bacteria can also occur due to genetic transfer between strains (Akiba et al. 1960; Datta 1965; Falkow 1975: 3-6; Watanabe 1963, 1967). An article in the *British Medical Journal* expressed that worry in a particularly captivating way: 'Increased microbic resistance has darkened the future of antibiotic treatment throughout its short history' (Craven 1965: 1325).

Meanwhile, the development and mass use of antimicrobials (initially, salvarsan, prontosil, and penicillin) paved the way for additional research and development of antibiotic drugs. In the next three decades, new antibiotics were developed and produced. Thus, one solution to AMR has been the development of new drugs (e.g. aminoglycosides, macrolides, and glycopeptides), or alternatively, the chemical modification of existing drugs (Aminov 2010; Gold & Moellering 1996). To a large extent, as Podolsky (2018: 2) suggested, the early decades following the discovery and mass production of antibiotics were marked by a 'persisting optimism regarding the pharmaceutical industry's ability to keep up in the microbial arms race', or to put it in broader terms, a belief that new scientific and technical developments and their utilization by industry will effectively help overcome AMR. This belief has not faded and has remained fundamental in the (global) governance of AMR.

4.3.2. Regulation and control

A second class of challenges and solutions in AMR governance has revolved around regulation and control. During the 1970's-1980's, microbiologists, epidemiologists, geneticists, and medical practitioners who became increasingly concerned with the possible implications of AMR began to devise infection prevention and control strategies (particularly for hospital settings) (e.g. Weinstein & Kabins 1981). That development was especially driven, first, by the occurrence of two cases where penicillin failed to work on common bacterial infections (Levy 2013: 10-11), and second, by studies that identified increasing resistance to multiple antimicrobials (Cross et al. 1983; Finland 1979; Goldstein et al. 1983; John & McNeill 1981; Mayer 1986; McGowan 1985; Sanders & Sanders 1985). It was also driven by a growing understanding that one of the main reasons for increasing resistance is the use of antimicrobials in hospitals, inappropriate and excessive use of antimicrobials in general (Kunin et al. 1973; McGowan 1983), and specifically in agriculture (see: Bud 2007).

Discourses on challenges of, and strategies for infection prevention and control in the context of AMR eventually also sought regulatory interventions and these were incorporated in propositions for strategies to decrease or avoid microbial resistance,[23] and that included measures such as limiting and controlling use, preventing transmission, appropriate education on the issue in physicians' training, and using different antimicrobials of the same family in cycles (Acar et al. 1986; Kunin et al. 1973; McGowan 1986; Neu 1985).

As infectious disease experts sought greater involvement by governments and public health institutions to introduce and regulate such strategic solutions nationally (Podolsky 2015), AMR gradually became a matter of concern for governmental actors (though mostly in Western Europe and North America). The need to regulate the use of antibiotics can be seen, for example, in a US Senate hearing that considered problematic prescription practices in the context of antibiotics, while relying on and echoing scientific studies that identified the 'use, misuse, and overuse of antibiotics', due to inappropriate and 'irrational' prescription practices as a major driver of resistance (U.S. Senate Select Committee on Small Business, Subcommittee on Monopoly 1972: 1040).

That increasing concern with the need to address ABR was also evident on the international level (representing an early phase in a process where AMR would eventually become a global governmental problem). During the 1970's-1980's, the WHO hosted a series of meetings where they looked at specific challenges related to ABR and discussed strategies to address them. Those meetings marked an important development as earlier expert meetings on AMR that were convened by the WHO focused on very narrow technical issues such as standardization of diagnostics and the laboratory definition of "resistance" (Gradmann 2013; Podolsky 2015: 150).

In December 1975, twelve microbiology experts attended a WHO consultation meeting (in Brussels) where they discussed the public health aspects of bacteria resistant to antibiotics, and in October 1977, experts met in Geneva for the WHO Meeting on Surveillance for the Prevention and Control of Health Hazards due to Antibiotic-Resistant Enterobacteria (WHO 1978). Then, in November 1981, the WHO Scientific Working Group on Antimicrobial Resistance met in Geneva (WHO 1982). The resulting report and memorandum from this meeting provided guidelines, technical recommendations, and ways of developing measures to control ABR: control of antibiotic use in hospitals; regulation of the relationship between pharmaceutical industry representatives and physicians; tests and monitoring systems for national and international surveillance; and reduction of antibiotic use by researching alternative measures to prevent disease. These measures, according to the report, were to improve antibiotic prescribing practices, support governments in creating policies on antibiotic use, and encourage pharmaceutical manufacturers to act responsibly in regard to antibiotics. Thus, international interventions on the problem of AMR

mainly focused on standardized technical solutions and their advancement through implementation and regulatory action on the national level.

Correspondingly, professional organizations and associations were similarly advocating for interventions on AMR. By 1988, the *Infectious Diseases Society of America* published general guidelines that were to encourage and assist hospitals in evaluating and controlling antimicrobial usage in order to decrease the incidence of resistant strains in them (Marr et al. 1988); and by 1995, the *American Society for Microbiology* Task Force on ABR published a report that recommended to focus on educating physician and the public, encouraging research and development of new antimicrobials and vaccines; and establishing a national surveillance system (Jones 1996).

The two classes of challenges and solutions presented above represent two general rationales or ideas that have undergirded the emergence of AMR as a governmental problem and remain at the core of its governance to this day. In the first, biological challenges can be solved through a combination of techno-scientific innovation and economic enticement. In the second, the combination between techno-scientific innovation and economic enticement creates challenges that can be solved through regulation and control. Those two rationales are not mutually exclusive but appear together and are entangled in the formation of initiatives, frameworks, and policies (as indicated below).

4.4. The crisis of AMR

4.4.1. A widening gap

By the late 1980's, an international space that consisted of more or less scattered and incoherent activities and efforts to address AMR had emerged. At that point, however, that space started to change as it became more consolidated and established. In other words, governmental apparatuses of AMR governance began to form. What had driven that formation was a perceived crisis of AMR.

During the 1990's, an international community of policymakers, bureaucrats, experts, and scientists who were concerned with AMR increasingly defined and understood this problem as a "crisis". A widely cited article in *Science*, 'The crisis in antibiotic resistance' (Neu 1992), warned that as pharmaceutical companies continuously discovered and developed new antibiotics in the past three decades, the scientific community and society largely neglected the threat posed by

bacterial resistance. Further, it claimed that over-use of antibiotics has led to this crisis, and suggested that resistance can be limited by implementing antibiotic control programs, improving hygiene practices, and developing new antibiotics. Similar ideas and concerns were repeatedly presented in such a manner. For instance, in an editorial response piece in *Clinical Infectious Diseases* titled 'Antibiotic Armageddon', AMR expert Calvin Kunin discussed the continual over-use of antimicrobials despite the knowledge that resistance to them can be stalled if they are used in a controlled manner, and concluded that the 'long-term outlook for control of antibiotic resistance is bleak' (Kunin 1997: 241). These and similar commentaries and articles that appeared in scientific journals reiterated previously identified challenges and solutions in relation to AMR, but presented and discussed them in a different way than before, expressing a different understanding of the problem.

Meanwhile, at the policy level, that same shift in the understanding of the problem was expressed in terms of a widening gap. That can be seen, for instance, in the use of the "arms race" metaphor to refer to a widening gap between the pace of bacterial resistance and the development or implementation of solutions to counter this resistance. In the 1995 U.S. Congress Office of Technology Assessment (OTA) report on the 'Impacts of Antibiotic-Resistant Bacteria' (U.S. Congress Office of Technology Assessment 1995), OTA's Director, warned that as resistance to antibiotics – 'the primary weapons in mankind's battle against bacterial diseases' – continues to develop and spread, we are getting closer to a point where 'many bacteria will become resistant to all antibiotics, plunging humanity back into the conditions that existed in the pre-antibiotic age' (U.S. Congress Office of Technology Assessment 1995: iii).

The report identified several significant challenges, especially: that the incidence of antibiotic resistance is continuously rising while fewer new antibiotics are developed; that the estimated costs of antibiotic resistance could reach several Billion USD (or more) per year; and that ABR is spreading internationally due to the circulation of people and goods. The report also provided recommendations for strategies to control ABR. Mainly, to develop new antibiotics; to prolong the effectiveness of existing antibiotics by using them prudently while tracking patterns of resistance through surveillance; to reduce their use by providing vaccines as a preventative measure; and to implement effective infection control measures (U.S. Congress Office of Technology Assessment 1995: 1-2).

A similar concern with a widening gap between the pace of bacterial resistance and development of countermeasures (and the specific challenges and solutions in that regard) appeared in the European Union. An early European Council resolution from 1999, 'A strategy against the microbial threat', considered ABR 'a major European and global health problem' and called on EU member states to create policies for containment of the spread of ABR, implement and maintain ABR control and prevention measures, and coordinate on monitoring and surveillance in that area (European Council 1999). It should be noted that the resolution marked an important policy shift as the EU had previously only acted on ABR in an ad-hoc manner and mainly focused on veterinary and agricultural aspects of ABR (e.g. European Parliament 1998).

In some instances, that widening gap was even directly discussed in terms of a "crisis". For example, a policy report by the Infectious Diseases Society of America (IDSA) identified the stagnation of research and development for novel antibiotics as the onset of a public health crisis:

> Unfortunately, both the public and private sectors appear to have been lulled into a false sense of security based on past successes. The potential crisis at hand is the result of a marked decrease in industry R&D, government inaction, and the increasing prevalence of resistant bacteria. (IDSA 2004: 3)

The report proposed that to avoid the possibility of currently treatable infections becoming untreatable due to the unavailability of new antibiotics, it is necessary to act now through a 'multi-pronged approach', and to intervene on the 'drying up' pharmaceutical pipeline (IDSA 2004: 4).[24]

Evidently, there was an increasingly widespread notion of a widening gap between the pace of bacterial resistance and the development or implementation of solutions, a situation that was often understood and framed as a "strategic threat" or an "arms race" between humanity and bacterial diseases. A fundamental shift was occurring in the basic understanding of the problem of AMR.

As some scholars suggested, the problem of AMR was visibly turning into a future (biosecurity) threat (see: Cooper 2006). More broadly, however, the problem was being rendered into a (conceptual) crisis. That is, the problem was (retrospectively) defined as constituting a fracture or break in history (Roitman 2014), meaning that the present is a critical juncture or decisive moment (Koselleck 2006; Starn 1971), where action must be taken to avoid a certain undesirable future outcome. To show how the problem of AMR was rendered into a crisis that drove the formation

of governmental apparatuses of AMR governance, I identify and examine three kinds of developments and notions that express this process and its implications.

4.4.2. *A costly global threat to modern medicine*

The first is related to an understanding of the problem of AMR through a notion of AMR as a threat to modern medicine. In the *Global Action Plan on Antimicrobial Resistance* that was developed by the WHO in cooperation with FAO (Food and Agriculture Organization) and OIE (World Organization of Animal Health), and adopted by the WHA in May 2015, former WHO Director General, Margaret Chan stated that:

> Antimicrobial resistance threatens the very core of modern medicine and the sustainability of an effective, global public health response to the enduring threat from infectious diseases… Without harmonized and immediate action on a global scale, the world is heading towards a post-antibiotic era in which common infections could once again kill. (WHO 2015e)

As this indicates, AMR became widely understood and acted upon as a *threat to modern medicine* as it may result in an inability to treat some of the most 'common infections'. This future catastrophe can be avoided, however, if *global* action is taken immediately.

Expressing a similar understanding of the problem as a crisis, a public health official who specializes in AMR, Ron Axelrod, explained to me during an interview: 'You have to understand that [antibiotics] are really the reason for why we can have a lot of modern medicine. Without antibiotics modern medicine would not be possible… You can't imagine modern medicine without antibiotics'. ABR, he further explained 'is a global challenge' in the sense that 'it is connected everywhere… resistant pathogens can cross borders very easily because you carry them and nobody sees it'. Modern medicine is unimaginable without antibiotics, and resistance to antibiotics is a global concern.

Indeed, since around the early years of the 21st century, AMR has appeared not only as an "(emerging) threat" but also as a "global" challenge. In February 2002 the Forum on Emerging Infections (a science-policy advisory group that was established in 1996 at the request of the US CDC and NIH) held a workshop on the increasingly 'important health threat' of AMR, and the lack of adequate action by the US and the *world as a whole* on it (Knobler et al. 2003: 1). According to the workshop report, some progress had been made as governments, health professionals,

researchers, the pharmaceutical industry, and society became aware of the problem and recognized that it can only be resolved through broad, coordinated action (Knobler et al. 2003: 4).

Since AMR poses a threat to modern medicine, 'the fight *against* AMR' became 'a fight *for modernity*' (Chandler 2019: 5; emphasis in original). Since AMR is a global issue, it must be addressed on a global scale and through global mechanisms. As AMR turned into a crisis, present action to avoid a catastrophic future had become a matter not only of saving lives, but also of preserving a (modern) way of living. Furthermore, it had become an essentially global endeavor.

Another development that expresses the rendering of AMR into a crisis involves efforts to know the problem of AMR quantitatively and economically. In the US, for example, a General Accounting Office report from 1999 suggested that as AMR is occurring around the world the burden on US public health could potentially increase, and argued that while many studies showed the difficulty of treating infections caused by resistant bacteria, 'the full extent of the problem' is still 'unknown', and therefore more and better data is needed (U.S. General Accounting Office 1999: 2-3). More quantitative data, to be precise. It appeared that, as Adams (2016) suggested, AMR needed to be counted in order to demonstrate its relative importance.

One interviewee, AMR expert and advocate Magnus Rasmuson, explained the challenge of accurately measuring or quantifying the problem as an issue related to 'lack of' or 'scarcity' in ABR 'burden data'. According to him, a main contributing factor to this situation is that ABR is not considered 'a disease in itself' and therefore has not been included in the 'global burden of disease problems'. As a result, he and his colleagues have not been able 'to visualize the death toll and the health economic consequences' of this problem. In other words, for the purpose of encouraging and justifying present action on AMR, quantitative data and knowledge are critical as they demonstrate the (past) magnitude of the problem, and enable calculations that can show the costs of such possible future catastrophe.

By the late 1990's there was already some (quantitative) research and assessments regarding the medical and economic consequences of ABR (Acar 1997; Holmberg et al. 1987; Liss & Batchelor 1987), and in the following years economic cost-impact estimates (both directly and, for example, in terms of costs of loss of modern healthcare) and policies (e.g. restriction on drug use) began to appear with increasing frequency (e.g. Smith & Coast 2012, 2013). Economic analyses of AMR

or 'the economics of resistance' provided a way to know the problem quantitively and to intervene on it with (for example) regulation and trade rights (Knobler et al. 2003: 107-108).

Accordingly, quantitative assessments of the economic implications of AMR soon provided a main justification for governmental interventions.

> The use of antimicrobials has a wider cost to society that is not faced by the individual who receives them or practitioner who prescribes them. This cost is due to resistance to antimicrobials, which is predicted to rise over time without intervention.… antibiotics are likely to be overused and intervention is necessary to ensure that these external costs (of increased resistance) are taken into account by practitioners and individuals. (Department of Health [UK] 2013: 1)

In the UK's 2013-2018 AMR strategy 'Impact Assessment', interventional policies in the context of AMR were explicitly justified in economic terms. This justification and the cost-benefit analyses presented in the Impact Assessment reflected a growing governmental inclination in the UK (and generally) to understand and act on the problem of AMR as a quantitative and measurable issue. An inclination that clearly manifested in the O'Neill Review on AMR (chaired by the economist Jim O'Neill) that was commissioned by the UK government.

The highly influential Review report aimed to 'quantify the costs that society will face if action is not taken' on AMR (O'Neill 2014: 3), and provided the kind of knowledge that was needed to garner public and political attention to the problem. In the report, AMR was not only addressed as a quantitative and economic issue, but also as a threat to 'many of the most important medical advances we have made'. Furthermore, the report addressed AMR as a global issue, claiming that despite 'considerable variation globally in the patterns of AMR', it is nevertheless 'a problem that should concern every country irrespective of its level of income' (O'Neill 2014: 3). Thus, the report expressed the three key notions mentioned above. AMR was presented at once as a threat to modern medicine, an increasingly costly challenge, and an inherently global issue.

Overall, the process in which the problem of AMR was retrospectively rendered into a crisis and the implications of that were manifested in three developments and notions.[25] One related to a perception that AMR poses a threat to the future of modern medicine and modernity itself, meaning that governmental action on AMR became intertwined with a more general motivation to avert the end of modernity. A second related to a perception of AMR as an inherently global challenge that requires global action, and therefore, the establishment of a global scale governance system that

represents the global interest and works with a global approach (see below). And a third related to the determination to show both the impact and consequences of AMR thus far, and the possible costs of this problem in the future as a way to promote and justify governmental action in the immediate present.

The crisis of AMR has involved an understanding of the present as a fracture in history that is possibly the beginning of the end of our modern way of life; a present that is a critical point for global action on what is seen as an inherently global challenge; and has promoted retrospective analysis of the consequences or costs of the problem and an evaluation or projection of those in the future. This crisis has driven the emergence of the global governance of AMR as governmental apparatuses have carried out routine, organized, and systematic efforts to manage and address the problem.

4.5. The global governance of AMR

> Who's responsible? This is a really critical question. Who is responsible, really? Can you name one agency, can you name one sort of governmental ministry, or can you name anyone? No!? *Everyone is responsible*. So there need to be a coordination mechanism. (Magnus Rasmuson, July 2021).

Understanding that the problem of AMR is simply too broad, resource intensive, and complex for any single governmental actor to address alone, AMR advocates such as Rasmuson have argued that no single governmental entity, or even group of entities, can be allocated the responsibility to respond to this problem. It is in that sense that the responsibility is seen as globally shared and global mechanisms must be established. The landscape of the global governance of AMR that has evolved over the last two decades is rooted in, and reflects that view.

An especially significant moment in the development of the global governance of AMR was in May 1998, when the WHA adopted a resolution (WHA51.17, agenda item 21.3) on AMR which called on member states to promote, legislate, and work towards better, more regulated, and cost-effective prescription, consumption and use of antimicrobials, to limit the use of antimicrobials for animals, to develop sustainable systems for detection of resistance, to monitor the usage of antimicrobials, to improve practice in terms of preventing the spread of infections, and to monitor the impact of control measures (WHO 1998). The significance of this resolution was not only on the practical level, but also on the international political level, as it paved the way for new "global"

initiatives and platforms of cooperation on AMR. For instance, the 'WHO Global Strategy for Containment of Antimicrobial Resistance' (2001).

This strategy provided various actors – from governments, health systems, and hospitals to international organizations, pharmaceutical companies, and communities – a framework to address AMR. It suggested a specific set of actions to tackle AMR: reducing disease burden and infection spread, better use and consumption of antimicrobials, introduction of appropriate regulation and legislation, strengthened health systems and surveillance, and research and development of new drugs. During those years, then, the role of international organizations in the context of AMR shifted from 'whistleblowing and reviewing data' to managing governance frameworks. A shift that was also accompanied by the rise of the 'One Health' lens which meant a wider range of topics to be addressed by international organizations in this regard (Overtone et al. 2021).

4.5.1. One health

In 2003, the WHO held an implementation workshop on the 2001 strategy (WHO 2003), and that same year a particularly significant part of the global governance of AMR began to develop as the WHO, FAO, and OIE convened a joint risk assessment meeting on antimicrobial use in food producing animals (FAO, WHO & OIE 2004). Thereafter, those expert meetings have been held on a regular basis, and by 2010 the WHO, FAO, and OIE formalized their cooperation on AMR. By 2012 the WHO-FAO-OIE Tripartite Secretariat was established and in May 2018 they signed a memorandum of understanding, promising to 'step up' their joint efforts to tackle AMR in the context of 'One Health' and implementation of the AMR Global Action Plan (FAO, WHO & OIE 2018; Guerra 2018).[26]

The Tripartite are three international organization that have acted together in response to the problem of AMR through a sense of "shared responsibility". In that regard, the "One Health" approach is not only an idea that shapes and organizes the way that actors practically address the problem, but also a political instrument. That approach establishes a pattern that reshapes governance as it redraws and blurs the lines between usually separate sectors, professional orientations, and areas under distinct institutional authority. A somewhat similar and connected part of the global governance of AMR, particularly in relation to the role of the One Health approach, developed at the broader UN level.

In December 2015, the UN General Assembly adopted a resolution on *Global health and foreign policy: Strengthening the management of international health crises*. Within this resolution, it was decided to hold a High-Level Meeting on AMR (United Nations General Assembly 2015). In 2016, the UN General Assembly High-Level Meeting made a declaration on AMR. Based on the advice of WHO, FAO, and OIE, UN Member States called on the UN Secretary General to form an Interagency Coordination Group (IACG) that would provide a common global framework to tackle AMR (United Nations General Assembly 2016).[27]

In April 2019, the IACG submitted a report to the UN Secretary General (Getahun & Balkhy 2019), largely recommending to accelerate progress on implementing measures for combating AMR on the country level, to invest in innovative solutions, to increase collaboration for more effective action, to ensure responses are sustainable, and to strengthen accountability and global governance (IACG 2019: 2). Importantly, the report also called for unified action through 'a more robust and sustained One Health response' that involves 'all stakeholders, at all levels, across sectors and disciplines, around a shared vision and goals' (Getahun & Balkhy 2019). As noted in the following section, an advocacy group called the Global Leaders Group on AMR was established in accordance with the recommendations of the IACG. This group, like many governmental and non-governmental actors responding to the problem of AMR, has adopted and promoted the One Health approach in recent years. Indeed, the One Health approach was also central in the 2017 Berlin 'Call to Action' event on AMR that came as a follow-up to the 2016 UN General Assembly High-Level Meeting declaration on AMR. Co-hosted by the governments of Ghana, Thailand, and the UK, together with the Wellcome Trust and the UN Foundation, during the event participants discussed specific ways to translate the declaration into enduring and systematic global action (Department of Health [UK] 2017).

Further, while in 2001 the EU's AMR policy mainly focused on the problem of AMR as a public health issue and only embedded a limited consideration of the animal and food aspects of AMR (European Commission 2001), by 2011 this policy had been modified to include the One Health approach as a more central component (European Commission 2011). A comparison of the two policies reveals that the centrality of the One Health approach in the 2011 policy meant a greater focus on the animal and food aspects of AMR, the prioritization of regulatory interventions and risk mitigation in those areas, and the inclusion of policymakers and experts from the veterinary,

animal husbandry, agricultural, environmental, and trade sectors in the entire process of governance rather than only in the implementation phase.

Thus, One Health has been a dominant approach, idea, and form of engagement between actors, driving and shaping the global governance of AMR. Nevertheless, existing arrangements of governance are not easily changed and One Health has therefore often remained only as a vision for change. The challenge is, as German physician, entertainer, and One Health advocate Eckart von Hirschhausen had put it in his introduction to a workshop on 'One Health: Good practices and challenges' held during the 2021 World Health Summit in Berlin, that 'One Health is a bit like world peace. Everybody thinks it's a good idea, but nobody knows exactly how to get there' (World Health Summit 2021).

4.5.2. Action plans

Another significant moment in the development of the global governance of AMR was the May 2015 WHA adoption of a *Global Action Plan on AMR*. The action plan focused on five objectives (WHO 2015e): increased awareness and understanding of AMR through communication, education, and training; increased knowledge and evidence through surveillance and research; reduced infection through sanitation, hygiene, and prevention; optimization of antimicrobial medicinal use; and increased investment in new biotechnological interventions such as medicines, diagnostics, and vaccines. A central reference point for many AMR action plans that were created around the same time and in subsequent years, the WHO's Global Action Plan highlighted the importance of action plans for the emergence of the global governance of AMR through the formation of various governmental apparatuses.

"Action Plan" (occasionally interchangeable with "strategy") has risen as a prominent and central solution in the context of AMR policy. The term refers to a document that details a set of general aims, specific goals, and sub-sets of measures to achieve them, usually within a certain time period. However, action plan is not merely a document that outlines specific actions and ways to implement measures, but also a governmental technology that is global-oriented (i.e. explicitly termed "global" or purposely links to other, "global" action plans), iterated by an appointed group of experts or reiterated by policymakers, and designed to organize and facilitate routine activities and procedures (e.g. regulations; shared surveillance mechanisms and laboratory networks; collaboration schemes; research and development frameworks), as well as to establish regular

monitoring and oversight of progress in implementation and outcomes. This is evident in the case of the WHO's Global Action Plan on AMR mentioned above, as well as in the WHO European region action plan (WHO EURO 2011). It is also evident in the US' National Action Plan on AMR that was created by the Task Force for Combating Antibiotic-Resistant Bacteria, as instructed by president Obama's US Presidential Executive Order on AMR (White House 2014), and in the EU's Action Plan that was created by the European Commission as a result of a European Parliament resolution on the issue of ABR and the European Council's adoption of conclusions concerning incentives for the development of new antibiotics (European Commission 2011; European Council 2009; European Parliament 2011).

With over one hundred countries creating national AMR action plans by 2017 in accordance with the WHA resolution 68.7 from May 2015 (Inoue & Minghui 2017: 242; WHO 2015f), a more or less similar pattern has appeared around the world, as echoed in the action plans of various European countries such as France (Ministère des Solidarités et de la Santé 2022), Germany (Federal Government [Germany] 2015), Ireland (Department of Health [Ireland] 2017), Norway (Norwegian Ministries 2015), the UK (HM Government 2019), Sweden (Government Offices of Sweden 2016), and Switzerland (Federal Council [Switzerland] 2015).

Action plan is a governmental technology that has driven the emergence of the global governance of AMR. In line with the objectives of such action plans,[28] and as advocates at the science-policy nexus have continually pressed for their implementation (e.g. Årdal et al. 2016), various governmental apparatuses of AMR governance that focus on infection reduction; consumption regulation; advocacy; surveillance; and research and development have formed.

Global AMR surveillance mechanisms have formed in direct relation to the WHO's Global Action Plan. In 2014, the WHO's *Antimicrobial resistance: Global report on surveillance* on the state of AMR surveillance in countries found gaps between countries and regions in performance of routine surveillance, and identified the lack of 'global consensus' on how to conduct surveillance as a significant challenge (WHO 2014b: x). In response to this issue and in accordance with the WHO's Global Action Plan, in October 2015 the WHO launched the Global Antimicrobial Resistance and Use Surveillance System (GLASS), a standardized approach and virtual platform for countries for sharing and analyzing AMR surveillance data (WHO 2022).

GLASS has worked as an international surveillance mechanism that allows the routine management of the AMR problem. This and other mechanisms are complemented by and interlinked with regional mechanisms such as the European Antimicrobial Resistance Surveillance Network (EARS-Net). This network, which has been coordinated and funded by ECDC since 2010, is an apparatus for the collection and analysis of AMR data from European national surveillance systems (ECDC 2010: 3). It was initially established in the early 2000's as the European Antimicrobial Resistance Surveillance System (funded by the European Commission and coordinated by the National Institute of Public Health and the Environment of the Netherlands), in accordance with the EU's action plan (European Commission 2001: 6).

Global Research and Development (R&D) mechanisms have often been established as an effect of international political cooperation such as that facilitated by the G-20 forum (of the Group of 19 countries and the EU). Following commitments that were made during the G-20 forum at the 2017 summit in Hamburg, the Global Antimicrobial Resistance Research and Development Hub was established in May 2018 (German Federal Ministry of Education and Research 2018; Green 2019). The Hub, based in the German Center for Infection Research (DZIF) in Berlin, has brought together representatives of bodies from around the world: from countries such as Russia and the US to organizations such as the Gates Foundation, the Wellcome Trust, and the European Commission. The representatives regularly meet on matters related to AMR research and development, as well as coordination (especially regarding effective use of resources and allocation of funding). Attempting to overcome the problem of insufficient research and development for new antibiotics, seen as caused by the complexity of the subject itself and the weak economic incentive for pharmaceutical companies, the Hub focuses on public research funding and measures to increase commitment by pharmaceutical companies.

A related initiative which has similarly been tied to the establishment of R&D mechanisms is the AMR Industry Alliance, a coalition of over 100 pharmaceutical companies and industry associations (as of 2021). This initiative provides the 'life sciences industry' (AMR Industry Alliance 2019) with a general framework for tackling AMR, and a mechanism to monitor progress in the particular context of the commitments and goals set by the Alliance. Those commitments and goals are outlined in the Davos Declaration (first presented at the World Economic Forum in Davos in 2016), to which those in the Alliance are signatories. The declaration advocates for

government funding that would create 'a sustainable and predictable market' for antibiotics and diagnostics 'while also implementing the measures needed to safeguard the effectiveness of antibiotics' (AMR Industry Alliance 2016: 2). Further, the declaration includes commitment to: 'Work to reduce the development of antimicrobial resistance'; 'Invest in R&D that meets global public health needs with new innovative diagnostics and treatments'; and 'Improve access to high-quality antibiotics and ensuring that new ones are available to all' (AMR Industry Alliance 2016: 4).

