"The thing about chaos, is that while it disturbs us, it too, forces our hearts to roar in a way we secretly find magnificent."

Christopher Poindexter

CHAPTER 1 - Introductory Remarks

1.1 Diseases and Disasters

Outbreaks of diseases and occurrences of disasters have harrowed humankind since the beginning of time. Disasters have shaped history. Mount Vesuvius buried Pompeii, a storm sealed the fate of the remainder of the Spanish Armada, and the Tangshan earthquake in 1976 is likely to have been key to ending the Cultural Revolution in China (De Carolis & Patricelli, 2003; Douglas, 2009; Kok-Kheng Yeoh, 2010). Similarly, diseases from the Antonine Plague claiming Marcus Aurelius, the Black Death, the Spanish Flu (Huremović, 2019), up to and including the Coronavirus disease 2019 (Covid-19), impacted on political balances of power and our reading of how history unfolded. Noah's flood, the Egyptian Plagues, and the destruction of Sodom and Gomorrah are key elements in our holy scriptures – appearing in the Bible, the Quran, the Hadith, as well as the Torah – and thus testimony of their importance for humans and their lives and beliefs (O'Mathúna, 2018).

Disasters and diseases shape the world. Therefore, it is no surprise that both receive ample attention in research. Political science and public administration (e.g., Harrald, 2006; Malhotra & Kuo, 2008), applied fields of science, such as engineering and medicine (e.g., Cao & Huang, 2012; Chen, Peña-Mora, & Ouyang, 2011; Mahoney & Reutershan, 1987; Park, Seager, Rao,

Convertino, & Linkov, 2013), psychology and behavioral studies (e.g., Baran & Scott, 2010; Comfort, Ko, & Zagorecki, 2004; Gist & Lubin, 1989), and management studies (e.g., Bigley & Roberts, 2001; Elliott & Macpherson, 2010; James, 2011) have contributed to our knowledge of them. The journal *Disasters,* the *International Journal of Mass Emergencies and Disasters,* the *International Journal of Disaster Risk Science,* and various medical publications represent just a small selection of outlets specifically dedicated to the topic.

Diseases break out and disasters occur, and both will continue to do so. But humanity has not become extinct, which implies that humanity has had opportunities to acquire experience in managing diseases and disasters.

1.2 Responses and Decisions

In the last decades, the frequency and the economic costs of disasters have increased (EMDAT, 2019). This increase has been countered with more and more sophisticated and effective local, national, and international response mechanisms. These are run and financed by various actors, such as the United Nations (UN), government agencies, private companies, or non-governmental organizations (NGO). The same is true for the constantly evolving response mechanisms to disease outbreaks, which are responsible for landmark success stories, such as the eradication of smallpox (Breman & Arita, 1980) and probably soon polio (Ochmann & Roser, 2017).

It is not global response mechanisms alone which have evolved. Disasters and diseases also directly affect individuals and organizations. Every firm, every public office, and every association needs to respond when the environment suddenly changes because of an external shock, such as a disaster or a disease outbreak. The need for quick and purposeful action often results in the creation of temporary organizations. These temporary organizations come in

various forms and types, but have in common that they are specifically created to perform a complex task and, as long as they work on that complex task, are credited with a superior performance output (Burke & Morley, 2016; Lundin & Söderholm, 1995).

A core activity of all organizations tasked with coordinating resources and adapting to dynamic situations, is decision-making (e.g., Gonzalez, Lerch, & Lebiere, 2003; Kerstholt & Raaijmakers, 1997; Simon, 1959). In the context of dynamic environments, it is especially the *speed-accuracy trade-off* which needs closer examination. The term originated in cognitive sciences, where the *speed-accuracy trade-off* is understood as an ubiquitous symptom of human or animal cognitive limitations (e.g., Chittka, Dyer, Bock, & Dornhaus, 2003; Garrett, 1922; Woodworth, 1899). By now, it has evolved into a concept adopted by leadership and organization studies, describing how organizations rather than individuals handle the balance between thoroughness and quick action (Brewer & Ridgway, 1998; Johnson, 1975; Srivastava & Leonard, 2014).

Disasters and diseases create dynamic environments. The resulting time pressure leads to the creation of temporary organizations to respond. This dissertation will examine these organizations, and their decision-making, in order to derive assertions about the organizational performance.

1.3 Organizational Performance and Research Gap

Neither the previously mentioned literature on diseases and disasters, nor the equally existing literature on temporary organizations (e.g., Bechky, 2006; Burke & Morley, 2016; Lundin & Söderholm, 1995) or crisis management (e.g., Barton, 1993; Billings, Milburn, & Lou, 1980; Boin, Kuipers, & Overdijk, 2013) have yet answered the question of when these temporary response organizations perform well. No scientific criteria exist to predict if a temporary

response organization is likely to be successful and consequently, no criteria exist to know how these organizations should be composed, staffed, led, and structured.

