Linnæus University
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Master's Thesis

Towards an Archaeology of Disaster

Opportunities and difficulties

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Summary

Can archaeology contribute to emergency relief in areas struck by a disastrous event? As climate change continues to escalate and threaten our contemporary society, every field of research should get involved to protect the people, and to protect our heritage. Even archaeology. By using theories and methodologies normally found within the realms of traditional fieldwork, archaeology has proven itself to be of great use during the initial phase of a disaster, but also during the post-disaster recovery process. Apart from being useful in the initial disaster aid, archaeological data collected at previous disasters has also proven to be useful in terms of building resilient societies and in some cases even prevent extreme damage to be caused by a disaster.

But, with extreme and highly stressful work environments comes the emotional response. It is close to impossible to avoid once our senses become overloaded, and disaster archaeology with its sometimes extremely gruesome images is not excluded from such responses. But, how can the archaeologist working under such conditions learn how to handle their emotions? In terms of disaster archaeology, the phrase of “teamwork makes the dream work” seems highly applicable as the burden of dealing with mass-fatalities seem to ease a little from working in close-knit teams of workers from organisations such as the Red Cross, military personnel and other culture heritage workers. However, with experience and time out in the field, the archaeologist also learns how to come to terms with the gruesome images that can be found at a disaster scene. Yet, archaeology and archaeologists still are not given the proper recognition in terms of what they can contribute with at the scene of a disaster, despite the branch existing for nearly two decades.

Abstract

This thesis examines the role of archaeology and its contribution to emergency relief work in areas struck by a disastrous event. At a time in our contemporary society where we may be extra vulnerable against disasters, archaeology can help us both prevent and reduce the risks of disasters. In areas where a disaster has struck it can instead help the survivors of the affected community to recover and to rebuild their society by using traditional archaeological methods and knowledge. Despite this, archaeology is not used to its full potential at disaster scenes.

Incorporating evidence from articles, personal correspondences and a survey, this thesis demonstrates that archaeology should be more involved in the initial phase of emergency rescue work due to the usefulness of archaeological excavation methods. Archaeology also shows great potential in regards to preventative measures and general research around disaster management.

This thesis argues for an increased involvement of archaeology and archaeologists in the initial phase of emergency relief in areas affected by a disastrous event. It also argues for more open discussions regarding the emotional difficulties that may arise from working at a disaster scene, allowing the workers to freely share their experiences with one another even in an academic setting.

Key words

Cultural heritage management, cultural resource management, disaster, disaster archaeology, disaster risk management, disaster risk prevention, emergency relief, forensic archaeology

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1 Introduction

1.1 Background

Within the field of archaeology, there has more or less always been an academic interest in studying disasters, of which Herculaneum and Pompeii are a classic example of how traditional archaeology studies a historical disaster. However, disaster archaeology, or disaster-led archaeology as it is sometimes called, defies the more conventional claims of what archaeology as an academic field of study is. Rather than studying the past, disaster archaeology instead focuses on the present, even though disastrous events has always been present in the life of humans in one way or another. Disaster archaeologists thus focus their studies and their field-expertise on disasters that are either caused by humans (e.g., war or accidents) or by natural forces (e.g., a tsunami or an earthquake), as well as how to prevent disasters from happening again, or at least how to reduce the damage caused by them (Gould 2007; UNESCO 2010; Laoupi 2011; Gould 2013).

Disaster archaeology has since its birth as a research field in the early 2000's continued to evolve and develop new approaches, as well as new areas of research where, for example, knowledge about past calamities in combination with geophysical analyses are used to both predict and reduce the risk of a disaster striking in a specific area (Gould 2007; Gould 2013; Riede 2017). And since climate change is one of our contemporary society's biggest challenges, this development is nothing but positive. Especially since recent climate reports show that we can expect a rise in natural disasters all around the world, with a possible risk of political tension as people are forced to flee from their previous habitat. With this comes the need for tangible solutions in the case of a disaster, as well as further research to make communities more resilient (Laoupi 2011; Riede 2017; Peres & Deter-Wolf 2018). This is without a doubt where disaster archaeology can further prove itself useful.

With the aforementioned in mind, this thesis is the result of my personal interest in disaster archaeology, and how disasters can affect the human psyche. Thus, I decided to research the possibilities and limitations in what archaeology and archaeological methods, as well as theories, could contribute with in terms of emergency relief in areas struck by a disastrous event. Although I personally am of the opinion that archaeology have a lot of uses even outside its own field of research, I tried to keep these opinions down as much as possible throughout the general text and instead focusing on what

others were saying about disaster archaeology. Regarding the effect a disaster can have on the human psyche, I was inspired by Richard Gould's ethno-archaeological approach to disasters. Compared to his victim-focused approach however, I decided to shift the focus onto those who were performing the work and how they handled the emotional difficulties that are bound to occur in high-stress situations. This is what made me decide on the subject of the opportunities and difficulties of archaeology carried out in areas struck by disaster (human-instigated or caused by a natural phenomenon).

Although disaster archaeology has come a long way since its early beginnings in the 21st century it was brought to my attention by one of my interviewees that archaeology as a method of emergency relief work was not accepted by their on-field colleagues (for example fire-fighters, military personnel or the Red Cross). This became another reason as to why this thesis needed to be written; to collect "evidence" of how archaeology could be used in various difficult situations, as well as on how the archaeological data could be used to either prevent or reduce the risk of a disaster striking.

In the end, this thesis can hopefully prove to the doubters that archaeology and archaeologists can be of great help in an area struck by disaster, while simultaneously opening up for further discussion regarding the emotional difficulties of working under extremely harsh conditions.

1.2 Aim

The aim of this thesis is to raise awareness about the opportunities and difficulties of archaeology carried out in areas struck by disaster.

I will thus focus on the one hand on how archaeology can contribute to emergency relief in disaster areas, and on the other hand on how archaeologists working in a disaster area handle the emotional difficulties that may occur during such work.

1.3 Questions

This thesis will aim to answer the two following questions;

1. How can archaeology contribute to emergency relief in areas struck by a disastrous event?

2. What emotional difficulties arise in this context and how can archaeologists deal with them in the best way?

1.4 Definitions

This thesis does not differentiate between disasters that are human-instigated or caused by a natural phenomenon as per the definition set by the *International Federation of Red Cross and Red Crescent Societies* (IFRC);

"Disasters are serious disruptions to the functioning of a community that exceed its capacity to cope using its own resources. Disasters can be caused by natural, man-made and technological hazards, as well as various factors that influence the exposure and vulnerability of a community."

- *International Federation of Red Cross and Red Crescent Societies, 2023*

This thesis will thus look at both human-instigated and natural disasters in terms of how archaeology can contribute to emergency relief in both situations.

Apart from the aforementioned definition by the IFRC, the following terms are also of particular significance in this work;

Cultural resource management: the process of managing, either in the form of conservation or salvage, as well as mitigating conflict over archaeological and cultural sites and places that are deemed to have particular values for a nation (Smith 1994).

Cultural heritage management: same as cultural resource management.

Disaster archaeology: a term most often used in collaborations with forensic anthropologists and archaeologists in mass-fatality disasters (Gould 2007; Gould 2013).

Disaster damage: a collective term of the damage done to a specific area where the damage is measured in physical units (e.g., square meters of housing, kilometres of roads etcetera.), as well as describes the total or partial destruction of physical assets, the disruption of basic services and damages to sources of livelihood (UNDRR n.d.).

Disaster impact: the total effect of the damage done to a specific area, including negative long-term effects (e.g., economic losses) as well as positive effects (e.g., economic gains), this term includes economic, human and environmental impacts and may thus include death, injuries, disease and other negative effects on human physical, mental and social well-being (UNDRR n.d.). In my thesis, this is also written as "impact of a disaster."

Disaster-led archaeology: a term more commonly used in collaborations with cultural heritage management, the focus lays more on documentation and damage assessment to cultural heritage sites and artefacts (Schlanger et.al. 2016).

Disaster risk management: the process of preventing or reducing the negative impacts of a disaster on heritage properties (UNESCO 2010).

Disaster risk reduction: the process of reducing the risks of a future extreme event by using archaeological data from past calamities (Riede 2017).

Emergency: a term that is used interchangeably with the term disaster in the context of biological and technological hazards or health emergencies that does not necessarily cause a disruption of the functioning of a community or society (UNDRR n.d.).

Forensic archaeology: the application of archaeological fieldwork methods and theories in a criminal context or in the case of mass-fatality disasters (Powers & Sibun 2013).

2 Research History

This chapter's aim is to give the reader a short introduction to the two fields of research that are of relevance to my research questions, i.e., disaster archaeology and forensic archaeology and anthropology. The two fields are what has formed the archaeological methodologies and theories that is usually found within emergency relief work involving archaeology today. With this in mind, it is thus important to understand the background surrounding the two fields and how they came to be and how they developed throughout history, especially in regards to how they can both be used in areas struck by a disastrous event.

2.1 Disaster Archaeology

Disaster archaeology is a sub-genre of archaeology that arose from a combination of humanitarian impulses and the rigorous application of forensic methods during fieldwork to find out "what happened?" at a contemporary disaster-scene (Gould 2007; Laoupi 2011; Gould 2013). It is a highly practical approach to the recording, recovery and analysis of physical remains and materials where the archaeologist must possess sharp problem-solving abilities while working under high pressure in a high-risk area. Health concerns exist everywhere in any field of work, but the demands in disaster archaeology can sometimes be extreme for many different reasons, which requires the archaeologist to undergo special training before going out into fieldwork (Gould 2007; Gould 2013; Interview 3). Disaster archaeology is often used in combination with forensic archaeology and anthropology in the cases involving mass fatalities where materials found by archaeologists are viewed as medicolegal evidence to be presented in court, as for example in the case of The Station nightclub fire in 2003, Rhode Island, USA (Snow 1995; Gould 2007). With this in mind, disaster archaeology can take many different approaches depending on how and where it is used. Richard Gould defines in his book *"Disaster Archaeology"* (2007) that this type of archaeology is about the victims of a disaster, as well as the events that follow during the initial recovery process, where it plays an active role in restoring order to an affected community.

However, more recent disasters and continuous research have since Gould's first definition of disaster archaeology added new and alternative ways of defining the field and its uses. Dr. Amanda Laoupi for example defines disaster archaeology in more broad terms than previously used by Gould, who kept the

definition more victim-focused. She says that disaster archaeology generally can be defined as a discipline that a) defines the identity, the impact and the dynamics of disasters based off of the origin of human civilisations, b) tries to find and analyse the different types, frequencies and the magnitudes of disasters that may still be "hidden" inside of archaeological landscapes, c) seek new adaptation abilities from areas previously affected by a disaster, and d) handles risk assessments regarding cultural heritage in our contemporary society (Laoupi 2011). Nathan Schlanger and Felix Riede are two other prominent researchers who took to disaster archaeology in their respective research to further promote the areas in which archaeology can be used in relation to different types of disasters around the world. While Schlanger took a more tangible approach to the field following the triple-disaster in Fukushima, Japan, in 2011, Riede took a more preventative approach in the hopes of making our contemporary communities more resilient to future disasters by researching pre-historical disasters in the areas now inhabited by thousands, if not millions, of people (Schlanger et.al. 2016; Riede 2017). This disaster-led type of archaeology thus strengthens the assumption that, within the field of disaster archaeology, one handles everything from humanitarian affairs or concerns, environmental education, dangers and risk management to preventative policy actions and mitigation plans (Laoupi 2011; Gould 2013; Schlanger et.al. 2016; Riede 2017).

2.2 Forensic Archaeology & Anthropology

Forensic archaeology can generally be defined as the application of archaeological methods and theories in a criminal framework where those methods and theories together with paradigms such as "contexts" are integrated with those of criminalistics and forensic science (Powers & Sibun 2013). As a sub-genre of criminal science, forensic anthropology and forensic archaeology has given rise to new and unique types of criminal investigations, including crimes committed by governments against their own people (Snow 1995), as well as being used regularly during mass fatality disasters (Gould 2007; Gould 2013). The development of forensic archaeology as a profession, as well as its acceptance by law enforcement and the military among other authorities, however has been slow and has taken different paths depending on the country. In the US for example the development of a forensic archaeology took place during the 1970s, while it in the UK first appeared with an official status as an accepted field of study during the 1990s. This development was based on the racial studies performed by physician T. Wingate Todd and physical anthropologist Wilton M. Krogman during the 1930s. Their skeletal

studies of different individuals, although highly problematic from a racial discrimination perspective, gave valuable information to those involved with forensic anthropology at the time (Snow 1995; Powers & Sibun 2013). Partly due to Todd's and Krogman's research, forensic anthropologists were able to modernise their work by using computer programs and measurements taken directly from the deceased individuals. This method was used to re-create three-dimensional portraits with near-photographic accuracy of the victims (Snow 1995), rather than having to rely on out-dated methods such as eugenics. Methods and theories however remain in a continuous phase of development with many international collaborations between organisations, authorities and governments (Powers & Sibun 2013), where 3D-generated portraits are just a small, but significant, part of it.

The establishment of both national and international human rights organisations and legal institutions since the birth of forensic archaeology during the late 1900s increased the necessity of being able to employ forensic anthropologists as well as archaeologists within the investigation of atrocities and in victim identification (Powers & Sibun 2013). One such organisation is the *Equipo Argentino de Antropología Forense* (EAAF) who in 1984 emerged as a response to a plea of help from CONADEP (*National Comission on the Disappearance of Persons*) and *Abuelas de Plaza de Mayo*, who both were non-governmental human rights organisations dedicated to the search of missing people in Argentine, following their brutal military regime's fall from power (Snow 1995; Fondebrider & Scheinsohn 2015; EAAF 2021; Interview 3). The work performed by EAAF in Argentine was seen as pioneering even by today's standards for working in a multidisciplinary manner, aligned with the interests of victims and covering all steps of the investigation; from the initial first contact with victim's families to the actual work of searching for the missing individual(s), recovery of remains and laboratory analyses (Fondebrider & Scheinsohn 2015; EAAF 2021; Interview 3).

Forensic archaeology has since its establishment been used successfully in many investigations concerning crimes against humanity and mass-fatality disasters, such as the ethnic cleansing in both former Yugoslavia during the 1990s and in Iraq during the late 1980s, as well as during the recovery work of the Bam earthquake in Iran during December of 2003 (EAAF 2021; Interview 5).