While some of the mechanisms that have become part of the governmental apparatuses of global AMR governance are newly established, others pre-existed (on the national, regional, or international level) and have been brought under or linked through newly created policies, processes, and frameworks. For instance, the Global Health Security Agenda that was initiated in 2014 and which included AMR as a top priority, has aimed to assist countries to develop 'their capacity to address AMR' by helping them, among other things, to comply with 'standards and guidelines set by international organizations' in the context of AMR (Global Health Security Agenda n.d.[b]). One of the hoped-for effects of such compliance is the worldwide implementation of measures on the national level to reduce infection.

As a further example, the EU's 2017 action plan on AMR has sustained and enhanced advocacy mechanisms through the provision of behavioral knowledge via Eurobarometer surveys, communication tools, and public awareness campaigns such as the annual European Antibiotic Awareness Day (European Commission 2017: 8; European Commission 2021d: 2). The EU's 2017 action plan has also strengthened mechanisms of infection reduction through funding for various AMR detection activities and networks (European Commission 2017: 7; European Commission 2021d: 1).

The distinction between different kinds of governmental mechanisms of AMR is, of course, analytical. In some cases, such mechanisms are entangled to such an extent that it becomes nearly impossible to tell them apart. For instance, in 2017 (and again in 2019) Public Health England initiated a national campaign called 'Keep antibiotics working' that aimed to reduce inappropriate antibiotic prescriptions and public demand for antibiotics by raising awareness to these issues (Public Health England 2022). The campaign, which was also linked with the World Antimicrobial Awareness Week and the European Antibiotic Awareness Day, simultaneously reflects advocacy

mechanisms and consumption regulation mechanisms. In terms of its form of action and practice, the campaign worked towards advocacy, for example, in providing healthcare professionals with leaflets, brochures, and digital graphics to share with the public. At the same time, in terms of the content of advocacy materials and the strategy it accommodates, the campaign was set towards improvement in the area of antibiotics consumption regulation.

After declarations and resolutions secured political commitment to address the AMR crisis, the introduction of AMR action plans and strategies around the world, and efforts to ensure their implementation have driven, shaped, and effectively resulted in the establishment of various governmental apparatuses of AMR that have constituted the global governance of AMR. Both the crisis and those apparatuses have played a key role in the eventual (partial) rendering of AMR into a health emergency.

4.6. Between a "slow" emergency and a "silent" emergency: The compression effect

As noted at the beginning of this chapter, some people who are involved in the global governance of AMR do not consider this problem an emergency while others do. Currently, views that identify AMR as an emergency seem to have consolidated around the notion that it is a "silent" emergency. As ECDC's Director, Andrea Ammon, stated: 'the AMR pandemic is here, but goes mostly unnoticed because infections with AMR are like a multitude of small fires scattered across Europe and the world that are much less visible than the current monster firestorm that is COVID-19' (ECDC 2020c). The aforementioned crisis of AMR and the formation of governmental apparatuses over the last two decades in relation to that crisis have played a key role in the process of rendering of the problem of AMR into an "invisible" or "silent" emergency.

The crisis of AMR has driven a growing and intensifying sense of urgency around the need to act on this problem. That urgency is clearly evident, for example, in a call by a group of global health experts for immediate and decisive global action against the 'unrelenting rise' of AMR, which 'constitutes a serious threat to health worldwide' (Wernli et al. 2011: 1). Furthermore, the UN IACG on AMR report emphasized that there is a 'need for far more urgency in the global response, without which the health and economic and impact of antimicrobial resistance could reach disastrous levels within just a generation' (Getahun & Balkhy 2019). Solutions proposed amidst

this growing urgency have accordingly aimed to address velocity. As expressed by one commentary piece that appeared in *Nature Microbiology*:

> While the emergence of AMR is a natural phenomenon that cannot be completely prevented, there are many things that we can do to *reduce the speed at which AMR emerges and spreads globally*…. Only through improved awareness of AMR across all of society will we get the public and political support needed to work together and implement the necessary policies to *slow the emergence and spread* of AMR and effectively respond to this growing public health issue. (Sugden et al. 2016: 1; emphasis added)

For the UK Department of Health officials who wrote this commentary, the problem of AMR is thus a matter of slowing down emergence and spread. Others have echoed a similar urge to address velocity, for instance, in suggesting solutions that seek to 'significantly' moderate the use of antimicrobials to extend 'the useful life of existing and prospective therapies', and therefore also to moderate 'the rate at which microbial adaptation to antimicrobials occurs' (Michael et al. 2014: 3).

These examples indicate that there has been a growing emphasis in AMR discourses on the need to "catch up" with AMR and a notion that the future catastrophe is moving closer to the present. Indeed, some experts who have warned of the coming end of 'the age of antibiotics' suggested that the problem of AMR is becoming increasingly urgent due to 'the recent emergence of strains of pathogens resistant to nearly all (and in some rare cases, *all*) licensed antimicrobials' (Toner et al. 2015: 154; emphasis in original).

The concern with highly resistant pathogens or "superbugs" has been particularly important and salient in relation to the AMR crisis. The use of the term "superbugs" can be found as early as the 1960's (Podolsky 2018), though its use in professional or scientific context around the 1980's was mainly to describe microorganisms that can grow in extreme settings (e.g. high temperature), particularly in the context of efforts to develop new technologies on the basis of such microorganisms (e.g. Anderson 1984: 172; Myers 1992), or through genetic engineering (e.g. Popkin 1986: 11). Nevertheless, by the late-1990's the meaning of the term that gained traction was that which associated superbugs with antibiotic-resistant bacteria (e.g. Morris 1998; Williams 1996), particularly the rapid development and dissemination of resistance in certain bacteria (e.g. Low et al. 1999: 464), and resistance to multiple kinds of antibiotics (Wright 2007: 176).

Over time, the concern with superbugs became intertwined with the general fear of the coming "end of the antibiotic era" (e.g. Cannon 1995; Hancock & Knowles 1998; Häusler 2006; Kmietowicz 2000), and accordingly received attention in the media (e.g. BBC News 1999; Kristof 2010; Stolberg 1998; see also: Pines 2010; Wilson 2004). Effectively, this meant a growing understanding of the problem of AMR through multiple concrete events set in the present, rather than through a threat or possible catastrophe set in the future.

The concern with superbugs soon became widely circulated via newspapers and magazines, television and radio, and social media and podcasts. An article on the threat posed by superbugs that appeared in *Newsweek* in 2004 reported that: a 13-year-old boy from Texas 'nearly died from what he thought was a shoulder sprain' (Kuchment 2004: 49), and concluded that 'one thing is clear: what nearly killed the otherwise healthy teen was an increasingly common infection that standard antibiotics couldn't touch'. In 2010, the *Daily Mail* reported that 'Three babies have died… after being found to be carrying superbugs resistant to common antibiotics' (Macrae 2010). That same year, a piece in *The Guardian* asked "Are you ready for a world without antibiotics?", and stated: 'Antibiotics are a bedrock of modern medicine. But in the very near future, we're going to have to learn to live without them once again' (Boseley 2010).

Similarly contributing to the amplification of the concern with superbugs were popular science works such as Laurie Garretts' (1994) *The Coming Plague*, and the documentary film *Resistance* from 2015, which 'puts a human face on what can be an abstract problem, telling the stories of parents whose children have been sickened or killed by superbugs and what they felt when all the medicines available to treat their kids' infections failed to work' (Belluz 2015).

Such news reports, stories, and popular science works have led to growing public and political awareness and calls to act on the problem of AMR, often by zooming in on incidents involving specific kinds of superbugs such as MRSA (Methicillin-resistant Staphylococcus aureus), Clostridium difficile, and GRE (Glycopeptide-resistant Enterococci) (Koteyko et al. 2008; Rawson 2008). Thus, the rise of "superbugs" as a term that expresses a growing anxiety around the problem of AMR fostered a growing sense of urgency (as within AMR discourses at the science-policy nexus) in the general public sphere while illustrating this problem through concrete events in the present.

As an effect, the time-space of the problem of AMR was compressed. The possible catastrophic event set in the future has been relocated to, or pushed towards the present reality. The event of AMR was no longer only about a crisis foreshadowing a future catastrophe or post-antibiotic age (Chandler 2019; Brown & Nettleton 2017), but also and increasingly about an alarming present reality of concrete incidents that are becoming more frequent and severe.

The notion of the catastrophe being present was recently expressed by Manica Balasegaram, Executive Director of the Global Antibiotic Research and Development Partnership (2022):

> We live in a world in which nearly 1.3 million people die every year to antibiotic resistance, more than HIV and malaria deaths combined. One in five of those who die is a child under 5 years old…. The so-called 'silent pandemic' of drug-resistant infections was silent no more.

Instead of a projection or calculation of the possible future impact of AMR, here quantitative and statistical knowledge is used to highlight the significant magnitude of the problem in the present.

The difference between a compressed and non-compressed time-space of the problem can also be demonstrated through uses of future scenarios.[29] In some cases, imagined future scenarios have been created to narrate a possible future without antibiotics. For instance, in 2019 *The Economist* published a scenario for the year 2041, in which antibiotics no longer work and consequently (among other things), 'Caesarean sections, which at their peak made up one-third of births in America in 2019, are now carried out only when there is no other option' (The Economist 2019). However, more often and especially in recent years, scenarios that are used in the context of AMR serve to simulate a certain reality that is set in a present time.[30]

For example, during the 2018 ministerial meeting of the G20 countries in Argentina, health ministers participated in an AMR simulation exercise that aimed to 'test' their response to a cross-border outbreak involving an antibiotic resistant E. Coli bug that results in 'a pandemic affecting global public health, placing pressure on health systems and the economies of the fictional countries involved' (Department for Health and Social Care 2018). In another exercise that practiced the Emerging Antimicrobial Resistance Reporting (EAR) component and associated risk assessment components of the Global AMR Surveillance System (GLASS), exercise participants – GLASS national focal points, WHO Collaborating Centres and other key individuals in AMR surveillance and response – logged into an internet-based platform where they were to face

scenarios set in present time and in their country (specific details were tailored for each participant). For example, exercise participants had to respond to the following scenario:

> On November 13, 2017, hospital A reported an isolate of carbapenem-resistant Klebsiella pneumoniae isolated from a wound specimen collected on October 19, 2017. The patient was a 76-year-old man admitted to the hospital A on October 18, 2017 with a primary diagnosis of systemic inflammatory response syndrome, likely resulting from an infected left hip seroma. In May-June 2017 the patient was hospitalized in India in relation to a hip replacement surgery. The isolate was resistant to 26 antibiotics tested… The isolate was sent to the national reference laboratory where the AST results were confirmed and the presence of blaNDM-1 detected…. After the CRE was identified, the patient was placed in a single room under contact precautions. No secondary transmission from the case has been reported. The patient developed septic shock and died. (WHO 2017d: 14-15)

The GLASS-EAR scenarios are highly detailed and technical because they aim to trigger a certain set of actions by the exercise participants. Thus, they work through a simulative mode and are designed to achieve specific aims and objectives (Samimian-Darash 2021, 2022). Further, in practicing responses to detailed (yet imaginary) scenarios, those exercises have also made the AMR problem thinkable in terms of concrete events that are happening in the present and in the participants' countries. Thus, the governmental technology of simulations has compressed the time-space of the problem of AMR.

Another important factor in the compression of the time-space of the AMR problem has been the use of strategies of *affinity*. Such strategies link or create figurative associations between AMR and problems that are widely perceived as present emergencies. In a lecture titled 'Why we cannot wait: The need for global governance of Antimicrobial Resistance (AMR)' from 2018, global health scholar and AMR advocate Ilona Kickbusch said that:

> We cannot wait, we should not wait… we are now in a similar situation with AMR as we are with climate change. When the Paris agreement was negotiated we still thought "this is in the distant future," now in Poland after the IPCC [Intergovernmental Panel on Climate Change] report we know it's happening here, it's happening now. And when the AMR discussion started… the focus was, you know, "What's the terrible thing that's gonna happen in 2050?" But actually, we're in the situation just like with climate change. It's here, it's now. (Kickbusch 2018)

Such equivalence between AMR and climate change is common and was made by many of those who I interviewed about AMR. The point of that equivalence, as indicated in the quote above, is

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to highlight the lack of time and the urgency of the problem, and that the event is not a possible future, but a present reality.

Correspondingly, throughout the COVID-19 pandemic, governmental and non-governmental actors have made various strategic attempts to explain, raise awareness to-, and advocate for improved action on AMR by framing it through the pandemic emergency. Early on in the pandemic the WHO Regional Office for Europe promptly published an advocacy document titled 'Stop the COVID-19 pandemic from becoming an AMR catastrophe', which presented possible AMR-related challenges in the context of COVID-19 and existing solutions that can be used in that regard, and called for the prioritization of AMR programmes and for the implementation of measures 'to prevent drug-resistant infections from becoming the next global public health emergency!' (WHO EURO 2020).

Many others have similarly embarked on the COVID-19 pandemic to promote an understanding of AMR as "the next" emergency which we need to prepare for. Thomas Cueni, chair of the AMR Industry Alliance and the Director-General of the International Federation of Pharmaceutical Manufacturers and Associations (IFPMA), wrote: 'The COVID-19 pandemic has killed 6 million people so far, but *the next pandemic threat* could emerge unnecessarily from pathogen resistance to life-saving antibiotics and other anti-microbial drugs' (Cueni 2022; emphasis added).

Additionally, Stella Kyriakides, European Commissioner for Health and Food Safety; and Tedros Ghebreyesus, Director-General of the WHO, wrote that as the WHA 'gathers to address health emergencies, including the challenge of antimicrobial resistance', it is important to remember that '[w]hile the COVID-19 pandemic has dominated headlines, other serious health threats like AMR have continued to grow unnoticed'. According to them, '[u]nless we take action, we risk seeing a silent pandemic rising – with far-reaching consequences'. And thus, immediate action is needed in 'a spirit of global cooperation and a sense of genuine urgency' in order 'to prevent antimicrobial resistance from becoming the next pandemic' (Kyriakides & Ghebreyesus 2021).

Taking that sense of urgency a step further by considering AMR as a pandemic which is already here, ECDC's Director Andrea Ammon stated in a video for European Antibiotic Awareness Day 2020 that,

our efforts to prevention and control for AMR can certainly learn from the COVID-19 pandemic. In particular, the current pandemic shows that it is possible to implement weekly or even daily reporting on number of cases while, for AMR, reporting occurs only once a year. ECDC, in partnership with member states, should explore how reporting and feedback of AMR surveillance data could take place at a more rapid frequency (ECDC 2020c).

From that perspective, the rapid frequency of surveillance data reporting seen in the COVID-19 emergency can and should be applied in the context of AMR.

Correspondingly, advocates have tried to insert AMR as a concern in post-emergency reforms and rebuilding effort. The European Public Health Alliance (EPHA) published a policy briefing which overviews policy and political reactions to the consequences of the COVID-19 pandemic for AMR, and seeks to provide European policymakers who are working towards 'building more resilient healthcare systems' in the light of the pandemic with an understanding of 'the direct and indirect impacts of responses to the pandemic relevant to AMR' (European Public Health Alliance 2021: 1). Other advocacy groups, such as the ReAct network, have aimed at reforms on an even greater scale, bringing the concern with AMR into discussions on a new international pandemic treaty (ReAct Europe 2021). Indeed, a piece by the ReAct network suggested that COVID-19 has provided 'a window of opportunity to root antibiotic resistance in the unprecedented scale-up of global efforts to address pandemic preparedness, prevention and response' (ReAct 2022). Moreover, according to the piece:

> Building on the current political momentum, it is important that the efforts now do not become too narrowly focused on addressing "another coronavirus epidemic," but takes a wider view on pandemic preparedness. Inclusion of antibiotic resistance to a new international legal instrument was made an advocacy priority by the Global Leaders Group on AMR. The upcoming intergovernmental negotiating body discussions around international legal instrument – pandemic preparedness and prevention should consider antibiotic resistance in the context of pandemic preparedness efforts – both as it relates to the revision of the International Health Regulations, as well as in the context of the new legal instrument (ReAct 2022).

The Global Leaders Group (GLG) on AMR was established in November 2020 as a result of recommendations by the IACG on AMR. Currently co-chaired by the Prime Minister of Bangladesh and the Prime Minister of Barbados, the GLG operates as an advisory and advocacy group that consists of key policymakers, representatives from the philanthropic and private sectors,

civil society, and the OIE, WHO, and FAO (the Tripartite organizations). Its main aim has been to maintain 'urgency, public support, political momentum and visibility of the AMR challenge on the global agenda' (Tripartite Joint Secretariat on Antimicrobial Resistance 2021). More specifically, the GLG has been tasked with raising public awareness to, and galvanizing political support for action on AMR with the One Health approach, especially through advocacy in the context of high-level international political forums such as the G7, G20, and the UN General Assembly, and by pursuing the inclusion of AMR in a potential international pandemic treaty and in as many COVID-19 response and recovery plans as possible (Global Leaders Group on Antimicrobial Resistance 2021a; Tripartite Joint Secretariat on Antimicrobial Resistance 2020, 2021).

Repeatedly, the GLG and its members have emphasized the urgency of addressing the "silent" pandemic of AMR while coupling or identifying this problem with more "visible" problems, particularly COVID-19 and climate change. As an example, an information note on 'AMR and the climate crisis' that was published by the GLG in October 2021 pointed to multiple connections and similarities between the two problems, for instance, that they are 'two of the greatest and most complex threats currently facing the world' and that they similarly 'have been exacerbated by, and can be mitigated with, human action' (Global Leaders Group on Antimicrobial Resistance 2021d: 1). As it was explained during the third meeting of the GLG, the timing of the publication of this information note, which aimed to 'raise awareness about these intertwined crises' was purposely selected to 'coincide with the COP26 conference' (Global Leaders Group on Antimicrobial Resistance 2021e: 2).

As another example, consider the following statement made by Lothar Wieler, the President of RKI and a member of GLG, in a video for World Antimicrobial Awareness Week:

> we are just at the start of our efforts to urgently address this silent pandemic…
> While we continue to deal with the COVID-19 pandemic, we must not forget that
> we are facing another substantial but currently more hidden pandemic –
> antimicrobial resistance… Currently, the world is experiencing the impact of the
> COVID-19 pandemic in all areas of our lives. At the same time, we are also facing
> a climate crisis and future pandemics, but we have the knowledge and the means
> to fight AMR, this pandemic, effectively (RKI 2021).

This message is consistent with the understanding of COVID-19 as a critical moment to promote action on AMR, as this understanding emerged in the meetings of the GLG. Already in the

inaugural meeting, it was recognized that the COVID-19 pandemic has created opportunities to enhance the response to AMR, including an improved 'understanding of the wide-ranging impact of a global public health emergency' (Global Leaders Group on Antimicrobial Resistance 2021b: 3). Further, during the second meeting, it was noted in the context of financing for AMR response that AMR is highly relevant to pandemic preparedness and response, and can be moved higher on the global and national political agenda through its relation to the COVID-19 pandemic (Global Leaders Group on Antimicrobial Resistance 2021c: 2).

In a similar way, during the EU-US Transatlantic Dialogue on AMR that was held on 8 December 2021, the COVID-19 pandemic and its aftermath were viewed as an opportunity to enhance action on AMR. For instance, as Claire Bury, Deputy Director-General of the European Commission's DG Health and Food Safety, said on that occasion:

> the future global agreements on pandemic prevention, preparedness, and response… is another important opportunity to advance work on antimicrobial resistance, in particular around preparedness and response to *health emergency* (European Union 2021; emphasis added).

What is most striking about various AMR discourses that employ strategies of affinity, such as those described above, is that in many of them there appears to be a certain nominal shift, wherein the problem of AMR is increasingly referred to as an emergency. More importantly, though, the problem of AMR is being introduced into reformed or new frameworks that are dedicated to the global governance of pandemic and epidemic emergencies.

Beyond its political usefulness as a strategy, the promotion of AMR policy and action through affinities with salient problems that are widely recognized as emergencies, particularly the COVID-19 pandemic and climate change, has also entailed a compression effect. As indicated in the following statement of the WHO's Director-General, which was made during his speech at the inaugural meeting of the GLG:

> Prime Minister Mottley [of Barbados] often refers to AMR as a slow-motion pandemic. *Whatever its speed, we have no time to waste*. We must come together to take on this global threat. It is a silent killer and that is why we must pay more attention (WHO 2021c; emphasis added).

From that perspective, whether or not the 'silent killer' of AMR may still be considered an emergency that is slow in developing, and whether or not the speed of this development is accelerating, there is 'no time to waste'.

The GLG logo, a nearly empty hourglass, similarly expresses that idea. Time, in that sense, becomes an acute and dwindling resource. A valuable resource that should be invested in tackling AMR. Thus, as AMR is understood through a notion of lack of time, the future catastrophe collapses into a present reality. The time-space of the problem is effectively compressed. AMR can finally be rendered into an emergency

4.7. Discussion

The social scientific literature on AMR has been limited both in scope and in its impact on the general scientific discourse (Frid-Nielsen et al. 2019), and even more so in relation to AMR governance. Nevertheless, an increasing number of works in sociology and STS that focus on AMR have appeared over the last decade.

Some studies have informed policy and interventions in the context of AMR by explaining behaviors, interactions, experiences, and narratives in various settings (Broom et al. 2014; Lohm et al. 2020; Will 2018), and by examining different ways in which practices, structures, and social networks build antibiotics into everyday life (Dixon et al. 2021; Tompson et al. 2021). Other studies have analyzed and discerned metaphors, narratives, frames, and moral reflections in discourses, policies, biopolitical debates and media coverage in the context of AMR (Brown & Crawford 2009; Brown & Nettleton 2017b; Lee & Motzkau 2013; Nerlich & James 2009; Overton et al. 2021).

In addition, in recent years scholars have started to analyze the emergence and consolidation of AMR governance in national and international contexts from the perspectives of sociology and STS. Gröndal (2018) examined how AMR became a public concern and a top priority on the Swedish policymaking agenda. Brown and Nettleton (2017a) focused on the construction of imaginaries and catastrophic futures in the UK's AMR politics and policy. And Chandler (2019) examined how AMR is represented and practiced in science and policy to understand how a certain frame was formed around it.

In Sweden, Gröndal (2018) showed, processes whereby AMR eventually turned into a national issue, and the particular way in which this issue came to be understood and managed, were rooted in the approach of an organization called Strama (The Strategy Group for Rational Use of Antibiotics and Reduced Antibiotic Resistance) that identified AMR as a threat which is caused by (over)consumption of antibiotics. AMR became a public concern in Sweden because of a specific 'transformative event': an outbreak of antibiotic-resistant pneumococci that occurred in southern Sweden around the mid-1990's. When this outbreak occurred, it became a 'transformative event' as the existing infrastructure turned it into a public issue, thus shaping both the perception of the problem – overconsumption, and the approach to tackle it – disease control.

In a somewhat different manner, in the context of the UK (Brown & Nettleton 2017a), the emergence of AMR as a public and political concern was tied to cases of MRSA (identified) in hospitals, and to the catastrophic prospects of "superbugs" and a return to the "dark ages." Moreover, according to Brown and Nettleton (2017a), in the UK, AMR was ultimately rendered a problem through a liberal market economy perspective that places the fault in the public sector and emphasizes solutions that are market-based and competition-driven.

These cases express different trajectories in the development of AMR governance in specific national contexts, with each one resulting in a different policy or priority. However, in the present study I have sought to understand more broadly the emergence of the global governance of AMR by focusing on the science-policy nexus. Based on my examination of this nexus at the beginning of the chapter, I have suggested that the evolution of AMR as a governmental problem was not merely affected by one kind of problem-frame and solution.

As Hinchliffe highlighted (2022: 153-154), the dominant discourse in the context of the global health governance of AMR has simultaneously focused on two problems: the 'need to sell more product' and the need 'to regulate sales and medicine use.' And consequently, solutions have focused simultaneously on aligning markets, changing beliefs, and raising biomedical awareness. Through my examination of the emergence of AMR as a governmental problem at the science-policy nexus (in the period between the initial mass manufacturing and use of antibiotics in the 1950's and the early emergence of the global governance of AMR in the 1990's), I have analytically distinguished between two rationales or ideas that have continuously undergird the governance of AMR. One suggests that biological challenges can be solved through a combination

of techno-scientific innovation and economic enticement, whereas the other suggests that the combination between techno-scientific innovation and economic enticement creates challenges that can be solved through regulation and control. This distinction incorporates Hinchliffe's observation but also transcends it. The two rationales are co-existent and enmeshed, and therefore simultaneously drive market-oriented and regulatory inclinations.

Further, as indicated in the analysis throughout this chapter (and especially in the last section), events that highlighted the threat of AMR have been significant for the advancement of the problem on the political and public agenda. NGO's, public and global health institutions and facilities, and the media provide infrastructure that allows and propagates the circulation of information and stories on such events. In doing so, my analysis further suggested, that infrastructure has also driven the evolution of a notion of crisis that views the threat as located in the future into a realization of AMR as an immediate and urgent problem, a present reality involving specific and concrete events. I argue that the compression of the time-space of the AMR problem is related to (among other things) processes that have brought AMR onto the public and political agenda, and has been key to rendering AMR into an emergency.

Another key process has been the emergence of the global governance of AMR through apparatuses that routinely and systematically manage the problem. As indicated in my analysis, for instance, of AMR action plans, this process of emergence and consolidation incorporates and corresponds with what Chandler (2019) identified as interrelated reasons that explain how AMR turned into a global priority: first, AMR advocates had early-on understood the need for a clear and coherent message across science and policy; second, collaborations between international organizations (e.g. One Health) became a platform for turning AMR into a top priority on the international political agenda; and third, a collective commitment to tackling AMR and a common approach to doing so led to a standardized approach and tools that can be implemented by countries (although AMR advocates have voiced concerns regarding actual implementation).

Importantly, scholars have also analyzed the politics and governance of AMR through future-oriented discourses of speculation and imagination. Brown and Nettleton (2017a) identified and examined economic imaginaries that underlie the construction of (especially catastrophic) futures in the UK's AMR politics and policy, approaching AMR discourse in this context as an anticipatory biopolitics that is tied to processes of biosecuritization. Meanwhile, Chandler (2019)

argued that AMR was eventually stabilized as an object through a sentinel or speculative lens. As AMR proved too challenging to be stabilized through an actuarial lens since it could not be easily defined nor counted, it was therefore problematized through the speculative lens as a future threat (to health, economies, security, and to modernity itself). For Chandler, in this sense (of AMR being a future threat), AMR discourse is similar to those of other pandemic threats that have been discussed by scholars: pandemic influenza (Caduff 2015), SARS and Zika (Lakoff 2017), and Ebola (Kelly 2018). Furthermore, it is through this future-oriented, speculative discourse that 'the fight *against* AMR' could be thought of as 'a fight *for modernity*' and therefore immediately acted upon (Chandler 2019: 5; emphasis in original).

Indeed, discourses that express and foster economic and security imaginaries, projections of a pre-modern past that returns as a catastrophic future, or rationales of pre-emption and preparedness have had a significant role in the global governance of AMR and the stabilization of AMR as an object of governance. The present chapter highlights that, in addition to this speculative lens, an actuarial lens with its associated technologies and practices of quantification, calculation, and risk has been equally central for that matter.

As indicated in my analysis, the emergence of AMR as a general crisis event, which accelerated in the 1990's, involved a growing realization that AMR poses a threat to modernity, and simultaneously, the increasing quantification and economization of AMR. Furthermore, risk calculations, economic models, and statistical-based projections that typically focus on the possible future consequences of AMR on the population level have continued to play a key role in the global governance of AMR. For example, in 2018, a report by the Organization for Economic Co-operation and Development (OECD) projected that in the next 30 years superbugs could cause approximately 2.4 million deaths in Europe, North America, and Australia; that complications caused by AMR could cost up to USD 3.5 billion a year on average (across 33 countries); and that Southern European countries such as Italy, Greece, and Portugal are at particularly high risk and could suffer the highest mortality rates from AMR (OECD 2018). More recently, a study that estimated the death toll from bacterial AMR in 2019 at 4.95 million (Murray et al. 2022) was widely circulated and received heightened attention, particularly within networks of AMR advocates and policymakers. These additional examples assert that the actuarial lens has remained dominant in the global governance of AMR.