This dissertation aims to contribute to our understanding of performance of temporary organizations founded to respond to external shocks, such as disasters and diseases. These contributions aim to improving tools and institutions in a way that the overall management of disasters and diseases is strengthened. Therefore, they contribute directly to the quality of how two of humankind's greatest scourges are handled. The overall research question is thus: ***How can the performance of temporary organizations responding to disasters and disease outbreaks be predicted?***

To predict the performance of temporary organizations responding to the outbreaks of diseases and the occurrences of disasters, this dissertation aims at identifying and determining performance predictors. It examines organizational performance of different temporary response teams in the context of both disaster response and a pandemic, Covid-19. At the same time, this dissertation attempts to generalize findings on performance predictors for response organizations in other contexts.

1.4 Dissertation Structure

To achieve these goals, this dissertation is structured in six chapters. It sets out with introductory remarks in Chapter 1, and explains contextual factors and their implications for responding organizations in Chapter 2. Chapter 3 to 5 represent the core of the dissertation as three independent research studies, each with own research questions, data sets, and methods. As illustrated in Figure 1-1, Chapter 3 uses the Grounded Theory approach to induct predictors of organizational performance using data from temporary disaster response teams from the UN Office for the Coordination of Humanitarian Affairs (OCHA). These results shape the basics

for the hypotheses, which are empirically tested in the context of Covid-19 response, in a multi-level quantitative analysis based on a factorial survey in Chapter 4, and in a qualitative comparative analysis (QCA), focusing on configurations of performance predictors, in Chapter 5. Chapter 6 offers conclusions, derives theoretical and practical implications, points out limitations, and offers potential paths for future research.

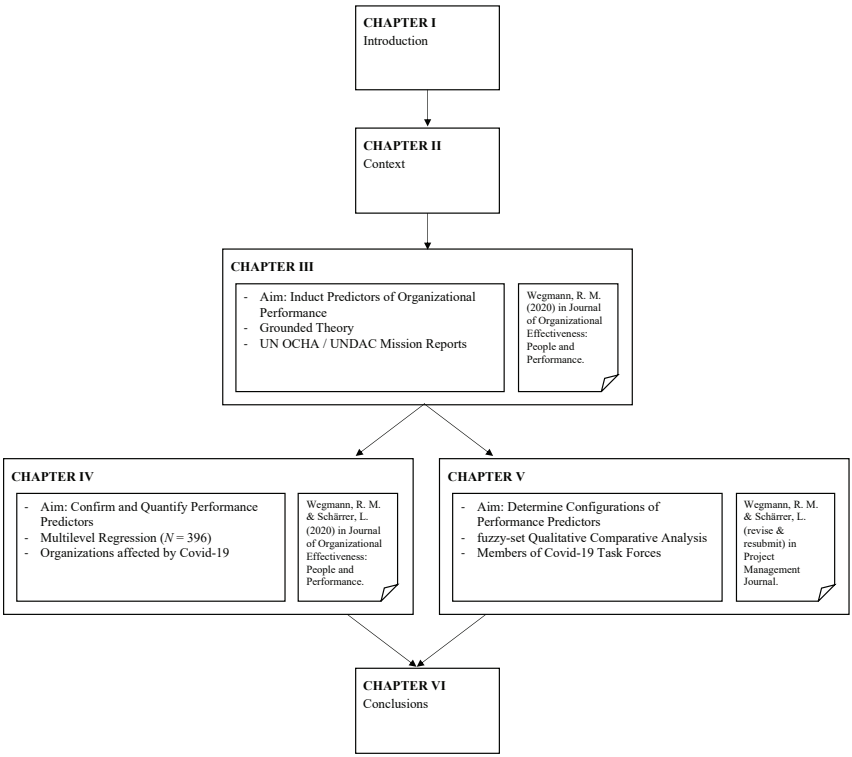

Figure 1-1: Dissertation Structure

"The natural state of humanity is poverty, disease, ignorance, exploitation, and violence. It is knowledge… that allows any-one to rise above this state."

Steven Pinker

CHAPTER 2 - Disease, Disasters and Decisions

2.1 Humankind's Greatest Scourges

Humankind has always been exposed to multiple recurring and existential threats, killing people and devastating livelihoods and infrastructure. Most notable among these threats are war, disease, poverty, and disaster (Dyer, 2005; Harari, 2015; Jebari, 2015; Pinker, 2018). However, not all of these threats are alike in how they occur and how they unfold. This chapter outlines these threats, and reasons why this dissertation, interested in analyzing temporary response organizations, focuses on the outbreak of diseases and the occurrence of disasters. Furthermore, this chapter explains the consequences for these response organizations.