3 Theory

3.1 Applied Archaeology

During the past few years, archaeology has been applied to a wide variety of domains. The majority of these are focused on contemporary societies and their societal issues. In this sense, archaeology is often applied as a form of civic engagement, political action, social justice or activism, environmental justice, events related to tourism, as well as collaborations with different communities (Sabloff 2008; Harrison & Breithoff 2017; Stottman 2020). However, archaeology has also been applied in contexts of climate change (Cooper & Duncan 2019), genocide, agriculture (Erickson 1998), gender equality, racism, homelessness, poverty, hunger and disasters, just to name a few (Perring 2007; Sabloff 2008; Stottman 2020).

In a majority of these fields of study, the application of archaeology and archaeological knowledge and methods has already proved itself useful. One example of this is that of the terrace farming in the Andean Highlands, with mountain peaks of up to around 7000 meters above sea-level, making it a very difficult environment for farming with frequent frosts and hailstorms, irregular rainfall resulting in serious droughts or heavy flooding. Despite this though, some areas showed signs of once supporting dense and well-organised populations well before the Spanish conquest in the 16th century. One of these areas was the Lake Titicaca Basin, which is one of the most massively human-modified landscapes in the Americas where hundreds of square kilometres of terraces for farming were constructed. This proved that the area had been able to sustain dense populations before, and that it was possible to once again use the area for farming purposes. By applying the archaeological data and knowledge gained from excavations in the area around Lake Titicaca Basin, raised fields and terrace farming proved to be the solution to the difficulties of farming in rough environments such as those in the Andean Highlands, as the technique improved the conditions of the soil, humidity and microclimate, with results of producing two to three times the number of crops, compared to the more traditional flat farmland in the same area (Erickson 1998; Down & Price 1999).

Another example of where applied archaeology can be useful is that of social justice and activism, where it is used as a way of documenting any possible damages to both people and property, as well of what was used during any confrontations or protests. Applied archaeology can thus be used to

demonstrate alterations in the urban landscape related to both police presence and protesters, but also as a way to provide human rights organisations with concrete proof of oppression by the state or violations of basic human rights (McGuire 2008; Sabloff 2008; Stottman 2020; Lindskoug & Martinez 2022).

Based on these recent applications of archaeology, it is clear that at this point in time, archaeology has seen more applications than ever before. The application of archaeology and archaeological knowledge and methods are pushing the notion of archaeology from just being useful to the public to being instrumental in many issues that contemporary communities face on a daily basis (Stottman 2020), including disasters.

In the case of this thesis, applied archaeology will be paired with the sub-genre of disaster archaeology to offer a better understanding on how archaeology and archaeological methods can benefit those who have been struck by a disastrous event. I believe that this is the best theoretical standpoint to have when researching how archaeology is used in context outside of its original purpose of researching past societies because of its openminded approach towards all types of contexts. With the previously mentioned examples in mind, especially the example regarding social justice, it becomes clear to me that the application of archaeological methods and theories can be of more use to our contemporary society than what it is given credit for today. This is especially the case when it comes to life-saving interventions. Although a disaster scene is not the same thing as that of a protest, I believe that the application of archaeological field methods can be beneficial in terms of how we as archaeologists document and interpret the cultural material left behind after a disastrous event. It can help us understand the patterns of a disaster, and how it affected the people in the disaster-struck area both short-term and long-term. The application of archaeological methods and theories can also prove itself useful in restauration, as well as preventative work regarding disasters.

Since archaeology as a scholarly discipline is the process of studying material remains of past cultures, it has for many years primarily been applied as a means to learn about the past, resulting in archaeology having a unique and vast knowledge of how time and the passing of time become materialised, as well as how it manifests in people's lives (Perring 2007; Burström 2009; Stottman 2020). One may thus argue that all archaeology is inherently applied in one way or another, especially since it during the more recent years also has been applied to a wide variety of uses outside its own field of research. Applied archaeology as a theoretical standpoint has seen very sporadic use among archaeologists throughout its history. It has also had a history of ambiguous meanings, causing even fewer archaeologists to be willing to use it in their

research. Despite this, it has now had a recent upswing in uses as a theoretical standpoint, redeeming itself from its somewhat troublesome past of being used in, for example, racist justifications. Applied archaeology can, despite this, still be interpreted and used in many different ways depending on its target audience due to its history (Perring 2007: Stottman 2020).

If all archaeology is inherently applied, it may seem easy enough to define what applied archaeology is. However, this theoretical paradigm has proven itself difficult to fully define and is thus often referred to as simply the application of archaeology and archaeological methods outside of traditional academic research. This means that applied archaeology has a much more practical and public purpose than its counterpart of traditional archaeology (Downum & Price 1999; Perring 2007; Stottman 2020). Downum and Price made an attempt to define what applied archaeology is, as well as its potential uses, in their article "*Applied Archaeology*" from 1999, and it is still by far the most comprehensive work regarding the matter of defining applied archaeology and its potential uses (Downum & Price 1999; Stottman 2020). They define it as a typology of applications of archaeological knowledge and methods on a crosscut of a multitude of current events, specialisations, theoretical perspectives and institutional contexts such as cultural resource management. According to them, a major aspect of what applied archaeology is involves managing, protecting, maintaining and interpreting the archaeological resources within a specific context (Downum & Price 1999). With this in mind, it becomes clear that almost all concepts of applied archaeology are inherently public, meaning that there is a clear connection or relationship to the general public. It is also this relationship with the public that allowed cultural resource management to not only become synonymous with applied archaeology, but also with the aspect of public archaeology through the application of archaeology to preserve and protect cultural resources (Downum & Price 1999; Perring 2007; Stottman 2020).

Donwum and Price's article (1999) became the keystone to the definition of applied archaeology and its potential uses, but by the 2000s archaeologists had already become more actively engaged in, and had goals aimed at contemporary communities, not just past ones (Stottman 2020). These goals could vary depending on the specific context or project, but generally included:

1. Preserving cultural heritage: archaeologists work to protect and preserve cultural heritage sites and artifacts, often in collaboration with local communities and other stakeholders (Downum & Price 1999;

Perring 2007; Stump 2013; Harrison & Breithoff 2017; Holtorf & Burström 2018; Stottman 2020).

2. Mitigating the impact of development: archaeologists conduct impact assessments and provide guidance on how to minimise the impact of development projects on cultural heritage resources (Downum & Price 1999; Perring 2007; Harrison & Breithoff 2017).
3. Engaging with local communities: archaeologists work in close contact with local communities to involve them in archaeological research and decision-making processes, as well as to promote community owner- and stewardship of cultural heritage resources (Erickson 1998; Downum & Price 1999; Perring 2007; Stump 2013; Harrison & Breithoff 2017; Holtorf & Burström 2018; Stottman 2020).
4. Advancing knowledge and understanding: archaeologists use their research and expertise to advance our understanding of past and present societies, as well as to inform policy and decision-making in contemporary society (Erickson 1998; Downum & Price 1999; Perring 2007; Burström 2009; Stump 2013; Harrison & Breithoff 2017; Holtorf & Burström 2018; Stottman 2020).

Overall, applied archaeology is a theoretical standpoint, as well as a research field, that seeks to bridge the gap between traditional academic research and more tangible applications, as well as using archaeological knowledge and methods to address issues in our contemporary society (Erickson 1998; Downum & Price 1999; Sabloff 2008; Harrison & Breithoff 2017; Stottman 2020). Not only that, applied archaeology also plays an important role of critically examining the current relationship between archaeological productions of the past and our contemporary relations and interpretations of the past (Nakamura 2012). Thus, it is of importance for us as archaeologists to understand how archaeology can be applied to our contemporary society; how it can benefit ourselves, as well as the society of the future generations to come (Holtorf 2013).

4 Methods & Data

This chapter entails the different methods used to make this thesis a reality. These methods were chosen on the basis of enabling open communication through both interviews and a survey, especially as the second question of this thesis requires personal experiences as an empirical material. Alongside this I have also used more traditional literature studies to both compliment and back up statements from both the interviews and the survey.

4.1 Interviews

Some of the empirical material for this thesis was collected through interviews with different people who in one way or another have experience from working with disaster and/or forensic archaeology, as well as cultural heritage sites at risk. The aim of interviews like these are to collect information through a method of self-reporting; what people say they have experienced and what opinions they may have about a specific topic (Denscombe 2017; Sohlberg & Sohlberg 2019). For this thesis I interviewed a total of five individuals from different parts of the world and with different academic backgrounds. The reason for this was to get as much of a global perspective on the matter as possible. This was important to me, as disasters is not something that only affects people in the West, but rather something that can affect us all no matter where we live.

However, interviews as a method of collecting information are often unrepresentative in nature. What is said in an interview can often be considered to represent something broader, something that is also applicable to other individuals in a corresponding situation. While this may be the case in some scenarios, it is also quite problematic as generalisation can be dangerous (Sohlberg & Sohlberg 2019). Especially so when the total number of interviewees is as small as mine.

The interviews were mainly conducted through video meetings by using the services of Google Meets, but where it was possible, they were also conducted in person. All of the interviews were conducted through the semi-structured method, which according to Martyn Denscombe (2017) means that the person who is interviewing has a set list of questions, but rather than expecting answers in a predetermined manner, the interviewer is more flexible when it comes to how the answers are delivered and in which order. The reason behind this is to allow the interviewee to elaborate their own ideas and to expand on

their own point of view regarding a topic (Denscombe 2017). Two of the interviews however had to happen in written form, in which case I sent the interviewees my questions and got the answers sent back to me on terms that better suited their schedules, as well as mine. While this was not optimal in terms of being able to ask follow-up questions in real time it still worked really well as I kept my interview questions open for interpretation. The written interviews themselves were also semi-structured, which means that the interview questions are more flexible in regards to how and in which order the interviewee can reply to them. I believe this opened up for further discussions despite me being unable to participate directly.

Unfortunately, though, not all interviews can be found in the appendices due to unforeseen technical difficulties with the transcription service I used as an add-on to Google Meets. This service, called *Scribbl Transcribe*, although seemingly useful did not work as I thought it would, or as the developers claimed it would. While it did record what was said during the meeting, it did not do so correctly, meaning that the documents containing the transcriptions is not useful for this thesis. However, this does not mean that the interviews themselves were in vain. The information gained from those were still very much useful throughout this thesis, and in combination with supporting notes taken by hand during the interviews it was still possible for me to refer to things that were discussed in them. Where it was possible however, the interviews can be found in their entirety in the appendices, and where it was not possible, I have chosen to at least include the questions I used during the interview together with a short summary of what was discussed during the interview.

4.2 Survey

Besides interviews, empirical material was also collected through a survey with similar questions to those asked in the interviews. This survey was sent out to members of the international non-governmental organisation *ICORP* with the help of my supervisor Professor Cornelius Holtorf, who is also a member. This non-governmental organisation is an international scientific committee of *ICOMOS (International Scientific Committee on Risk Preparedness)*, which is dedicated towards the protection, as well as the management of cultural heritage around the globe, while simultaneously supporting the local communities in which they operate (ICOMOS-ICORP 2023).

A total of six people, seemingly with different academic backgrounds, participated. In my survey I allowed people to reply in a way that felt most comfortable for them, whether it was in short or in long form, as well as allowing them to skip a question if they wished to do so. This was done in order to encourage more people to participate as surveys, depending on the subject and questions asked, can be seen as annoying and time consuming by the recipient. Based on the participants total being less than ten, it may not be great from a statistical point of view, but the survey results are to be viewed as a complement to the answers given in the interviews rather than something that can fully stand its own. Claims made in the survey are backed up through literature studies.

4.3 Literature Studies

A majority of the empirical material comes from literature studies. The chosen material was looked at through a qualitative method, with both a thematic and holistic approach in mind. The thematic approach became a self-explanatory part of the research due to the fact that the overall theme of this thesis is that of disaster archaeology. It is, according to this approach, the overall theme of a work that dictates the flow of the general text and descriptions of events where examples are needed (Sohlberg & Sohlberg 2019). A lot of the material I worked with was chosen with this in mind; that it had to fit the theme of disaster archaeology and how the people were affected by it.

However, since I always try to perform my work with a holistic state of mind, the holistic approach also came as a natural part of the process for this thesis. This approach comes from the hermeneutic tradition of analysing text material, often of historical value, where it must relate to the wholeness of a subject or context. Although the wholeness is of utmost importance according to the holistic approach, it is not unusual that it sometimes shifts between something of smaller value and something of a much larger value, in order to achieve the wanted wholeness of a specific context (Smith & Riley 2009; Johnson 2010; Sohlberg & Sohlberg 2019). In the case of this thesis, the wholeness is that of what archaeology can contribute with in areas struck by a disaster.

Finding literature about the research subject was not difficult, as there is an abundance of both books and articles that deals in various types of disaster-related work, as well as websites of organisations working with disaster relief or disaster risk reduction. It was rather difficult however, to sift through and decide on what to use as dependable references and sources of information.

The chosen literature was found through web-sites such as Academia.edu or Researchgate.net, or through various search engines like Google Scholar and OneSearch, the latter being provided by the library of Linnaeus university. Some of the literature was also recommended to me by interviewees, as well as by my supervisor. A clear majority of the literature I reference can thus be accessed online through sites like, for example, JSTOR, which is a digital, world-wide library.

4.4 Source Criticism

In the previous section I mentioned that it had been difficult to choose which literature to use as a reference; if they were a dependable source or not, and if it in that case would be safe for me to use it in my thesis. And since the subject of my thesis is already of a sensitive nature, I did not want to risk spreading any misinformation or make any unreliable claims, especially since disaster relief in general can be a somewhat tricky field to navigate through. The reason as to why it can be tricky to navigate through is because of the so-called saviour complex. This is a type of complex that can manifest itself in a group of people who then believes themselves having to rescue another group of people, whether it may be needed or not.

This concern may seem of little to no relevance to my research regarding disaster archaeology, however, it is still something to take into account when dealing with disaster relief. Thus, in order to minimise the risk of falling into this trap, I had to make sure that I only used information from reputable sources and organisations that were already established within the field of disaster relief or disaster risk reduction. Something I found very helpful when finally deciding on who to reference throughout this thesis was to make a checklist of questions that I could try the source against. These questions were inspired by questions that can be found on Krisinformation.se published in 2022 (MSB) in an attempt to minimise the risk of misinformation about the covid-19 pandemic spreading on social media. Some of those involved asking how old a specific piece of information is and whether it is still relevant or not, who it is that published the information and whether it comes from a reputable source that has previously published reliable information, as well as if it is possible to cross-reference it with other sources.

The following table shows the checklist from Krisinformation.se in its entirety, however slightly adapted to better fit the subject of my research for this thesis as the checklist was originally created for another purpose.