While all those studies on AMR governance provide important insight, I have sought to illuminate how developments and changes in this governance, particularly what appeared to me as an increasing tendency by governmental actors to portray AMR as an emergency, relate to the governance of health emergencies. That is, I examined the boundaries of the global governance of health emergencies through the evolution and management of AMR as a governmental problem. My analysis of the emergence and operation of AMR governance at the science-policy nexus suggested that three key processes have enabled and driven the partial rendering of the problem of AMR into a health emergency.

That rendering would not have been possible without the earlier "crisisifcation" of the problem and the related emergence of the global governance of AMR, where governmental apparatuses routinely address the problem. The latter development was key because it established the means to address the problem and to effectively render it into an emergency. The former was key because it turned the problem of AMR from a technical issue into a temporally situated concern (present action to prevent a future catastrophe), and promoted that perception, thus also prompting and fostering notions of urgency and eventfulness around the problem. Finally, there is the compression effect. Discourses, technologies, and strategies that promote ways of thinking and acting on the problem of AMR as tangible events in the present and drive the intensification of urgency around it have effectively compressed the time-space of the problem, turning a previously future catastrophe into an unfolding present reality, allowing the problem to be thought of as a health emergency.

Usually, processes of "emergencization" in relation to health, particularly infectious disease, are driven either by the migration, proliferation, and development of emergency technologies, practices, and expertise within the fields of global and public health; or by the structural disposition of health emergency governance to expand and integrate problems into it. By contrast, in the case of AMR, the process has been driven (whether intentionally or not) by internal forces in the governance of AMR that have pushed for greater attention to, investment in, and prioritization of this problem.

Overall, the boundaries of contemporary health emergency governance and perhaps also ontologies of emergency more generally, are anchored in eventfulness and velocity. For a problem to be a health emergency it needs to be perceived as an event or series of events that outgrow and

outpace response and existing capacities. AMR can only be rendered into a health emergency to the extent that it is perceived as a rapidly deteriorating situation (actually or potentially) that cannot be managed with the existing capacities of the system.

5. COVID-19: Health Emergency Event from Beginning to End

5.1. Background

In this chapter I focus on the health emergency that surrounded and consisted, among other things, of the Coronavirus Disease 2019 (COVID-19) pandemic. There are multiple reasons for selecting this case for a research on the global governance of health emergencies, but mainly: because it is a clear-cut and unambiguous case of a health emergency event.

That COVID-19 was an emergency event at one point or another (or still is) is widely accepted, to the point that this is almost self-evident. Indeed, there is general agreement that this health emergency was of unprecedent magnitude and scale, both epidemiologically, in its social implications, and in terms of governmental response. Therefore, it provides a unique opportunity to examine the global governance of health emergencies when it is fully operative and geared towards managing a worldwide infectious disease problem. More specifically, COVID-19 is used here as an almost archetypical, representative case study to analyze how, within the global governance of health emergencies, a health emergency event is constituted – from beginning to end.

In the analysis, I mainly focused on three governmental actors that played a central role in the international and European regional management of the COVID-19 emergency: the WHO, EU, and German Federal government. In addition, I focused on specifically relevant discourses and activities at the nexus of global health expertise and policymaking.

Analytically, I argue, that in the contemporary global governance of health emergencies a health emergency event (such as the COVID-19 emergency) is generated in a manifold manner. The event is only seemingly a singular, particular occurrence within defined and stable boundaries as there are multiple and coexistent variations of the event that emerge and evolve, with some disappearing and others becoming more dominant than others. Instead of basing my examination on any particular demarcation of "the event", then, I identify and discuss key "vectors" that constituted the health emergency event of COVID-19 and its boundaries.

The term "vector" implies directionality, magnitude, and relative position. Vectors are not sequential – one does not begin where the other ends. Moreover, different vectors can be

simultaneously active and, although they have distinct trajectories, may overlap at various points. Through an analysis of key vectors in the case of COVID-19, I addressed a critical question that pertains to the governance of health emergencies: How are health emergencies, as events with a beginning and end, constituted?

I argue that in the global governance of health emergencies, beginnings and endings of health emergency events do not simply appear naturally or spontaneously. They are simultaneously and constantly formed through an array of complex and occasionally overlapping processes. I further argue that, while the event has no actual end point, the constitution of ending has an important political role in relation to governance. The ending opens up a liminal space between the event and its aftermath, enabling and driving processes of reflection, change, and transformation within and to governance.

5.2. Beyond dramaturgy and epidemics

> Thus, as a social phenomenon, an epidemic has a dramaturgic form. Epidemics start at a moment in time, proceed on a stage limited in space and duration, follow a plot line of increasing and revelatory tension, move to a crisis of individual and collective character, then drift toward closure. (Rosenberg 1989: 2)

According to historian of medicine Charles Rosenberg, what defines an epidemic is 'fear and sudden widespread death', as well as its 'episodic quality'. It is 'an event' rather than a 'trend', it 'elicits immediate and widespread response', and is 'highly visible' (Rosenberg 1989: 1-2). Historically, Rosenberg claimed, epidemics unfold in a manner that is similar to 'a conventionally structured play' with a 'predictable narrative sequence' that consists of three acts. In the first ('progressive revelation'), initial warning signs and denial are slowly replaced with the recognition that comes with the accumulation of the sick and dead. In the second ('managing randomness'), there are attempts to manage the 'dismaying arbitrariness' of the epidemic through explanatory frameworks. Finally, in the third ('negotiating public response'), a response takes place – the implementation of various policies and measures that 'constitute rituals, collective rites' and facilitate 'the visible acting out of community solidarity' (Rosenberg 1989: 7).

Rosenberg's classic account provides a number of useful and instructive observations, particularly that epidemics are events; that they prompt response; and that spectacle is a central element in them. However, the term "epidemic" refers to a 'lifecycle' that begins with an 'outbreak' – a

sudden (and largely unexpected) surge in morbidity and mortality within a population, continues with 'growth', and then reaches 'climax'. Epidemic as such, Charters and Heitman argued (2021: 213), fosters an overemphasis on moments leading to upsurge and climactic points, and to a lack of emphasis on termination and decline (something that Rosenberg only discusses very briefly). Moreover, as Dóra Vargha (2020: 692) argued, thinking through the dramaturgic narrative of an epidemic focuses our attention on the present, thus concealing the various coexisting 'temporalities at play' in an epidemic, the tensions between them, and how they change.

I wish to suggest further that both the dramaturgic narrative and the focus on "epidemic" reflect and promote a particular (mis)apprehension of the epidemic aspects of the event (or the epidemic sub-event) as the broader event itself. That is, a tendency to misconstrue the broader surrounding of the epidemic as a component within it (or simply to downplay or overlook that surrounding). Indeed, even though Vargha (2020: 696) has critically reevaluated the dramaturgic narrative of the epidemic and warned us of its 'seductive' familiarity, she has continued to focus on and discuss, first and foremost, an "epidemic" event. Accordingly, her conceptualization of emergency as temporality (alongside urgency and permanence) is limited to the very particular and concrete kind of experience involved in medical emergencies – specific instances of life-saving medical action that are an inherent part of any epidemic.

Contemporary events such as that of COVID-19, however, are better understood as health emergencies. Emergency is not an (technical-legal) aspect that is separate from or part of the epidemic event. Epidemic neither precedes health emergency, nor does it eventually turn into one. *Epidemic* (rising or declining case count) or *pandemic* (in its current meaning as a large-scale or world-encompassing epidemic) is part of what makes up a contemporary *health emergency* event. A specific trajectory or layer within the whole.

As shown throughout this dissertation, and as shall be seen in this chapter, the "emergency" or "health emergency" captures critical aspects beyond the "epidemic" side of the event: from preparations, infrastructural settings, and technical apparatuses that preconfigure, shape, enable, and play out in the event to different discourses and practices that enable and shape its aftermath.

The notion of "health emergency" was particularly useful in the current case, where there was a need to move beyond conventional thinking on COVID-19 as a "pandemic". COVID-19 has fundamentally challenged experts and policymakers' perspective and way of thinking on

pandemics. As the prominent epidemiologist Michael Osterholm recently confessed: 'We are in totally uncharted territory from the perspective of understanding what a pandemic is, how it starts, how it unfolds, and how it ends' (quoted in Wadman 2022). In that sense, "pandemics" appear as a previously familiar object that had suddenly and fundamentally become unfamiliar and uncertain (Foucault 2003: xviii). Rather than adopt or further the problematization of "pandemics" by defining the event as such, however, I understand that problematization in its relation to the constitution of COVID-19 as a health emergency event.

While there is already a plethora of accounts (by both researchers and practitioners) that chronicle and trace how the event of COVID-19 evolved (e.g. Christakis 2020), for the most part these tend to follow the epidemic dramaturgy narrative arc. They set a clear beginning point for the event (whether known or unknown; e.g. patient zero, zoonotic spillover), and describe how it unfolded chronologically, proceeding (usually, in a linear fashion) from that arbitrary beginning point A to a "climactic" point B, and to an arbitrary end point C (which can be set in the past, present, or future). My analysis of the event of COVID-19 as more than an epidemic – as a health emergency, works not only to upset that dramaturgic narrative arc but also to question and challenge the boundaries of the event – the demarcation of its beginning and end.

COVID-19 as an event has been studied (across various disciplines) in a similar way to other infectious disease epidemic events before it: with a tendency to focus on the origins, beginning, and peek of the "epidemic". Thus, and despite some notable exceptions, especially among historians of medicine (e.g. Vargha 2016, 2020), researchers have given relatively little attention to how such events end (Charters & Heitman 2021). Here, then, I identify and examine key vectors that have constituted the health emergency event of COVID-19 as a demarcated whole – both its beginning and ending.

Of the few scholars that examined and discussed the end of (what I call) health emergency events with a dominant epidemic component, some attended to that end in its relation to the 'aftermath' (Roth 2020: 15-16). That is, end as in the "post-event" sense of implications that stem from the event *after* it had seemingly ended. Meanwhile, others have proposed a critique or reassessment of existing conceptions of the end by asking 'where and when' does the event actually end? Is the ending 'always inevitable'? 'Who, and based on what, makes the decision to announce the ending?', and 'What can be the consequences of such a declaration?' (Vargha 2020: 698). For

Vargha, therefore, the end of the spectacle is not *the* end, if there ever is one: 'instead of an ending, the play moves on from the stage and, as an experimental theatre piece, blends with the audience and continues long after the curtain is drawn'.

I am inclined to agree with Vargha. To the extent that there is an "ending" to the event, it is a construct, and one worth investigating for that matter. Having said that, by conceptualizing the event as a health emergency rather than an epidemic, I highlight the potential problematicality of endlessness. Instead of a critique to promote or turn attention to what and who is neglected or left behind in and after events such as COVID-19 (a just and worthy cause, to be sure), then, my aim here is to understand how the event, with particular emphasis and focus on its ending, has been constituted. Furthermore, it is to understand what role that constitution of the health emergency event plays in relation to governance.

Based on rigorous ethnographic research and detailed analysis, I argue that the ending of the health emergency event should not be seen as a separate process or particular moment that is preceded by the peek and the beginning of the event. The ending of the COVID-19 emergency has been in the process of making for at least as long as there has been a COVID-19 emergency event.

5.3. Prolog: How does a health emergency event begin?

2 June 2020

In the last few days I developed a cough and occasionally have difficulty breathing. Given the movement restrictions and nation-wide lockdown I haven't been in physical proximity to many people recently so it seems unlikely that I got infected with coronavirus. On the other hand, the news today said there is a huge surge in COVID cases in Jerusalem not too far from where I live. I will go get tested just to be sure.

4 June 2020

I drove my car to the drive-through COVID testing site in Jerusalem's Teddy Stadium parking lot. I passed two checkpoints and joined the line of cars heading towards one of the large white tents that were set up on the premise. A man wearing a MADA (Magen David Adom) jacket, a facemask, and gloves approached my car. I put on a facemask and gave him my personal details. He entered my details into a hand-sized electronic device and printed out a page with barcodes and numbers. Placing it on the car's front window, he instructed me to drive forward.

I drove the car to the tent. Inside, I saw people in full personal protective gear – white garments, gloves, masks, and face-shields. They were moving around in a hurry, walking back and forth from the cars, filling out forms, disposing of their gloves and wearing new ones each time. One of them approached my car and took the paper from the car window. A minute later she returned and politely asked me to confirm that the personal details written down are correct. She then calmly explained the testing procedure and preformed it quickly. I saw her handling small tubes that had the applicators with the samples she obtained from me, placing stickers on them. She then said that we are finished and as I started driving away I saw her walk to the back of the tent to store my samples with all the others that will be sent later that day to the lab.

7 June 2020

I just received a text message from my health fund. I tested negative for coronavirus. I let out a sigh of relief. (Personal fieldnotes)

As I was going over my notes from early 2020 to spot the exact moment when the COVID-19 emergency event began, I eventually reached the conclusion that there was no specific occasion, at least at the level of the field that I was studying, where things suddenly changed in a dramatic way that screamed "we are now in an emergency". Surely, there were multiple moments that signaled that an emergency was unfolding at some level (though not everywhere and not at once): the first death reported, the first cases confirmed outside China, the WHO's declaration of a PHEIC, quarantines, physical distancing measures, travel bans, lockdowns, mandatory facemasks. At the time that these things were happening, though, they did not seem to prompt in me a full and conscious awareness that the emergency event *began*. Quite simply, my notes indicated that at first it was possibly an emergency, and then it clearly was already an emergency. The question remained: At what point did the emergency begin?

For me, it was during that week in June 2020 that the emergency event began, as it suddenly became vivid and tangible. There was a very good reason for this. Until then, I was largely a passive observer *of* the health emergency event. Then, suddenly, my experience shifted to living *in* the event: the agitated concern for my health, my awareness to the epidemic situation around where I lived, the procedure of getting approval to get tested, the experience of being processed by the state's health emergency machinery, the very real sensation of discomfort when a person in full personal protective gear swabbed my throat and nose to extract samples, and my understanding that these will be sent to a laboratory for diagnosis and then rendered into data that will eventually

appear in governmental epidemiological reports. All of these fused and inscribed in me an amplified, intensive, and memorable experience of the event as a new reality.

On a fundamental level, health emergencies do not have a definite or exact beginning point. Different individuals, formal organizations and institutions, social networks, and cultural groups repeatedly demarcate the beginning of a given health emergency event based on experiences, narratives, and explanatory frameworks that point to a moment of entrance or transition into the new or significantly altered reality that characterizes the event. What is of interest here, however, is not how the event is generated within specific social, cultural, or political environments, but how key vectors constitute the event and shape its beginning (transcending social, cultural, and political contexts).

5.4. Things that spread past and present

Two key vectors that constituted the beginning of the health emergency event of COVID-19 were, paradoxically, information and its absence. An international health surveillance system that is intricately tied to processes of information flow via the internet and mass media enabled and facilitated the comprehension of the "event", at first epistemologically and then chronologically. Simultaneously however, in the absence of information and the certainty of accumulated knowledge, the past – whether as experience or historical record – turned out to be nonetheless significant in that regard.

On 31 December 2019 my cellphone vibrated as I received a daily Email update from ProMED, a publicly accessible digital system for infectious disease monitoring and surveillance that I first became familiar with as it was routinely used by the WHE staff in Copenhagen to identify and keep track of potential health emergency events.[31] I opened the Email and scrolled through as the second topic immediately caught my attention: 'UNDIAGNOSED PNEUMONIA - CHINA (HUBEI), REQUEST FOR INFORMATION' (ProMED-Mail 2019).

Recent information gathered from Chinese news outlets (*Finance Sina* and *Sina Finance Mobile*) suggested that 27 people in the city of Wuhan (Hubei Province, China) were admitted to hospitals in the city with 'unexplained' pneumonia and have been placed in isolation. According to one of the sources:

On [31 Dec 2019], various hospitals in Wuhan held an emergency symposium on the topic of the treatment of patients with pneumonia of unknown cause in some medical institutions. (Cited and translated in ProMED-Mail 2019)

This was not the first time that I received a ProMED notification on an outbreak of an undiagnosed or unfamiliar disease, but so far these had eventually turned out to be related to ordinary, familiar causes.

Nevertheless, I was intrigued by something that the news report addressed: 'rumors' on social media that there is a new SARS outbreak. The report noted that 'Even if the SARS virus is eventually diagnosed, there is a mature prevention and treatment system in place, and citizens need not panic'. It appeared that local authorities were at least as concerned with panic as they were with the undiagnosed disease. My interest was then sparked further by the ProMED editor's comment on the reports, which stated that 'the type of social media activity that is now surrounding this event, is very reminiscent of the original "rumors" that accompanied the SARS-CoV outbreak [of 2002-2003]' (ProMED-Mail 2019).

An initial sketch of the health emergency event was emerging from a combination of factors: a disease seemed to be spreading; there was very little information about that disease; this scarce information was spreading increasingly fast; and in the absence of information, people resorted to the recollection of experience from a past infectious disease outbreak that exhibited similar patterns – SARS. I wrote myself a reminder to keep track of ProMED's updates on this situation.

In the next few days the number of cases of the unidentified disease continued to rise, reaching 44 by 3 January. Further, Chinese authorities started to arrest people for spreading rumors about a SARS outbreak on social media. Based on that information, much like the ProMED editor, some states suspected that a SARS-like outbreak is unfolding. Therefore, they began to take precautionary measures: Singapore deployed temperature screening and isolation measures for all incoming travelers from Wuhan, and Hong Kong and Taiwan deployed thermal imaging systems at boundary check points (Gale 2020; ProMED-Mail 2020a). Beyond the medical or epidemiological construction of the event, memories and experiences of past epidemics, whether SARS, Ebola, or swine flu, allowed to perceive a possible health emergency event in the meantime, despite the absence of information or knowledge. As Vargha (2020: 692) wrote, 'The contemporary and the past are… inextricably linked and continuously shape each other in

epidemics. In the time of scientific uncertainty… the past is what our experiences and response are anchored on'.

A few weeks later, as western news media began to sporadically report on China's struggle to contain the spread of the novel coronavirus, I sat down in a Jerusalem café with an experienced international public health expert, Max Cohen. Speaking confidently, Cohen analyzed the current outbreak in China while drawing on his past experience from what he saw as similar situations: 'Now, there is one other disease that accompanies all the other diseases that we talked about … *panic*. *Panic very much rules*. It rules! You have both Corona and panic. It's not Corona alone'. He then used an example to illustrate that panic: 'During SARS [2002-2003] Zurich hosted an international exhibition with diamonds and gems. They didn't open the crates that arrived from China. They didn't even want to open them!'. By that he meant that outbreaks of new or unfamiliar diseases arouse panic and therefore people react in an exaggerated, disproportionate, or irrational way.

> It always starts all over again. New journalists, new young people, not familiar with what happened. And you see people who said [in reaction to the new coronavirus] that not only do we not want people from China and they have to be tested when they come here, but also goods from China should be tested. What is that? It's panic! (Max Cohen, January 2020)

Cohen suggested that the panic he observed in the media and public reaction to the novel coronavirus is something that repeatedly occurs, spreading like a disease every time there is a new outbreak. By drawing on past experience in his diagnosis of the situation, and by highlighting the importance of that experience as a kind of remedy against the pathogenic-like tendency to panic, he was not only filling gaps in information to make sense of what had been occurring, but also calibrating his perception (and perhaps, also mine) to understand an unfolding health emergency event that had now become as real as past epidemics.

5.5. Emergency discourses and spectacles

5.5.1. Formal and informal beginnings

Emergency discourses and spectacles – both formal and informal – operated as vectors that constituted the beginning of the health emergency event. Specifically, they worked to focus attention, communicate, raise questions, and provide answers about the quality, nature, magnitude, or status of the event, the kind of threat it involves, and more importantly – to whom.

Towards the end of January 2020, while there was still much uncertainty around the novel disease, it was becoming clear to experts, scholars, bureaucrats, policymakers, and others in the field of global health that the virus transmits between people.

> This outbreak is extremely concerning. Uncertainty and gaps remain, but it is now clear that there is person to person transmission (Wellcome Trust Director Jeremy Farrar, cited in Young Lee & Qian 2020).

Based on this information and as Chinese authorities confirmed that there is evidence of person-to-person virus transmission, on 20 January the WHO Director-General decided to convene the IHR Emergency Committee (ProMED-Mail 2020b; Young Lee & Qian 2020).

Members of the IHR Emergency Committee, mostly public health officials and experts in biomedicine and infectious disease, were supposed to evaluate the situation in order to advise the WHO Director-General whether to declare a PHEIC and to make preliminary public health recommendations. While Committee meetings (and protocols from those meetings) are not publicly accessible, the interest that they spark – both in the media and global health governance – makes them into a spectacle. As one interviewee commented, '[The IHR Emergency Committee's] first meeting in January was important, and the whole world was listening to their temporary recommendations' (Biomedical expert and global health consultant Lucas Hartman, May 2021).

The Committee convened on 22-23 January 2020. Reportedly, Committee members differed in their views regarding whether the event constitutes a PHEIC, but eventually reached the conclusion that it should not be declared as such. They agreed that the situation was 'urgent' and that they should reconvene in several days (WHO 2020a). In a speech later that day (23 January), the WHO Director-General presented the Committee's advice to explain why he is not declaring the event a PHEIC. However, he clarified: 'Make no mistake. *This is an emergency in China*, but

it has not yet become a global health emergency. *It may yet become one*' (Ghebreyesus 2020a; emphasis added).

While he did not formally declare an emergency, he informally identified and conceptualized the event as an emergency in China that could potentially evolve into a global health emergency. This is further demonstrated by his emphasis that 'WHO's risk assessment is that the outbreak is a very high risk in China, and a high risk regionally and globally'. Thus, whether intentionally or not, he discursively produced the health emergency event.

He continued to do so on at least two other notable occasions. First, on 29 January, after returning from a visit to China, he stated that:

> The continued increase in cases, and the evidence of human-to-human transmission outside China, are both deeply concerning. Although the numbers outside China are still relatively small, *they hold the potential for a much larger outbreak*. I have therefore decided to reconvene the International Health Regulations Emergency Committee on novel coronavirus 2019, to advise me on whether the outbreak represents a public health emergency of international concern, and to seek their recommendations on how best to protect people all over the world – while recognizing what China is doing. (Ghebreyesus 2020b; emphasis added)

Highlighting his concern with the growing number of cases outside China, the Director-General once again informally produced the emergency event while redrawing its conceptual boundaries: an emergency that involves both China and other countries and could potentially evolve into a health emergency 'all over the world'.

Second, in his speech after the Committee reconvened on 30 January, the Director General formally declared it an emergency event:

> Over the past few weeks, we have witnessed the emergence of a previously unknown pathogen, which has escalated into an unprecedented outbreak, and which has been met by an unprecedented response…. We don't know what sort of damage this virus could do if it were to spread in a country with a weaker health system. We must act now to help countries prepare for that possibility. For all of these reasons, I am declaring a public health emergency of international concern over *the global outbreak of novel coronavirus*. The main reason for this declaration is *not because of what is happening in China, but because of what is happening in other countries*. Our greatest concern is the potential for the virus to spread to countries with weaker health systems, and which are ill-prepared to deal with it. (Ghebreyesus 2020c; emphasis added)

The Director-General discursively generated the emergency event through a particular narrative. According to this narrative, the event began 'over the past few weeks' with the 'emergence' of an 'unknown pathogen' that became an 'outbreak', that led to a 'response'. The next phase of the event is that the virus will reach other countries, some of which have 'weaker health systems' and lack sufficient preparedness. In a matter of one week, then, the emergency event had evolved from an emergency within China, to an emergency that involves both China and other countries, to a global health emergency.

The meaning of the event being global (or of 'international concern'), for that matter, was that it concerns the potential 'damage' the virus could inflict on countries with 'weaker health systems'. An important implication of that widely-held perception was described by Lucas Hartman, a biomedical expert and global health consultant from Germany:

> We have seen on live television how China was tackling the disease. People in full personal protective equipment where their hospitals were overwhelmed. Here [in Germany], people were still going skiing and saying, "That wouldn't affect us".

The spectacle of emergency in China, as seen from a perspective that looks at it as a *global* health emergency event, was not understood in western countries with robust health systems, such as Germany, as something that directly concerns them.

A formal emergency declaration is undoubtedly a significant and at times even critical factor in the making of the health emergency event. Through the spectacle and speech act of the emergency declaration, a perceived imminent threat (see below) becomes publicly recognized as such and that, in turn, immediately sets into motion an array of reactions. However, informal emergency discourses and spectacles are nonetheless important as they constitute the emergency event, not only by readying the ground for the formal declaration, but also by calibrating and enabling response for the specific event.

In the case of COVID-19, a salient kind of emergency discourse and spectacle was the one linked to the term 'pandemic'. As Hartman observed, even though 'the highest alert [level] for a global health emergency was announced, people were still watching'. From that perspective, governments only began to take the event seriously, properly respond, and scaled-up public health measures after the WHO Director-General 'spoke about the pandemic for the first time'.

On 11 March 2020, in one of the WHO media briefings about the COVID-19 emergency that were held routinely since early 2020 (a spectacle in itself), the Director-General referred to the event as a 'pandemic' for the first time. He explained that since mid-February the number of cases and deaths significantly increased as the virus had reached 114 countries, and that they anticipate this trend will continue. Given that situation, and as the WHO was 'deeply concerned both by the alarming levels of spread and severity, and by the alarming levels of inaction', he claimed:

> We have therefore made the assessment that COVID-19 can be characterized as a pandemic. Pandemic is not a word to use lightly or carelessly. It is a word that, if misused, can cause unreasonable fear, or unjustified acceptance that the fight is over, leading to unnecessary suffering and death. (Ghebreyesus 2020d)

Unlike the declaration of a PHEIC, the point of calling the event a pandemic was not technical-legal, but practical and political. It was a rhetorical device aimed to draw attention to the severity of the event and the need to act promptly on it. As the Director General emphasized: 'Describing the situation as a pandemic does not change WHO's assessment of the threat posed by this virus. It doesn't change what WHO is doing, and it doesn't change what countries *should* do' (Ghebreyesus 2020d; emphasis added). In that sense, the usefulness of 'pandemic' for emergency discourses and spectacles derives from its elusiveness.

> The word pandemic doesn't really have a clear definition. There's a pandemic definition on WHO's website where it's more about influenza, actually. It doesn't come with any rules or regulations. (Lucas Hartman, May 2021)

According to Hartman, the emergency declaration that is grounded in the IHR has mainly focused attention on travel and trade restrictions, and as a result is usually not used in an effective way. Hartman, like many other experts in global health, has therefore advocated for the creation of a new international legal instrument – a pandemic treaty, that will establish a clear legal definition and technical procedures for pandemics. Furthermore, Hartman suggested that while the IHR provide a definition and procedure for declaring health emergencies, that is, 'when a new infectious disease is spreading across countries and so on, or if there's an earthquake or something like this', there may be a need for 'a new definition'. For him, a global health emergency is about 'an acute problem', and should therefore also include 'chronic global health problems in some way'.

5.5.2. *Formal declaration (of the end)*

Formal emergency discourses and spectacles did not merely constitute the beginning of the event, but also its ending. On 14 December 2022, during a press briefing, the WHO Director-General announced: 'We are hopeful that at some point next year we will be happy to say that COVID 19 is no longer a global health emergency' (quoted in Fletcher 2022). He then explained that the issue of declaring an end to the emergency will be discussed in the upcoming meeting of IHR Emergency Committee in January 2023. However, at the January meeting, the committee once again decided to maintain the definition of COVID-19 as a PHEIC. In that regard, Seth Berkley, the CEO of GAVI, noted that 'Today's announcement is a recognition that the global threat posed by COVID-19 is not over… we cannot afford to be complacent' (quoted in Furlong 2023).

A formal declaration is, of course, an obvious way in which health emergencies end. Simply put, if the emergency begins with the WHO's formal declaration of a PHEIC, then it ends with a declaration that it is over. Indeed, when I asked one interviewee, biomedical expert and global health consultant Lucas Hartman, *when does a global health emergency end, and how?* He replied:

> Whenever this committee, the emergency committee [advising the WHO Director General], declares the PHEIC to be over, then probably the international community will say, "Okay, then it's over now". Like with the Ebola outbreak in West Africa or now in Congo. With COVID, it will take some time.