War and poverty can be distinguished from diseases and disasters in one particular dimension: time, both in speed of onset and in duration. On the one hand, inter-state wars often last anything from several weeks to several years. Conflicts with multitudes of non-state or quasi-state actors can even last considerably longer (Fearon, 2004). In 2019, the International Committee of the Red Cross (ICRC) reports the average length of time of presence in each of its ten largest operations as 42 years (ICRC, 2020; Policinski & Kuzmanovic, 2020). Similarly, poverty is rather a state than an event, and even if it occurs temporarily rather than chronically,

it rarely encompasses an event 'happening' and thus triggering a temporary response. Poverty is traditionally combated by structured, long-term interventions (Ite, 2005; Lok-Dessallien, 1999; Noël, 2006). On the other hand, disasters and diseases are often external shocks of limited duration. In the first period after their occurrence, they trigger organizations to react, to improvise or to activate pre-planned response structures, and thus creating temporary response organizations. If the effects of the disasters or the diseases last longer, as is the case in prolonged droughts or in diseases not subsiding, then, these structures are harmonized and the temporary response organizations become permanent, thus losing their transient nature and changing their characteristics.

At a first glance, war and poverty also seem to differ from disasters and diseases in that their causes are always and entirely human-made. War is constructed by people, both in the Hobbesian understanding of being inherent to humankind's nature (Durbin & Bowlby, 1939; Thivet, 2008) and from the perspective as a fairly recent social invention (Dyer, 2005). Poverty is defined and measured in different ways (e.g., Atkinson, 1987; OECD, 2008; WorldBank, 2020), but these definitions all have essentially in common that poverty is the absence of the wealth necessary to live a life in dignity. Poverty results from behavioral, structural, or political causes, or a combination thereof (Brady, 2019), meaning that it is entirely anthropogenic as well. However, deeper analysis shows that – even without taking human-made disasters into account – the same is true for diseases and disasters. The death tolls of disasters is significantly higher in poor countries, and inequality plays a central role in how deadly disasters are, both within and across countries (Carbonnier, 2018). Equally, human-made living standards and behavioral patterns contribute to, or hinder, the spread of diseases (Castillo-Chavez, Bichara, & Morin, 2016; Funk, Salathé, & Jansen, 2010).

Thus, disasters and diseases belong to humanity's greatest scourges, but they distinguish themselves from war and poverty in that they offer distinguishable periods of time, in which organizations respond. Even when disasters and diseases persist, improvised or pre-planned response organizations characterize the first period after the occurrence. These response organizations and their performance are the core object of study of this dissertation.

2.2 Emergency, Crisis and Disaster – Terms and Concepts

Diseases and disasters have been of academic and practical interest for a long time, and they have been explored by various disciplines. Social and political sciences (e.g., Harrald, 2006; Malhotra & Kuo, 2008), behavioral studies (e.g., Baran & Scott, 2010; Comfort et al., 2004; Gist & Lubin, 1989), but also applied disciplines, such as engineering (e.g., Chen et al., 2011; Park et al., 2013) and management (e.g., Bigley & Roberts, 2001; Elliott & Macpherson, 2010; James, 2011) have produced insights into numerous niches, in attempts to improve our understanding and thus management of these perils.

However, the terms used to describe these events vary. Sometimes, both scholars and practitioners use the most common ones of them – *emergency*, *crisis* and *disaster* – interchangeably, partly because definitions are manifold and sometimes contradictory, and partly because most practitioners follow an "I Know It When I See It"-approach (Gewirtz, 1995; Jaques, 2009) rather than bothering with nuances of definitions.

To clear up these terminologies and establish a proper baseline, this dissertation will first introduce Al-Dahash and colleagues' (2016) proposition to define these terms, which builds on a substantial range of existing literature on crises, disasters, and emergencies, and compares the respective uses and definitions of these three terms. Bearing in mind that their framework is derived from a meta-study, thus essentially summarizing and ordering characteristics which

other scholars defined, it becomes clear that specific organizations practicing the art of handling these threats might again use other definitions for their daily work. Furthermore, as Al-Dahash and colleagues' resulting framework is enormously wide and comprises a total number of 22 identifying characteristics, this dissertation will simplify and reduce it to the characteristics needed to examine the situations which build the core of this thesis: disasters and the global outbreak of Covid-19. This own adaptation and simplification of Al-Dahash and colleagues' terminology overview is shown in Figure 2-1. The details of the distinctions demand closer attention.

At the center of it, and valid for all three terms, is the occurrence of sudden damage. An external shock happens, not predominantly presenting opportunities but characterized by damage. Sometimes, these shocks can be anticipated, as in cyclones already observed before they make landfall (e.g., Bengtsson, 2001), or in business operations, where liquidity shortages can be forecasted (e.g., Gray, 2008), and sometimes, these shocks come as surprise (such as earthquakes or nuclear meltdowns). Between surprise and anticipation is a spectrum, indicating that various degrees of anticipation can exist. For example, a city may be in an earthquake-prone area, anticipating that twice per century it is hit, but the actual event is still not forecasted (e.g., Jordan et al., 2011; Nishenko & Buland, 1987).