Who is behind the information? Can I find the original source?
Why does the information exist? How is the information used in regards to the subject at hand? Who is the target audience?
What kind of information is it? Who benefits from me using and/or spreading it?
How old is the information? Is it still relevant?
Where did I find the information? Does it come from a reputable source that has previously published reliable information?
Can I find the same information from another source? If I cannot do that, should I still be using it?

Krisinformation.se (2022)

Although this checklist definitely helped in minimising the risk of spreading any misinformation or making any unreliable claims, it is important to remember that the sources I reference to throughout this thesis is not without flaw.

5 Results

5.1 Survey Results

This part will present the results of the survey sent out to ICORP members. To maintain the anonymity of the six participants, they will be referred to as Person A, Person B etcetera. Their answers will be presented in a type of numbered point form and in citation marks when needed, following the same order in which the questions were asked on the survey form. Since not every participant felt comfortable with or wanted to reply to every question, as they were allowed to skip one if this was the case, I will also mark the total of replies given on each question within parentheses.

A. In what way do you think archaeology can be of use in an area struck by a disaster? (The disaster may be caused either by natural forces or by humans) (6/6)

1. Person A concludes in their reply that archaeology can contribute mainly with different types of assessments and documentation methods. They also conclude that archaeology can be useful, not only in the emergency rescue work, but also in the following reconstruction work in terms of, for example, retaining authenticity of an affected area. Person A also thinks that the data collected from a disaster-struck area can be used in new archaeological research of a specific area.
2. Person B is of the opinion that methods of careful documentation alongside excavation of affected objects and places could be of help in an area struck by a disaster, especially since they think it hinders further damage to an artefact as it can be preserved properly.
3. Person C thinks that since archaeologists are extremely good at documenting and recording remains, as well as analysing the traces of what was once there, that they can help in restoration efforts.
4. Person D says that a town struck by, for example, an earthquake may have an archaeological layer affected by the damage and that damage assessment efforts should ensure that these

archaeological layers or ruins are not further damaged by rescue efforts.

5. Person E reckons that archaeology may be able to provide a focus or a sense of place for the reconstruction work where the community have been fragmented and traumatized.
6. Person F thinks that archaeology can provide a sense of place for the affected community, which helps in achieving post-disaster recovery.

B. If you have previous experience of working in a disaster-struck area, what was your experience? Was it challenging in any way (physically and/or mentally)? If yes, how did you cope with it? (1/6)

7. Person A states in their reply that they do have previous experience of working in areas affected by either earthquakes or floods, but also from fires. They say that apart from the logistics and knowledge needed around working in unsafe situations and the need to be part of a team, that "the local people are very nice and helpful at times when having to cope with terrible situations."

C. With some recent disasters in mind (e.g., the war in Ukraine and the earthquake in Turkey & Syria), what do you think archaeology/archaeologists can do to help? (6/6)

8. Person A refers back to their answer on the first question here that different types of assessments and documentation methods can be of great help in disasters like the ones in Ukraine and Turkey, as well as Syria. However, they also add that working with bomb- and landmine clearance at times is a must where the ground has been disturbed. Understanding settlement patterns in relation to seismology and the dynamic landscape development is also something that Person A thinks is of great help in the case of an earthquake. Archaeologists can also help with getting monuments and sites back in operation, while simultaneously supporting community resilience according to Person A.
9. Person B thinks that it depends heavily on the location and positionality of the archaeologist to begin with. They say that the local archaeologists are the first responders to an affected

area where they can help with damage assessment and documentation together with relevant emergency services. In the case where there is still time to, for example, evacuate artefacts and further protect cultural heritage sites, Person B thinks that local archaeologists can help with this task as well. Non-local archaeologists on the other hand can, according to Person B, help their colleagues on the ground with for example funding, knowledge, training or other forms of assistance as a need for it appears and is requested by those working in the affected area.

10. Person C says that documentation as well as recovery and conservation can be of great help in situations similar to those in Ukraine, Turkey and Syria. They also conclude that archaeologists can help with safe evacuation procedures of artefacts if needed.
11. Person D is of the opinion that archaeologists should be involved in the process of documenting, salvaging and protecting archaeological remains, which might become visible underneath demolished buildings etcetera, referring specifically to the situation in Antakya, Turkey.
12. Person E concludes that archaeologists can assist in the inventorying of artefacts as well as recording the impact a disaster has on the cultural heritage.
13. Person F thinks that archaeologists should try to support local heritage professionals in recording and assessing the damage done to a building or an artefact. The support can vary from moral to financial and technical during the post-disaster recovery.

D. Is there any comment you would like to make on disaster archaeology? (4/6)

14. Person A replied to this question with a personal anecdote; *"In the great Yemen earthquake I used building damage patterns and characteristics to support a) predictive modelling of impacts and effects on the future high risk historic environment assets, and b) to support archaeological excavations where the sites were created by earthquakes – to ensure proper excavation of rubble (over walls and floors) as this can be used in seeing how the buildings failed and what they actually looked like before falling down."*

15. Person B comments that disaster archaeology as a field of expertise has to avoid the pitfalls of other disaster philanthropy and disaster aid by focusing on what a specific community needs at that specific time, rather than what the external actors are willing to provide to the affected community.
16. Person E says that since disaster archaeology is viewed as a transferable skill that it can be brought to bear on other situations around the world as they emerge.
17. Person F reckons that archaeology could unify people after disasters. They also think that it could help during peace-building between two conflicting parties.

5.2 Highlights

The results of my survey show very cohesive replies, despite the participants having different academic backgrounds and experiences regarding disaster relief work, and archaeological fieldwork in general. Although this may be because of their mutual connection to the ICORP network, I still think it is of interest to see what the participants may have agreed upon or what they thought differently about.

The majority of the replies given on my survey mostly agreed on the fact that archaeology could contribute mainly with different types of assessments and documentation methods in the aftermath of a disastrous event, as well as performing careful excavations to rescue artefacts where it was needed. A very small percentage of the participants brought up the possibility of how archaeology could be used to help the affected community achieve post-disaster recovery. I find this interesting, especially since Richard Gould (2007, 2013) defined disaster archaeology as something that is mainly victim-focused, and that it is not the artefacts that should be in focus, but rather the people of an affected community. Based on the answers I got, there seems to have been a shift of focus away from what was previously established by Gould towards something that is more focused on the cultural heritage sites and artefacts. Neither is wrong however; it does portray an interesting topic for further discussion regarding how archaeology can contribute to emergency relief in disaster-struck areas. Yet, it is documentation and damage assessments, as well as the protection of cultural heritage sites and artefacts, that dominate how the participants of this survey thought archaeology and archaeologists could be the most useful in a situation of disaster aid.

6 Discussion

6.1 The Contribution of Archaeology to Emergency Relief

This section incorporates the results of my survey and of the interviews in combination with literature studies with the focus on how archaeology can contribute to emergency relief in the case of a disaster.

6.1.1 Archaeology in Disaster Areas

No disaster scene is ever the same as the previous one, as every type of disaster wields its own results in turns of damage and number of victims. The disasters can be broadly categorised however into three different groups; natural phenomena (e.g., earthquakes, tsunamis or tornados), accidents (e.g., building collapses) and criminal activity (e.g., shootings or bombings) (Gould 2007; Gould 2013; Emery 2020). In the aftermath of a large-scale disaster, a *multi-sector initial rapid assessment* (MIRA) is usually rolled out as one of the first major tasks. This responsibility often falls on the leading authorities of an affected country as the first step of emergency relief. The aim of MIRA is to identify the immediate need for humanitarian aid, such as food, water and shelter, but it also identifies the damages caused to the infrastructure (Tandon 2017). In order to effectively respond to a plea for help following a disaster, the incident command structure needs to gather as much information as possible in a very short period of time. They quickly need to figure out what type of disaster it is and what happened, where it occurred, as well as the pertinent environmental conditions, a rough estimation of number of victims in the area, but also if there are any immediate safety and security issues. Based on this data, and the data collected prior to a disaster, as well as after, the planning and the mobilisation of both personnel and resources can begin (Wescoat & Kanda 2012; Tandon 2017; Emery 2020).

However, MIRA does not include a damage assessment of the damage caused to any cultural heritage, mainly because these require more time to perform and is not a priority during the first phase of emergency relief. Once that phase is over though, a *post-disaster needs assessment* (PDNA) is carried out in order to launch a consolidated appeal for financial aid from other countries and donor agencies (Tandon 2017). One such agency is that of CER – *Cultural Emergency Response.* This is an emergency grant mechanism that provides

both quick and flexible support for cultural heritage sites in need of rescue, stabilisation or evacuation to prevent further damage from happening (CER n.d.).

Assessing the damage done to a cultural heritage site during the aftermath of a large-scale disaster is, despite both MIRA and PDNA, complex work. It becomes even more complex if it is also a disaster with many fatalities, since the human remains must be prioritised for the sake of everyone's well-being. It is only after dealing with the fatalities, and the removal of, as well as sorting through, the debris of fallen structures and broken objects that the true cost of restoration, or even temporary stabilisation can be estimated (Tandon 2017; Emery 2020). With this in mind, the process of damage assessment has to be broken down into two phases. In the first phase there should be an on-site assessment to estimate costs for salvaging, stabilising, as well as mitigating risks of further damage during the reconstruction work. In the second phase there should be a detailed condition assessment of all of the damaged objects, as well as structural elements in order to estimate the costs of a full conservation and rehabilitation treatment. In both phases, it is important to include both movable and immovable, as well as intangible, cultural heritage. In fact, it can even be counterproductive to hold a separate post-disaster damage assessment, as time is of utmost importance in these situations (Wescoat & Kanda 2012; Tandon 2017; Emery 2020).

Archaeology and archaeologists specifically can during a post-disaster walkthrough, in combination with both the MIRA and PDNA data, and in collaboration with cultural heritage management, emergency rescue workers and the government help in various ways, not just with excavation of collapses buildings. It can provide further help with damage assessment and help identifying resources for recovery (Tandon 2017; Survey A1, 4; Interview 5). It can also help with the time-consuming work of documentation (Survey A1-3), but it can also help the affected community by involving them in the recovery and reconstruction work of their cultural heritage (Survey A5-6; Interview 5). With all the newly collected data, archaeologists can of course also conduct further research on the matter in order to advance the discoveries within the field of disaster risk reduction, so that a future disaster may not do as much damage as the previous one did (Riede 2017; Survey A1; Interview 5).

The general success of an at-scale post-disaster assessment however, relies on three main factors; trained teams of heritage professionals, as well as volunteers who can both understand and perceive different degrees of damage to a wide variety of cultural heritage. The volunteers should already be familiar

with the tools for data collection; the ready availability of pre-disaster baseline data for all heritage types within the affected area, complete with geo-locations; a tested centralised system for emergency data gathering, tracking, analysis and visualisation. Without these, the post-disaster assessment may not yield successful results in regards to what the affected community needs during post-disaster recovery (Tandon 2017).

Example: The Station Nightclub Fire, Rhode Island (USA)

On the 20th of February, 2003, shortly after the rock band "Great White" took the stage at The Station nightclub, a pyrotechnics display caught fire. Due to the cramped space near the stage, in combination with a lot of easily combustible material, such as acoustic foam, in its vicinity the fire spread rapidly. According to video footage used at the trial, it took less than a minute for the stage to catch fire, and less than two minutes for black, toxic smoke to engulf the entire building, making it difficult for visitors to find their way out of the cramped space. The final number of visitors were never determined, but police estimate it to have been well over the permitted limit for the premises. A total of 100 people died that night, and 230 people were seriously injured due to the toxic smoke, heat, as well as pressure injuries that occurred when people panicked, thus trying to push themselves out through the only available exit, as all emergency exits had been blocked by stage equipment, or had been locked for unknown reasons (Gould 2007; Korzeniewicz & Casullo 2009; Gould 2013). Shortly after the initial rescue work, it was quickly realised that in order to carry out a thorough investigation of the course of events, it was necessary to involve individuals with special knowledge of how to deal with this type of disaster. And thus, for its second ever mission, the fledgling organisation *Forensic Archaeology Recovery* (FAR) was roped in with the official mission of collecting evidence that could be used at trial, but also with the unofficial mission of completely clearing the area of materials, as there was a suspicion of people looting the place for a type of disaster collectibles that could be sold on websites like eBay or Amazon (Gould 2007; Gould 2013).

The archaeological dig began at the entrance of the nightclub and systematically worked its way backwards towards the area where the stage had once stood. The main entrance was the area where the most individuals had died, which also resulted in it being a very find-dense area. A total of 88 items were entered as evidence directly related to the fire, which is an average of one item less than one per victim. Items that were not considered to be directly related to the fire, or was not needed in the victim identification process, were set aside to be repatriated to family members where it was possible to do so (Gould 2007). Due to the extreme heat caused by the fire, many of the finds were either badly burned, or fragmented. Despite this however, after just three days, all of the deceased individuals had been identified using forensic archaeology and modern scientific analysis methods, and once the cause of death had been documented for the court documents, their remains could be repatriated to family members (Gould 2013).

In a small state like Rhode Island, with such a strong sentimental connection to the nightclub, one could clearly see the advantages of using forensic processes in combination with an archaeological dig; many of those affected by the disaster said they found comfort in the way they went about it; that they really combed the area in an attempt to find answers to why it had happened, as well as for repatriation purposes (Gould 2007; Korzeniewicz & Casullo 2009; Gould 2013). The fire at The Station is a prime example of where applied archaeology is used in a context of collecting evidence to serve as proof for what happened at a disaster scene with many fatalities. Applied archaeology also served as a means to make repatriation possible in this case, as the bodies were badly burnt and thus fairly difficult for family members and friends to identify. But by using the methodologies of traditional archaeological fieldwork, this was possible despite the bodily trauma of the deceased victims' bodies. The use of applied archaeology as a theoretical standpoint can in similar scenarios yield just as successful results as it did in this case since it opens up for a clearer discussion regarding archaeology's contribution to the collection of evidence amongst other things. It does also, as proven by the aforementioned example, further develop and strengthen the cooperation between two very different work fields. This means that the multi-disciplinarity of archaeology will become clearer for other parties in need of similar working methods as those that archaeology can offer in the future (Perring 2007; Sabloff 2008; Stottman 2020).