The Emergency Committee appointed by the WHO Director-General in accordance with the IHR to advise on whether to declare a certain event a PHEIC also advises him on whether that event is no longer an emergency. At my request, Hartman then clarified how that works in practice:

> [T]he emergency committee has to meet every three months. They have a regular meeting. They get presented the newest results by WHO and by external experts, if necessary, and then they see if those points that were made when declaring it are now still there. Meaning [for example] that it is an emerging disease that's still affecting a number of countries and spreading from one area to the other. They have some clear criteria there, but not 100% clear.

Between January 2020 and January 2023, the IHR emergency committee had met fourteen times. At the time of this writing, however, the event is still formally defined an emergency.[32] On 15 July 2021, after the committee met for the eighth time, it was stated that:

> The Committee unanimously agreed that the COVID-19 pandemic still constitutes an extraordinary event that continues to adversely affect the health of populations

around the world, poses a risk of international spread and interference with international traffic, and requires a coordinated international response. As such, the Committee concurred that the COVID-19 pandemic remains a public health emergency of international concern… (WHO 2021a)

The WHO Director-General followed the committee's advice and 'determined that the COVID-19 pandemic continues to constitute a PHEIC'. Thus, the event was still defined an emergency based on the criteria in the IHR. Nevertheless, by 30 January 2023, after the committee met for the fourteenth time, the main justification for maintaining that emergency status had changed.

The Committee discussed whether the continuation of a PHEIC is required *to maintain global attention to COVID-19*, the potential negative consequences that could arise if the PHEIC was terminated, and how to transition in a safe manner. (WHO 2023a; emphasis added)

While effectively recognizing that there may be a need to declare the end of the emergency event since 'the COVID-19 pandemic may be approaching an inflexion point', the committee nevertheless advised to maintain the emergency status because its termination could potentially have unwanted consequences. Therefore, the committee recommended that WHO 'should develop a proposal for alternative mechanisms to maintain the global and national focus on COVID-19 after the PHEIC is terminated' (WHO 2023a). The main justification for maintaining emergency status became the implications of ending it.

What this shift in justification indicates is that the criteria in the IHR that provide a formal procedure for terminating a global health emergency event are only part of the story. There are other considerations, especially those related to public attention and adherence to public health measures. At the same time, this shift also marks the beginning of a transition process or the preparation of groundwork for the day after the event, as expressed for example in the committee's recommendation for WHO 'to assess and, if necessary, to accelerate the integration of COVID-19 surveillance into the Global Influenza Surveillance and Response System' (WHO 2023a). That is, in preparation for the anticipated formal end of the emergency, there is a need to integrate new technologies and mechanisms that were developed to tackle COVID-19 into routine frameworks and activities. The ending of the emergency event is thus not simply constituted by the formal declaration but even before that, in the preparations that take place in the light of expectations that such a declaration will be made eventually.

Furthermore, the ending of the emergency event, as constituted by the criteria in the IHR and the recommendations of the emergency committee, is very much tied to the epidemiological and biomedical perspective that most of the committee members bring with them (as Lucas Hartman suggested).[33]

A particularly illustrative example for what that perspective means can be found in an opinion piece by Aris Katzourakis, a professor of evolution and genomics at Oxford University, in which he addressed the question of 'when will the end of this pandemic come, and what might it look like?' (Katzourakis 2022). According to him, this is a challenging question since 'we won't know we have passed the end of the pandemic until some time has elapsed'. The end of the emergency event, from his epidemiological point of view, is marked by a shift to managing COVID-19 as an 'endemic' disease, 'meaning immunity in the population will balance out the reproduction of the virus, resulting in a stable level of infection year on year'.

From that epidemiological perspective, then, it is only possible to know and declare with sufficient certainty that the emergency is over in retrospect. Meaning that it is not only the formal recognition of a health emergency that is often perceived as too late (see: Vargha 2020: 691; cf. Lakoff 2017: 3-4), but also the formal termination of a health emergency.

Formal governmental procedures for terminating emergency have significant legal and financial implications in terms of sustaining public health and social care measures; and research, development, and provision of biomedical and pharmaceutical products (Wadman 2022). However, the constitution of the ending of the COVID-19 emergency happened through various vectors, and this was not even the most significant one. Indeed, while the IHR emergency committee and its recommendations attracted global attention and were highly visible initially, that was only temporary. As Hartman noted, attention to the IHR emergency committee and its recommendations completely faded in a matter of months: 'Three months later, nobody really recognizes that there is a follow-up meeting or if the emergency has now been declared over'.

Relatively speaking, governmental emergency declarations play a more significant role in making the beginning of the event than in making its ending. Indeed, 'An official declaration, whether by a king or by an international body such as the WHO, is thus only one part of the ending of an epidemic and does not suffice on its own' (Charters & Heitman 2021: 215).

5.6. The threat and the machinery

> We already have 2.5, 2.6 million children dying every year under the age of five of mainly preventable diseases… and this is a chronic emergency, so to speak, but it's not visible…. Now we have COVID, of course, which affects the rich countries, suddenly, surprisingly, and the world is getting out of control…. when rich countries are affected, the whole machinery is going full-speed. (Lucas Hartman, May 2021)

Lucas Hartman, a biomedical expert and global health consultant, pointed out during his interview that once the threat of COVID-19 directly affected high-income countries it appeared that a whole 'machinery' became *fully* activated. This suggests that there was a certain moment in which governmental systems that are responsible for addressing health emergencies launched a significantly more concerted and substantial effort to respond to COVID-19, whereas prior to that they were unable, unwilling, or too preoccupied to do so.

How, specifically, did that transition or escalation unfold and how does that relate to the constitution of the event? In the case of COVID-19, different conceptions of the threat translated into narratives that prompted governance systems to react in various, at times diverging ways. Together, threat conceptions and their related narratives and actions operated as a vector for the constitution of the health emergency event, and as a mechanism that promoted the evolvement of multiple variations of the event.

In Europe, health emergency governance systems (the 'machinery') was initially triggered by what was perceived as a health threat that mainly affects non-Europeans, an external threat. On 9 January 2020, the EC's Directorate-General for Health and Food Safety (DG SANTE) created a new alert notification in the EU's Early Warning and Response System (EWRS), a digital platform used to monitor and share information about public health threats that are relevant to the EU (Health Security Committee 2020a).[34] The EU's early warning mechanism, as one interviewee explained, relies on 'the data that member states are providing and sometimes also data from social media, et cetera' and that same data is also used for their analysis and assessment of the situation (Annike Weber, July 2021). In a similar process to the one at the international level, the emergency event was being produced at the EU level through accumulated information, initially about the situation in China.

Based on the accumulated information, on 17 January, the EU's Health Security Committee met to discuss 'the cluster of pneumonia cases associated with novel Coronavirus in Wuhan, China'. On this occasion, the main issue of concern was the possibility that the virus will transmits between humans and reach EU countries through air travel since 'the airport of Wuhan has direct flight connections with some EU countries (France, the UK and Italy)' (Health Security Committee 2020a). The EU's reaction, as reflected in the early Health Security Committee meetings, was mainly focused on monitoring and understanding the possible threat that the novel virus posed to the EU and its member states.

During those meetings, the ECDC's (repeatedly updated) risk assessments were presented. Whereas the ECDC's Threat Assessment Brief from 9 January assessed that travel risk and likelihood of introduction to the EU were low, the new rapid risk assessment from the 17 January meeting (which was based on new indications for person-to-person transmission) assessed the risk 'for travellers going to Wuhan and visiting live animal markets as moderate', and therefore recommended avoiding such markets as a measure to 'reduce the risk to low' (Health Security Committee 2020a). On 22 January, the ECDC published another Risk Assessment update in which, based on the available information, they found that 'the potential impact of 2019-nCoV outbreaks is high', and that 'further global spread is likely'. At the same time, however, they found that 'there is currently a moderate likelihood of infection for EU/EEA travellers visiting Wuhan', and that

> adherence to appropriate infection prevention and control practices, particularly in healthcare settings in EU/EEA countries with direct links to Wuhan, means that the likelihood of a case reported in the EU resulting in secondary cases within the EU/EEA is low. (ECDC 2020a: 1)

At that point, the EU's public health agency assessed that the novel coronavirus is a health threat with a *high* impact potential, that this virus is *likely to spread globally*, but also that there is *low likelihood* of it spreading uncontrollably within Europe given 'adherence' to infection prevention and control protocols. The situation was expected to deteriorate and become severe on a *global* scale. However, the global scale, as far as the ECDC's assessment was concerned, did not include Europe itself.

Not unexpectedly, in reaction to that the EU and European countries employed measures that were designed to enhance vigilance (especially in terms of monitoring the situation) and confine the exterior threat. In late January, the Council of the EU (with Croatia holding the Presidency at the

time) activated the EU's Integrated Political Crisis Response (IPCR) arrangements in 'information sharing mode' which meant that the European External Action Service (EEAS),[35] and the EC would begin producing integrated reports on the situation (Council of the EU 2020). Furthermore, soon after the first cases in Italy (two tourists from China) were detected and isolated, authorities had placed a ban on flights to and from China and declared a six-month state of emergency (Amante 2020). Almost simultaneously, anti-Chinese and anti-Asian xenophobic incidents were reportedly on the rise in Italy and across Europe (Giuffrida & Willsher 2020).

Nevertheless, by mid-February threat conception started changing. The ECDC no longer mentioned in their risk assessments what the global likelihood of spread is (e.g. ECDC 2020b). In fact, as the number of reported cases throughout Europe increased, the EU gradually turned its attention inward to focus more on Points of Entry and the situation within and between European countries. Similarly, in parallel to the ECDC changing the risk level for coronavirus in the EU to 'moderate to high' on 2 March, the EU began to scale-up its action and coordination within and between member states with the launch of the EC's new corona response team (von der Leyen 2020), and the Council of the EU's decision to 'escalate' the IPCR arrangements from 'information sharing mode to full activation mode' which facilitated a high-level forum for discussing and deciding on proposed actions at EU level (Council of the EU 2020).

In many places, but especially in the affluent west, COVID-19 was initially conceptualized as a global and possible threat. However, as the virus was actually spreading globally – around most of the world, that conception was changing. The virus turned into a primarily internal threat. On 10 March, the European Council laid out the four strategic priorities for the EU's response: limiting the spread of the virus; the provision of medical equipment; promoting research; and tackling socio-economic consequences. These priorities were devoid of any considerations beyond the EU as they were explicitly set towards the aim of protecting the health of EU populations. This was also clearly stated by Charles Michel, President of the European Council, who said on that occasion: 'Member states agreed that our citizens' health is the top priority' (European Council 2020a). Furthermore, at the national level, as one interviewee noted:

> [T]he whole debate [in Germany] was quite inward-looking. It was about Germany, and how Germans will get vaccinated, and then bashing the EU, harsh, harsh criticism of the EU and its methods actually to buy vaccines (Annike Weber, July 2021).

Once the virus was conceptualized as a direct and actual threat from *within*, both the EU and Germany launched a more robust and inward-facing governmental response. Moreover, in Germany the Ministry of Interior was initially responsible for overseeing the health system response to the COVID-19 emergency, but then 'it got to the Ministry of Health, and then it came to our Chancellery, so to Angela Merkel, quite fast because the intensity of the health crisis has been so high that it traveled all the levels up' (Annike Weber, July 2021). In other words, once the health threat became an "interior" matter it quickly ascended to the top of the political agenda, becoming a high priority.

The transition in threat conception – from an exterior and global threat to an interior and domestic threat, translated into a basic narrative of fragmentation. For those who continued to conceptualize the threat as global, the EU's conceptual transition (and the actions that followed from that) meant that the event had become essentially about fragmental dynamics. Expressing that narrative, during her interview, global health journalist Emilia Keller observed that in the early phase of the COVID-19 pandemic it seemed that the EU was assuming a 'leadership' role in global health as it committed to and funded initiatives such as the ACT-Accelerator. However, according to her, the EU eventually did not rise up to the occasion – at least from an 'international Geneva point of view'. The EU's response to the pandemic increasingly diverged from what was advocated by the WHO and international health experts (for example) in its imposition of export restrictions. At least 'from a multilateral perspective', Keller argued, 'it's a bit like saying that, "Okay, we know the WHO system has failed, so we don't trust international response alert systems. We will do our own thing"'. The event, in this globalist narrative, began with cohesion and then turned towards fragmentation.

Meanwhile, others conceptualized the threat as internal or domestic at the regional, European level. In this case, it was a transition at the national level rather than at the EU level that translated into a narrative of increasingly fragmental dynamics.

On 27 January 2020, when the EU's Health Security Committee met in the light of the outbreak of the novel coronavirus in China, the conclusion was that 'Preliminary assessment by SANTE of the information provided by EU Member States indicates a strong level of preparedness' (Health Security Committee 2020a). Indeed, Annike Weber, who attended the meetings of the committee around that period, recollected that when members states were asked if they were prepared 'in

terms of equipment, et cetera, for this health emergency', they answered '"Yes, we are"'. Subsequently, however, 'we saw they are not'. As she saw it, fragmentation then ensued – member states were supposed to coordinate their responses to COVID-19 through the Health Security Committee, but largely failed to do so. 'Sometimes, even the informal function of coordination couldn't be implemented correctly'. Representatives of member states would sometimes first learn about measures taken by other member states in the media instead of in the committee (Annike Weber, July 2021).

Similarly, multiple accounts showed and argued that EU institutions had a limited ability to intervene in the sphere of public health to begin with, but this worsened during the COVID-19 pandemic as EU member states diverged in their strategies and responses (Anderson et al. 2020; Gontariuk et al. 2021; Jordana & Triviño-Salazar 2020). A divergence that was particularly salient in EU countries' border closures, travel bans, and export restrictions (Deutsch 2021; *Euronews* 2021).

Importantly, the point here is not to evaluate whether or to what extent there was in fact fragmentation at any level. Instead, it is to show that there is a pattern in how the event is recounted in narratives (as involving particular kinds of fragmentation), and that the specific appearance of the pattern across systems is related to threat conception.

Initially there was a global threat and that meant a global health emergency event that poses a possible threat to affluent countries, and a limited governmental response that largely aimed at keeping the external threat at bay by means of containment. However, the transition in conception to an internal or domestic threat meant a regional or national health emergency event – and a governmental response that is more robust and inward-facing. Different threat conceptions led to different kinds of actions, and to narratives that pointed to different kinds of exacerbated fragmentation in governance. Threat conception shaped the contours of the event while the narrative rendered it concrete. Together with the preset governmental reaction, they operated as a mechanism that repeatedly generated the health emergency event, driving its mutation.

5.7. Moving on?

5.7.1. Vaccines and the return to "normal"

> We need to move earlier to the early recovery phase…. [WHO] are often too late to declare [an emergency] over, or not over, but at least moving to another phase. We're moving to the early recovery phase which is still active and positive and operational, but redirecting our focus on what to build out of it. (Former WHO official John Reeves, August 2020)

Addressing the question of when emergencies end, John Reeves reflected on occasions where the WHO formally declared a PHEIC. According to Reeves, similarly to the current COVID-19 emergency, in these previous emergency events the WHO's shift from response to recovery had been too slow. For him, the end of emergency is associated with a gradual move from response to recovery. Having experience in the area of health emergencies, Reeves referred by that specifically to the actions that are to be taken in the response and recovery phases as part of what emergency management experts call the 'emergency cycle' (see Chapter 2). The end of emergency in that sense is constituted by the phasing out of urgent response activities and the initiation of plans and efforts to (re)build in the long term.

Some of the key vectors that constituted the health emergency event, and primarily – its ending, were about transitioning from emergency response mode to "normality" or "recovery". Here I focus on a highly salient and particular kind of vector in that regard, which comprised of hopes, expectations, calls, claims, and policies directed at vaccines and (subsequently) vaccination coverage. These initially emerged in the pre-vaccine months of 2020, consolidated with the first announcements on the development and regulatory authorization of effective vaccines, and persisted as vaccination campaigns were launched and even when booster shots were delivered.

From the early months of 2020, the development of COVID-19 vaccines was an issue constantly looming in the background. Already on 31 January 2020, at a meeting of the EU's Health Security Committee, the EC indicated that one of its key focus areas in response to the unfolding event would be to support research and development of vaccines against the novel coronavirus (Health Security Committee 2020b). As indicated by a later meeting (held 22 April 2020), this focus on vaccines remained key and even expanded further in the following months.

First, this was visible in that, during the meeting, detailed information was presented regarding the status of COVID-19 vaccine development around the world and how many of those received support from the EU, and about vaccine candidates that are being developed within member states. Second, as also noted during the meeting, the EC has worked with the European Medicines Agency (EMA) to 'accelerate the regulatory pathway for a COVID-19 vaccine' (Health Security Committee 2020c). Third, it was clear that vaccines are and will remain a key issue going forward as those attending the meeting 'exchanged information on questions on vaccine development possible needs for an EU vaccine strategy', and also concluded that they need to coordinate more on 'vaccine production, distribution, stockpiling as well as common understanding on risk groups and immunization strategy' (Health Security Committee 2020c).

The importance of vaccines for the transition from response to recovery cannot be overstated. Vaccines were generally perceived as a necessary, even critical, tool to ultimately resolve the emergency situation. As expressed by the EC's *EU Strategy for COVID-19 Vaccines* (published on 17 June 2020):

> A permanent solution to this crisis is most likely to be brought about by the development and deployment of an effective and safe vaccine against the virus…. every month gained in the deployment of a vaccine will save many lives, many jobs and many billions of euros. (European Commission 2020b: 1)

Vaccines as 'the most likely lasting solution to the ongoing pandemic' were to bring back 'economic and social life to normality across the world' (European Commission 2020b: 9). Processes that were set into motion to achieve the main aim of the strategy – timely and equitable access of EU countries to high quality, safe, and effective vaccines, were therefore constitutive of the ending of the emergency event.

In December 2020, following the positive recommendation of the EMA, the EC gave the first EU marketing authorization for a COVID-19 vaccine (the Pfizer-BioNTech vaccine). On that occasion, the EU Commissioner for Health and Food Safety, Stella Kyriakides, announced that 'After months of work, we are seeing our EU Vaccines Strategy bear fruit' (European Commission 2020a). Further, the President of the EC, Ursula von der Leyen, triumphantly remarked:

> Today we add an important chapter to a European success story. We approved the first safe and effective vaccine against COVID-19. More vaccines will come

soon…. This is a good way to end this difficult year, *and to start turning the page on this pandemic*. (European Commission 2020a; emphasis added)

The development of the vaccine, the regulatory approval for using it in the EU, and the subsequent launch of the EU vaccination campaign, thus represented a major step towards a much-awaited and planned transition from response to recovery.

Indeed, for many people, that marked the beginning of the end of the event. When I asked EC bureaucrat Chloe Baros whether they are still mostly focusing on COVID-19 (the interview was held in June 2021), she replied that recently 'It's changing a little bit' and there is more interest in things other than COVID, 'especially now with all the vaccination campaign and… certificate and so on. The focus is still very much on COVID-19 response but I hope that soon we are going to shift to normal business'.

As COVID-19 vaccination campaigns were rolled out and policies were implemented to encourage people to get vaccinated, it seemed that the shift to "normality" was imminent. The Director of the highly influential Institute for Health Metrics and Evaluation (IHME) at the University of Washington, Christopher Murray (2022), even argued that 'The era of extraordinary measures by government and societies to control SARS-CoV-2 transmission will be over. After the omicron wave, COVID-19 will return but the pandemic will not'. In other words, he claimed that while COVID-19 itself is not 'going away', there is no longer a need for 'extraordinary emergency measures' and that it should be managed as any other endemic disease (Marcus 2022). Thus, even when the virus evolved and the Omicron variant was spreading around the world, some global health experts and policymakers maintained that the health emergency event is over or at least nearing its end.

5.7.2. *Back to the global normal*

> Any talk that the pandemic phase is coming to an end is premature. We're going through this highly variable period with waves that depend on the evolution of the virus, immunity, and access to vaccines. I think that this period will be quite protracted…. I don't think anybody thinks this infection is going away any time soon. It's part of humanity now. (Farrar & Galvin 2022)

As this quote by Wellcome Trust Director Jeremy Farrar indicates, for many people in the field of global health the end of the COVID-19 pandemic was not yet in sight, despite the availability of vaccines. From that perspective, the emergency was prolonged not only by the fact that the virus

continued to evolve and immunity was waning, but also by inequality in international vaccine distribution and vaccination coverage – an issue that reflects a broader problem of global health inequity.

The 'Rome Declaration' that derived from the Global Health Summit of May 2021, expressed a similar point of view:

> We, Leaders of G20 and other states… Reaffirm that the pandemic continues to be an unprecedented global health and socio-economic crisis … It will not be over until all countries are able to bring the disease under control (Global Health Summit 2021)

Such statements represent the central role of yet another vector in the constitution of the health emergency event and its ending. A vector that works to reposition COVID-19 as a problem of global health inequity and therefore, toward the continued generation and maintenance of the event, but at the same time also towards the termination of the event as it effectively enables and signals a return to "normal".

> The race to end the COVID-19 pandemic isn't over until those most at-risk are reached, every country can offer protection, and every corner of the globe is covered…. Many countries still lag far behind the finish line and are overwhelmed with balancing other serious healthcare demands…. the race to end the COVID-19 pandemic isn't over until the final mile is covered… (WHO 2022a)

This explanation from an advocacy video of the COVID-19 Vaccine Delivery Partnership (of the WHO, UNICEF, and GAVI) presented the problem of inequity in international COVID-19 vaccination coverage. A problem that had risen as a central issue (from mid-2020, but more so once vaccines became available) in discourses at the intersection of global public health expertise and policymaking (Asundi et al. 2021; Bollyky et al. 2020; Cohen & Kupferschmidt 2021). Claims within those discourses were largely of two kinds. First, the pragmatic kind. As the following argument demonstrates:

> Beyond expanding short-term supply, fostering global cooperation will better situate the global economy to rapidly supply vaccines and therapeutics in the future. Such cooperation is not only a matter of social justice, it is also a sound pragmatic response to ending a pandemic in which a virus and its variants easily cross borders…. Covid-19 vaccines provide a pathway out of this pandemic, but bold, innovative policies that ensure fast and fair distribution are also critical. (Katz et al. 2021: 1283)

According to the pragmatist claim, global equity is crucial for ending the event because if the virus continues to circulate among people around the world who do not have access to vaccines, it may evolve in unexpected ways and new variants can then potentially evade the immune protection provided by available vaccinations and booster shots (Asundi et al. 2021; Ye et al. 2022). In that regard, furthermore, some claimed that, since 'the only way this pandemic will be eradicated' is by vaccinating 'all people worldwide', and because we must 'avoid the tragedy of the commons, in which selfish behaviour leads to adverse communal outcomes', vaccines against COVID-19 should be declared 'a global common good' (Yunus et al. 2020).

Such pragmatic claims were then reaffirmed and reiterated in the light of the upsurge in COVID-19 cases as a result of new variants, especially the Omicron variant. For example, the WHO Director-General stated that 'New waves of the virus demonstrate again that the COVID-19 is *nowhere near over*' (Ghebreyesus 2022; emphasis added); and an editorial article in *Nature* criticized governments of high-income countries for 'talking and acting' as if 'the COVID-19 pandemic is no longer worth keeping track of', and the shortsightedness of scaling back COVID-19 surveillance 'just at a time when a highly infectious subvariant of Omicron, BA.2, is spilling out across the world and case rates and hospitalizations are creeping back up… [and] while most of the world remains unvaccinated' (*Nature* 2022). The pragmatist argument in discourses concerning vaccine equity thus countered or challenged the notion that the end of the emergency event is getting much closer due to the availability of vaccines.

The second kind of claim was of the ethical kind. Prior to the availability of vaccines, ethical discourses in the context of public health were mainly focused on issues such as triage or the tension between public health emergency measures and their implications both socially and for individual freedoms (see, for example, German Ethics Council 2020). However, once vaccines became available, they started becoming more focused on global inequity.

As German health policy researcher and adviser Annike Weber explained, in Germany 'vaccine rollout processes' were criticized (mainly, for being too slow) through more national and regional lenses – 'without looking at the international level … really everyone was looking just at Europe without seeing that maybe we should also share vaccines globally, and not only worry about the European populations'. Subsequently, however, this began to change and the discourse, even

within Germany, turned to focus more on 'the COVID-19 worldwide vaccination and the unequal distribution of vaccines'.

Critics pointed out that wealthy countries' efforts to make vaccines available in low- and middle-income countries (e.g. through donations and the COVAX mechanism) are not only far from sufficient, but also symptomatic of a broader ethical problem. As stated in one essay that criticized wealthy countries for launching vaccine booster shot campaigns, 'acts of charity are not enough to establish the foundations and institutions of international health solidarity. It is not a sustainable solution' (Liu & Chung 2021). Furthermore,

> The predacious race in hoarding world stockpiles of Covid-19 vaccines by wealthy nations is a dramatic illustration of the structural and political problems that perpetuate global health inequalities…. [and] exemplifies the phenomenon of securitizing health for national interests, which runs counter to the spirit of international cooperation and promoting human security. (Liu & Chung 2021)

In making claims such as this, advocates for more equity in the international distribution of or access to COVID-19 vaccines ethically problematized the use of particular governmental preparedness practices such as vaccine stockpiling. The event, from that perspective, was not yet over.

Both kinds of claims worked to generate and maintain the event, constituting it through discourses and activities around the problem of global health inequity. However, all those were also entwined with the question of how the event ends. They worked to offset or challenge the view that the emergency event was to end with the availability of COVID-19 vaccines in affluent western countries. As expressed by Emilia Keller, who noted that critics of efforts to create a new international pandemic treaty argued that the timing of the negotiations over this treaty is problematic since, 'yes, the fire has been put off or for the moment put off in this part of the world [i.e. the west], but in many other parts of the world, it's raging'. For her, that raised an important question:

> Does that mean that if it is over in one part of the world, it's over everywhere? Just because it's far away from us, it doesn't mean that it is over because developing country governments are really fighting with this as we speak.

That duality is particularly evident in case of the Access to COVID-19 Tools (ACT) Accelerator, a WHO-led collaborative initiative that was launched in April 2020 with the aim of speeding-up

the development and production of countermeasures to COVID-19 (tests, treatments, and vaccines), and to ensure globally equitable access to them.

The basic rationale of this initiative is, first, that 'innovative COVID-19 diagnostics, therapeutics and vaccines are needed – in record time and at record scale and access – to save millions of lives and countless trillions of dollars, and to return the world to a sense of "normalcy"' (WHO 2022b). Techno-scientific solutions in the pharmaceutical and biomedical field are understood as key for any transition away from the emergency. At the same time, however, it is also understood that 'as long as anyone is at risk from this virus, the entire world is at risk'. This echoes the kind of technical or pragmatic argument that was made for global equity in vaccine distribution. Furthermore, this rationale also resonates with the ethical argument for global equity in vaccine distribution: 'even when effective tools are available to the world, too often some are protected, while others are not. This inequity is unacceptable – all tools to address COVID-19 must be available to all' (WHO 2022b).

According to this rationale, once solutions – especially vaccines – become available, a return to "normal" can take place. Simultaneously, however, there is the ending of the 'global' emergency event which is constituted as contingent upon progress towards global equity in access to technical measures for dealing with COVID-19, especially vaccines. Thus, by February 2022, appeals to wealthy countries to fund the ACT Accelerator in order to 'end the pandemic as a global emergency in 2022', strictly used justifications that underlined the pragmatic and ethical aspects of global health products inequity: 'massive inequity not only costs lives, it also hurts economies and risks the emergence of new, more dangerous variants that could rob current tools of their effectiveness and set even highly-vaccinated populations back many months' (WHO 2022c).

The simultaneous constitution of the event and its ending, in this case, resulted in a familiar situation. The event of COVID-19 once again became "global" – posing a possible threat to affluent countries. As expressed by a representative of the 'Youth 7' group during a webinar (that was organized by Global Health Hub Germany in the context of the German G7 Presidency) to discuss priorities for development of and access to vaccines and therapeutics:[36]

> It's very important to acknowledge that we are still very much in the current health threat that is the COVID-19 pandemic and that we still need to take some significant steps there to minimize the impacts. We see that in G7 countries

restrictions have lifted, people are vaccinated, we are going back to some form of normal life. But across the world, in many parts, especially lower and middle-income countries, this is really not the case and there is a huge inequality in access to vaccines and therapeutics… [we need] to make sure that the current pandemic ends for everyone, everywhere. (Global Health Hub Germany 2022a)

On the one hand, the emergency event has been ending in G7 countries as life returns to 'normal'. On the other, the event has continued in many countries around the world and will continue until it ends for 'everyone, everywhere'. The end of the event as a destination, in that way, is simultaneously near and far, normal and global.