This example also showcases one of the very first cases in which archaeology and archaeological methods, as well as thought patterns, was used in a forensic investigation following a disastrous event. The application of archaeological methods typically used in traditional fieldwork settings proved to be extremely useful in regards to the collection of evidence, and it has in later years been proven that the use of archaeology in crime scene investigations manages to collect more evidence than in the cases where it was not used (Dupras 2012; Evis 2016). According to Richard Gould this type of archaeology also proves that archaeological methods and thought patterns can be used for other purposes than what it was originally intended for. By using archaeology in a way that is inherently victim-focused, as well as in a situation where something tragic has happened, it also serves another purpose for something that can be argued is for the greater good in terms of providing evidence of what happened (Gould 2007; Gould 2013). The reason as to why this fall under the category of being victim-focused disaster archaeology is just that; finding out what happened at a disaster scene in order to create justice for those who fell victims for the disaster, or in this case, fire-related accident where many were either burnt to death or succumbed to the toxic smoke. One can thus argue that the application of archaeology can help in the grieving process of the affected

community, especially for the grieving family members of the deceased victims, who through archaeological means get to say a proper good-bye to their relative, friend or spouse, etcetera.

Since this accident happened a decade ago however, there has been many new developments regarding how disaster- and forensic archaeology is used today. And although the aforementioned is what Gould intended with the development of disaster archaeology, it has now taken a different approach where the cultural heritage is in focus rather than the victims who may already have passed away from the disaster. The surviving victims are of course not forgotten about in the situation of a disaster, but their main emergency relief does not come from archaeology or archaeological methods in a majority of cases. Instead, it comes from humanitarian organisations such as the *International Federation Red Cross and Red Crescent* (IFRC), the *World Health Organisation* (WHO) and sub-organisations of the *United Nations* like *UNICEF*.

Example: The Triple-disaster of Fukushima, Japan

On the 11th of March, 2011, a strong earthquake occurred just off the east coast of Japan. Since seismic measurements began in the 1900s, this had been the strongest earthquake ever measured on the devices. It reached a 9,0 on the Richter scale, with many of the aftershocks reaching a strength of up to 7,4 before decreasing to a magnitude of 4,5. This earthquake gave rise to a subsequent tsunami, which also caused great devastation, especially in combination with the earthquakes. The tsunami also caused major problems for the power supply at the Fukushima nuclear power plant, affecting the cooling of the reactors. Without the possibility to cool down the reactors and with further damage done to the infrastructure surrounding the power plant, it ultimately led to a meltdown. This accident was assessed by Japan's nuclear power authority – NISA – as a seven on the international nuclear and radiological event scale. This puts it on the same level as the Chernobyl accident in 1986 (Schlanger et.al. 2016; Krisinformation.se n.d.). This triple disaster has been considered to be the most expensive natural disaster in human history, with an estimated damage and reconstruction cost of about 10 trillion yen. The large extent of the damage to the infrastructure etcetera, generated a form of disaster-led archaeology that went on alongside the reconstruction work for several years, of which it is still on-going in some areas (Schlanger et.al. 2016).

Driven by a sense of *force majeure*, a total of 6800 people struggled for roughly two years to both locate and submit reports on the condition of the area's diverse cultural heritage. At the same time however, the Japanese government began to rebuild infrastructure, such as railways and port facilities. The end result of these two years hard work showed that up to 700 national cultural properties, including five national treasures, 160 important cultural properties and up to 90 historical sites and buildings were damaged. However, that was only estimated damage assessments from what could be seen; the risk of buried cultural

property (i.e., archaeological sites) being damaged as well was of great concern (Schlanger et.al. 2016; Habu & Okamura 2017). Archaeologists were thus tasked with performing rescue excavations in order to save the damaged sites, while simultaneously documenting the damage that had occurred on cultural heritage sites that were already known. They were also tasked with performing emergency preservations of artefacts where it was needed at the sites most affected by the disaster. The archaeologists participated in many rescue excavations that would take place before reconstruction, or new development of residential areas, highways and other important infrastructure. Despite the many difficulties, such as a lack of the needed materials, as well as time constraints, the rescue excavations were a great success; many discoveries that might not have been made without the reconstruction efforts were made, and new research material was produced that could give rise to a deeper understanding of the area's history (Habu & Okamura 2017; Interview 1).

Compared to the more victim-focused disaster archaeology in the case study before this one, about the nightclub fire, this type of disaster-led archaeology takes on a more cultural heritage-focused approach. This means that it is the concern for damage to cultural properties that is the driving force behind this type of archaeology. Archaeologists thus lend their knowledge and fieldwork methods to the cultural resource management in the area, applying archaeological methods to both find and document damage on a cultural property, but also to perform emergency excavations in order to save damaged artefacts from further damage (Schlanger et.al. 2016; Habu & Okamura 2017). The difference between disaster- and disaster-led archaeology may not be of significance when considering the bigger scale of an event, however, the differences are of significance when deciding how to handle the aftermath of a disaster. Since disaster-led archaeology thus applies archaeological methods to collect the necessary data needed to perform calculations regarding reconstruction work, it is needless to say that the victims in this perspective is the damaged artefacts, rather than the inhabitants of the same area.

6.1.2 Archaeology in Areas of Armed Conflict

The archaeological study of material culture in regards to a conflict can give new perspectives on, as well as of, its impact on our contemporary world and the community in which it has happened. The knowledge produced by this type of study is, according to Randall McGuire, a necessary part of understanding the struggles of the affected community and how they either ceased to exist or recuperated (McGuire 2008; Badcock & Johnston 2013). In areas of armed conflict this may be especially important as the bodies, together with material culture such as bullet cases and gas masks left at the scene, tell us the story of what happened in that specific area at a specific time in history.

The results yielded from studying the material culture left behind after an armed conflict can be used in many various ways depending on the situation behind the conflict. In the case of war, this type of material analysis can provide the necessary proof needed to convict a regime of crimes against humanity, as well as other war crimes, such as the deliberate destruction of cultural heritage sites. In the more extreme cases, this type of material analysis can also show us if and how the human body could have been used as a last resource of defence in situations where the victim may have been stripped off of their liberty and material goods. It may show us that the human body, in lack of a better weapon, becomes the victim's weapon of choice for both defence and offense, while simultaneously demonstrating a total commitment to the cause (Badcock & Johnston 2013; Moshenska 2013; Lindskoug & Martinez 2022; Interview 3, 5). One example of this is the case of the death of Syrian archaeologist Khaled al-Asaad. One can argue that he did in fact use his own body as the last defence, although highly unwillingly and without really being able to defend himself as his hands were bound. Asaad, who worked at the ancient city of Palmyra in Syria, were beheaded by the *Islamic State* (IS) militants in 2015 for refusing to reveal where the valuable artefacts had been taken for safekeeping (Gopalakrishnan 2021). Asaad's death however, is unfortunately just one of many examples of archaeologists, culture workers and journalists, amongst other workers in a warzone, risking and sometimes even losing their life in an attempt to bring attention to injustices around the world, while simultaneously standing up for and protecting what they believe in (Abdulkarim 2014; Gopalakrishnan 2021).

With this in mind, archaeology takes on a much darker mission in regards to how it can be used in the context of armed conflict. Using the same example of Asaad's death, archaeology is here used in two different ways by either side, both with a dark and unfortunate outcome. They can also be seen in different perspectives regarding disaster archaeology as a whole. The death of Asaad can be seen as a disaster for his family and colleagues, as well as the archaeological community as whole, who lost a valuable researcher to what is essentially seen as something inherently evil. In terms of how archaeology is used in regards to his unfortunate death, it does create problems for how archaeology carries itself in contexts of armed conflict. While everyone is right to their opinion and to act out on their beliefs, it is also important to notice the consequences of such actions, which in this case creates an aura of martyrism. On the other hand, the ancient city of Palmyra is used as an excuse to make unjustified claims based off of greed and the wish to sell valuables in order to gain more, for example, power over a situation or over another person (Clack 2020). The disaster in relation to the ancient city gets tied to the heinous actions committed on its grounds, as well as to IS militants' on-going

campaign against archaeology in the area. With this in mind, archaeology and archaeological sites of value become a special war tactic used to shock and demoralise the opponents (Bauman 1989; Curry 2017; Clack 2020). Looting and illegal excavations also increase during conflict, something that could be impossible to stop without putting oneself at great risk (Abdulkarim 2014). Professor Susan Pollock, who worked as an archaeologist in Iraq during the Iraq-Iran war in the 1980s says in an interview that archaeologists who work in countries with on-going, violent conflicts often run into issues regarding their guaranteed safety; *"As outsiders, we rarely have sufficient insights into the inner workings of conflicts, as well as up-to-the-minute information"* (Gopalakrishnan 2021).

Apart from archaeological sites sometimes being turned into a battlefield as a direct impact of war, they could, on a much brighter note, also be used as a refugee camp for the displaced civilians. This is because the sites are often seen as protected land, as well as already being well-known landmarks, making it easy to both find and get to. This however, depends on its location and the situation surrounding the outburst of conflict, and whether or not the site is affected by the on-going war or not (Clack 2020; Stottman 2020; Gopalakrishnan 2021). Even though the sites cannot be used as a permanent refugee camp, it is often used as a temporary collection point due to the aforementioned reasons of it being a well-known landmark in the area.

Archaeology, including both the physical remains of the past as well as the disciplinary enterprise of knowledge production, is not just a passive victim of violence in an armed conflict. It can also play a rather dynamic role in the production of entitlement to cultural resources, priming past injustices, as well as in the dividing of social relationships. The relationship between archaeology and armed conflict is a long one, and it is still on-going, bringing an abundance of ethical considerations and dilemmas with it that need to be considered (Clack 2020). Over the past two decades, there has been a number of proscribed groups, such as the *Islamic State, Al-Qaeda* and the *Wagner Group*, who have deliberately targeted and destroyed many archaeological sites in acts of iconoclasm and looting, of which the ancient city of Palmyra in Syria is one who got almost completely obliterated. On top of that, hybrid warfare has seen archaeology weaponised in both Crimea and eastern Ukraine recently, with the protection of cultural heritage used as justification for the arming of ethnic groups, as well as territorial annexations (Abdulkarim 2014; Clack 2020; Gopalakrishnan 2021). This type of targeted destruction of archaeological heritage (sites, buildings, artefacts etcetera) is unfortunately an ever-present aspect of armed conflict. There can be many reasons for this, but some of the most common ones include military necessity in which armed actors may

occupy an historically important building and use it as a so-called "heritage shield," meaning that they can use it as a base without having to worry about being attacked; collateral and/or inadvertent damage, which means that the archaeological resources receives unintended damage as a result of military activities or due to inconsideration of its value; iconoclasm, which can be defined as the motivated annihilation of any presence of power that can be communicated through a symbol in order to interfere with morale (Clack 2020).

As a response to this ever-present destruction of archaeological sites, the president-director of the *Musée du Louvre*, Jean-Luc Martinez, published a plea of action taking; "*Fifty proposals to protect the cultural heritage of humanity,"* as per the request of the president of the French Republic. The plea was heard and acted upon as the *ALIPH Foundation* was founded in March of 2017. This foundation aims to stop the widespread destruction of monuments, museums and heritage in conflict areas through a special aid programme. The three main areas of intervention are as follows; preventive protection to limit the risks of destruction prior and during a conflict, emergency measures to ensure the security of heritage during on-going conflict, as well as post-conflict actions to enable the local population to once again enjoy their cultural heritage (ALIPH Foundation n.d.). They believe that the protection of cultural heritage in areas of armed conflict matter because it can help in supporting the economic and social development in regions currently facing great difficulties, as well as promoting an intercultural and interreligious dialogue in regards to community resilience (ALIPH Foundation 2021), in which archaeology can play a huge role. For example, archaeology can be applied in a protective and preventative manner when it comes to the risk of damages to a cultural heritage site. It can also be applied during the recovery process, during phases of reconstructing infrastructure and housing for the displaced civilians. However, one of the most important things in which archaeology can play a huge role in is that of peacebuilding between two conflicting nations or groups of people. It can help them find a common ground to build peace upon, while simultaneously learning about one another and how culture can bring humans together in a celebration of hope and new beginnings (ALIPH Foundation 2021; Interview 4, 5).

Archaeology as a field of research can also serve as an important tool in the understanding of socio-political and socio-cultural causes to a conflict. On top of that, it can also help us move towards a more critical approach regarding the studies of both past and present remains found on a site, meaning that new perspectives on a subject can thrive despite difficult circumstances (McGuire 2008; Badcock & Johnston 2013; Lindskoug & Martinez 2022). This type of

contemporary archaeological interventions can also contribute with more strength regarding social justice in contexts of violence. In the case of extreme violence and crimes against humanity, it should also be able to help provide relevant human rights organisations with concrete evidence of violations (Lindskoug & Martinez 2022; Interview 3, 4 & 5). By using applied archaeology as the theoretical standpoint in studies regarding conflict and conflict management in areas of armed conflict, the different socio-political and socio-cultural causes to a conflict is put in new perspectives due to the inventive nature of applied archaeology. It can thus also help in the peacebuilding between two fighting communities as new information is provided through the use of applied archaeology and its thought patterns (Sabloff 2008; Harrison & Breithoff 2017; Stottman 2020). In a more tangible manner, applied archaeology and the application of fieldwork methodologies normally found in traditional archaeological excavations, has proven itself very useful in relation to securing evidence of wrong-doings. This is something that is crucial during armed conflict, as it quite often also involves crimes against humanity, amongst other war-crimes. Applied archaeology, with its many adaptive perspectives and standpoints, should thus be seen as a theory that will further the claims of the affected community (Stottman 2020).

However, it is also important to remember that warzones are extremely fleeting. This means that the thought patterns normally found within the framework of applied archaeology need to constantly adapt to its surroundings. Applied archaeology does, despite this, possess many of the necessary qualities for peacebuilding and for connecting two opposite forces simply by applying archaeological theories and methods onto a situation that could benefit from finding a common ground. This common ground is often that of culture, especially since cultures tend to overlap or merge together over time (Harrison & Breithoff 2017; Stottman 2020). In the case of a very recent outbreak of war – the Russian invasion of Ukraine – it is both the socio-political and socio-cultural perspectives that could, and should, be explored during attempts of peacebuilding between the two nations, as well as any similarities in their respective cultural heritage to serve as a common ground for the people to bond over. It is however, a very complex situation and these suggestions will at this stage most likely not have a very strong impact on either part, especially not since Russia is reportedly destroying Ukrainian cultural heritage sites as a way of advancing the war.

Example: The Russia – Ukraine war

On the 24th of February 2022, the security situation changed drastically for Ukraine after Russia launched a military offensive against the country. The violent offensive escalated in at least eight regions, of which the region of Kyivska and the capital city of Kyiv were hit the hardest. Donetsk and Luhansk, which have previously been affected by a large-scale conflict between Russia and Ukraine, were also affected by the war that now prevails in the area (United Nations 2022). The *Armed Conflict Location & Event Data Project* (ACLED) have since Russia's full-scale invasion recorded nearly 40 000 political violence events across the country (ACLED 2023a). ACLED is a disaggregated data collection, analysis and crisis mapping project, created by Professor Clionadh Raleigh of the University of Sussex in 2005 as part of her PhD work. It has since then operated as a non-profit, non-governmental organisation that collects data of all reported political violence and protest events around the world, providing it for free to be used by the public (ACLED 2023b).

In the wake of the invasion, thousands of images portraying human tragedies were released to the rest of the world to witness; broken families where mothers and children fled the country while the fathers stayed behind to defend their country (Rail 2022). In addition to the human tragedies, another tragedy also takes place simultaneously; the annihilation of a country's cultural heritage. Across Ukraine, a number of historical buildings, museums, churches and cemeteries, priceless works of art and monuments, as well as public squares and archaeological sites are reduced to rubble by Russian rockets, missiles, bombs and gunfire (Coles & Rocca 2022; Rail 2022). According to UNESCO, the targeting of Ukraine's cultural heritage sites has since the start of the invasion in February 2022 developed into a purposeful tactic for the advancement of war. The goal of a tactic like that is to annihilate societies for a longer period of time by deliberately destroying a nation's cultural heritage, and thus even their national identity (Clack 2020). To deliberately destroy a country's cultural heritage is considered a serious war crime, and UNESCO's former director-general describes the situation in Ukraine as a *"cultural cleansing"* (Bellamy 2022).

According to the *1972 World Heritage Convention*, each member state has an obligation under article 4 to both protect and to preserve the world heritage located within the country's borders, while article 6(3) points out the importance of not taking deliberate actions that may cause harm, both directly and indirectly, to a cultural heritage site located on the territory of another contracting state. The terms of which the *World Heritage Convention* work under does not cease to exist in the case of an armed conflict, provided that the member state has fulfilled its obligations in relation to the *law of armed conflict* (LOAC), *international human rights law* (IHRL) and the terms of the 1972 World Heritage Convention. In practice, this means that if you follow the laws of both LOAC and IHRL when it comes to the protection of cultural heritage and archaeological sites of value during armed conflict, there is no

need for concern about the individual laws and conditions implemented by the World Heritage Convention as compliance with LOAC guarantees compliance with those as well. A reverse scenario however, where a violation of LOAC is committed, it also constitutes as a violation of the World Heritage Convention. Furthermore, both the *international tribunal for the former Yugoslavia* (ICTY) and *international criminal court* (ICC), when guilty are to be tried for war crimes involving the destruction or damage of cultural property, treated the presence of a site on the *World Heritage List* as a reinforcement of the seriousness of the crime (O'Keefe et.al. 2016).

However, the cultural heritage in Ukraine has despite these international laws and protective measures become a deliberate target for Russia's war tactics, meaning that several war crimes have been committed where cultural heritage sites are involved. This is extremely worrying as actions like using the destruction of cultural heritage to advance war easily can lead to a cultural genocide where the identity of Ukraine in this case is wiped from the face of the Earth. At the same time, it can be difficult to promote the *1954 Hague Convention protocols* of peace and protection of cultural heritage sites. The message may in many cases be heard, but ultimately ignored as it does not benefit the advancement of war. Morale is also often at an all-time low during armed conflict, meaning that otherwise obvious does and do not's does not apply, as it also is not beneficial for the offensive to suddenly consider what is morally wrong or not (Bauman 1989; Clack 2020; Bellamy 2022; Coles & Rocca 2022; Rail 2022). Thus, the cultural heritage must be simultaneously protected by using other measures as well.

Aid has been delivered from several different help organisations, as well as neighbouring countries in Europe who went together in a joint effort to save and safekeep the cultural heritage of Ukraine. UNESCO is continuously in contact with cultural institutions across Ukraine, as well as with cultural heritage workers who is not connected to a specific institution, to see how the situation is developing and to reinforce the protective measures already in place through the use of the *Blue Shield emblem*, which is a product of the 1954 Hague convention used to mark buildings and places of cultural value for safekeeping during war (UNESCO 2022). Some of the help also came from *The Cultural Heritage Response Unit* (German: *KulturGutRetter (KGR))*, which is a German-based project developed within the *Archaeological Heritage Network* (ArcHerNet). Christoph Rogalla von Bieberstein, coordinator for the project at DAI (*German Archaeological Institute*) says that the aim of the project is to minimise or slow down, as well as documenting, the damage to both movable and immovable cultural heritage immediately after the disaster in an operational period of approximately two weeks. This is

done by dispatching teams of trained experts in both disaster management and cultural property in the affected area upon request by the activation of the UCPM *(EU Civil Protection Mechanism)* (KulturGutRetter 2023a; KulturGutRetter 2023b; Interview 2). However, KulturGutRetter as a civilian organisation is categorically not intended for active deployment in a war zone (Interview 2).

This does not mean that it has not been keeping up to date with the unfortunate fate of many Ukrainian heritage sites and artefacts, as well as coordinating shipments of protective material to be used by cultural heritage workers already on site in different areas of Ukraine affected by the war. In order to collect donated materials in a quick and effective manner to later be shipped off to Ukraine, DAI, KulturGutRetter and the THW *(Technisches Hilfswerk)* joined forces with *Blue Shield Deutschland e.V.*, the *DGKS* (which is a registered association for cultural heritage protection) and the team behind the *Guidelines for the Protection of Cultural Property* (known by the German acronym SiLK), as well as with several emergency response stations around Germany. The donated material was used to erect protective cladding around monuments, to pack art objects and archaeological artefacts safely in boxes, and to protect buildings and collections from fire caused by, for example, raid missiles. KulturGutRetter, have apart from coordinating shipments, also provided advice to the collection centres and forwarded transport data to the THW's logistics headquarters in Hilden, which is the city from where donated material was shipped off to Kyiv to be further distributed across Ukraine (KulturGutRetter 2023b).

In this case study, archaeology has shown two of its faces; one where it is being used for evil and destructive forces, and one where it is used for good and protective forces. However, armed conflict still remains a difficult topic for archaeology to handle as its relationship with armed conflict is a long and troublesome one, with many injustices and ethical dilemmas to consider (Clack 2020). This includes the armed conflict of Russia and Ukraine, a conflict that can easily develop into something similar to a cultural cleansing, which is why it is of utmost importance to save the cultural heritage in order to prevent a nation's identity to be eradicated.

6.1.3 Archaeology and Data Collection

The Anthropocene, our current geological epoch, in which humans have become the dominating and largely destructive force shaping global environmental change to near apocalyptic notes has garnered much recent

attention in regards to how our society will either collapse or adapt to the upcoming environmental changes. Within cultural heritage management, the looming threat of sea levels rising and coastal floodings, forest fires and drought and its impacts on archaeological resources and cultural heritage sites, has also garnered much recent attention in regards to preservation and risk management protocols (Riede 2017; Peres & Deter-Wolf 2018). As weather-related events become more and more common, the need for published case studies of response efforts and further research within the area will become crucial in not only archaeological site management and planning, but also in general disaster response (Peres & Deter-Wolf 2018).

This is where archaeological data collected at former disaster scenes can help us prevent casualties in a disaster of best-case scenario, or in a worst-case scenario lessen the damage that can be done by, for example, an earthquake. The information learnt by studying past calamities, as well as contemporary ones, can be fed into preparatory scenarios that is of great use for disaster research today, but also for preventative measures in the case of future extreme events (Riede 2017). However, a new report by the *International Science Council* (ISC 2023) shows that the world is not doing enough to prevent mass fatality disasters wherever it may be possible to do so. Their report shows that there is a devastating lack of long-term planning and investment in the needed research, which in turn has put the world off track from reducing the impact that natural disasters have on a society. Victor Galaz, researcher at *Stockholm Resilience Centre* (SRC) and one of the report's co-authors says; *"Risks are outpacing our capacity to anticipate, manage and reduce the impact of disasters as they cascade through people's lives, livelihoods, build infrastructure, environments and socio-economic systems."* This is worrying, because during the past 30 years there have been more than 10 700 disasters worldwide that affected more than six billion people. Many of these could have been eased with adequate systems for monitoring disaster risks or by building resilience (ISC 2023; SRC 2023). This is where archaeological data can be of great help. Both archaeological and historical data can be effectively used to modulate the resilience efforts by offering historically informed and evidence-based information on both the geophysical, as well as sociocultural parameters of past extreme events that, critically, retains a great deal of immediacy and intimacy. By using archaeological methods one can both record and assess the damage patterns done to an area affected by a disaster by tracing the geological changes in the ground and comparing those to the maps and city planning of an area. Apart from that, archaeology can also contribute to a balanced understanding of the relationship between humans and the environment (Bagwell 2009; Riede 2017). As it stands now, there is no reason as to why the information on past disasters and on past vulnerability that can be collected

from archaeological excursions should not be used more pro-actively as part of future research, resilience building and measures of living sustainability (Riede 2017).

Data collection from disasters can come in other forms as well, not only in the form of damage and risk assessments in case of future disasters in the same area, or for the data to be applicable in other parts of the world where similar disasters can strike. It can also come in the shape of forensic analyses of deceased individuals and the trauma done to their bodies, as both trauma and stressful events are visible in our bodies even after death. Bioarchaeologists view these human bodies found at mass-fatality disasters or at mass graves as a type of life-recording device, documenting patterns of nutrition, migration, violence, social status and cultural practice, that later on can be analytically observed in a lab. The knowledge gained from this can then be used to understand what happened and how people either died or survived a disastrous event. The same type of procedure can be performed on both ancient and pre-modern bodies, which in combination with the analyses done on the more recently deceased can be used to research different methods of disaster prevention and resilience for our contemporary society, as well as the future (Kurin 2021). These studies of the human body and the taphonomic changes that occur in our bodies after death gives a clear idea on when an injury was sustained and whether it was that specific injury that caused a person to die or not. This knowledge is especially important to know in the terms of a mass-fatality disaster, since it adds to the necessary data of figuring out what happened. One important taphonomic inquiry to have in mind is that of the timing of sustained alterations to human remains found at a disaster scene, not least in terms of whether bone fractures or puncture wounds, as well as head traumas, were caused by peri-mortem or post-mortem taphonomic processes (Alfsdotter 2021; Kurin 2021). The value of forensic-anthropological and forensic-archaeological contextual, methodological and theoretical studies has produced valuable knowledge that in turn has proved to be highly beneficial in both forensic and humanitarian endeavours around the world. In relation to disaster archaeology and mass-fatality disasters, as well as armed conflict, this value manifests itself as a continuous development of different means used to both ease and advance emergency relief for disaster-struck areas. An example of this is the development of the *Mass Identification Manager* (MIM) used by the *Korea Disaster Victim Identification* (DVI) team. Although currently only being in use by police and other rescue personnel in South Korea, it shows tremendous promise for use in mass-fatality disasters such as the 2014 sinking of ferry MV Sewol and the 2022 Itaewon (Seoul) tragedy during Halloween celebrations (Chung et.al. 2015; Alfsdotter 2021; Kurin 2021).

Prior experiences show that the amount of data related to mass disaster victims or mass graves are usually too large to collect or to compare. The MIM module was thus developed in order to make the process of data collection in a mass-fatality disaster both faster and more efficient, both in the field during the process of recovery (forensic archaeology) and later in the laboratory or morgue. Victims of a mass-fatality disaster are often very difficult to identify due to extensive trauma, fire and other modifying forces associated with disaster events. Depending on the scale of the disaster, the remains may also be in advanced stages of decomposition by the time workers can extricate them from the scene. In this case knowledge of the taphonomic processes, as well as the MIM module, can be of great use for the workers who are tasked with the difficult assignment of collecting the scattered remains of a disaster scene (Chung et.al. 2015; Emery 2020). In extreme cases, bereaved family members cannot be expected to provide reliable visual identifications. Instead, one must use appropriate scientific practices in order to identify the deceased individuals (Emery 2020), in which case forensic archaeological field methods can be of great help for the responsible lab technicians and forensic anthropologists who will be performing the tests.

It is increasingly accepted and advocated for that interdisciplinary collaborations are used, both in the excavation process, but also during the process of examining the collected material. This enables an accurate recognition of otherwise difficult to interpret traces of disaster patterns in the affected area. With this information new practices, software and methods development, as well as new approaches, can be utilised for devising public disaster prevention measures. It can also be used to inform future plans of such eventualities (Okamura et.al. 2013).

6.1.4 Disaster Risk Management

Related to disaster archaeology and the work to prevent future disasters from happening is that of *disaster risk management*. One may argue that what has been discussed in this thesis up until this section is not feasible without it. And since it is closely related to the work of managing cultural heritage sites, it would be remiss of me not to include it in this thesis, especially since it is something that will be further developed as climate change continues to threaten our contemporary society.

Heritage at risk is something that evokes and engages the future; taking responsibility for endangered goods should be a communal and unopposable agenda; something that everyone around the world can agree upon. What is

endangered must be saved, and what was lost is to be remade or commemorated (Holtorf 2017). Cultural heritage is almost daily confronted with different types of disaster risks. These can vary from natural hazards such as floods, fires and earthquakes, to human induced dangers such as acts of terrorism, armed conflict and arson. As a result, many cultural heritage sites have since the start of the 21st century been significantly damaged in one way or another (Participants of ITC2015 & Former Participants of ITC 2016). An example of cultural heritage that for the past twelve years has been confronted with various disaster risks is the rich and unique heritage of Syria, where many sites have already been either significantly damaged or completely destroyed. In an attempt to halt the on-going loss of cultural heritage in Syria, UNESCO launched a project funded by the *European Union's Directorate-General for European Neighbourhood Policy and Enlargement Negotiations* to help in these peacebuilding efforts. The project known as the *Emergency Safeguarding of the Syrian Cultural Heritage* aim to contribute to restoration of social cohesion, stability and sustainable development through the protection and safeguarding of heritage, as well as preparing post-conflict priority actions within the nation (UNESCO 2021; Interview 4).