Thus, some governments have developed global health policies that 'recognize the criticality of responding to the COVID-19 pandemic, and in parallel building global health security capacity and architecture for the future' (G7 2022: 3). That is, at least for a while, governments took the middle-ground: continuing to intervene on COVID-19 as a protracted (global) health emergency while learning lessons and planning forward to prepare for future health emergencies as if the emergency is nearing its end.

5.8. In with a bang, out with a whimper

5.8.1. *Inflammation, response adaptation, and preparedness amplification*

The health emergency event was constituted through the twin "practical" vectors of response and preparedness. Governmental responses constituted the beginning of the event in acts of adaptation and amplification of routine and preparedness activities, drawing upon and utilizing deeply entrenched notions of escalation and inflammation.

Chloe Baros, a European Commission bureaucrat, described how, from the perception of someone working at the intersection of governmental public health and emergency management, the COVID-19 emergency event began. The COVID-19 emergency, according to her, 'completely shifted' their focus – 'Both civil protection authorities and health authorities [of the EU and generally] do not have the time, the energy to look into other issues than COVID. It's a bit difficult to advance on other topics… in this moment' (Chloe Baros, June 2021). In other words, the emergency involved a shift to full response mode. The European response to the COVID-19 emergency meant that it was not only a top governmental priority but *the* governmental priority. Many resources were accordingly allocated towards that priority.

In May 2020, I interviewed Emily Morison, a staff member at the RKI. Emily described how, as the event began to unfold, she and others at the institute were reassigned from their usual work to the national response to COVID-19. They postponed meetings and sought to 'adapt our work plan in light of the pandemic', and this 'basically freed up a bit of time to then focus on COVID'. She was assigned to the 'situation center' (i.e. Emergency Operations Center), which operated seven days a week from 08:00 AM to 09:00 PM (with one person remaining on standby the rest of the time as an emergency contact), and as she explained, was set up in accordance with Germany's pandemic preparedness plan, that was 'refreshed, revised, and completed' in late 2019. Those working at the Center were responsible (among other things) for coordination and communication between local public health authorities at the national level, and with international bodies (other countries and international organizations such as the WHO) on various issues, from public health policies to contact tracing.

The reassignment of personnel from their work to other roles is a common feature of emergency response at the governmental level. In various occasions where the public health systems of countries were visibly collapsing, such as in the 2014-2016 Ebola epidemic in West Africa, health and medical personnel from national health institutions in Europe have been (voluntarily) reassigned and deployed in those countries to assist in responses to epidemics, whether under the banner of the WHO, GOARN, Emergency Medical Teams, the EU Medical Corps, or specific countries. Somewhat similarly, the magnitude of COVID-19 and the required scale of governmental response exceeded and exhausted existing capacities (within European countries), and this meant that there was a need to mobilize and reassign the health and medical workforce towards response efforts. Governmental acts of mobilization, reprioritization, and reassignment towards response, in that sense, practically constituted the health emergency event.

Acts of governmental response to COVID-19, however unusual and escalatory, did not represent a break or rupture but an intensification of sort. Emily and her colleagues who were placed at the Center were largely familiar with the kinds of tasks they were required to do and knew how to preform them, as these were tasks that are part of any epidemic outbreak response. The Center was at the heart of the national emergency response, monitoring the availability of intensive care beds and the capacity of Intensive Care Units, and regularly receiving and collating information from local public health authorities and laboratories, for instance concerning people who tested positive.

Moreover, 'containment scouts' who were employed by the Center were occasionally mobilized to support local public health authorities with tasks such as contact tracing. Nevertheless, Emily noted, what was new or unfamiliar about their work during the COVID-19 emergency was the different, broader scale, the visibility of their work, and the need to communicate it to the public and the media.

The emergency event as such was constituted as a matter of excess growth, an inflation, or inflammation. Routine activities, regular capacities, and ready-made plans, whether or not formally recognized or designated a part of health emergency "preparedness", were adapted and enhanced towards response. This is not to say that governmental response did not involve the use of some extraordinary or new kinds of measures, but that the general framework of response was already set and designed to mirror escalation.

One interviewee described the Platform for European Preparedness Against Reemerging Epidemics (PREPARE), a cross-European network aimed to 'deliver clinical research in a public health emergency' (Vera Farham, October 2019). The interviewee, who was involved in the establishment of PREPARE, explained to me that the idea was to set up a massive 'infrastructure' for a pandemic 'event' or 'scenario', which they thought would most likely be pandemic flu or 'an acute respiratory infection'. She continued to explain: 'We then have the clinician research infrastructure where we can either deliver new clinical protocols, or rapidly adapt some of the work that we're doing'.

According to Farham, the establishment of several research schemes for emergencies, such as PREPARE, was driven by the experiences of public health professionals from health emergencies, especially the 2009 swine flu pandemic, where 'there were no clinical trials that could be delivered, because they just take too long to set up'. She emphasized that the lessons from the 2009 pandemic made it clear that:

> …it takes so long to set these trials up. To do the design work, to develop the protocols, to select the science, train the science, get the approvals through – the ethics, the other regulatory approvals, to get the contracting in place. Operationally, to get these trials set up takes months. Of course, when you try and do that in the heat of a public health emergency, you may end up-- It's moved. The peak pandemic waves have moved by the time the research gets set up. We see this time and time again. (Vera Farham, October 2019)

The lengthy process of clinical research, from this point of view, is problematic in emergency because, when responding to a health emergency such as a flu pandemic, 'you'd want to try to catch the early waves as quickly as you can'. In the light of this challenge, the idea at the basis of PREPARE was 'to have that infrastructure up and running so that in the event of a pandemic, we can switch on that rapid pivoting mechanism to be able to respond to the new scenario'. In this regard, furthermore, the network was to be 'constantly active', providing 'built-in operational readiness' to respond to a health emergency.

PREPARE was a preparedness program designed to allow an 'adaptive' and more rapid response to health emergencies.[37] For two years, the core group involved in the establishment of PREPARE worked on this design, using preparedness instruments such as simulation exercises to assist in building and refining response plans. Subsequently, when the COVID-19 pandemic unfolded, that research infrastructure provided a scientific knowledge base that could be used to make decisions in relation to public health interventions and clinical care (PREPARE 2021). Indeed, as early as 31 January 2020, EU member states were called upon to collaborate with this EU funded preparedness program, in order to 'optimize their work on the clinical treatment protocols of the 2019-nCoV' (Health Security Committee 2020b).

The vast literature on preparedness has shown how, in the absence of an actual health emergency event, preparedness claims and measures such as scenario exercises, vulnerability mapping, and vaccine stockpiling, enable intervention on potential and possible future health emergencies (e.g. Caduff 2015; Elbe et al. 2014; Lakoff 2017; Samimian-Darash 2013). Health emergency events have therefore been chronically constituted as a potentiality or possibility through activities that are undertaken in programs such as PREPARE.

As governmental emergency responses to COVID-19 utilized, modified, and amplified routine activities and preparedness efforts, they reconstituted possible or potential events as actual events, using and reproducing embedded notions of escalation, upscaling, and inflammation.[38] As governmental responses sought to deescalate or reduce inflammation back to a "normal" level, moreover, they not only constituted the event, but also its ending.

5.8.2. Disappearance and amnesia

The ending of a health emergency event is constituted by its gradual disappearance on the practical level, or to quote Rosenberg (1989: 8-9): 'with a whimper, not a bang' (however, see: Cohn 2022). When governmental authorities lifted public health restrictions or significantly scaled down the response to COVID-19, regardless of what had been intended, it was often interpreted as a significant transition point towards normality, a step towards the disappearance of the event. For example, one news article titled *"It's over": Sweden lifts Covid restrictions and ends mass testing* (Ahlander 2022), reported on the phasing out of Sweden's public health response despite significant 'pressure on its healthcare system', and suggested that in doing so, the government of Sweden was 'effectively declaring the pandemic over'.

Similar transitions, which often coincided with the formal termination of the emergency event, were reportedly happening across Europe, including in Belgium (Bencharif 2022), Italy (Martuscelli 2022b), and other countries (Wadman 2022: 1077). Moreover, at the same time that EU member states lifted most public health restrictions, EC President Ursula von der Leyen declared the emergency over while highlighting the transformation in both the nature of the event and how it needs to be addressed practically: 'We are entering a new phase of the pandemic, as we move from emergency mode to a more sustainable management of COVID-19' (Martuscelli 2022a). With the transition to the new phase, according to the EC recommendations,[39] the EC and EU member states should remain 'vigilant' and integrate mechanisms that were established specifically for the COVID-19 emergency into existing systems. For example, testing programs for COVID-19 should be integrated into surveillance systems for other respiratory viruses such as influenza (European Commission 2022a: 3-7).

In that sense of practical disappearance, the end of the health emergency is about a decision. As expressed by a group of global health scholars who suggested (in relation to the question of when COVID-19 will end) that:

> Pandemics do not end with a parade or a negotiated armistice. They end when the disease fades into the background and other, more pressing daily concerns come to the forefront. (Mukaigawara et al. 2022: 896)

The end of the health emergency is about a decision to set a threshold and an ability to subsequently manage the disease in a routine manner, thus ensuring that the threshold is not crossed: 'Ultimately,

countries will need to define and decide what levels of transmission are acceptable and how to control the virus without burdening health systems and avoid adverse health and socio-economic consequences' (Mukaigawara et al. 2022: 896).

On the one hand, the health emergency ends in the sense that the disease is deprioritized or removed entirely from the political agenda, and that the governmental response is deescalated, defunded, or integrated into regular, routine public health management activities. On the other, there is still a threshold and a need to ensure that it is not crossed – which means the event persists at some level.

In the WHO's *Strategic Preparedness, Readiness and Response Plan to End the Global COVID-19 Emergency in 2022*, the WHO presented a plan for ending the event and three possible scenarios that represent key drivers (and interactions between them) of virus transmission (e.g. viral evolution, lack of immunity) and disease impacts (e.g. low global vaccination coverage, waning protection). The goal was to arrive at a position where the disease is 'manageable'; and the termination of the event was considered as an open question that depends on decision: 'The choices we all make now, both as individuals and collectively, will determine when the pandemic ends' (WHO 2022d: 1-2).

In this example, as in the previous one, the ending of the COVID-19 emergency is contingent upon particular political or governmental contexts in which decisions are made. That ending is set as a central and achievable strategic goal, yet remains unspecified and undefined. The ending of the emergency event thus opens up an ambiguous, liminal space between routine management of an endemic disease and acute response. Even as the event seemingly disappears, at some level it persists for a very long time, lurking in the shadows.

That liminal space is created in the gap between the (social) ending of the event and its (medical) persistence. In May 2020, an article in the *New York Times* used the historical examples of plague, smallpox, and influenza to suggest how COVID-19 may end medically or socially (Kolata 2020). Aside from rare exceptions such as the eradication of smallpox, the former kind is usually temporary as even the plague 'never really went away'. Meanwhile, the latter kind arrives as 'people grow tired of panic mode and learn to live with a disease'. Thus, 'the coronavirus pandemic could end socially before it ends medically. People may grow so tired of the restrictions that they declare the pandemic over' (Kolata 2020).

The seeming end of the event at the political level, coupled with growing public weariness, has often resulted in a kind of collective psychosocial repression of the event from memory. As Maria Van Kerkhove, the WHO's Technical Lead on COVID-19, explained (Quoted in Branswell 2022), alongside that urge to bring the event to an end and return to 'normal', there is also a tendency to erase it from memory. It is 'like when you have a traumatic event on your body and you have your surgery, you have your cast, you have your rehabilitation, and then you forget about the pain'.

Western news media and global health scholars and experts repeatedly pointed to this phenomenon and problematized it. For example, the *Washington Post* suggested that 'For most Americans, coronavirus has faded from the foreground' (Nirappil et al. 2022); *USA Today* reported that '"COVID is over" might trend within social media circles, but weekly U.S. death tolls tell a different story' (Rodriguez 2022); and a piece in *The Guardian* argued that:

> After a mass trauma comes the mass forgetting. No one really wants to talk about Covid any more, even though it tore through every dimension of our lives.… we have done a remarkable and largely collective job of acting like the pandemic is over, and – even more – of trying to forget that it even happened…. What we are experiencing right now is the pandemic's social death (Delaney 2022)

According to this, while epidemiologically and medically speaking COVID-19 continues to take its toll, there appears to be a collective decision to act not only as if the event ended but also as if it never happened.

A report by a large group of experts from the US explained that this sort of 'collective amnesia' following health emergencies is linked to 'The sense of helplessness in the face of an unrelenting and implacable adversary' (Albarracin et al. 2022: 22). Nevertheless, they warned, simply 'moving on would be a mistake' as there will be more pandemics and public health emergencies in the future. To move towards 'the next normal' and to be better 'prepared the next time', there is a need to improve and rebuild infrastructure and systems, and that also requires 'remembrance and concerted work'. The ending of the health emergency event as constituted by vectors of practical disappearance, therefore, involves the social termination of the event, but also its medical persistence. Accordingly, it sharply contrasts, but also corresponds with vectors of recollection.

5.9. Recollection: Towards the aftermath

Experts, journalists, scholars, activists, and policymakers have extensively reviewed, scrutinized, analyzed, and debated the health emergency of COVID-19, focusing (for example) on governmental health emergency preparedness and response measures. While doing so, they have often sought to extract lessons from the event or to reiterate lessons through it. Those lessons have then been utilized and echoed as policies, organizational and interorganizational structures, activity frameworks, and governmental systems have been modified and reshaped. Lesson learning processes are, in that sense, a kind of recollection vector for constituting the ending of the event.

The issues addressed in those processes, the kinds of lessons learned, and the ways they are utilized are heterogenous. They have focused on specific areas such as investment in research and development for pandemic preparedness (CEPI & UNITE 2022), and the generation and use of scientific evidence in global health emergencies (Cochrane 2021); and on broad problems, such as lack of coordination and preparedness, insufficient funding for health systems, growing public distrust in government and science, and inequity (Global Preparedness Monitoring Board 2021; OECD 2022; Sachs et al. 2022; Sirleaf & Clark 2021). Their overarching purpose and general structure, however, are similar. As expressed by the four themes of enquiry of the Independent Panel for Pandemic Preparedness and Response (IPPPR 2021a: 6), such processes have mainly consisted of efforts to 'Build on the past'; 'Review the present'; 'Understand the impacts'; and 'Change for the future'.

Most processes of lesson learning have been located somewhere on a scale in-between formal institutionally-mandated reviews (e.g. European Parliament 2022a), and informal discourses (e.g. EPHA 2022). Many of them have involved workshops and events in which lessons were identified, presented, and discussed. On 23 June 2021, I observed such an event – a webinar organized by Project Syndicate on *'Back to Health: Making Up for Lost Time'*. During the webinar, participants reflected on the COVID-19 emergency to highlight certain lessons for the future. For instance, Dr. Tom Frieden, former Director of the US CDC and current President and CEO of Resolve to Save Lives, pointed to technical and regulatory lessons for risk management (Project Syndicate 2021), and the President and CEO of the International Rescue Committee, David Miliband, argued that:

> Some quite basic changes could, I think, have prevented the worst of this outbreak…. The equity aspect of this is absolutely critical, because in a connected

world we're only as strong as the weakest link in the chain. (Project Syndicate 2021).

For the most part, those lessons, and especially that global health equity is important because we live in an interconnected world, are not new in themselves and are largely obvious to people in the field of global health.[40] Such lessons are, in that sense, ready-made and the emergency event itself provided an opportunity to reiterate them.

One of the most salient ready-made lessons has been about avoiding repeated 'cycles of panic and neglect' by investing in preparedness. A World Bank report from 2017 already suggested that: 'Responding to outbreaks once they have happened is far more expensive – in lives and money – than investing in preparedness' (International Working Group on Financing Preparedness 2017: iv). Subsequently, in the context of the COVID-19 emergency, CEPI appealed for funding while arguing that: 'Now is the moment for the world to unite and break the cycle of panic and neglect that has characterised the historical response to epidemic and pandemic disease' (CEPI 2021: 14); and that same lesson (with a reference to the World Bank report) was more recently brought up by researchers from the IHME, who argued:

> Prior to the pandemic, the global community neglected to devote sufficient resources to pandemic preparedness systems and activities, and then COVID-19 led to a massive increase in (largely emergency) health spending. Had the world been better prepared, the COVID-19 pandemic might not have taken such a tragic toll. (O'Rourke et al. 2023)

The lesson reiterated by the emergency event of COVID-19 is the need to 'break' the cycle of panic and neglect. The conclusion, accordingly, is that the international community needs to invest much more in preparedness for future health emergencies.

Similarly, observations and claims regarding the importance of rapidity and the consequences of global inequity were made through examinations and analyses of the COVID-19 emergency event.

> If the first year of the COVID-19 pandemic was defined by a collective failure to take preparedness seriously and act rapidly on the basis of science, the second has been marked by profound inequalities and a failure of leaders to understand our interconnectedness and act accordingly. (Global Preparedness Monitoring Board 2021: 6)

In contrast to such ready-made lessons that are often generic and general, newly extracted lessons have tended to be more concrete, technical, and functional. As can be seen in the European Court of Auditors' scrutiny of the EU's response in an attempt to 'contribute to the ongoing development of the EU's pandemic preparedness and response capabilities', specifically in relation to the EU's COVID-19 vaccine procurement process (European Court of Auditors 2022: 4). Based on the examination of that process, it was suggested that the EC should:

> produce pandemic procurement guidelines and/or lessons learnt for future negotiating teams;
>
> carry out a risk assessment of the EU's procurement approach and propose appropriate measures;
>
> run exercises to test all parts of its updated pandemic procurement framework, including information and intelligence gathering, to identify any weaknesses and areas for improvement and publish the results. (European Court of Auditors 2022: 5)

The report presented particular errors and issues, and systemic weaknesses that were identified; and proposed concrete measures to fix, resolve, or bypass these.

Learning lessons from the emergency event is an activity directed at the future, but works as a kind of reflection or post-hoc scrutiny. That is, lesson learning processes have chronologized and historicized the emergency event of COVID-19.[41] Certain aspects of the event, depending on the particular focus of the process, were therefore rendered into historical facts. As indicated in an article by WHO's top officials (published in *Science*), in which they argued for the need to prepare for 'pathogen X'.

> Severe acute respiratory syndrome (SARS), middle east respiratory syndrome (MERS), influenza, Ebola, Marburg, Lassa, Nipah, Zika, and now SARS coronavirus 2 (SARS-CoV-2) each have been the "Disease X" of their time.… The next Disease X could appear at any time, and the world needs to be better prepared. (Van Kerkhove et al. 2021)

The event of COVID-19 is not simply likened to past infectious disease emergencies, but rendered into a historical event that, through the lessons learned from it, will help the world prepare for the next health emergency. Accordingly, on 29-30 August 2022, the WHO held a consultation meeting where scientists and experts presented and discussed lessons learned from recent infectious disease

outbreaks, with a particular emphasis on the event of COVID-19, 'to address the research needs for unknown agents capable of future pandemics – Pathogen X' (WHO 2022e).

The starting point for processes of reflection and lesson learning was not with the understanding that the emergency is over, or even necessarily with the perception that the ending of the emergency is on the horizon. Instead, experts and policymakers started to learn lessons from the event as soon as it was being constituted.

In some cases, that starting point can be traced to the second half of 2020. On 1-2 October 2020, the European Council held a special meeting where the COVID-19 emergency and its economic implications were discussed. The conclusions from that meeting highlighted 'the need to return to the normal functioning of the Single Market as soon as possible'. Nevertheless, it was added that 'this is not enough: we will draw the lessons from the COVID-19 crisis, address remaining fragmentation, barriers and weaknesses, and increase our ambition' (European Council 2020b: 1). While the strategic effort to reshape the EU's Single Market policy preceded the COVID-19 emergency (European Council 2019), by late 2020 that effort became linked to processes of learning lessons from that health emergency.

Then, in September 2022, the EC published its proposed creation of the Single Market Emergency Instrument (SMEI). The rationale guiding this proposal was that:

> While the Single Market has proven to be our best asset in crisis management, the COVID-19 pandemic has highlighted structural shortcomings hampering the EU's ability to effectively respond to emergency situations in a coordinated manner. (European Commission 2022b)

The proposed structural changes were based on and justified through lessons learned from the emergency event, and were supposed to reshape the EU's emergency governance systems whilst connecting it to the EU's economic policy.

> … particularly in the early days of the COVID-19 pandemic, businesses and citizens suffered from entry restrictions, supply disruptions and a lack of predictability of rules which fragmented the Single Market. Intra-EU export restrictions and travel limitations, adopted in response to the pandemic, but in many cases poorly designed and justified for that purpose, disrupted the free circulation of goods, services and persons, causing economic costs, delays and hampering the overall crisis response. (European Commission 2022b)

The lessons that the EC learned from the event, in this case, pointed to flaws in the EU systems that made the Single Market vulnerable to the broader fragmentation in governance that had taken place within the EU during the COVID-19 emergency.

Accordingly, the instrument was designed as 'A new mechanism to monitor the Single Market, identify different levels of risk and coordinate an appropriate response comprising several stages – contingency, vigilance and emergency modes' (European Commission 2022b). Basically, this three-stage emergency management framework involves: preparedness activities that are routinely carried out; once a threat is detected, relevant products and services, supply chains, and strategic stockpiles are identified and intensively monitored; and in cases where there is 'wide-ranging impact' on the Single Market, 'free movement in the Single Market' is ensured using 'a blacklist of prohibited restrictions and, more generally, through reinforced and rapid scrutiny of unilateral restrictions'. In that situation, furthermore, the EC has the ability to employ special 'last-resort measures' (activated separately) – interventions on production activities and priorities of companies and businesses, to 'facilitate public procurement of relevant goods and services' (European Commission 2022b). Thus, the new instrument that was based on lessons learned from the event will significantly affect the EU's emergency governance systems.[42]

In other cases, the starting point of processes of reflection and lesson learning can be traced to an even earlier period: the first half of 2020. The process of the IPPPR, launched in September 2020, was based on and shaped by a WHA resolution from May 2020, that requested the WHO Director-General to establish: 'a stepwise process of impartial, independent and comprehensive evaluation … to review experience gained and lessons learned from the WHO-coordinated international health response to COVID-19' (WHA 2020: 7).

Further, certain lessons already started to appear while the event was only a possibility. In January 2020, while the members of the IHR Emergency Committee were still discussing how to advise the WHO Director-General regarding the declaration of a PHEIC, they already identified a problem that would become a key consideration in different reflections and analyses: 'Several members considered that it is still too early to declare a PHEIC, given its restrictive and binary nature' (WHO 2020a). Some members of the committee found that the current emergency declaration procedure provided in the IHR was not sufficiently flexible and suggested to add intermediary grades.

A year later, the *'Interim progress report of the Review Committee on the functioning of the IHR (2005) during the COVID-19 response'*, presented by the WHO Director-General to the Executive Board, addressed 'the rigid binary nature of declaring a PHEIC' as a significant 'area of concern' (WHO 2021b: 7). The Review Committee drew on the lesson identified by the IHR Emergency Committee and further developed it:

> The Review Committee is assessing the advantages and disadvantages of an intermediate level of alert, such as a "yellow stage" of the PHEIC as an initial warning signal, and whether different types of PHEIC are required, such as a regional PHEIC declaration for events that pose a public health threat to a region/continent only…. For events that may not meet the criteria for a PHEIC but may nonetheless require an urgent escalated public health response, the Committee considers that WHO should actively alert the global community. (WHO 2021b: 7)

Meanwhile, another institutionally-mandated review body that addressed that same problem – the Independent Oversight and Advisory Committee (IOAC) for the WHO Health Emergencies Programme, rejected proposals to add 'intermediate' or 'regional' level PHEICs to the IHR. Instead, the IOAC suggested 'to include graded levels akin to other global hazard warning systems, in order to signal to policy-makers the degree and nature of the specific risk and to indicate corresponding preparedness actions' (IOAC 2022: 9).

Corresponding with these and other formal review procedures (e.g. Sirleaf & Clark 2021), global health and international law experts continuously discussed and examined that and other problems in relation to the IHR and the emergency declaration procedure, and debated possible solutions (e.g. Berlin Institute of Global Health 2020; Burci 2020; Mullen et al. 2020; Pavone 2022). Drawing on lessons from the event, experts and policymakers proposed and advocated for reforms in the IHR (e.g. Aavitsland 2021). As a specific example, global health researchers Jay Patel and Devi Sridhar found that during the event many countries only partially complied with the IHR, and that was problematic because: 'Better compliance with the IHR surely would have resulted in responses that were timelier and more effective in safeguarding public health'. Based on the lessons identified in that regard, they argued:

> Although the pandemic exposed its shortcomings, the IHR remains indisputably central to the global health architecture for pandemics, and when adhered to, can be meaningful in any health emergency. Adjustments are needed, especially to adopt a more nuanced alerting mechanism and empower the WHO to continually

review and improve member states' compliance with the overall regime. (Patel & Sridhar 2021: 49)

In that context, furthermore, global health experts Durrheim *et al.* (2020) claimed that: 'In the aftermath of the COVID-19 pandemic, International Health Regulation reform must be an ethical imperative for more rapid and effective responses to novel infectious diseases'. Echoing these discourses, during his interview Lucas Hartman pinpointed what he sees as a significant problem: 'the international health regulations are not up-to-date anymore and the declaration of an emergency… is not fitting to the 21st century'. For him, the solution is 'Transparent and clear communication on all levels, meaning the global level, the national level, but also here the local level'.

Whether intentionally or not, lesson learning processes gradually constituted the ending of the event by facilitating a transition from it towards the aftermath, thus fostering opportunities for change in governance, regardless of whether they actually and directly lead to any change.

5.10.   Epilog: How does a health emergency event end?

Vectors involving information and its absence (a gap filled by experience and knowledge of past events), formal and informal emergency discourses and spectacles, conceptualizations of threat and related narratives and reactions, and escalating governmental responses – show how health emergency governance systems produced and shaped the health emergency event of COVID-19, especially at the onset.

From the moment that the coronavirus and information pertaining to it started circulating throughout the world, the event emerged and evolved as well. Once triggered, different systems of health emergency governance continuously (re)calibrated to manage the event, though their timing, pace, intensity, and scope varied. A multitude of event variations then emerged and evolved. In the contemporary governance of health emergencies (generally) and particularly in the case of COVID-19, therefore, the emergency event is not singular but manifold.

Endings of health emergency events are slippery, vague, and plural, perhaps even more so than their beginnings (see Wigen 2022). However, the ending of the health emergency of COVID-19 was not separate from the broader constitution of the event, but a part of it. In parallel to the constitution of the beginning of the event, the event and its ending were constituted through formal

emergency discourses and spectacles; plans, hopes, and attempts to transition from emergency response to "normality" or "recovery"; the gradual disappearance of the event in terms of practice (and its subtler persistence at the medical level); and its recollection in processes of lesson learning.

In different ways, these vectors represent the opening up or establishment of a liminal space between the event and its aftermath, where processes of change may take place. While it is difficult to say what those changes will actually be, as many processes of change are still ongoing, some trends have clearly emerged. Some involving specific modifications or additions within systems of health emergency governance. New and temporary ad-hoc arrangements, initiatives, and solutions that appeared during the event may become more permanent as they are institutionalized or consolidated (e.g. through funding). Meanwhile, other changes have involved broad transformations and alterations to health emergency governance systems themselves. The main question in that regard has been what to reform and how?

The event and its ending play a significant political role in the global governance of health emergencies. They create significant opportunities for profound and fundamental changes to take place through processes of reform and policy change. While they do not promote any radical changes to the present order and landscape of governance, reform processes may still significantly reshape how health emergencies are governed, for example, by redefining the conditions for declaring (and possibly even terminating) the next health emergency. Reforms set the terms for the next health emergency event, and thus, for the next round of failure, lesson learning, and once again – reform. Evidently, what we may consider as another "cycle of panic and neglect" (a cliché, but a valid one) is part of a perpetual spiral of health emergency governance fixated on reform. The wise path is not the one that leads to the abolishment of the health emergency event or its ending, but to a better understanding of the spiral and how it operates.