The unfortunate case of what has happened in Syria is why every heritage site should already be equipped with a disaster risk management plan, alongside the normal cultural resource management plan already on site. Compared to its counterpart of traditional cultural heritage management, or cultural resource management as it is also called, disaster risk management takes on a slightly more tangible approach than its counterpart. While cultural resource management aims to manage and preserve our heritage for the future, disaster risk management on the other hand aims to prevent or reduce the negative impacts of disaster on heritage properties. Its primarily concern is reducing the risks to the values that are embedded in the property, as well as to human lives, other physical assets and livelihoods in the case of a disaster (UNESCO 2010; UNESCO 2023; Interview 4). Not only that, disaster risk management also works to reduce the underlying vulnerability factors that may already be present at a heritage site. These can vary from a lack of maintenance and inadequate management, to progressive deterioration and ecosystem buffering that may cause an unstable environment to further develop into a full-blown disaster (UNESCO 2010; UNESCO 2023). With this in mind, *ICCROM* has since 2013 identified both disaster- and risk management especially as one of the key programmatic areas, resulting in a 10-year multi-partnered initiative to build new capacities, as well as strengthening initiatives already on the field. ICCROM is the *International Centre for the Study of the Preservation and Restoration of Cultural Property*, founded during the aftermaths of the Second World War as a response to the widespread destruction and need for

reconstruction of cultural property. As an intergovernmental organisation their aim regarding disaster risk management is to reinforce policies that are already in place in at the so called "global hot spots" – areas that are more prone to disasters than others. This will be accomplished through a strategic effort involving actors from both fields; cultural heritage management and disaster risk management (ICCROM 2023a; ICCROM 2023c).

However, as climate change currently is the biggest threat to our contemporary society, the list of cultural heritage sites at risk, or that have already been damaged, is bound to be expanded upon as time moves on due to, for example, increased intensity and frequency of natural disasters. Many of the sites that are already on the list are located in the "global hot spots" near coastal areas that lay below sea level, which are especially vulnerable to hydro-meteorological events. Despite the risks that are already identified, as well as the increasing vulnerability, disaster risk management of cultural heritage sites does unfortunately not fall as a priority for most nations. This claim is supported by the fact that only a small percentage of *World Heritage Properties* have formulated a disaster risk management plan. An even smaller percentage have implemented them. The reason for this may be because of a low level of awareness among the stakeholders and the public, as well as limitations regarding the capacity to take protective measures within the management as a whole. To combat this one must expand the capacity of cultural resource management. This expansion must be done in cooperation with not only heritage managers, but also with the civic defence and emergency response agencies, as well as with the decision makers of a nation on how to reduce the disaster risks of any form to cultural heritage. The first step in doing this is to conduct site-based risk assessments and, where appropriate, develop disaster risk management plans. These plans must in turn outline the process of mitigation, emergency preparedness, response and recovery measures for various hazards that the properties are exposed to on a daily basis. The second step is to implement the disaster risk management plan on site, as well as continuously raise awareness among heritage managers and professionals, and to further advance the concerns regarding heritage in the wider agenda for disaster risk reduction (Participants of ITC2015 & Former Participants of ITC 2016). However, since cultural resource management represents the process of managing cultural resources, either in the form of conservation or salvage, as well as mitigating conflict over archaeological sites and places, it is ultimately their word that should carry the most weight in an argument regarding risk reducing efforts. On top of that, the different values of a cultural heritage site must be taken into consideration as well (Smith 1994; Participants of ITC2015 & Former Participants of ITC 2016; Buckley 2019).

To both ensure the safety of a sites' value for everyone involved, as well as continuously raise awareness of the risks a disaster can pose to a heritage site, ICCROM created their now flagship programme *First Aid and Resilience for Cultural Heritage in Times of Crisis* (FAR). This programme does not only train cultural heritage workers, it also builds knowledge, creates networks and increases awareness, as well as informs policy with the universal aim to reduce the risk of disaster for both tangible and intangible heritage and their associated communities. FAR has since its beginning in 2020 both served and engaged up to 122 countries by offering advisory services regarding the protection of cultural heritage before, during and after a disaster or a conflict. The programmes' motto – "*Culture cannot wait"* – is grounded in the belief that we are able to build both peaceful and disaster-resilient communities by integrating cultural heritage into the work of disaster risk reduction on top of the humanitarian aid, peacebuilding and climate action (ICCROM 2023b). By using both the cultural and natural heritage, the negative effect a disaster can have on an affected community can be reduced simply by using what is already there. For example, the traditional knowledge systems already embodied in the physical planning and construction, as well as local management systems and ecology, can not only prevent or mitigate the impact of a disaster, it can also provide sufficient coping mechanisms for a community in distress post-disaster. As cultural heritage sites also often play the role as well-known landmarks, they can also serve as a safe haven for the affected community as they wait for their temporary relocation during emergency situations (UNESCO 2010; ICCROM 2023b; UNESCO 2023).

6.2 Emotional Difficulties And How To Deal With Them

This section incorporates the results of my survey and of the interviews in combination with literature studies with the focus on how the emotional aspect can affect the archaeologists out in the field, and how they handled the situation.

6.2.1 The Emotional Difficulties

When opening mass graves or dealing with the recently deceased following a mass-fatality disaster the associated sights and smells can cause people to have a strong negative reaction towards it. Although this reaction is more common amongst those who are not a part of the excavation and/or rescue team.

Reactions may vary greatly between guilt and sadness to anger. Sometimes the reactions may even result in violence towards the workers, which in turn endangers everyone in an already emotionally tense situation (Moshenska 2013). These are all natural reactions when encountering something horrific and/or unexpected.

However, it may sometimes be easy to forget the archaeologists' position and feelings in these types of situations, where the focus lay heavily on the victims rather than the worker. While this is not wrong in and of itself, the experiences and feelings of the one performing the difficult task is just as important as anyone else's, as they surely experience similar feelings as the victim's family when, for example, excavating a mass grave or a fallen building with trapped individuals underneath. An aura of professionalism however, should despite these emotional experiences be maintained at all times, as a public emotional outburst otherwise can disrupt the professionalism needed at investigations (Crossland 2011). As one may expect however, that is far from an easy task in highly unpredictable settings where anything can happen in a very short period of time. Forensic anthropologist Clyde Snow often told those who asked him how he could stand his line of work, and whether it did not get to him in the end, that *"of course it did."* Snow continues to tell us in a testimony that machinegunned children from a mass grave in El Salvador, as well as having to show a mother in Argentina the bones of her "disappeared" daughter were two of his most distressing experiences working as a forensic anthropologist. Despite the very obvious emotional difficulties of having to be the bringer of bad news Snow points out that no matter how difficult the task at hand may be, the community surrounding the area of an investigation would always lend a helping hand, whether it was physical help of excavating a mass grave or sharing food and drinks while cracking jokes – as if death were simply a part of life. And so it was, for each bone was a witness in the present. To his many students, Snow's advice was to always cry at night and to listen calmly to what the bones were telling them during the day ('Stories in bones; Clyde Snow' 2014).

Snow's experience and advice were perhaps more acceptable during the 1980's during his fieldwork in South America, compared to the modern standards and professionalism as advocated for by Zoë Crossland (2011) and Gabriel Moshenka (2013). However, a lot of the modern standards rests upon his legacy as a pioneer for forensic archaeology and anthropology. Despite the modern standards and a strong focus on ensuring a safe working environment for the archaeologists out in the field, including the emotional safety aspects, there are still few archaeologists who can do this type of work full-time in the same way that Clyde Snow did during his years of life, at least not without

serious consequences regarding their mental health. One archaeologist who could compete with Snow however, was Richard Gould. When asked how he and his team coped psychologically with the work, he replied: *"That is a really big issue. We make sure people never work alone at one of these scenes. We also make arrangements for counsellors to be present (at the scene). … I never know how I will feel about the next disaster. Disaster archaeology is incredibly rewarding, but it is stressful. One day I may have to stop."* Both Snow and Gould can be credited for their pioneering work regarding forensic- and disaster archaeology, but also in how they dealt with the emotional difficulties. Credit should also be given to them both for always making sure that their team could deal with the task at hand, as well as caring for the victims; *"We are very careful with how we treat human remains: our job is to do this with respect. It is a tough thing to deal with and it is not for everyone"* (Gould 2008; 'Stories in bones; Clyde Snow' 2014).

Some archaeologists however, have since their participation in disaster-related work reported signs of depression, anxiety and PTSD (post-traumatic stress disorder) amongst other things after their time out in the field (Moshenka 2013; Interview 1, 3 & 5). This is something that three of my interviewees mentioned in their interviews, that at some point in time the psyche and the mental well-being starts to deteriorate. To combat the risk of it becoming a much larger issue, it is important to take breaks from the fieldwork to work on something else, it does not even have to be related to what is typically defined as a disaster (Interview 3 & 5). At the same time though, most archaeologists claim that, despite risking both their own physical and mental health, that the work they perform on site is worth it after seeing the relief flood the survivor's faces after they can bring back something so simple like a broken cup, a plant or a photograph, and of course, in the case of a mass grave or a mass-fatality disaster; the remains of a loved one (Interview 3 & 5).

This is the case in both the excavations of The Club Atlético in Buenos Aires, Argentina, which was used as a detention and torture site during the Dirty War (1976-1983) of dictator Jorge Videla, as well as the excavation of Kurdish mass graves in Iraq, following the Anfal campaign in 1988 (Human Rights Watch 1993; Ferguson 2009; Kaleck 2016; The Kurdish Project n.d; Interview 3 & 5.). Kerrie Grant, a field archaeologist who helped excavating the Kurdish mass graves speaks out on the emotional difficulties she and her team encountered during the harsh field conditions in an article written by Heather Pringle (2009). Grant says that finding deceased children was one of the hardest things to deal with for everyone, especially after knowing the reality of how the bodies were dumped; *"At times I could see people freeze in the lab. They were having what we called a 'a moment'"* she says, referring to the

unpredictability of it all. Paul Rubenstein, a federal preservation officer for the *U.S. Army Corps of Engineers*, who was also interviewed by Pringle for her article tells us the story of his own moment of freezing, after having opened a body bag containing a little girl wearing a pair of plastic shoes known as jellies. Rubenstein's daughter had once worn a similar pair of shoes, which is what caused him to have his own moment. *"When you make this type of mental connection, that these people were not unlike yourself… It hits you very hard,"* he says, as he remembers the little girl in jellies (Pringle 2009). Even though both Grant and Rubenstein, as well as their respective team members, received rigorous training prior to the excavations, nothing could really prepare them fully for what was waiting inside the shallow mass graves. However, still knowing about the hardships and the emotional toll it had on the team, everyone still concluded that the meticulous work of excavating tiny bone fragments had been worth it, as it could bring the grieving families' closure, as well as justice for the victims. The state of "this is for the greater good" is what kept them all going, knowing that all their hard work would be worth it in the end, despite the risks associated with the case (Pringle 2009).

This is something that seems to be a common theme amongst almost every case of excavation in a disaster-struck area, or in the case of bringing justice to victims of crimes against humanity, which is something that my interviewees also agreed upon; that archaeology could be used for the greater good (Interview 3 & 5). Jennifer Trunzo, archaeologist at Augusta University (USA), sees the use for disaster archaeology in a way in which archaeological knowledge and methods are applied for the use of public service. This allows archaeology to give something back to the public that goes beyond just heritage preservation (Hoffman 2004). And in a way of its own, this is exactly what disaster archaeology does; it gives back hope and memories of something or someone that was once lost, while simultaneously giving answers to some of the most difficult questions; *"…it can definitely tell people if they should be mourning, rather than waiting for somebody to return that may never come home"* (Hoffman 2004; Interview 5).

6.2.2 Conflict of Interests

However, emotional difficulties do not necessarily always have something to do with the harsh reality of the excavation at hand, as proven by various mass grave exhumations in Zimbabwe. Here some of the difficulties arose due to a conflict of interests, or rather, a lack of communication and understanding between the two groups working on site; archaeologists from the *National Museums and Monuments of Zimbabwe* (NMMZ) and veterans from the

Fallen Heroes Trust of Zimbabwe (FHTZ), as well as spirit mediums (Chipangura & Silika 2019). Joost Fontein, anthropologist and author, briefly describes the dissonant nature of exhumations in Zimbabwe as something that caused a lot of friction between the archaeologists working on the site and the members of the FHTZ. The standard archaeological methods were often subject to the competing contestations of spirit mediums, church leaders, war veterans and others who each had their own perspectives, loyalties, interpretations and practices (Chipangura 2020). Feelings of frustration and annoyance thus arose due to the conflict of interests between the NMMZ archaeologists and members of FHTZ, who compared to the archaeologists wanted a quick recovery of remains, largely by using spiritually sanctioned methods rather than archaeological exhumation methods. As a result, proper archaeological exhumation methods that could have assured proper identification and repatriation was disregarded by the FHTZ (Chipangura & Silika 2019; Chipangura 2020). Archaeologists were in the end forced to adhere to the spiritual exhumation methods and heavy-handed political approaches used by the FHTZ. Human remains were dug up and put on display for the public to appreciate the atrocities committed by the colonial regime in an attempt to further the ruling ZANU-PF's political power (Chipangura 2020). This did not sit well with the working archaeologists, but due to the power dynamic, nothing could be done about it which understandably only fuelled the feelings of frustration and helplessness. The practice of using archaeology and human remains in political settings is unfortunately not exclusive to the Zimbabwe mass grave exhumations, as the political power such practices wield is far from small-scale (McGuire 2008; Chipangura & Silika 2019; Chipangura 2020).

6.2.3 Ethical Dilemmas

Archaeologists have traditionally operated on the assumption that they are not necessarily implicated in the representation and struggles of living people and their contemporary struggles, and that all such political engagement is negatively charged. This was due to the illusion that the subjects of archaeological study are dead and buried and that research goals are paramount (Meskell 2010). Today that is not the case as archaeologists often work in close proximity to living communities, both under normal circumstances but also under more extreme circumstances like, for example, during the aftermath of a disaster. With this, a concern for ethical approaches has evolved. Although both forensic and humanitarian efforts have the same end goal, sometimes tension between the two fields may arise due to differences in how things are handled, especially concerning the chain of evidence collected by forensic

archaeologists as it can easily become contaminated by, for example, other rescue workers' DNA (Meskell 2010; Crossland 2011). There is also a huge difference regarding how both fields view the deceased individuals, which has proven to be the biggest ethical dilemma so far in an already very difficult situation. While the humanitarian side wants to retrieve and return the remains to the surviving family members as soon as possible in order for them to properly grieve, the forensic side on the other hand encourages a view of the dead as evidence in the service of a greater societal good (Snow 1995; Crossland 2011). Neither side is more right or wrong than the other, which understandably creates the ethical dilemma of what to prioritize in a situation of great loss.

Continuing on the topic of the recently deceased being used in the service for a greater societal good, there are several ethical dilemmas to consider already. Archaeology has a whole battled this dilemma almost on a daily basis, but it seems to be an extra sensitive topic if the individuals are recently deceased rather than ancient remains. The definition of human remains however, differ from region to region. Although there is a universal agreement that human remains are the whole, or parts of, once living people from our own species – *Homo sapiens* – some countries exclude fossilised hominids, others exclude hair and nails, while yet others consider everything, including soft tissue and slides containing microscopic fragments, as remains (Clegg 2020). This makes the work of forensic, as well as disaster, archaeology a minefield of ethical questions and morals to navigate through, especially when the main aim is to perform the assigned task, whether that may be immediate repatriation or post-mortem analyses in a lab. Where should the line for what can be considered "the greater good" be drawn? Should it be drawn already at the extrication during fieldwork in order to return the deceased immediately to the grieving family members, or should it be drawn after the deceased individuals have submitted their witness statements? Neither statement is wrong, or right, as both can be seen as the morally right thing to do depending on the circumstances, thus creating a type of fox shears for the responsible archaeologists to escape from. This dilemma is not something that is entirely exclusive to individuals who passed away recently however, but rather it is something that archaeology as a field of research will have to consider for as long as human remains are used for research purposes (Clegg 2020; Alfsdotter 2021). There are also several questions of conflicting desires or benefits from this type of research, especially when the bodies come from mass graves as the community sometimes would rather forget that something happened at all than to have forensic archaeologists and human rights organisations come in and excavate the graves in the service of a greater societal good (Steele 2008).

Although the aforementioned, generally speaking, are the two most major ethical dilemmas that archaeology can face during research endeavours and data collection in the context of a disaster, it is far from the only ethical dilemma that can occur. Another major dilemma is that of whether it is right to continue archaeological fieldwork in an area with on-going armed conflict, or not. The death of Syrian archaeologist Khaled al-Asaad (see chapter 6.1.2 for more details) is one example of this, where it may not have been appropriate to do so considering the violent actions against archaeologists and other cultural workers by IS militants (Abdulkarim 2014; Gopalakrishnan 2021). Where should the line be drawn in this case? Should every type of archaeological fieldwork just stop whenever there is a conflict, or should it continue as usual? While there are very strict safety measures in place for working under uncertain circumstances, one does not automatically erase the question of whether it is the correct decision or not just by stationing out armed guards around the perimeter of an archaeological dig.

7 Conclusion

Archaeology, as well as archaeological theories and methodologies, can be applied in a wide array of contexts, including those of disaster aid and disaster prevention. And as climate change continues to threaten our contemporary society, disaster archaeology shows a strong future in regards to its own development as a research field, especially since climate reports show an increased risk of natural disasters, as well as political tension connected to these possible future events. This proves that archaeological methodologies should be utilised more in terms of preventative measures prior to a disaster, but also during the initial rescue phase at a disaster scene. The application of archaeological theories and methodologies however, depends on the context, meaning that the way in which archaeology can be used at a disaster scene varies depending on the situation. For example, if the disaster is caused by an earthquake, the archaeological methods utilised at the scene may vary from damage assessments of cultural heritage sites and pattern tracing of the urban landscape affected by the earthquake, to rescue excavations of both artefacts and people. In the case of armed conflict however, archaeology is forced to take a step back in order to avoid unnecessary risk-taking, while simultaneously lending its knowledge about documentation and excavation processes normally found in traditional fieldwork to the services of something that is seen as a greater societal good, i.e., documenting cases of violations against basic human rights in warzones. Archaeology is thus used for something that can bring justice to the victims of, for example, a hate crime. In terms of how archaeology can be used in a preventative matter however, one must look at the data collected by archaeologists at previous disasters. This data is invaluable for the researchers who continuously work to improve our society's resilience against different types of natural disasters in order to, in a best-case scenario completely prevent the disaster from happening, or in a worst-case scenario at least minimise the damage caused by it.

These examples are, of course, just a small percentage of what is discussed throughout this thesis. It is however, what I found repeated itself as the most utilised uses of archaeological theories and methods in regards to disaster aid of various kinds. I personally think that there is more that archaeology can contribute with, especially if we also consider the early definitions of disaster archaeology by Richard Gould; that it should be inherently victim-focused. By the looks of it, that seems to have changed during the past two decades from where archaeology was first used at a disaster scene. There is thus much that can be done in regards to how archaeology can be utilised in actual emergency relief work rather than making it a secondary option. I think it should be more included during the first phase of disaster aid in an affected area, just not in

regards to the cultural heritage sites, but also in terms of helping the victims in a more direct way. Several of my interviewees brought up instances of where they had helped the victims regain a small amount of hope, and thus start to heal from the trauma, by doing something so simple as giving them something that used to belong to them, that was found during rescue excavations of collapsed buildings. It could be a photograph or a small household utensil, but to them it was a small glimmer of hope in an otherwise traumatic experience. With this in mind, I think that archaeologists should be more involved in the same type of tasks performed by humanitarian organisations.

Regarding the emotional difficulties that may arise from working in extreme environments such as a disaster scene, and how the workers can deal with them, there are some things that I think is valuable to consider. The first thing being somewhat obvious, but I think it is important to know why you may want to work as a disaster archaeologist and what it may mean to you as a person. What I mean by this is that it is important to be aware of one's emotions; are you doing this because you want to help the affected community or are you doing it for other reasons? Although, I think a majority of the people will agree that they are doing it in order to help the community, I still think that it is of value to reflect over, especially considering that the work may cause irreversible trauma to your own body and psyche. Once out in field however, there are three main things that I think can ease the burden of working in harsh conditions a little. Firstly, is to never work alone; always work in a team of other people. This does not only make it easier to handle the difficult emotions that may arise, but it is also important in terms of general safety aspects; if something happens or someone gets injured during the work, they are not alone. Secondly, is to be open about one's feelings. Talk with the other personnel of the team; they are not there to judge someone for needing a break from what is happening, but rather to support one another in a difficult situation. I believe that this is possibly the most important part of disaster aid; to give moral and emotional support to those who may need it. Thirdly, is to connect with the community one is helping, as chances are that they possess a lot of valuable knowledge about the area, how it looked like before the disaster and where people used to live and/or gather. This also ties in with the aspect of being open about how one is feeling about something. What I mean by this is that, even though the community is traumatised by something horrible, it can also bring everyone closer together by allowing open communication between everyone involved in the emergency rescue work, as well as during the post-disaster recovery process.

However, I must also criticise the current academic approach to how feelings are discussed in articles about disaster archaeology. Both Clyde Snow and

Richard Gould were two individuals who, in a way, advocated for open dialogues regarding emotions where it was appropriate to discuss just that, and yet there is a very small number of articles regarding the topic of disaster archaeology that even touches upon the subject of emotions. I think that this needs to change. I think that there is definitely enough room for this type of discussion as well, especially if disaster archaeology is to evolve further as a field of research. In order to do this, I suggest a more open approach towards how both the emotional and physical difficulties is handled in a written context. There is a lot to learn from each other's experiences, and that in turn can be applied to future archaeological work in similar settings. But to get there we also need to discuss not only the mundane things, but also the emotional and traumatic aspects of archaeological disaster aid. Only then can disaster archaeology reach, what I think is, its full potential.

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Interview 1

This is the full interview with archaeologist Katsuyuki Okamura, from 2023-03-31. It was done in written form, as that is what worked best for our respective schedules.

"First, let me tell you my situation.

I am not a resident of Fukushima, but an archaeologist working for Osaka City, and I am one of more than a dozen researchers (including public officers) who were sent to Fukushima in 2013 for a year of emergency research prior to the reconstruction of Fukushima. So, I can only imagine the hardships faced by the residents, archaeologists and cultural heritage officers in Fukushima.

The biggest concern for us when we started working in Fukushima was the issue of radiation. I took part in an excavation prior to the construction of a motorway connecting Fukushima City and Soma City, and the radiation was relatively high. However, I myself soon became accustomed to the environment, partly because it was invisible."

1) What were the challenges of working at Fukushima, considering it had been struck by three different kinds of disasters (earthquake, tsunami and nuclear)?

- Although I did not participate myself, I believe that archaeologists and public heritage managers in Fukushima had a harder time rescuing cultural heritage damaged by the earthquake and radiation than by the tsunami. With buildings demolished and valuable historical materials about to be lost, they worked very hard while explaining the significance of "cultural assets" to the residents. It must have been particularly difficult in the radioactive area, as they had to rescue heritage while wearing special clothing to protect them from radiation. The content of this work has been the subject of many discussions and books.

2) Would you say that archaeology played an important role in the rescue work and restoration of Fukushima prefecture?

- If yes, in what way did it do that?

- Archaeologists and cultural heritage officers rather than "archaeology" played an important role in the rescue operations and reconstruction. This is

because they played a role in succeeding heritage, property from the past for future, and a number of excavations carried out in the affected areas have revealed more about the local history that was previously unknown. Concrete evidence of the past (material culture) and the past, HERITAGE is important for the preservation of the inhabitants' IDENTITY, their ability to live.

3) Aside from Fukushima, do you know if disaster/disaster-led archaeology has been used elsewhere in Japan?

- If yes, could you give me some examples?

- A major starting point for disaster-led archaeology in Japan was the Great Hanshin-Awaji Earthquake of 1995. Here, too, there were many cultural property rescue activities, and intensive investigation of archaeological sites by dispatched personnel. Also, although on a different scale, there were cultural property rescue activities in the Kumamoto earthquake in 2016 as well.

4) Since my thesis also looks at the emotional challenges that may arise from working in a high-stress environment such as a disaster zone, I would also like to ask you about your experience from this perspective. Was it challenging in any way (physically and/or mentally)?

- If yes, how did you cope with it?

- I did not have much difficulty myself, since I had been exclusively engaged in surveying sites in relatively low-radioactive areas. However, some of the dispatched staff entered local government offices, were engaged in work other than cultural property, just like the staff in the affected areas. They had a hard time and, some of them became mentally ill (PTSD) in the face of the severe situation of the tsunami-affected coastal areas.

Generally, working in the affected area is often more demanding at the municipal level than at the prefectural level. This is because they are closer to the local population. However, the degree to which this is the case varies from region to region.

I myself was very active in organising regular get-togethers, including with local archaeologists, to deepen our interaction, since all temporary staff live far away from their families and tend to be lonely.

Interview 2

This is the interview with Christoph Rogalla von Bieberstein, coordinator for the KulturGutRetter (KGR) project at the DAI (German Archaeological Institute) in Berlin. This interview was also done in written form, from 2023-03-17.

1) How did the idea for the KulturGutRetter project come about?
- From the realisation that the organisation of help for Cultural Heritage needs a personnel recruitment and material facilities that run "automatically" after a catastrophe. A spontaneous self-organisation of helpers and material is possible, but not reliable and consumes valuable time until the intervention.

2) What was the trigger?

- There were many causes: Looting of the National Museum in Baghdad, destruction by Taliban in Afghanistan and IS in Syria and Iraq, collapse of the Cologne City Archive, fire of the National Museum in Rio, floods in Dresden and Halle, and various other events in the international context.

3) What are the goals?

- To minimise or slow down and document the damage to movable and immovable cultural heritage immediately after the disaster in an operational period of max. 2 weeks through stabilising measures.

4) How does it work?

- Through trained teams of experts in disaster management and cultural property, which can be dispatched worldwide on the basis of an international request for assistance through the activation of the UCPM (EU Civil Protection Mechanism).

5) Is it only for archaeological artifacts or does it work for other artifacts as well?
- The area of application is all buildings and artifacts that are defined as cultural property by the country requesting assistance. Archaeological objects are just one category of many.

6) Can you give me examples where it has been used successfully?

- The underlying CH module for this has not yet been registered with the EU. It is planned to achieve this by the end of 2023.

7) In what ways has it been successful?
- The module is still in the trial phase and has not yet been operationally deployed.

8) Are there areas where it has not worked as expected?
- This question can only be evaluated by future planned exercises and a "real deployment".

9) What is the future of the project?
- The primary goal is to provide the EU with a German CH module for activation by UCPM. The secondary goal is interoperable cooperation with other CH modules from other CH countries during exercises and in the event of an operation.

10) Given the recent disasters (e.g., the war in Ukraine and the earthquake in Turkey and Syria), to what extent does or can KulturGutRetter help in these areas?
- Ukraine is not a disaster but a war. KulturGutRetter as a civilian organisation is categorically not intended for deployment in a war zone.
- The earthquake catastrophe was carefully observed by the KGR project in order to sharpen its own workflow in future crisis. KGR is currently still in the testing phase and is therefore not available for active operations.

11) Do you have personal experience working in a disaster area?
- Yes, e.g., Beirut 2021 and during the flood disaster in Germany 2022.

12) If so, in what ways do you think we can incorporate archaeology into the rescue efforts?
- The methods of archaeological documentation of burial areas and identification of objects can be transferred well to a catastrophe scenario. However, the methods of the criminal police in the area of securing evidence are just as good.

13) Is there a risk of doing more harm than good?
- No, if the areas of operation and procedures are clearly defined by standard operating procedures (SOPs).

Interview 3

These are the general interview questions used for the interview with archaeologist Henrik Lindskoug, performed over Google Meets, 2023-02-21. Due to technical difficulties, this interview cannot be shown in its entirety and will instead be presented by a short summary of what was discussed during it.

1. In what way do you think archaeology can be of use in an area struck by a disaster? (The disaster may be caused either by natural forces or by humans)
    a. What did you do?

2. What was your experience like?
    a. I assume it is not an easy task, so how did you cope with the demanding circumstances?

3. Do you think it could be beneficial to involve archaeology in the first-response rescue work in disaster-struck areas?
    a. Is there a risk that it could cause more harm than good?

4. With some recent disasters in mind (e.g., the war in Ukraine, and the earthquake in Turkey & Syria), what do you think archaeology/archaeologists can do to help?

Summary:

We discussed the use of forensic archaeology in Argentina and the creation of EAAF, who Lindskoug is currently working for. This gave me an opportunity to learn more about how EAAF in particular operates, but also how a regular workday out in field can be.

Apart from EAAF and other human rights organisations, we also discussed the previous work and experiences of Lindskoug, that was of relevance to my thesis. This includes the emotional aspect, as well as how Lindskoug thinks archaeology can contribute to emergency relief after a disaster.

Appendix 4

These were the questions used in the interview with Roger Negredo. This interview was performed over Google Meets, 2023-03-16. Due to technical difficulties, this interview cannot be shown in its entirety. Instead, it will be presented as a short summary.

1. In what way do you think archaeology can be of use in an area struck by a disaster? (The disaster may be caused either by natural forces or by humans)

2. What was your experience like?
    a. Note: Since you said you did not have any field experience, you can just tell me about the safeguarding of heritage in Syria instead for example.

3. Do you think it could be beneficial to involve archaeology in the first-response rescue work in disaster-struck areas?
    a. Is there a risk that it could cause more harm than good?