6. Discussion: Perpetual Spirals

> We will either spiral upwards or spiral downwards. If we spiral downwards, we will have more climate change, more pandemics because of climate change. We will have poorer primary health because of climate change and pandemics, and we will have more wars because all of this is happening. So, this is an endless spiral downwards… And we could also have a spiral upwards where we have better climate control, fewer pandemics, where we have better primary healthcare, where we have fewer wars. (German Federal Health Minister, Karl Lauterbach, during the World Health Summit [2022])

> As Karl [Lauterbach] said earlier, you can either spiral up or you can spiral down. But you don't spiral up or down passively. I do not believe that history is just passively written. You take actions – people, governments, organizations – take actions which more encourage you to spiral up than spiral down. And that's the moment we're in at the moment. That's the moment you have to seize, because if you wait, that window of opportunity [to] make a difference disappears. (Wellcome Trust Director, Jeremy Farrar, during the World Health Summit [2022])

In the context of infectious disease epidemics, the notion that things are "spiraling out of control" is usually evoked to convey a deterioration of the epidemiological situation or an inability to contain the outbreak. As the quotes above imply, however, the image of the "spiral" has also been used to refer to an endless chain of actions, decisions, and reactions that steer the world in a particular direction, in relation to the broad problems of the current era, and with increasing and (nearly) unstoppable force and thrust.

Drawing on findings from my research and the four main chapters of the dissertation, here I wish to characterize and discuss the contemporary governance of health emergencies through the notion of *perpetual spirals*. That is, sequential curves that form a consistent outline and advance endlessly, circling closer towards or away from a central point. This conceptualization, I suggest, expresses the structure and dynamics of health emergency governance, and therefore captures the diagram of the assemblage (see "Approach and concepts" section in the Introduction). For that reason, it also provides a useful way to synthesize and further explore findings from this research.

6.1. Structure

There is a consistent pattern that can be seen in the historical emergence and contemporary forms of health emergency governance. I am referring here to a structure that, generally speaking, has two dimensions. The first is more volatile and includes reaction and response activities – declarations and rapid assessments, public health measures, constant surveillance and updating of epidemiological knowledge, and development and deployment of biomedical solutions; recollection and lesson learning – committee hearings, commissioned reviews, reflections, scrutiny, criticisms, evaluations, and post-hoc analyses; and processes of change – policy reformulation, new strategies and frameworks, newly institutionalized initiatives and activities, reorganization efforts, and reforms. As shall be explained below, every health emergency event is a focal or coordinate point for spirals that move towards it and away from it.[43] This dimension is accordingly represented in the figure of a spiral that moves away from the center (the event).

Meanwhile, the other dimension is represented in the figure of a spiral that moves towards the center. This dimension includes more stable and solid elements: long-term policies and strategic frameworks; formal definitions and procedures; technical guidelines based on accumulated and robust scientific knowledge; routine preparedness and planning activities; the regular flow of public health and epidemiological information, and their processing through established mechanisms of surveillance and monitoring; legal, institutional, and regulatory frameworks and systems; and collaboration, cooperation, and investment schemes.

Figure 3: Illustration of the structure and dynamics of the governance of health emergencies
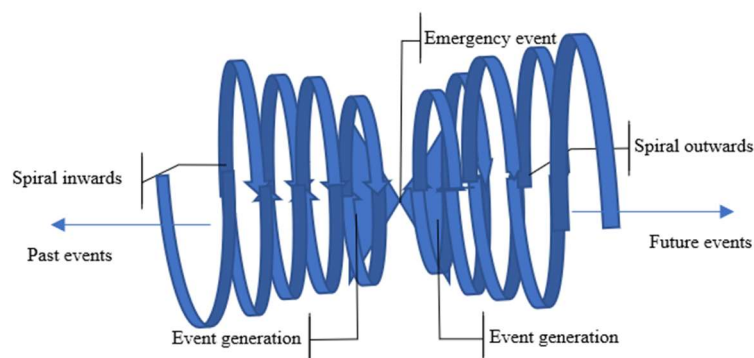
In the governance of health emergencies, the generation of a new health emergency event indicates a shift. When we focus our attention on the center point, the spiral appears to move outwards. Such outwards thrust represents a transformative and expansive, centrifugal power. A power that enables changes in governance (but not to governance as a whole) and overrides boundaries.

When we finally turn our focus away from the center point, whether because our attention is distracted by something else or due to fatigue, there is once again the appearance of a spiraling movement inwards. A thrust inward, towards an unknown and uncertain future event, denotes a centripetal, formative, constructive, and crystalizing power. A power to set conditions and create settings for the realization and comprehension of emergency events, and to configure and calibrate response to, and management of such events.

6.2. Dynamics

The dynamics of health emergency governance, like spirals, create an optical illusion with a potentially hypnotic effect. An endless spiraling motion that moves inwards and outwards, depending on the perspective and focus of the observer, consuming attention and fixing it on that which lies in front of us. In that regard, and as it was repeatedly shown throughout the dissertation, contemporary governance of health emergencies is, at its core, a matter of identifying, producing, thinking, and acting on events.

Significant and highly salient health emergency events tend to capture our attention in a mesmerizing and overwhelming manner. Those are the kind of events that are historicized as "watershed moments" or "turning points". The 2002-2003 SARS epidemic and the 2014-2016 Ebola epidemic were such events. The COVID-19 pandemic is evidently another. As seen in that case, however, what is seemingly a singular emergency event may in fact be a multiplicity of coexistent versions of that event that are produced and shaped by various combinations of experience and knowledge, formal and informal processes, conceptualizations and perceptions of the threat, and governmental reactions. In other words, various spirals surround different coordinate points (some being more dominant or noticeable than others).

Health emergency events as center points of spirals serve to create a mirage.[44] They cannot be comprehended in themselves. As I argued in the chapter on the COVID-19 pandemic, a given health emergency event has no actual definite and clear beginning or end. Furthermore, as I showed

in the chapter on AMR, when a health problem is rendered into a kind of health emergency it undergoes a process of temporal demarcation and reconstituted as eventful or episodic. The event in itself is thus a static, blank object that serves the illusion that the spiral is moving either outwards or inwards. Producing a notion of aftermath or affect of urgency (for example), in accordance with an experience and understanding of where one is in relation to the spiral and to what direction it is moving.

The seeming movement towards the emergency event or away from it is thus a matter of focus and perspective. Claims about the emergency event itself – whether the COVID-19 pandemic, the measles epidemic in Europe, or AMR – only express particular viewpoints and positions relative to a spiraling structure and dynamics of governance, and in relation to a given health emergency event (past, present, or future). Indeed, the case studies in this dissertation illuminated how health emergency events are conceptualized and comprehended in different and occasionally changing ways. The worldwide resurgence of measles – a disease seemingly on the path towards elimination in Europe, turned into a regional, European emergency of regression in the fight against infectious disease. Meanwhile, efforts to address a global problem of AMR have pivoted to effectively render this problem into an urgent and presently unfolding "silent" emergency.

6.3. Scale and velocity

Health emergency governance systems are calibrated through scale and velocity, as these determine whether, when, and how a certain problem is to be understood and acted upon as a health emergency, and what kind of emergency. Throughout the research, scale and velocity appeared frequently and consistently as significant issues, and indeed, the focus on, and concern with rapidity and (coordinated) flexibility – which are fundamentally about velocity and scale – have been the crux of emergency management and embedded in the global governance of health emergencies.

On one level, the constitution of the COVID-19 emergency event was based on an identification of an unexpected and novel disease threat. However, different interpretations and narratives fostered a divergence between systems of health emergency governance. Answers to the questions of what a health emergency is, how to interpret that particular event, and what response is appropriate differed in accordance with embedded perceptions and conceptualizations of scale.

The event was thus regarded in different and occasionally changing ways as "global", "regional", and "national".

This, however, is not simply to imply an alignment between the level of a given system (national, reginal, international) and the conceptualization of the event. While measles had resurged around the world, it was largely understood and considered by both international and regional actors as a regional, European emergency rather than a "global" or even "national" emergency. It was perceived as a medium scale event that calls for a medium scale response. Different systems may embed various perceptions of scale. The question is, what perception is dominant in relation to a given problem and at a particular moment? What components of the system are central or set the tone?

Regarding velocity, in order for the problem of AMR to be rendered into an emergency, it first has to be thought of as an acute (present) reality that is not only eventful, but also rapidly deteriorating and exceeding the response capabilities of the existing system. Somewhat differently, in the case of measles, the emergency was conceptualized as a gradual development (of measles resurgence in Europe) that represents the brink of a rapid collapse, the harbinger of a disaster in the making in the broad area of infectious disease. The cases thus point to something important about the temporality of health emergency governance: a gap between the velocity of event and action is key and even a prerequisite in health emergency governance. They also suggest, however, that it is a malleable temporality that receives its specific form contingently. Each case expressed a different, particular temporal positioning and molding of that velocity gap.

6.4. Processes

The multifaceted, heterogenous, emergent, and dynamic assemblage of the global governance of health emergencies is characterized by the fundamental role that "the event" plays in it, and by the core issues of scale and velocity that underpin and shape how systems of health emergency governance operate. Specific problems may possibly be addressed by this assemblage as far as they are (re)constituted in the light of those characteristics. Having said that, in terms of the process involved, there are multiple (though sometimes overlapping) pathways for governmental problems to turn into problems of health emergency governance.

The first and simplest pathway is when a specific problem is accommodated by legal or institutional frameworks, policies, definitions, and criteria, such as the IHR. Whether because the frameworks or criteria were in fact designed with that particular problem or a similar one in mind (but possibly also because of sheer chance). That pathway is particularly evident in clear-cut cases of health emergencies, such as the worldwide spread of the unknown and lethal virus eventually named SARS-CoV-2. It is no coincidence that elements that were developed and established in the light of the 2002-2003 SARS epidemic – which disappeared as unexpectedly as it arrived – proved to be most useful and adequate during the initial phase of what became the COVID-19 pandemic.

A second pathway is about contingences. As the genealogy of health emergency governance shows, the evolution and emergence of health emergency governance involved the adoption, development, and deployment of emergency management technologies, practices, ideas, and knowledge in response to specific governmental health problems. This was a gradual process that contingently developed through particular circumstances, challenges, and responses. The kind of governmental problems that have been rendered into health emergencies (and accordingly, addressed within the contemporary global governance of health emergencies) are therefore not necessarily or exclusively about infectious disease, but also about various other issues that are perceived to affect health somehow. In that sense, the question of what constitutes a health emergency problem is open-ended and remains without a definite answer. The assemblage appears to still be more emergent than established, consolidated, or institutionalized.

A third pathway involves the expansionist power and structural disposition of health emergency governance. The form of power of health emergency governance, and its structure (accordingly), are such that they enable and even foster expansion. It appears that with every new (or newly rendered) health emergency event, the governance of health emergencies expands outwards in a centrifugal fashion, integrating more elements (e.g. actors, mechanisms) and specific problems by linking them with existing systems or absorbing them to establish new systems. Correspondingly, that power of health emergency governance has also enabled and driven the expansion of the overlapping field of global health governance into other fields. That expansionism is not only indicated by the genealogy of health emergency governance, but also by measles and other cases that were not examined in this dissertation (perhaps most prominently – polio), where a persistent

problem is rendered into a health emergency despite the availability of both knowledge and technical solutions (especially vaccines).

Lastly, a fourth pathway is externally driven and has to do with the political appeal of health emergency governance. As seen in the case of AMR and the partially successful and still ongoing process of rendering this problem into a health emergency, the governance of health emergencies is politically appealing. Advocates in pursuit of more resources for, attention to, and action on "silent" problems such as AMR are therefore inclined to initiate, or at least contribute to and promote, processes that effectively reconstitute problems and integrate them (and by extension, the systems and elements involved in their governance) into the governance of health emergencies.

6.5. On the concept and power of emergency

This dissertation has illuminated the contingent historical development and dynamic emergence of a contemporary global governance assemblage that centers on health emergencies; the multiplicity and heterogeneity of systems (and elements within them) that compose it, and their repeated reconfiguration in the light of health emergency events; and the different kinds of processes, activities, and perceptions expressed by it. Moreover, the case studies (and to a more limited extent, the genealogical chapter) demonstrated the variability of health emergencies. The European measles epidemic was effectively rendered an emergency of regression, whereas the persistent problem of AMR has been partially reconstituted a silent emergency. Although the COVID-19 pandemic represents a more "extreme" case or something closer to an "ideal" type, this case illustrated the complex dynamics that constitute the beginning and ending of health emergency events, and showed that systems of health emergency governance simultaneously produce the reality of the event in varying ways.

All that sharply contrasts what has been, within the social sciences and humanities, a widely adopted and highly influential conceptualizations of emergency as a means of invoking a state of exception (Schmitt 2010) or permanent exception (Agamben 2005). My research on the global governance of health emergencies not only reiterates and reasserts that it is much more useful and contemporarily appropriate to conceptualize emergency as a multiplicity of forms of governance (Adey et al. 2015; Collier & Lakoff 2022; Rabi et al. 2022; Samimian-Darash & Rotem 2019), but

also underscores a fundamental shortcoming in the conceptualization of emergency as exception, even if considered as one of multiple forms of emergency governance.

In the wake of the COVID-19 emergency, various scholars began to analyze and discuss this unfolding event and government responses to it (e.g. Lupton 2020). A particularly salient intellectual debate was triggered by Giorgio Agamben's comments on the situation. In February 2020, Agamben warned of the 'frenetic, irrational and entirely unfounded emergency measures adopted against an *alleged* epidemic of coronavirus' (Agamben 2020a; emphasis added). To clarify his argument, in mid-March he further explained: 'our society no longer believes in anything but naked life', and this has resulted in 'the state of exception, which governments began to accustom us to years ago, [being] an authentically normal condition'. Decrying the lack of resistance to government imposed public health measures against COVID-19, he employed the same reading of biopolitics that he developed in his earlier, highly acclaimed works (Agamben 1998), arguing that we have become accustomed to the permanent state of emergency wherein life is nothing more than 'a purely biological condition' (Agamben 2020b).

In those and later commentaries, Agamben's critique of state, government, and medical establishment slipped into a long chain of unfounded and inaccurate claims, often with a conspiratorial undertone: from suggesting that COVID-19 is no more lethal than common flu to equating the discrimination suffered by Jews in Nazi Germany to the use of vaccine passes to limit the movement of people who refuse to get vaccinated. Unsurprisingly, those claims were heavily criticized by a wide range of scholars and from various perspectives (Baross 2021; Christiaens 2021; Esposito 2021; Lorenzini 2020; Mitropoulos 2021; Nancy 2021; Peters 2020; Sotiris 2020; van den Berge 2020; Žižek 2020). Generally, while some scholars suggested that Agamben was misunderstood, wrong, or not thorough enough in his analyses and interpretations of the situation, others pointed out that his arguments clearly did not represent a deviation from his earlier work and theories, but directly derived from them.

In complete contrast to the relatively widespread acclamation with which his previous works were received across the social sciences and humanities, Agamben's claims about the COVID-19 pandemic were largely rejected as theoretically irrelevant and outdated, exaggerated and disproportional (from an empirical standpoint), and even plainly dangerous. To a large extent, I suggest, this rejection had to do with the first-hand experience we all had living amidst the

unfolding COVID-19 emergency, to one degree or another. The problem was not only with Agamben's reading of biopolitics (as earlier critics of Agamben already pointed out, see: Fassin 2009; Lemke 2011; Rabinow & Rose 2006), which is what most of those who responded to him in that context focused on, but more broadly with his conceptualization of emergency as permanent exception and what it entails (grey zones, bare life). This conceptualization simply did not capture the nuance and complexity of the situation as most people experienced it. Agamben's employment of this concept in his analyses of the health emergency of COVID-19 revealed its critical limitations.[45]

To be sure, I am not implying that there were never occasions where the state of emergency had been invoked to allow the seizure or expansion of executive authority in response to a staged crisis or exaggerated threat. However, such use of emergency for whatever intention and with whatever effect (nefarious or otherwise) should not be conflated with what emergency powers themselves are about or what they do. At the most basic level, emergency is proclaimed or enunciated to signal, communicate, or render visible a problem at a collective level (of a group, organization, national or global population), in a way that designates that problem as an "other than usual" situation – indicating an escalation or deterioration of sort that the collective should be aware of. The power of emergency, in that sense, lies in that it amplifies, magnifies, and augments. How that power is used and to what ends specifically is another issue. The legal problematic of emergency power largely focuses on the question of who has the authority to decide on the emergency, and thus to establish the state of exception. This is undoubtedly an important question, as are questions regarding the distribution of that power to decide and measures to keep it in check. However, such legal problematic and understanding of emergency either mistakes emergency for a mere technical instrument, procedure, or justification for the suspension of law, or conflates emergency power itself with its specific utilization towards the ends of sovereign or disciplinary forms of governance and power.

By introducing my minimal conceptualization (and problematization) of emergency, I have tried to utilize its power (to amplify, magnify, and augment) towards an analytical end. As I wish to demonstrate in the final and slightly more empirical part of this discussion, that effort is both appropriate and fruitful for the purpose of making forms and constellations of governance and

power more visible and vivid, especially when those are in their early phase of emergence or undergoing significant remediation.

6.6. Governance changes in the aftermath of COVID-19

> [T]he great cholera epidemic of 1832 dissolved received understanding in a number of different aspects of French thought and society, thus opening up a space for a new problematic.… The beginnings of a modern understanding of society as a historical/natural whole , as well as the beginnings of society as a target of state intervention – what has been called "the social" – can plausibly be situated at this historical conjuncture… the cholera epidemic not only provided a clear impetus for change, but opened the way for new scientific discourses, new administrative practices, and new conceptions of social order, and hence ushered in a long period of experimentation with spatial/scientific/social technologies (Rabinow1995: 15).

> [T]here are so many, so many things that we are going to discover in the next couple of months.… At what prices will medicines be sold? What are the contracts that companies are signing? What is the end date for the pandemic? There are a lot of things at stake and how they are going to go through, maneuver these decisions will actually set a precedent for the future as well. (Global health journalist Emilia Keller, May 2021)

Seeing the COVID-19 emergency unfold, from the very start, many people in the field of global health and health emergency governance, like global health journalist Emilia Keller, understood what it meant. The more devastating a health emergency is, the greater the opportunity for change. An emergency as significant as the COVID-19 pandemic therefore opened-up a unique space to pursue changes in governance. As expressed by Pierre Delsaux, Director-General of the EC's Health Emergency Preparedness and Response Authority (HERA), specifically in relation to the establishment of a European Health Union:

> Member states, stakeholders, civil society, everybody, is convinced that we need to have a [European] Health Union. And that's something we need to maintain, you know, because when there is a crisis, health crisis, there is a consensus. When the health crisis is over, people tend to forget and focus on other crises. (European Health Forum Gastein 2022)

Multiple processes striving towards such change have thus been launched. For example, proposals for change at the international level have included, to name just a few: the creation of a Standing Committee on Health Emergency Prevention, Preparedness, and Response; the establishment of a Global Health Emergency Council; the formation of a committee dedicated to emergencies at the WHA; and amendments to the IHR (WHO 2023b).

Enabling far more than mere incremental changes to practice or modifications in policy, the aftermath of emergency is a space of reconfiguration of governance, where new elements can be added to systems and older elements can be removed. At the regional European level, a series of EU level reforms that were 'sparked' by the COVID-19 emergency were introduced under the 'umbrella term' or banner of a new 'European Health Union' (Annike Weber, July 2021). That process of change included the EC's decision (in September 2021) to establish HERA (European Commission 2021a, 2021b), and the adoption of new regulations that made the European Medicines Agency (EMA) responsible for activities such as monitoring medicine shortages, and coordinating the EU's response in that context during emergencies. Some of the responsibilities were completely new for the EMA and others were ad-hoc arrangements and activities undertaken by the agency in response to COVID-19 that were to be formalized through the new regulations (EMA 2022; European Parliament 2022b). In addition to that, new regulations were adopted to improve EU preparedness planning and risk assessment, and to facilitate cohesiveness through integrated surveillance and joint procurement mechanisms. Moreover, the ECDC's role in health emergencies was enhanced as the agency was given the authority to make recommendations for EU countries and to form a special taskforce for public health emergencies (European Commission 2022c).

The EU's reforms in the aftermath of the COVID-19 emergency indicate a certain development in the broad landscape of the global governance of health emergencies. Previously scattered elements that were linked to multiple systems of health emergency governance are rearranged and brought together with new elements to form a new and emergent assemblage. This is especially reflected in the proposal to enable the EU to classify and declare a health emergency that would trigger various mechanisms and actions (as established through the other reforms) at the EU level. If established, this regional European health emergency declaration mechanism, as one interviewee suggested, 'would definitely compete with the WHO authority' in that regard (Annike Weber, July 2021). The aftermath of emergency, then, enables and promotes the rearrangement and reconfiguration of governance assemblages, and fosters the emergence of new assemblages. However, such changes can also drive tensions within and between assemblages. Processes of change in the aftermath of emergency, in other words, are politically charged.

The ongoing process of creating a new international pandemic treaty is particularly noteworthy in relation to the latter point.[46] The more obvious sense in which the creation of a pandemic treaty is politically charged is in terms of the different interests, ideas, and visions at play in this process of change. Indeed, the sheer scope and variety of suggestions regarding what the treaty should include testifies to that (e.g. Davis 2021; Vinuales et al. 2021; WHO 2022f). Changes were envisioned, advocated, and pursued through the creation of a pandemic treaty as this was seen as a unique opportunity to influence and shape the global governance of health emergencies. As Annike Weber observed:

> One process that is of interest to [the German Ministries of Health, Foreign Affairs, and Development and Cooperation] is the pandemic treaty. Here, everyone is extremely interested in how a pandemic treaty can look like. They want to get involved and they also want to be a bit more, let's say, proactive.

In addition to that, the second sense in which the creation of a pandemic treaty as a process of change has been politically charged is that the issue at the heart of this process is not about knowledge or practice, but about politics. As global health experts Voss *et al.* (2022) explained: 'The justification for a pandemic treaty is that whilst the technical expertise on how to govern and end a pandemic exists, the political will to do so is missing'. Advocates of the treaty suggested that it would resolve this issue: 'A treaty on pandemics would be an expression of true political will to act collectively after the greatest global crisis of the past decades' (Nikogosian & Kickbusch 2021). Furthermore, as the WHO Director-General envisioned it, the treaty was to provide 'the political muscle and motivation needed to ensure tools, like the IHR, are properly implemented' (Ghebreyesus 2021). From that perspective, a pandemic treaty would bring law and order to what has become a chaotic and highly fragmented global health emergency governance arena. One interviewee, Lucas Hartman, expressed that notion of fragmentation as follows:

> Now things are reshuffled again… the tensions at the [World Health Assembly] between the US asking for more details on the origins [of SARS-CoV-2], the Chinese defending their ideas, and then the Russians blocking all recommendations… so it's getting more into geopolitics again.

Like Hartman, various scholars, analysts, and global health experts have underscored the interplay of fragmentary dynamics in international politics and global health governance during the COVID-19 emergency (Busby 2020; Global Health Hub Germany 2022b; Jones & Hameiri 2022; Patrick

2020). The WHO Director-General similarly emphasized this issue in relation to the governance of health emergencies in suggesting that:

> The fragmented nature of the current modes of health emergency governance, functional systems and financial mechanisms has given rise to a global health emergency preparedness, response and resilience (HEPR) architecture that is often less than the sum of its parts, and which fails to respond rapidly, predictably, equitably and inclusively to health emergencies. (WHO 2023b)

In the report to the Executive Board, the WHO Director-General presented ten proposals for strengthening the 'global architecture' for health emergency preparedness, response, and resilience. All three main areas of the proposed changes to that architecture (financing, governance, and systems) reflected a concern with fragmentation.

The twofold political issue has steered processes of change in the aftermath of the health emergency of COVID-19 towards the preservation of existing forms of governance.

> The German government advocates for constructive multilateralism in global health with a fundamentally strengthened WHO at the center… and we'd like to enable WHO not only financially but also technically, potentially legally through new mechanisms in the IHR and obviously the pandemic treaty, and politically also *vis a vie* other global health agencies or other actors who are engaging in global health. (World Health Summit 2022a)

As Björn Kümmel, a German health ministry representative (and co-chair of the Intergovernmental Working Group on Sustainable Financing of the WHO), explained during a panel at the World Health Summit 2022, Germany's plan for 'post-COVID' global health governance is to change the system in a way that empowers WHO. Germany's idea of governance changes in the aftermath of the emergency has been about reforming 'existing structures instead of creating a bucket of new ones', as Kümmel had put it; or as Germany's Federal Minister of Health, Karl Lauterbach suggested, 'strengthening existing institutions rather than mushrooming more and more institutions. And you need one central agency and this is, in my opinion, the WHO' (World Health Summit 2022b).

The creation of a pandemic treaty does not represent a fundamental change in or to the contemporary assemblage of health emergency governance, but an attempt to fortify it. The aftermath of emergency, it appears, may also promote the consolidation, crystallization, or

institutionalization of governance assemblages, enabling their establishment as more permanent and stable apparatuses.

7. Conclusions

A fire broke out backstage in a theatre. The clown came out to warn the public; they thought it was a joke and applauded. He repeated it; the acclaim was even greater. I think that's just how the world will come to an end: to general applause from wits who believe it's a joke. (Søren Kierkegaard [2004])

7.1. Main findings

The governance of health emergencies is a very serious matter that has significant and far-reaching ramifications. In this research, I have brought an interdisciplinary lens (political, sociological, and historical) to bear on that subject. My primary goals have been to disentangle the convergence between "health" and "emergency" in global governance; to identify, describe, and examine the structure, dynamics, characteristics, and shaping drivers of contemporary health emergency governance; to understand and illuminate how it has emerged as a field or landscape of global governance that revolves around a broad governmental problem concerned with "health emergencies"; to explore and clarify dynamics and relations between that field and global health governance; and to revisit the scholarly debate concerning emergency, in the light of health emergency governance.

The lack of substantial and robust social scientific research on the governance of health emergencies as a distinct phenomenon indicates that it has largely been taken for granted. That is not surprising, though, considering that the contemporary global governance of health emergencies, as I showed in Chapter 2, has only (relatively) recently evolved into an emerging assemblage that consists of systematic activities, coherent processes, and interconnected systems. How, then, did a distinct global governance field that is centred on health emergencies evolve and what are the key factors that enabled and shaped this evolution (Q1.1.)? Through a genealogical investigation, I traced the conditions that have allowed that emergence back to developments that began (at least) as early as the mid-20th century. Focusing on the intersecting and occasionally overlapping axes of public and global health governance, humanitarian biomedicine, and emergency management, I showed how emergency management knowledge, technologies, practices, and ideas developed, migrated, and evolved; and how, in their eventual integration within global health governance, they enabled and fostered the emergence of a new space of global governmental activity that centers on health emergency events.

Further, concerning the question of the ways in which contemporary health emergency governance systems are affected by or expressive of the historical development of the field (Q1.2.), I found that the historical roots and conditions of emergence of health emergency governance have shaped its contemporary operation and structure in such a way that the issues of rapidity and (coordinated) flexibility play a key role in it. This is especially significant because, as I argued, the emergence of health emergency governance has played into and contributed to the expansion of the meaning of "health" and its global governance as the ultimate end of society. Moreover, I argued, while health emergency governance is historically and contemporarily tied to global health governance, they are nonetheless distinct.

In addition to that genealogical investigation, I examined the governance of health emergencies through three case studies. In Chapter 3 – on the resurgence of measles (2017-2020) and the management of that disease in the European context, I explored the relationship between health emergency governance and the social construction of disease. Specifically, I sought to understand the meaning and implications of health emergency governance for governmental conduct in relation to infectious diseases for which there are readily available technoscientific knowledge and biomedical solutions, particularly vaccines. The question here was about *how* the emergence of health emergency governance plays into established processes and views in the context of infectious disease management (Q2.1.). The study suggested a certain transformation has taken place in the collective construct at the heart of the management of measles in Europe. Since the 1980's at least, governmental efforts in the management of measles in Europe were centered on hope for and progression towards measles elimination. However, with the rise of health emergency governance, during the epidemiological resurgence of measles in the years 2017-2020, a significant shift began to occur as hope has been redirected towards reviving progress itself. This correlated with and linked to processes whereby the problem of measles has been rendered into a problem in the governance of health emergencies.

Regarding the question of whether a practical shift towards managing a disease as a health emergency necessarily imply a change in the categorization or conceptualization of that disease (Q2.2.), I found that the European measles emergency was neither determined by a supposedly "emergent" disease it is set to address, nor by the categorization or conceptualization of that disease. Instead, the European measles emergency has been a marker or harbinger for looming

deterioration and rapid collapse in the global fight against infectious disease in general. Thus, the governmental management of measles as a medium scale, regional (European) health emergency represents an intervention on an emergency of regression.