4. With some recent disasters in mind (e.g., the war in Ukraine, and the earthquake in Turkey & Syria), what do you think archaeology/archaeologists can do to help?

Summary:

We discussed Negredo's previous work and experiences from his internship at UNESCO Beirut office, especially in connection to the *Emergency Safeguarding of the Syrian Cultural Heritage* project. This provided valuable knowledge of what goes on "behind the scenes," in other words regarding something that is not necessarily active work out in the field.

We also discussed the emotional aspect of wanting to help everyone, but ultimately having to come to terms with that it is not possible to help absolutely everyone.

Apart from the aforementioned, we also discussed more general topics on how Negredo thinks archaeology and archaeologists can contribute to emergency relief work in disaster-struck areas.

Appendix 5

This is the interview with disaster archaeologist Leila Papoli-Yazdi. This interview was performed at Linnaeus University, 2023-03-10.

Please note, that parts of the transcription may not be correct due to the AI used by Scribbl Transcription.

1. **In what way do you think archaeology can be of use in an area struck by a disaster? (The disaster may be caused either by natural forces or by humans)**
    a. **What did you do?**

- I think that archaeology can work in two ways for the disaster. First is to help the people in some ways that I will later come back to, and the other one is a more fundamental way. So, the first one is that you can use your abilities, your skills to take people out of the debris because you know how to excavate; you know how to use the trowels, which many other people may not know. And even the people working in like, the Red Cross, sometimes they are not as skilful as we are in excavating, so immediately after a disaster, we can help the people. I mean the disaster, which ruins the houses after an earthquake or a flood, we can help the people to get rid of or out of the debris. It is one of the uses of our knowledge. And in another way, we can explore the patterns (of a disaster), and it is the thing I have done. Patterns can be classified into two ways; there are first things that people do during the first days of the disaster, and the second one is the long-term behaviours that they do against the disaster or to cope with that situation. And we as the archaeologists, because we can see or observe the speculated thematic order, we can collect the material culture and we can work on them, and we can explore the patterns. So, it is the thing that I think is one of the methodologies or the things that we as archaeologists can do. And maybe there are very few branches of humanities that can do the same thing.

- *(Bex, follow-up question); Aside from excavating and tracing the patterns of a disaster, is there, for example, mapping of an affected area too?*

- Yes, it can be all the things that we do in normal archaeology, so it can start with survey. Like, for example, I have and my team have, we have surveyed first for their own houses. And secondly, we choose the places to excavate. So, it is like any other archaeology. And third, we mapped it. So, we tracked all

these trenches and places that we wanted to excavate and finally we excavated. After the excavation, it was this process of the excavation that is focused on classifying everything. So, it was like a very normal archaeological process, but you can also use other techniques of archaeology. For example, ethnoarchaeology, which I have done as well. And you can also use experimental archaeology if you want. And I think that other methods and techniques can work from other branches of archaeology, such as contemporary archaeology or forensic archaeology can also be very useful.

- *(Bex, follow-up question); But then it is more for identification purposes, or does it have another purpose?*

- It can also be used for identification purposes yes, but forensic archaeology, when you see the scene of the disaster… Let us imagine that this is a house (*gestures towards an area of the room we are doing the interview in, pretending that it is a house to be excavated*), someone is dead there, and then you find, for example, the clothes of a person here. It helps you to document the disaster scene. And it is not only for mapping an area, but it can also help you see it from another perspective. Well, for example, you can imagine that the earthquake was a murderer. I have written an article with my colleagues, and the title of the article is "The archaeology of last night… What happened in Bam (Iran) 25-26 December 2003?[1]" So, it is about all the things that happened in the last night for like, I think five or six individuals in Bam (*Leila is referring here to the 2003 Bam earthquake in Iran*). All of them, they died, just on five o'clock am. But we reconstructed all the things that happened for them before that from the night before. Like, they ate something or some of them even had written some entries in their diaries. So, we had all these things and, in the place, we found these bodies, or I guess we can say the remains of the bodies. So, if you use forensic archaeology, you can just track all these things in a sheet, you can just put all of the information together and reconstruct the last minutes of these people. If they are not dead, you can just reconstruct the happenings of a place.

[1] I believe this is the article Leila is referencing to here, for those of you who are interested; Dezhamkhooy, M. & Papoli-Yazdi, L. (2010) The archaeology of last night… What happened in Bam (Iran) on 25-26 December 2003? *World Archaeology* vol. 42 (3), pp. 341-354. https://doi.org/10.1080/00438243.2010.497358

2. **What was your experience like?**
    a. **I assume it is not an easy task, so how did you cope with the demanding circumstances?**

- Yes, it is very emotionally difficult. Because you have emotions, then you have to interrupt. You cannot do like, do this thing for a very long time. For example, you should do it for one week and then work on something else like classification, and then come back to the field. But I can tell you that in the long-term you learn how to deal with your emotions. In the beginning, it is one of the most difficult tasks to do, because we as archaeologists, we are not educated on how to handle our emotions. For example, when we found the remains of a body or of a child, it is very hard. But I can tell you that I am now 45 and I am doing disaster archaeology, or different forms of disaster-related archaeology, from when I was 23. So, it is like 22 years (of experience), and I still have these traumas. You never really heal from that. But in the long run, you learn how to deal with it, not to experience nightmares anymore, to control your sleep. Yeah, it is a very hard task, but at the end of the day it is not something that you can control. It happens.

3. **Do you think it could be beneficial to involve archaeology in the first-response rescue work in disaster-struck areas?**
    a. **Is there a risk that it could cause more harm than good?**

- Yeah, my answer to this is positive. But there are again two things. First of all, is that we are very skilful. As I told you even, we are sometimes even more skilful than the dogs. Because you have the plan in your mind as an archaeologist; this should be their bedroom, this place should be the kitchen, but since it happened during the night time we should expect to find something or someone in this place (bedroom). I mean your mind, because as an archaeologist you have learned to categorise everything. So, it is very easy for you to find the people. But the second thing is that most of them, they do not trust you.

- *(Bex, follow-up question) What do you mean? Who does not trust us?*

- Like, the Red Cross, or the people who are in the section of risks or disasters. They are sometimes not taking us seriously because we are "just" archaeologists, and they are researchers and it is again, a very hard task to attract the attention of these people, to prove to them that you are right. And it takes a very long time. You need to write a lot, you need to speak with them a lot, and I think that finally it happens. But it is a very, very hard task because

they have to change the idea from the archaeologist who is working in the museum or excavating in a monument to a person who can help people.

- Is there a risk that it could cause more harm than good?

- Yes, because we as archaeologists, we usually use the techniques and equipment that is usually fine to excavate the dead bodies. So, I will strongly recommend the people, our colleagues, who want to work at a disaster site to accompany the people from the Red Cross, because then you can join together and use the different sources of equipment. It is very important. We cannot, you know, dig a place with a trowel when you just think that there are maybe some alive people, or even plants or pets, you should be very much aware. And I think that in this phase, the very phase after disaster, like two days after disaster, the archaeologist should not use their normal tools like a trowel. You need to be very much careful about what or how you are trying to remove the debris from a place. But after two or three days, most of the people who are alive have been taken out, then you can do your job freely and without any concern.

4. **With some recent disasters in mind (e.g., the war in Ukraine, and the earthquake in Turkey & Syria), what do you think archaeology/archaeologists can do to help?**

- So, the very first thing I told you is to categorise these things. The thing that you can do, when in the case of war, is very different from the thing that you can do in the case of an earthquake, it is fantastic. So, we are here, we are disaster archaeologists, we categorise them into like catastrophe and disaster. Usually, a cultural and a natural disaster. Actually, it is just a classification. In the real world, all of them are tied together. But it can help you. When it is the cultural disaster of war it is very, very dangerous and we usually need the help of others. Like, people from military sections. I have dug myself a bomb and I did not know, because it could just explode and kill myself, my colleagues and their work as that. So, in the case of wars, you need to be very careful. You need to be aware of the security things so you cannot do everything that you think is essential. First of all, you need the advice of people in the military section. There are bombs usually that have not been exploded. And even in the places from, for example, the Second World War, we have the same thing. There are bombs in, for example, Berlin, from the 1940s, and you need the people from the military section. So, it is the difference when there is war. When there is an earthquake, there is another thing and it start, you should be very careful about the urban plan. For both of them, you should collect

information before going to the field. About the urban plan, about the buildings and how safe those are. How many people used to live there? And I think the very important thing also is the social status of the people and their norms of life. Second one, is that you should know that it is a multi-disciplinary thing. We are the head of our archaeological teams when we are outside on the field in normal archaeology work, but we are only one person in these teams when we are in a rescue team and we should actually listen to these people from the military section, the Red Cross and so on. You should communicate with all these people to do your best.

The very important thing when you are working in a disaster, sometimes, is priorities. Sometimes, you know that there might be a person alive somewhere. But there are like 20 other people somewhere else. It is a very hard task, but you have to choose. And it is better to decide in a team, because then, after that, emotionally, it is like you cannot deal with it (*comment: if you were to decide on your own it would be harder to deal with the emotions*). So, it is good to be in a team to communicate with them and to decide, but I think it is in the first phase. In the second phase, the very important thing, as I told you, is to explore the patterns. Between the war and the earthquake, the patterns are different. You see the behaviours of people and the behaviours of material culture. So, when you work on them, you give them to the right organisation, like the Red Cross, or you publish them as articles. You can predict the future; you can foresee the future. If somewhere else, and what happens? How do people deal with it?

When I was watching the movies and documentaries from Turkey and Syria, I saw lots of similarities between the context I have been working in, like in Bam for example, or Pakistan and in Turkey. And so, you can help the people to be more careful about their future. And it is the thing, it is a kind of… I do not know if I can use this kind of word or not, a gift, we can give the people and the department sections and the Red Cross, from an archaeological perspective.

- *(Bex, follow-up question) If I go back to the feeling aspect, I just want to touch back on one thing. You said that you should not be working in an area or with the subject for too long. Do you think that there is a risk of becoming like, cold-hearted, like you become immune to seeing the horrors that are actually there?*

- I myself, or many other archaeologists, they have worked on a place for like 10 years, but I mean that when you are excavating, you need some interruptions and breaks. I think that the thing which happens is depression.

There is a very famous archaeologist, he works in Argentina, on mass graves. So, it is another kind of disaster related to wars and so on. And once everywhere in a conference, his presentation was about his own experiences and then, because there are hundreds of young archaeologists working for him, they are excavating these massive mass graves of like 5000 people. And his experience was actually very valuable, because it was like, helping us. And he said that you need always a therapist in your team. Because many of these young archaeologists and himself were in a cycle of overworking like 12 hours per day. And finally, he said that many of these people were very depressed and anxious, that they could not continue this task anymore, or like, they had to take a break for a few years. So, I have not seen myself, anyone who got like very cold. After never, it happens to be normal for you. Me and my friends, we have like 20 years of experience, and then still when you see a new disaster, you want to stop and cry. And you know, it is never unusual. So, for every person there are some obsessive things, some people, they are very much hurtful when it comes to children, elderly people, disabled people. For me personally, it is children and pets also. Because I think that they do not have even any understanding of what is going on around them. So, like in Syria and Turkey, for example, they had brought out cats from the debris, and you see that they are very anxious and they do not want to leave the person who has saved them because they have no understanding of what has happened. So, to me, it is, sometimes I have seen a cat or a dog and I will cry for a few days. But every person has his or her narrative, but it never gets normal, never. So, every time it happens you are cursing yourself. Why? Why is it happening again?

- *(Bex, follow-up question) Yes, I think it is easy to ask yourself the question of why, why is this happening. But like, it is also way too easy in a way, to blame yourself. Like, as a modern society, it is easy to blame yourself for something that is happening.*

- Yes, but the other thing is that you also have two sides of the story. So, one side is this very depressing side, but the other side is that, when you compare yourself with, for example, your colleagues who are working in the museums, you think that "okay I am doing something that may help a person." So, I can tell you that, I have excavated houses that only I could, or with my friends took out a clock or like a bowl or something from that house. And for the survivors, it is very meaningful. And you see, you know that their eyes are sparkling. So, this is only a bowl, but for them it is the memory of a home. Another thing is photos. They still like it, I mean now that we have cell phones, but like 10 years ago, 20 years ago, people had photo albums and these printed photos were very important. So, when you give that back to them, you know, from

the debris, you just save these photos, for you it was just a piece of photo, but for them it was their whole world, their memories and now a sign of hope. So, I think that it has two sides because of that. And there are things, for example, when you learn how to deal with these people. You have like, physician friends, you can communicate, you can write letters for this person or that person. You can introduce a person who is in need to a physician or to a doctor or something. And then there is this community that you feel is yours. You find yourself related to them. So, yeah, it is two aspects to the emotional side of this branch of archaeology.

- *(Bex, follow-up question) Like, you see the value in the smallest of things. I assume that, like giving the photo to someone that you found is, like, it lightens the burden a little? Like, you can see them become happy for this thing, this small gesture.*

- Yes, yes! And then you also feel happy. I have done it, this is my, this is the technique that I have learned for a long time and it can work. It can help a person to become happy. Just imagine if you save a person's cat or a dog or even a plant. So, I mean, because we just arrived, maybe usually two to three days after the Red Cross and the dogs have done their work, say that you may find the plants. It is a symbol, a sign of life. So, you know that life is reproducing itself, so, it has its own happy side as well. And for the affected people it is very meaningful. Even a plant when it is under the debris and it is alive. When something like an earthquake happens, I think that in the very first days and after that, the initial feeling is that death is very close to you. And you lose everything. So, these people who are the survivors, they need help finding the puzzle pieces to put the puzzle together. Then at the end of the day you have maybe still some lost pieces, but you have the general picture. So, it is like that, you just excavated a bowl or a photo and then you can give it back to them. And after a while you just listen to them, to their stories. I am not a psychologist, but always I found it as the first step of healing from trauma.

Appendix 6

These are all the questions used in the survey "*Towards an Archaeology of Disaster",* held through Google Forms.

1. In what way do you think archaeology can be of use in an area struck by a disaster? (The disaster may be caused either by natural forces or by humans)

2. If you have previous experience of working in a disaster-struck area, what was your experience? Was it challenging in any way (physically and/or mentally)? If yes, how did you cope with it?

3. With some recent disasters in mind (e.g., the war in Ukraine, and the earthquake in Turkey & Syria), what do you think archaeology/archaeologists can do to help?

4. Is there any comment you would like to make on disaster archaeology?

5. Once again, thank you for your time and cooperation. If you wish to see the finished result of this study, please leave your contact information (name + e-mail) below.