In Chapter 4 – on AMR and the global governance of this persistent problem, I took the puzzling and ambivalent status of AMR as a problem viewed by some as an emergency and by others as a non-emergency, as an opportunity to explore the boundaries of the contemporary governance of health emergencies. That is, I sought to understand how problems come to be thought of, and acted upon as health emergency problems (Q3.1.), and what kinds of processes or elements are key to the rendering of problems into health emergency problems (Q3.2.). I found that the "crisis-ization" of AMR and the related formation of a global system of apparatuses to routinely manage and address that problem facilitated and promoted a widespread understanding of AMR as a social and political problem that is temporally situated (as a historical break, with present action being crucial to prevent a future catastrophe), and injected this problem with urgency and eventfulness. Then, a process of compression unfolded. I showed that certain discourses, technologies, and strategies in the governance of AMR have effectively compressed the time-space of the problem by repositioning the future disaster as an acute present reality where increasingly frequent events are exceeding existing governmental capacities to manage the problem. With that process under way, the problem of AMR has partially been rendered into a health emergency. That is, as some AMR advocates have called it, a "silent" emergency. Thus, I argued that a precondition for rendering problems into health emergencies in contemporary health emergency governance is that they must be seen as eventful and comprehended through an issue of velocity. This is important to bear in mind when considering the question of the implications of a problem becoming a health emergency problem (Q3.3.), because the more dominant health emergency governance becomes, the more its fixation on perceived velocity and scale will "spill" into governance more broadly.

Lastly, in Chapter 5 – on the health emergency of COVID-19, I addressed the question of what processes, forces, and dynamics are at play in the constitution of a health emergency event, and how are health emergencies produced or generated as events with beginning and end points (Q4.1.). Focusing on and examining key "vectors" for the constitution of the health emergency event of COVID-19, I showed how health emergency governance systems produced and shaped the event. First, it was produced and shaped in the interplay of information and its absence. Second,

it was in formal and informal emergency discourses and spectacles that revolved around the quality, nature, magnitude, or status of the event. Third, it was through a mechanism that involved a specific conception of the threat, a related narrative, and a certain predesignated governmental reaction prompted by those. Fourth, it was in the efforts to transition or move towards "normality", particularly as those pertained to the development and deployment of vaccines, and vaccination coverage; and the simultaneous resistance to a return to normal given that not all countries and populations are equally vaccinated. Fifth, it was through governmental practices of response and preparedness. Specifically, by adapting and amplifying routine public health and preparedness activities; and by scaling down response and managing the situation as part of a normal routine. Sixth, it was in processes of lesson learning. Processes that involve recollection – a post-hoc scrutiny or reflection, and extraction or reiteration of lessons for the future; and as a result – a chronological or historical rendering of the event.

Based on my analysis of the case, I found that what determines how systems of health emergency governance construe and respond to health emergency events (Q4.2.) in fact involves highly complex pathways in which multiple coexisting variations of the event appear and evolve. Finally, as to the question of the significance of the ending of a health emergency event for governance (Q4.3.), I argued that the ending of the event plays an important political role as it opens up a liminal space between the event and its aftermath, where processes of reflection, change, and transformation within and to governance take place.

7.2. Value and limitations

The general significance of this work is that it sheds light on the governance of health emergencies as a distinct phenomenon, field of governmental activity, and contemporary assemblage. That is, an emerging form of governance that needs to be comprehended and discerned separately from global health governance. This dissertation establishes an understanding of this governance, its structure, dynamics, and main features from a political, sociological, and historical perspective. In that, it also illuminates the relationship between health and emergency, both historically and presently.

More specifically, this work contributes to the study of global health governance. It problematizes the expansionism of global health governance by turning attention to the forces and dynamics that

enable and drive the expansion of this field. Particularly showing how global health governance gradually expanded as a result of its central role in, and intricate links to the evolution and emergence of health emergency governance. Further, while this work suggests that health emergency governance is distinct from global health governance and the global health security system, it also shows and underscores the intricate relationship between them. Indeed, to a large extent the global health emergency governance assemblage that is at the center of this research has emerged from within the field of global health governance, and health emergency governance systems include elements that were and have been part of the global health security system. This distinction turns our attention to the prioritization and dominance of different kinds of (security-oriented and emergency-oriented) strategies in governmental policies and initiatives, and in formal and informal settings, and to their implications. Furthermore, this distinction turns our attention to a broader scope of problems and activities that are not usually regarded part of global health security.

In addition to all that, each of the main chapters of the dissertation contributes to a specific scholarly literature: to historical studies of global and public health governance (Chapter 2); to sociological, anthropological, and political analyses of governmental health interventions and the social construction of disease (Chapter 3); to studies on AMR governance in sociology and STS (Chapter 4); and to debates on epidemics and their ending, especially in historical context, but also in political and socio-cultural context (Chapter 5).

For scholars or practitioners who are more interested in the people at the receiving end of global health governance interventions, this research provides useful insights and raises important questions concerning how health emergencies are contemporarily governed, and the historical developments and contingencies that have enabled and shaped this governance. Surely, scholars, advocates, and policymakers who are keen on promoting action on certain objectives and problems through health emergency governance frameworks will find in this work strategically useful insight regarding the centrality of eventfulness, velocity, and scale in contemporary health emergency governance. They may also find use in insight regarding the different pathways through which governmental problems are rendered into health emergencies. At the same time, however, this research also highlights and calls attention to the possible implications of the growing dominance of health emergency governance and the rendering of problems into health

emergencies. Especially, that governmental problems will be increasingly prioritized and addressed based on perceived velocity and scale.

This work also contributes to the scholarly debate concerning the conceptualization of emergency. It reiterates and reasserts previous critiques on the influential Schmittian and Agambenian conceptualizations of emergency as exception and permanent exception through detailed empirical analysis of health emergency governance as a contemporary, heterogenous, complex, and emergent form of governance that is not so much about a sovereign decision on the state of exception, as it is about multiple dynamic processes, elements, and powers of different kinds. This work also goes further than previous critiques by pointing to a critical limitation of the conceptualization of emergency as exception or permanent exception. Emergency conceptualized as such is thought of as an instrument, function, or technicality. Accordingly, the basic amplifying, magnifying, and augmenting power of governmental emergency gets overlooked or confused with a specific kind of instrumentalization of emergency towards the ends of sovereign or disciplinary forms of governance and power.

In terms of limitations, perhaps the most significant limitation of the study is its scope. The research largely concentrated on the governance of health emergencies as it can be observed at nodes or sites where key or very dominant "global" forces, mainly of the governmental kind, interact and act in that regard. Specifically, the WHO, the EU, and Germany. Therefore, my findings and arguments are limited to what can be seen as a partial, yet significant and influential part of contemporary health emergency governance. A governance landscape that, in many ways, is deeply entrenched in western thought and values, and still located (geographically and politically) in Europe.

Further, I was only able to provide a partial and mostly horizontal view on the study subject. In accordance with my repeated "pivoting" from node to node, I was unable to go into significant details or to describe and analyze in-depth specific actors, situations, developments, technologies, or practices. Correspondingly, another limitation has to do with the specific case studies, that are all related to infectious disease. In that regard, it is also important to note that findings from the research were significantly shaped by the substantial attention that I had given in both data collection and analysis to what can be called the policy-expertise nexus in the governance of health emergencies. Beyond all that, another possible limitation of the study is that the claims made

throughout it are not generalizable, universal, or (exactly) applicable to other contexts or cases. What I had sought to do in this research is in fact the opposite. To get an understanding that is firmly set in nuance and context; to induce from the data patterns that are necessarily specific, varying, or unique; and to conduct analyses that focus on and highlight heterogeneity, complexity, contingency, and change.

7.3. Future research directions

This work makes an important first step in the study of health emergency governance. There are, of course, many other appropriate case studies – both contemporary and historical, that can be examined to improve and expand the understanding of health emergency governance. Whether it is the ongoing polio health emergency, the recent health emergency of monkeypox, or the health emergency aspects of the Russian invasion of Ukraine. Similarly, additional ethnographic research into this governance can and should be undertaken (both digitally and physically) in other contexts and environments, particularly in those that involve actors that were briefly mentioned or used as secondary sites throughout this research. For example, governmental actors such as the US Centers for Disease Control and Prevention (CDC) and the European Civil Protection Mechanism, and non-governmental actors such as the Wellcome Trust and the Gates Foundation.

Though illuminating, my exploration of the historical and contemporary relationship between "health" and "emergency" has only scratched the surface of the subject. Several themes and issues that appeared in this dissertation can be examined and developed further in continuation of that exploration. One theme is temporality. Temporalities of health, emergency, and their governance, and what happens to those temporalities when they converge. Another theme or issue concerns the liminal space between the emergency event and its aftermath, which enables changes in and to governance. In what particular ways does it open up and to what extent in different contexts and periods, and what kind of change becomes possible and why. Additional issues that can be explored further are the social construction of disease and other hazards (e.g. earthquakes, floods) in health emergency governance, and the boundaries of this governance. How do they appear in cases other than measles and AMR (respectively), and how are they possibly changing? Also, what other vectors for the constitution of health emergency events can be identified? How are health emergency events constituted where there is "only" an epidemic involved? Furthermore, there is the issue of the relationship between the social sciences and the governance of health emergencies.

How did social scientists become involved in the governance of health emergencies, what specific roles have they played in it, how have they influenced its knowledge and practices, and to what extent have they been influenced by it?

Thus, many questions arise from, and remain unanswered in this dissertation. For example: To what extent and how are health emergencies governed beyond the contexts that I focused on in this research – whether in regions and countries in the global north or south, in places other than the governmental institutions and organization that are located in Geneva, Copenhagen, Brussels, and Berlin or outside the EU and Germany? How do health emergency governance assemblages within specific countries operate and what is their structure? In what ways are governmental policies for, and actions in emergencies (in general) affected by the emergence of health emergency governance? How do specific kinds of endings of health emergency events shape processes of change in and to governance? How do emergency management experts and governmental emergency authorities (e.g. European Civil Protection and Civil Aid Operations) adjust to or accommodate the rise of health emergency governance? How does the governance of health emergencies affect, shape, or play into people's everyday experiences? What are the social-cultural implications of this governance? In what specific ways is the future of health emergency governance imagined? What role do the colonial and imperial roots of international health play in regard to contemporary global governance of health emergencies?

7.4. Implications: Some final thoughts on emergency declarations and perpetual spirals

A governmental acknowledgement and declaration of an epidemic or pandemic emergency is a tricky matter. Unlike an earthquake or flood, where there is clearly a disaster that needs to be managed (whether in terms of health impacts or otherwise), when it comes to infectious disease the problem is not immediately or clearly visible at first. The crux of emergency declaration in such cases, therefore, is timing. At what point to acknowledge there is an emergency? How to avoid making a declaration too early or too late?

The consensus among global health scholars and practitioners has largely been that the declaration of a public health emergency (that is of international interest) or pandemic emergency should be based on a legally binding international framework, usually one that has WHO at the center. This was the logic driving the creation of the PHEIC declaration procedure in the IHR, and this has

been the dominant logic in the ongoing discussions around the possible creation of a pandemic declaration procedure in the new international pandemic treaty that is currently being negotiated.

Undoubtedly, an international legal mechanism for pandemic emergency declaration or graded upscaling of emergency response has many advantages. However, legally defining the term "pandemic" or creating more procedures and adding more levels to the emergency declaration or response mechanism are unlikely to resolve the problem of timing. In the contemporary governance of health emergencies, a pandemic or epidemic emergency declaration cannot be exactly on time. By default, a governmental acknowledgement and declaration of a pandemic or epidemic health emergency is premature or in delay. The reason for this is primarily structural. An important part of what constitutes a health emergency event as such at the onset is a lack of information that renders the situation unknown and uncertain; and that the situation is perceived to exceed the ability of governmental systems to manage it. In other words, at first there is uncertainty regarding whether there is indeed an emergency. Initially, even the most skilled and competent scientists and experts cannot possibly know with certainty whether the problem will eventually exceed the capacity of governmental systems. Then, by the time that there is sufficient knowledge to acknowledge and declare an emergency with certainty, it is already too late. A problem can only truly warrant a governmental recognition and declaration of emergency once and if it spirals out of control.

That contemporary health emergency governance is structured and operates as a perpetual spiral, then, also means that a governmental acknowledgement and declaration of a health emergency is effectively an admittance that existing systems have failed to prevent, contain, or control the situation. Consequently, lesson learning and processes of change in and to governance are an inherent and critical part of what constitutes the aftermath of the health emergency event. Indeed, although there is much uncertainty around how processes of change in the aftermath of COVID-19 will eventually play out and whether they will be sufficient, at least one thing is clear: there will be reform. Governmental acknowledgement and declaration of a health emergency (whether prematurely or in delay), in that sense, is also a decision to reform.

Thus, for reformers and others in pursuit of change in the governance of health emergencies, there are at least two more important dilemmas to consider. First, the usual challenge of balancing between effectiveness of response and decentralization of power is complicated further still by the

significant impact that the authority to declare an emergency has on eventual processes of reform. Second, the choice we have in the aftermath of health emergencies like COVID-19 is not simply between another cycle of panic-and-neglect or reform, but between another spiral of emergency-and-reform or a deeper, more fundamental change to governance. Between preserving and tweaking a structure that cannot but chronically generate disappointment or pursuing radical alternatives that will necessarily entail uncertainty as some valued organizations, frameworks, and forms of work may (or may not) become redundant.

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9. Appendices

Appendix 1: Fieldwork

Between October 2017 and January 2018, I conducted fieldwork at the WHO's Regional Office for Europe (EURO), specifically as in intern at the Health Emergencies Programme (WHE) and the Emergency Operations (EMO) unit. Between August and October 2018, I continued my fieldwork in the same place, this time as a non-paid consultant. During this period, I wrote fieldnotes to document my observations, engaged in informal conversations, and held meetings and informal interviews with multiple staff members. I also participated in meetings, workshops, exercises, and briefings in the office. I regularly had interactions with WHO personnel (whether technical officers, technicians, human resource personnel, consultants, or managers), and staff of other UN organizations, regional and national public health institutions, and NGO's. I collected documents and had the opportunity to read drafts, internal documents, and various materials that are not accessible outside the organization (and are therefore also not mentioned explicitly in the dissertation). Staying at the office for long hours at a time, I got to experience different atmospheres and to witness various kinds of interactions.

Overall, this initial phase of the research was critical. I gained valuable insight into the work, processes, activities, and relationships at the heart of the global governance of health emergencies. I also got to experience and learn about the challenges and routine work of those who work within this field. Most importantly, however, it was that fieldwork which led me to understand that researching the global governance of health emergencies only through this (nonetheless dominant and central) international organization would be insufficient.

Appendix 2: Sites and resources for data collection

Primary sites		
World Health Organization (WHO)	Including the WHO Health Emergencies Programme (WHE) and the WHO Regional Office for Europe (EURO)	Participant observation, interviews, document analysis (e.g. WHA/European Regional Committee resolutions, protocols, WHE progress reports, technical documents, oversight committee reports, framework budget, action plans, brochures, presentations, strategic Partnership for IHR and Health Security (SPH) portal, Open WHO news updates, WHO Infodemic Management News Flashes, news media updates, COVID-19 updates, news, resources, tools, guidelines, Q&A sessions, recommendations, speeches, social media updates)
European Union (EU)	Mainly the European Commission and European Centre for Disease Prevention and Control (ECDC)	Interviews, observations, document analysis (e.g. presentations, communicable disease threats reports, Risk Assessments, surveillance reports, antimicrobial resistance monitoring reports, measles and rubella monitoring reports, EU One Health reports, annual budget reports, technical reports on public health emergency preparedness, country preparedness activities report, health preparedness self-assessment tool, scientific publications, social media updates)
German Global Health Community	The German Federal government, especially the Ministry of Health; Bundestag sub-committee on global health; the Robert Koch Institute; Global Health Hub Germany (non-governmental)	Interviews, observations, document analysis (e.g. Collaborating Centers Annual Reports, news updates, brochures, scientific publications, the Federal Ministry of Health's Global Health Protection Programme documents

Secondary sites and other data resources	
The Council of the EU; the European Council; the European Parliament; European Civil Protection Mechanism (under the Directorate-General for European Civil Protection and Civil Aid Operations [ECHO]); EU Directorate-General for Health and Food Safety (SANTE); EU Health Security Committee	EU-level institutions/forums; Internet websites and various kinds of documents (policy, minutes, communication, reports, resolutions)
Wellcome Trust	Philanthropic NGO funding work on health emergency issues; monthly Email newsletter update; website; based in the UK
Global Social Science Network for Infectious Threats and Antimicrobial Resistance (SONAR-Global)	Network/platform; Internet website; documents; presentations; network members portal; Email updates/newsletter
Social Science in Humanitarian Action Platform	Network/platform; Newsletter; Internet website
CIDRAP	An organization that focuses on AMR; weekly newsletter; Internet website
ReAct	An advocacy group/network that focuses on Antibiotic Resistance; activities based in five different areas around the world (North America, Latin America, Europe, Asia Pacific, and Africa); largely funded by Sweden through the Swedish International Development Cooperation Agency, the Swedish Ministry of Health and Social Affairs,

	and Uppsala University; Monthly newsletter; Internet website
The Global Health Network	A platform for global health collaboration managed by Oxford University: eNews updates; website; impact reports; tools; knowledge resources; guidance documents
European Public Health Alliance	Internet website; social media; Email newsletter; based in the EU
NO-FEAR Project	Emergency-focused EU-funded project based in Italy; newsletter; publications; news; interactive portal; online community platform
Consortium of Universities for Global Health	Internet website; Email newsletter; based in the USA
Johns Hopkins University Center for Health Security	Daily and weekly Email updates compiling information on "Health Security", "Preparedness", and "Coronavirus"; from the USA
ProMED-Mail	Disease surveillance system hosted by the International Society for Infectious Diseases; I registered to receive daily and weekly Email updates
Think Global Health	Weekly newsletter on global health issue; based in the USA
Geneva Health Files	Weekly newsletter/blog post with updates, news reports, in-depth investigative pieces, analyses, and interviews on global health issues and governance
Health Policy Watch	A network for independent global health reporting; weekly summary newsletter; news reports and stories about global health issues
Google News	Used for searching and monitoring relevant news in English from news media websites such as The Guardian, The Independent, VOX, Politico, Reuters, BBC, CNN, USA Today, Washington Post, New York Times, Euronews, EURACTIV

Appendix 3: Observations (digital unless stated otherwise)

2019 and prior (recordings)		
Title	**Date**	**Organized by/additional details; link**
AMR webinar – TN leaders	14 July 2017	https://ec.europa.eu/assets/sante/health/videos/20170714_en.mp4
IPRED (International Preparedness and Response to Emergencies and Disasters)	16 January 2018	Bi-annual international conference organized by Israel's Home Front Command, Ministry of Health, Israel Export Institute, and Magen David Adom; Observation on-site (Tel-Aviv, Israel)
EU Health Policy Platform Meeting	12 November 2018	European Commission Directorate-General for Health and Food Safety; available on the EU Health Policy Platform
Sonar-Global Executive Board meeting	26 March 2019	Closed meeting for the core team members
Sonar-Global Executive Board meeting	13 June 2019	Closed meeting for the core team members
EU Health Policy Platform Annual Meeting	17 October 2019	European Commission Directorate-General for Health and Food Safety; available on the EU Health Policy Platform
2020		
Title	**Date**	**Organized by/additional details; link**
IPRED (International Preparedness and Response to Emergencies and Disasters)	13-14 January 2020	Bi-annual international conference organized by Israel's Home Front Command, Ministry of Health, Israel Export Institute, and Magen David Adom; Observation on-site (Tel-Aviv, Israel)
The response to COVID-19: A comparison of experiences in Europe	9 March 2020	NO-FEAR Project
The COVID-19 Pandemic	10 March 2020	Consortium of Universities for Global Health; https://www.cugh.org/resources/webinars/2020-2/cugh-webinar-update-the-covid-19-pandemic/
The COVID-19 Open Workshop for Research Implementation: Session 1	13 March 2020	The Global Health Network; https://youtu.be/3d4S_EQi60o
Donor and Funding Challenges for LMICs and Hospital Readiness in the Time of COVID-19	27 March 2020	Irish Global Health Network and Alliance for Global Health Partnerships
What Impact Could COVID-19 Have on Malaria?	14 April 2020	The Global Health Network; https://youtu.be/3ly2h7D1SUA
How can health & development NGOs best respond during COVID-19: Practical insights and lessons	17 April 2020	Alliance for Global Health Partnerships
Immunity Passports: Inevitable? Ethical?	4 May 2020	The Global Health Network and PHEPREN (Public Health Emergency Preparedness and Response Ethics Network); https://youtu.be/yAdb0gO-S5s
REMAP-CAP and Why we Need Platform Trials in a Pandemic: An Open Webinar	13 May 2020	The Global Health Network and REMAP-CAP (Randomised, Embedded, Multi-factorial, Adaptive Platform Trial for Community-Acquired Pneumonia); https://youtu.be/87Vd2tPx-qU
Protecting Health Care Workers During The COVID-19 Pandemic	22 May 2020	Alliance for Global Health Partnerships
Vulnerability in times of COVID-19	29 May 2020	Sonar-Global

Digital Technologies and their Ethical Application during the COVID-19 Pandemic	1 June 2020	Public Health Emergency Preparedness and Response Ethics Network (PHEPREN) and The Global Health Network
Beyond 'good enough': How to engage communities with COVID-19 research quickly and effectively.	15 June 2020	Public Health Emergency Preparedness and Response Ethics Network (PHEPREN) and The Global Health Network
Engaging communities in the response to COVID-19	15 June 2020	Sonar-Global
The WHO – Reforms, COVID-19 and the US Departure	23 June 2020	Consortium of Universities for Global Health; https://www.cugh.org/resources/webinars/2020-2/the-who-reforms-covid-19-and-the-us-departure/
Neurological disorders associated with COVID-19: The Known and Unknown, and special focus on Alzheimer's dementia	2 July 2020	The Global Health Network, the COVID Neuro Network, and the Liverpool Brain Infections Group
Covid: A case for research exceptionalism?	10 August 2020	Public Health Emergency Preparedness and Response Ethics Network (PHEPREN) and The Global Health Network
Lessons from a Zika Network to Covid-19 response and beyond	19 August 2020	The Global Health Network and ZikaPLAN
Health Partnerships during the Pandemic: Contributions and Lessons	28 August 2020	Alliance for Global Health Partnerships
Strategies to Mitigate the Rippling Impact of COVID-19. With Sir Jeremy Farrar	3 September 2020	National University of Singapore
COVID-19 pandemic: The way forward. Dr Michael Ryan	10 September 2020	National University of Singapore
Engagement at a distance - Sharing lessons from experience	10 September 2020	The Global Health Network, MESH Community Engagement Network, and the Wellcome Trust
WHO Regional Committee for Europe (70th session)	14-15 September 2020	Held virtually for the first time; https://www.euro.who.int/en/about-us/governance/regional-committee-for-europe/70th-session
The many faces of Stigma during COVID-19: Practical tools, proven approaches and a way forward for the global good	16 September 2020	WHO
COVID-19: Updates from Singapore (Finale). With Dr Tedros Ghebreyesus, WHO	17 September 2020	National University of Singapore
Setting priorities for COVID-19 vaccine allocation	21 September 2020	Public Health Emergency Preparedness and Response Ethics Network (PHEPREN) and The Global Health Network
Influencing Risk Perceptions about COVID-19	29 September 2020	WHO
COVID-19 vaccination in an era of vaccine hesitancy	5 October 2020	The Global Health Network
The Impact of COVID-19 on Global Infectious Diseases	7 October 2020	International Society for Infectious Diseases
COVID-19: New Wave, Old Problems?	16 October 2020	NO-FEAR Project
Expert Panel on effective ways of investing in Health. Hearing on 'the	20 October 2020	European Commission

organisation of resilient health and social care following the Covid-19 pandemic'		
Social participation: Synergies between systems strengthening and emergency response	27 October 2020	WHO
Webinar: Building a European Health Union: Preparedness and resilience for cross-border health threats	29 October 2020	European Commission Directorate-General for Health and Food Safety; on the EU Health Policy Platform
World Health Assembly 73	9-14 November 2020	
Capturing hearts & minds with facts and figures: Where is the evidence for community engagement	24 November 2020	WHO
EuroPCOM – 11th European public communication conference	7-8 December 2020	Many sessions featured officials and representatives of organizations from across Europe and the EU speaking on the COVID-19 pandemic
Pathogen and benefit-sharing: Where next in the global governance of outbreaks?	8 December 2020	Graduate Institute Geneva
Lessons observed – Human Resource management during COVID-19	10 December 2020	NO-FEAR Project
Epidemics Ethics: Effective COVID-19 vaccine(s)? Ethical Implications for Vaccine Research in 2021	14 December 2020	Public Health Emergency Preparedness and Response Ethics Network (PHEPREN) and The Global Health Network
Looking for hope: Let's build sustainable behaviors	16 December 2020	WHO
2021		
Title	**Date**	**Organized by/additional details; link**
COVID-19 vaccination: Preliminary lessons observed	7 January 2021	NO-FEAR Project
COVID-19 Vaccinology Update - Development, Use, and Effect on Public Health	21 January 2021	International Society for Infectious Diseases
COVID-19 Vaccine Nationalism: Unethical or Unjust?	21 January 2021	Graduate Institute Geneva
EU4Health Workshop	24 January 2021	European Commission
COVID-19 Vaccines: Trust, Transparency, and Global Access	2 February 2021	International Society for Infectious Diseases
10 steps to community readiness for vaccines, treatments and tests	2 February 2021	WHO
SARS-CoV-2 variants	3 February 2021	WHO
Covid-19 prevention - from quarantine to vaccine	4 February 2021	World Health Organization Collaboration Center for Leadership and Governance in Nursing
Immune Response to SARS-CoV-2	10 February 2021	WHO
Health in Areas Affected by Violent Conflict: Time for Academic Global Health Programs to Respond	11 February 2021	Consortium of Universities for Global Health
Book Launch: A Guide to Global Health Diplomacy	18 February 2021	Graduate Institute Geneva; Participants included senior WHO officials and global health experts
Disinformation, Conspiracy Theories, and COVID-19 Vaccines	19 February 2021	WHO EURO

KEI Roundtable on Pathways to Scale Up Manufacturing Capacity for COVID-19 Vaccines	19 February 2021	Knowledge Ecology International (KEI)
Systematizing the One Health Approach in Preparedness and Response Efforts for Infectious Disease Outbreaks	23 February 2021	NASEM Health and Medicine
Pandemic proofing primary health care	24 February 2021	PATH; https://www.path.org/articles/path-live-forum-pandemic-proofing-primary-health-care/
#CovidUnknowns: Vaccines webinar	25 February 2021	British Medical Journal
Equitably harnessing the power of health data	1 March 2021	International COVID-19 Data Alliance (ICODA)
EU Health Policy Platform Annual Meeting: 2020 Thematic Networks	3 March 2021	European Commission Directorate-General for Health and Food Safety; available on the EU Health Policy Platform
Global Health Architecture post-COVID: Curse or Blessing for Reducing Fragmentation and Strengthening the WHO in Pandemic Preparedness and Response	3 March 2021	Global Health Hub Germany
Webinar on Antimicrobial resistance	3 March 2021	Nordic Council of the European Parliament
A year into the COVID-19 pandemic	3 March 2021	WHO
Epidemic Preparedness through Vaccine Innovations with CIHR & CEPI	4 March 2021	Institute of Infection and Immunity (CIHR) and CEPI
Presentation and open dialogue on the key priorities in Global Health within the German G7 presidency	9 March 2022	Global Health Hub Germany
Inside the WHO-China Mission	10 March 2021	Chatham House
Update on COVID-19 vaccines & immune response	10 March 2021	WHO
Update on International travel in the context of COVID-19	18 March 2021	WHO
Week of the working groups	22-25 March 2021	Global Health Hub Germany;
Opening remarks by Stella Kyriakides, European Commissioner for Health and Food Safety	25 March 2021	AMR One Health Network; https://vimeo.com/543552597
UK Public Health Rapid Support Team: Latest research & scientific insights	25 March 2021	UK Public Health Rapid Support Team (UK-PHRST) co-led by the London School of Hygiene & Tropical Medicine (LSHTM) and Public Health England (PHE)
Vaccination for the world's vulnerable – Internally displaced populations, refugees and migrants	30 March 2021	WHO
Plenary: Community-centered responses to health emergencies: progress, gaps and research priorities	31 March 2021	WHO
Disease outbreak preparedness and response: Education experiences and ideas	1 April 2021	Organized by UK Public Health Rapid Support Team and The Global Health Network
Epidemics and Pandemics: Lessons from the Past, Coordinating for the Future	8 April 2021	Physicians for Human Rights
Tracking Drug Resistant Infections	18 April 2021	CIDRAP
COVID-19 Vaccine Safety Monitoring	19 April 2021	WHO

How national is a pandemic? From a global mass disease and national solo efforts	21 April 2021	Robert Bosch Society for Medical Research mBH
Global health in disarray? What next?	21 April 2021	Graduate Institute Geneva
COVID-19 and Public Governance: Effective Global Vaccination Strategies for Vaccine Access	29 April 2021	Konrad Adenauer Stiftung
What lessons from Covid-19 for advancing antibiotic R&D?	29 April 2021	Graduate Institute Geneva
Vaccine Passports: Equity and Human Rights Considerations	30 April 2021	Physicians for Human Rights; https://youtu.be/J_KyohYpMWM
Antimicrobial Resistance: The Pandemic in the Shadows - Jyoti Joshi	7 May 2021	Science Gallery Bengaluru
The pandemic treaty proposal: Seeking accountability after the disaster?	10 May 2021	Geneva Global Health Hub; Policy dialogue ahead of WHA74
COVID-19 Global Research & Innovation Forum: Meeting Information	13-14 May 2021	WHO
Health security and pandemics: Both COVID-19 and antimicrobial resistance. Dame Sally Davies in conversation with Ngaire Woods	17 May 2021	University of Oxford School of Government
European Public Health Week: Infodemic Management	17 May 2021	European Public Health Association
The EU and Solidarity in Global Health Cooperation: Lessons from the Covid-19 pandemic	18 May 2021	Development and Peace Foundation
Global Health governance at the crossroads: An introduction to the 74th World Health Assembly	19 May 2021	Graduate Institute Geneva
Launch of the new One Health High-Level Expert Panel	20 May 2021	WHO
Global Health Summit	21 May 2021	Forum/event attended by high-level international political figures
World Health Assembly 74	24 May – June 1 2021	
Voices from the Front Line: Public and Private Experiences from Italy and Germany During COVID-19 Epidemic	26 May 2021	German Health Alliance; https://youtu.be/dI5m3fAis0s
Reforming the WHO – How We Can Strengthen the World's Leading Public Health Agency	26 May 2021	Consortium of Universities for Global Health; https://www.cugh.org/resources/webinars/webinars-from-2021/reforming-the-who-how-we-can-strengthen-the-worlds-leading-public-health-agency/
Covid-19 & Cross-Border Health Measures: Lessons Learned and Critical Questions for the Future of the International Health Regulations	26 May 2021	Graduate Institute Geneva
Naming of SARS-CoV-2 variants	3 June 2021	WHO
WHO global conference on communicating science during health emergencies	7-25 June 2021	WHO; on the first and last day there were general "public opening panels" and the rest of the days there were specific thematic tracks with presentations and discussions
Virtual Webinar: How can the G7 end the COVID-19 pandemic?	8 June 2021	Chatham House

Revisiting and Rebuilding Clinical Development of Drugs for Antimicrobial Resistance – Lessons Learned during the COVID Pandemic	10 June 2021	Medpace Inc.; https://www.youtube.com/watch?v=MWzE3l9ygzA&ab_channel=Medpace%2CInc.
An Introduction to the AMR Knowledge Hub: Global Health Research Priorities for Responding to the AMR Silent Pandemic	13 June 2021	The Global Health Network
Back to Health: Making Up for Lost Time	23 June 2021	Project Syndicate; https://events.project-syndicate.org/event/back-to-health
Advancing antibiotic R&D during the COVID-19 pandemic	29 June 2021	Global Antibiotic Research & Developments Partnership; https://revive.gardp.org/advancing-antibiotic-rd-during-the-covid-19-pandemic/
Infection, Prevention and Control and Outbreak Response: Moving beyond a reactive to a proactive approach	29 June 2021	UK public health rapid support team and the Global Health Network
Intensive Care Medicine during the COVID-19 Pandemic: Experiences and Lessons from Italy, France and Israel	1 July 2021	Konrad Adenauer Foundation
HLPF Side event - As governance crises worsen COVID-19 impact, is SDG 16 key for recovery?	6 July 2021	Oslo Governance Centre
Kick-off BMG ad GHHG Discussion Series: "Health Promotion and Disease Prevention: Lessons Learned from Cooperation in the HIV/AIDS Epidemic"	8 July 2021	Global Health Hub Germany
Igniting Humanities in Health Meeting of Minds for Global Health	10 July 2021	Global Health Hub Germany Working Group on Ethics and Reprogram Global; https://www.youtube.com/watch?v=XxoZe9FjQyc
An Introduction to the AMR Knowledge Hub: Global Health Research Priorities for Responding to the AMR Silent Pandemic	13 July 2021	The Global Health Network; https://amr.tghn.org/event/global-research-priorities-for-AMR/
Lessons on global health cooperation from Covid-19: Germany's perspective'	15 July 2021	Graduate Institute Geneva and Konrad Adenauer Foundation; https://www.youtube.com/watch?v=WxJ6sx2u0xc&ab_channel=TheGraduateInstituteGeneva
Transforming the WHO by Strengthening its Science, Data, Funding and Governance	29 July 2021	Consortium of Universities for Global Health
Communicating risks and evidence during a public health emergency	14 September 2021	WHO Information Network for Epidemics
Welcome to Cochrane Convenes	14 October 2021	Cochrane; https://youtu.be/xCeOYt0zDDg
World Health Summit	24-26 October 2021	World Health Summit
EU-US Transatlantic Dialogue on AMR	8 December 2021	European Union; https://www.youtube.com/watch?v=qWI192V0PwE
Global Meeting of GOARN Partners 2021	16 December 2021	WHO/GOARN
2022		
Title	**Date**	**Organized by/additional details; link**

Business as usual? The case for transforming global health governance	27 January 2022	European Health Forum Gastein; https://youtu.be/nAWh0FMs6t4
The European Health Union & access to health technologies: Is joint purchasing the way forward?	10 February 2022	European Observatory on Health Systems & Policies; https://youtu.be/kfYs5HxWjQ8
European Health Union – not wishful thinking, but a reflection of Europeans' real concerns	21 February 2022	The European Institute of Health and Sustainable Development and The Foundation of European Progressive Studies (FEPS), with EURACTIV as media partner; https://youtu.be/_yVqYw4Y5MU
WHO Global Webinar Series to Support Implementation of National Action Plans on Antimicrobial Resistance (AMR)	1 March 2022	Project ECHO (WHO)
"International Pandemic Treaty – In Search of the Holy Grail for Pandemic Preparedness and Response"	29 March 2022	Global Health Hub Germany; https://youtu.be/bfgUio8d8eM
World Health Assembly 75	22-28 May 2022	
The silent Antimicrobial Resistance pandemic urges a concerted global response – but what needs to be done?	1 June 2022	Nordic Council of Ministers, ReAct, and SIANI; https://youtu.be/At51TnW-gSo
WHO Training on GLASS methodology for national surveillance of antimicrobial consumption	28 June 2022	WHO
EHFG 2022: A moonshot for a true European Health Union	26-29 September 2022	European Health Forum Gastein; https://www.youtube.com/playlist?list=PLt0Pe N_yxMkGbtMLPRgQLUuFxff7iipWR
World Health Summit	16-18 October 2022	World Health Summit and the WHO
Strengthening health system resilience in Europe Towards a European Health Union	1 December 2022	European Health Forum Gastein

Appendix 4: Interviews (background details of participants)

Organizations/institutions	WHO; ECDC; EU Directorate-General for European Civil Protection and Civil Aid Operations (DG ECHO); RKI; Global Health Hub Germany; Institute Pasteur; Stiftung für Wissenschaft und Politik (SWP) [advisory think tank to German parliament]; Institute of Development Studies at University of Sussex; Department of Physiatrics and Nursing, Saragossa University; Ben-Gurion University of the Negev; Leipzig University Hospital; Wellcome Trust; GOARN; German Agency for International Cooperation (GIZ); Ministry of Health (Israel, Germany); ReAct; PREPARE; German Bundestag and sub-committee on global health; World Alliance Against Antibiotic Resistance (VP); Institute for Global Health Berlin; World Health Summit; Independent Panel on Pandemic Preparedness and Response; Alliance to Save our Antibiotics (NGO)
Positions/work titles	Programme officer; manager/head of unit/director; deputy manager/head; founder; coordinator; coordinator of WHO Collaborating Center; technical officer; team leader; researcher; consultant/adviser/senior adviser; National Focal Point for ECDC; National Focal Point for WHO; head of national public health services; medical anthropologist; global health journalist; global health/civil society advocate; humanitarian worker; policy development officer; medical doctor
Area of expertise	Global health; global health ethics; immunization; vaccine safety; public health; infectious disease; AMR; AMR policy and governance; emergency management; humanitarianism

Appendix 5: Questions list (example)

<u>Background</u>

1. Can you tell me about yourself and your work?

2. How did you become involved in [specific areas of work]?

3. What are the greatest challenges and difficulties you have encountered in your work?

4. Have there been any particular difficulties or challenges in your area of work that relate to emergencies or health emergencies?

<u>Global health and health emergencies</u>

5. What is global health?

6. What are health emergencies?

7. When does something become a health emergency?

8. When does a health emergency end?

9. Is the current [national/regional/international] system able to address health emergencies adequately and effectively? What changes (if any) are required and why?

10. Who are the most central and influential actors in health emergencies? Who sets the priorities and agenda in that context? How are decisions and policies made?

11. What are the most critical issues or problems that ought to be prioritized and addressed in the context of health emergencies?

12. How would you describe the role and work of [WHO/EU/ECDC/German government/other] in the context of health emergencies? What should that role be? Is that role changing somehow?

<u>Other questions</u>

13. How has COVID-19 affected your work?

14. How did [country/organization] approach health emergencies before the COVID-19 pandemic? Has this approach changed in the light of COVID-19?

15. To what extent and how is the COVID-19 pandemic changing or effecting global health and work on health emergencies?

Appendix 6: Generic Email message for potential interviewees

Dear [name],

My name is Michael Rabi, PhD Candidate at the Federmann School of Public Policy and Government, the Hebrew University of Jerusalem.

For over [number] years now I have conducted ethnographic research on the governance of health emergencies (mainly in the European context), focusing on politics, policy, and dynamics between a range of actors, especially the WHO, Germany, and the EU, but others as well (e.g. Wellcome Trust). A part of that, I have also focused on [AMR/measles/COVID-19] as a case study.

I recently had the pleasure to meet with [name of the recommender], who kindly suggested that I contact you as someone who might have valuable insights for my research. I believe that your perspective and experience could be illuminating regarding several issues that I am looking at, mainly: [specific areas of relevance].

I am aware that you are likely very busy, but if you have any available time in the near or less near future I would appreciate the opportunity to conduct an interview with you via Zoom/Skype or any other means that is convenient and at any date and time of your choosing.

I look forward to your reply.

Best wishes,
Michael

Michael Rabi, PhD Candidate
School of Public Policy & Government
The Hebrew University of Jerusalem

Appendix 7: Consent form

Consent for Participation in Research

I volunteer to participate in a research project conducted by Michael Rabi from the Hebrew University of Jerusalem. I understand the project is designed to study global health emergency, its governance and policy, and that the study can benefit knowledge and improve practice in regard to these topics.

1. My participation in this project is voluntary. I understand that I will not be paid for my participation. I may withdraw and discontinue participation at any time without penalty. If I decline to participate, withdraw from the study without giving a reason for my withdrawal or decline to answer any particular questions in the study, there will be no consequences as a result.
2. If I feel uncomfortable in any way during the session, I have the right to decline to answer any question or to stop participating.
3. Participation involves being interviewed by the researcher. Interviews usually last approximately 60-120 minutes. Notes will be written during the interview. A digital recording of the interview and subsequent dialogue will be made.
4. I understand the researcher will not identify me by name in any reports using information obtained from this interview, and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals.
5. Managers and administrators from my organization/institution will neither be present at the interview nor have access to raw notes or transcripts. This precaution will prevent my individual comments from having any negative repercussions.
6. I read and understood the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.
7. I have been given a copy of this consent form.

_____ _____

Signature   Date

_____ _____

Full Name   Researcher Signature

For further information and questions, please contact:

Michael Rabi

+972-50-9931280

michael.rabi@mail.huji.ac.il

¹ The term "structure" or "structural" appears throughout the dissertation with slightly different meanings. When the term appears in a citation or in relation to one, the meaning depends on the specific context. When I employ this term, it is either to refer to a specific technical and formal organizational order (e.g. "organizational structure"), or to a consistent pattern in arrangement of elements of any kind.

² While the term "Global Politics" is often used interchangeably with "International Politics" and "International Relations", the former implies a certain departure from traditional International Relations approaches that focus on state actors towards more 'postinternationalist' approaches that focus on various actors across different levels within and beyond the state (Ferguson & Mansbach 2004: 1-3; Roesnau 1997).

³ This is related to what some scholars have explained as an analytical change from international to global politics or affairs in response to actual changes in the world, especially changes that are related to the acceleration of globalization. It is also related to what others have explained as an ontological shift that is implicit in that analytical change: from studying 'objects or entities that relate to each other in various ways' to studying relationality and interconnections (Edkins & Vaughan-Williams 2009: 2).

⁴ Generally, analyses of health securitization have drawn on or corresponded with securitization theory as initially developed by the Copenhagen School (Buzan et al. 1998).

⁵ With some notable exceptions (e.g. Elbe 2010b), for the most part scholars have focused on how security affects health, rather than on how health affects security.

⁶ The literature that focuses on health securitization in relation to emerging disease, bioterrorism, and dual-use in the life sciences significantly corresponds and overlaps with, but is not exactly similar to the post-Foucauldian literature on biosecurity that discusses those and other issues (Caduff 2014; Collier et al. 2004; Lakoff & Collier 2008; Fortané & Keck 2015; Samimian-Darash 2009).

⁷ This analytical distinction is inspired by and corresponds with Samimian-Darash's (2013) work on uncertainty and 'event technology', though my use of the term "event" is not in a future-oriented context.

⁸ For a critical reassessment of the assumed relationship between health securitization and emergency as the state of exception, see: Kirk and McDonald (2021).

⁹ Also see Marnie Howlett's (2022) illuminating reflections on conducting online research during the COVID-19 pandemic.

¹⁰ Quarantelli's socio-cultural observations about historical shifts in how people perceive and react to disasters draw explicitly on the sociological 'risk society' thesis (Beck 1992) and implicitly on corresponding works of anthropologists such as Mary Douglas and Aaron Wildavsky (1983).

¹¹ GOARN was established by the WHO in 2000 as a global technical partnership that draws on the resources and expertise of technical institutions and networks from within and outside the United Nations system to provide support to WHO member states (WHO 2020b).

¹² For context and further reading on "Health in All Policies" and "One Health", and their boundary dissolving and depoliticizing effects, see (respectively): Godziewski (2021) and Labonté (2014); and Craddock and Hinchliffe (2015) and Davis and Sharp (2020).

¹³ Critical accounts on disease eradication campaigns are, of course, not limited to smallpox (or malaria) and have focused on other disease as well (e.g. Polio) (Muraskin 2017: 323-324).

¹⁴ Some governmental actors have different definitions for "elimination".

¹⁵ vaccines have similarly been a central solution in that regard.

¹⁶ By 2023 TESSy is expected to be fully replaced by the EpiPulse system.

¹⁷ See: https://apps.who.int/gho/data/view.main.1520_62

¹⁸¹⁸ The forward is used as a specific example that expresses the themes that appear throughout the document.

¹⁹ Through my conversations and interviews with experts in the field, I came to learn that not everyone agrees with the definition of the problem as being about Antimicrobial Resistance (AMR). Some prefer to define the problem as more specifically related to Antibiotic Resistance (ABR). Throughout this chapter, when I use the term "AMR" I refer to both AMR and ABR (which is included in the former). When I use the term "ABR" I refer only to it.

²⁰ The indeterminate status of AMR might explain, together with contingencies that shaped the evolution of this problem and the development of responses to it, the current exclusion of AMR from public health organizations' classifications of hazards and broad frameworks of health emergency management. That the status of AMR is liminal means there are changes that are currently taking place which may result in its inclusion within those classifications and frameworks (see the third part of the analysis in this chapter).

²¹ Generally, resistance is known to occur in viruses, bacteria, fungi, and parasites.

[22] Paul Ehrlich, together with his colleagues Alfred Bertheim and Sahachiro Hata, eventually found a drug for syphilis in 1909 (marketed by Hoechst as Salvarsan), and his experimental approach for synthesizing and screening chemical compounds to find drugs was soon adopted by pharmaceutical companies, leading to the development of various drugs.

[23] According to critics, the effectiveness of some of the early strategies to curb resistance was uncertain and often depended on the specific patterns of resistance that appear, their prevalence, and the practices applied to address them (McGowan 1986).

[24] Despite IDSA's lobbying and public relations efforts (in the US), by 2008 very little progress had been achieved in implementing those solutions and this was seen as problematic because it could lead to 'a literal return to the preantibiotic era for many types of infections' (Spellberg et al. 2008: 155).

[25] The three developments and notions may (perhaps) be related to the pervasive effects of processes of "securitization", "actuarilzation" or "economization", and "globalization". However, in the present context they are understood and examined as expressions of a process whereby AMR has been rendered into a crisis.

[26] In 2022 the Tripartite became the Quadripartite as the UN Environment Programme (UNEP) joined the framework.

[27] The IACG on AMR included representatives from UN and international organizations, as well as experts in health and other related issue such as food, trade, development, and environment.

[28] Importantly, while AMR action plans have been implemented, there have certainly also been gaps in their implementation (see: Wells et al. 2017).

[29] I use the term "scenario" to loosely refer to scripted narratives in general. This includes but is not limited to the governmental technology of scenarios that has been discussed in the literature (see Samimian-Darash 2022).

[30] For an elaborate discussion on the difference between scenario technology and simulation technology, see Samimian-Darash (2022).

[31] The Program for Monitoring Emerging Diseases (ProMED) is an internet-based network operating under the International Society for Infectious Diseases (ISID). It regularly provides subscribes with information, reports, and summaries concerning emerging and re-emerging infectious disease and outbreak events from around the world. ProMED has been part of the infrastructure of the global governance of health emergencies and thus, also a valuable source for ethnographic insight.

[32] As I was finalizing the chapter in May 2023, the WHO finally declared the PHEIC over.

[33] I verified this claim by examining the list of members of the IHR Emergency Committee for COVID-19 that appears on the WHO's website.

[34] Access to the platform is restricted and it can only be accessed by personnel from the ECDC, EU Member States, and DG SANTE.

[35] The EEAS can be likened to a combined government ministry of foreign affairs and defense.

[3636] The 'Youth 7' group (which is part of the non-profit organization 'Future Leaders Network') is one of the engagement groups that provide policymakers with recommendations as part of the process that leads up to the annual G7 summit.

[37] Another example for such preparedness-based schemes or frameworks that aim to provide a flexible and rapid response in future health emergencies can be found in the Coalition for Epidemic Preparedness Innovations' (CEPI) use of established programmes and platforms to accelerate the development of COVID-19 vaccines (CEPI 2020).

[38] For a detailed account on the transformation of a potential event into an actual emergency in the Israeli response to COVID-19, see: Rabi et al. (2022).

[39] While the EC's document begins with a statement that 'The global COVID-19 pandemic is not over' (European Commission 2022a: 1), it nevertheless promotes a transition to a new phase that practically moves from emergency response to recovery and long-term planning.

[40] On health equity and globalization see, for example, the famous report by the Commission on Social Determinants of Health (2008).

[41] Usually this was implicit. However, for an explicit and instructive example for how the event was rendered into a chronological timeline as part of an investigation on the international response to COVID-19, see: IPPPR (2021b); and Singh (2021).

[42] As of May 2023, the EC's proposal has not yet been adopted by the European Parliament. The ongoing legislative process will only conclude with the final vote on the proposal in September 2023.

[43] I largely refer here to actual health emergency events as the center of spirals, but a somewhat similar pattern can be found in regard to potential future health emergency events that are simulated in exercises or prepared for as a future disease X.

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[44] By referring to an "illusion" or "mirage" I am not suggesting that emergency events are not real. These are simply useful terms to concisely communicate both the non-tangible, elusive, and fluid quality of the event, and its inseparability from the structure and dynamics of governance (the spiral).

[45] A concept's 'critical limitations' refers to what that concept is structurally incapable of rendering thinkable, and not simply to what is excluded by or remains external to it – an 'externality' (Rabinow & Bennett 2012: 52).

[46] For detailed technical and legal information about the pandemic treaty process see the elaborate account published by the Graduate Institute Geneva (Nikogosian 2021).

תקציר

עבודה זו בוחנת את הממשליות הגלובלית של בריאות בחירום מזווית אינטרדיסציפלינרית המשלבת פרספקטיבה פוליטית, סוציולוגית והיסטורית. בבסיס המחקר ניצבו ארבע משימות עיקריות: זיהוי, תיאור וניתוח המבנה, הדינמיקה, המאפיינים והגורמים המניעים והמעצבים של ממשליות בריאות בחירום; הארת האופן שבו ממשליות זו התפתחה והתהוותה; בירור אופי היחסים בין ממשליות זו לבין הממשליות של בריאות גלובלית, ובין מערכות ממשל לבריאות בחירום לבין המערכת הגלובלית לביטחון בריאותי; ובחינה מחודשת של הדיון התאורטי והקונספטואלי במדעי החברה בנוגע ל-"חירום".

מטרתה הכללית של העבודה היא לספק ידע והבנה בנוגע לשדה ממשליות מובחן שנוצר בנקודת המפגש בין "בריאות" ל-"לחירום" ולשם כך היא מתמקדת בארבע שאלות מרכזיות: כיצד התהווה שדה ממשליות גלובלי מובחן שבמרכזו הדאגה לבריאות בחירום? מהם היחסים בין ממשליות בריאות בחירום לבין ההבניה החברתית של מחלות? היכן עובר הגבול בין בעיות שהינן חלק מממשליות בריאות בחירום לבעיות שאינן בתחום זה? וכיצד ומתי אירוע חירומי-בריאותי מתחיל ומסתיים? על מנת לענות על שאלות אלו וכדי לבחון את הממשליות הגלובלית של בריאות בחירום כמארג דינמי, הטרוגני ועכשווי, במסגרת המחקר נערכה אתנוגרפיה רב-זירתית וצמתי פעילות שבהם פועלים ובאים במגע שחקנים ממשליים שונים סביב הבעיה הרחבה של בריאות בחירום. כדי להקיף תופעה רחבה אך לא מוכרת ולא יציבה זו, המחקר התבצע בגישה גמישה שאפשרה מעבר בין צירים שונים בתוך שדה המחקר. עם זאת, אתרים שבהם פועלים ארגון הבריאות העולמי, הנציבות האירופית והמרכז האירופי למניעה וניטור מחלות, וקהילת הבריאות הגלובלית בגרמניה שימשו כמעין "עוגנים" למחקר ועמדו במרכזו.

במסגרת העבודה מוצגת חקירה גנאלוגית אודות הממשליות של בריאות בחירום. החקירה מתחקה אחר שורשי היווצרותה של ממשליות זו ומספקת הקשר רחב ותובנות בנוגע להתפתחותה דרך תהליך מיזוג הדרגתי בין אלמנטים של ממשליות בריאותית ובין פרקטיקות, רעיונות וטכנולוגיות שמקורן בתחום של ניהול מצבי חירום. מעבר לכך, החקירה הגנאלוגית מעלה ומדגישה את חשיבותן הרבה של מהירות וגמישות (מתואמת) כסגוגיות מרכזיות הן בהתפתחות ההיסטורית והן בפעילות העכשווית של מערכות ממשל של בריאות בחירום.

כדי להעמיק ולבסס את המחקר מבחינה אמפירית נבחרו שלושה מקרי בוחן לניתוח. המקרה הראשון מתמקד בהתפרצותה המחודשת של מגפת החצבת (בין השנים 2017-2020) וניהולה של מחלה זו באירופה. בחינת מקרה זה שבמרכזו בעיה בריאותית פתירה מבחינה טכנית (ניתנת למניעה באמצעות חיסון), מראה כי הממשליות של בריאות בחירום מאפשרת ומקדמת טרנספורמציה בהבניה הקולקטיבית של ניהול הבעיה. עם התפרצותה המחודשת של מגפת החצבת באירופה, את התקווה שבהתקדמות לעבר מיגורה המוחלט של המחלה החלה להחליף התקווה לחזרה להתקדמות שכזו. מגפת החצבת באירופה, במובן זה, כוננה כמצב חירום בריאותי "רגרסיבי".

מקרה הבוחן השני עוסק בניהול הממשלי של התנגדות אנטי-מקרוביאלית והתהליך המתמשך שדרכו בעיה זו נהפכת למצב חירום בריאותי "שקט". במקרה זה מתגלה שהמפתח להפיכתה של בעיה לכזאת שניתן לחשוב ולפעול עליה כמצב חירום בריאותי הוא בתפיסת המהירות התנועתית והמאורעות של הבעיה. דהיינו, תפיסת הבעיה כאירוע או ריבוי אירועים שבהם יש פער שמתרחב במהירות בין התפתחותם והתדרדרותם לעבר אסון לבין יכולת ועוצמת התגובה אליהם.

במוקד מקרה הבוחן השלישי נמצאת מגפת הקורונה כאירוע חירום בריאותי ושאלת נקודת ההתחלה ונקודת הסיום של האירוע. הניתוח במקרה בוחן זה מתמקד בתהליכים המורכבים והדינמיקה הספציפית של כינון האירוע והתעצבות קווי המתאר שלו. דרך מקרה זה ניתן לראות כיצד מערכות ממשל של בריאות בחירום מייצרות וריאציות מרובות של האירוע שמתקיימות במקביל. יתרה מזאת, הניתוח מצביע על כך שתחילתו וסיומו של האירוע מכוננים במקביל ומגלה שלתהליך סיומו של האירוע יש תפקיד פוליטי קריטי כיוון שהוא מאפשר ומקדם שינויים בממשליות.

עבודה זו מציגה ומבססת טענה לפיה ממשליות של בריאות בחירום הינה שדה מובחן ונפרד משדה הממשליות המוכר כבריאות גלובלית. עם זאת, מודגש כי השדות שזורים זה בזה כיוון שישנם קשרים רבים וחפיפות ביניהם. אכן, ההתפתחות ההיסטורית וההתהוות של השדה הראשון היוו מנוע חשוב להתרחבותו של השדה השני. באופן דומה, נטען כי בעוד שיש להבחין בין מערכות ממשל לבריאות בחירום למערכת הגלובלית לביטחון בריאותי, גם אלו שזורים זה בזה באופן משמעותי כיוון שהם חולקים אלמנטים מסוימים. מעבר לכך, עבודה זו מציעה את המושג "ספירלות נצחיות" (perpetual spirals) כדי להבין ולתפוס את המבנה ואופן הפעולה של אותו מארג עכשווי של ממשליות בריאות בחירום שבמרכז המחקר. כמו כן, העבודה מציעה שההיבטים הקריטיים ביותר עבור מארג זה הם סקלה (קנה מידה או מדרגה) ומהירות תנועתית. סוגיות ודאגות הקשורות בהיבטים אלו לא רק מוטבעות בליבת המארג אלא גם מכיילות את המערכות שמכוננות אותו, מבנות את תפיסת הבעיה ומשפיעות על ההתערבות בפועל. אם כן, ייתכן שהדומיננטיות ההולכת וגדלה של הממשליות של בריאות בחירום תתבטא בנטייה לתעדף ולגשת לבעיות ממשליות על בסיס תפיסה מובנית של מהירות תנועתית וסקלה.

לבסוף, המחקר מאתגר את הקונספטואליזציה המשפיעה והנפוצה של חירום כהחרגה או החרגה קבועה על ידי הדגשת הדינמיות, המורכבות והאיכות הרב-גונית של חירום (בבריאות) כתצורה של ממשליות. בכך, העבודה שופכת אור על העוצמה הבסיסית של חירום – העוצמה להגביר, להגדיל ולהרחיב; ואף מדגימה את היתרון האנליטי של המשגה מצומצמת זו.

עבודה זו נעשתה בהדרכתם של

פרופסור לימור סמימיאן-דרש ופרופסור נדב דוידוביץ'

המשליות הגלובלית של בריאות בחירום

חיבור לשם קבלת תואר דוקטור לפילוסופיה

מאת

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