DIY Digital Storytelling in Archaeology:

a comparative study of narrative, immersive filmmaking, and gaming for pedagogy and public outreach

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Abstract

Archaeologists strive to disseminate their research to audiences through various mediums, often with limited time and funding available in Do-it-yourself (DIY) projects. However, there is a lack of established methodologies for the evaluation of the impact of DIY projects or the effectiveness of the media that archaeologists employ to disseminate knowledge about the past. This thesis employs a practice-based experimental approach with a strong creative element to develop digital media and a methodology to evaluate their impact on archaeological knowledge dissemination.

The archaeological storytelling media forms that were created in this research are a textual narrative, an interactive digital narrative (IDN), and a VR-video. The narratives are based on the Archaeology of Personhood model and combine osteological reports, archaeological evidence, and historical information. They recreate the life and death of the individual MYC_1V buried at grave V at Grave Circle A at Mycenae. This research uses a mixed methods design to analyse both quantitative and qualitative data in the form of surveys and structured interviews.

The key findings of the study are first, that Twine, and consequently IDNs, are the most suitable media for communicating archaeological research to audiences in DIY projects created by archaeologists with limited funding and time. Furthermore, the study confirmed the understanding that 360 filmmaking and VR-video are emotive media and thus can be used to emotionally engage audiences with the past. Lastly, the research reinforced the idea that archaeological storytelling is an effective way to disseminate archaeological knowledge, and consequently that the Archaeology of Personhood model, especially in a form of IDN, is an ideal medium to present information about the lives of people in the past.

The significance of the research's original contribution to knowledge is twofold: first, the thesis provides a novel methodology for developing and evaluating DIY archaeological projects with limited budget. Second, the research begins to decolonise the history of excavations at Mycenae by discussing Stamatakis' important contribution to Mycenaean archaeology, providing an example for decolonising cryptocolonial heritage.

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List of Accompanying Material

1. Excel file with the quantitative data (Sampatakou_206059511_Data_Spreadsheet.csv).

2. Mp4 file of the 360 film (Sampatakou_206059511_360_film.mp4).

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Author's Declaration

I declare that this thesis is a presentation of original work, and I am the sole author. This work has not previously been presented for an award at this, or any other, University. All sources are acknowledged as References. An older version of the textual story created for an osteology class during my MRes at the University of Nottingham has been the inspiration for the textual narrative in this research, however the narratives and the three media, and the consequent research and data analysis based on them were entirely unique and undertaken as part of the work towards this thesis.

Chapter 1 - Introduction

Towards a DIY Digital Archaeology for the people

This thesis examines do-it-yourself (DIY) digital archaeology and the use of digital media and storytelling for communicating archaeological research (Morgan and Eve 2012; Morgan 2015). DIY archaeology is understood in this thesis as archaeology where the archaeologist themselves incorporates creative practices to disseminate findings to the public, rather than relying on outside practitioners to disseminate their work. DIY is important in archaeological research and practice as in many cases archaeologists in the field need to quickly and effectively communicate what they are doing to engage the local community, to inform stakeholders about the progress of their research, to approach potential funding bodies and sponsors to assist with particular research expenses, as well as to tell other archaeologists about their research (i.e. Perry 2017, 2018; Richardson 2013). Therefore, both time and funding in many cases are likely to be rather limited or inaccessible (Perry 2017, 219; Beale and Reilly 2017a), and thus DIY archaeological practices can be valuable.

DIY archaeology remains relatively unexamined in the literature (Morgan 2015; Perry 2018). Yet, for centuries archaeologists have been using creative practices as both intellectual tools and aesthetic implements (Perry 2018, 217). Many archaeologists have commented that archaeologists have a responsibility to communicate their research to the public (i.e. Given 2019, 178; Deetz 1995; Praetzellis and Praetzellis 2015, 126). As Wickham-Jones points out (2019, 38): 'As an archaeologist, it is my job to report information about the past and interpret it for people in the present'. Fritz and Plog (1970, 412) have argued that 'unless archaeologists find ways to make their research increasingly relevant to the modern world, the modern world will find itself increasingly capable of getting along without archaeologists'. However, the relationship between interpretation and archaeological research has not been fully explored despite the fact that archaeologists regularly experiment with the creation of interpretive media in their research practice (Perry 2018, 217-218). Perry (2018, 218-219) argues that archaeologists lack essential skills in archaeological and heritage interpretation, which are crucial to understanding the evidence and communicating it. Silberman (2003, 16 as cited in Perry 2018, 219) warns that if our interpretations of the past continue to be 'soulless', and thus without any impact on audiences, other more compelling narratives will fill in the gap. Therefore, understanding the impact of the media we are creating for conducting our research and disseminating archaeological knowledge has significant value.

In this thesis, a DIY digital media project is considered to be one created *by an archaeologist* rather than by a non-archaeologist, i.e. a specialist or a professional (following Morgan's (2014) definition of archaeological film). Digital media, according to Bonacchi and Moshenska (2015, 5), have changed the ways that we interact with culture and heritage (see also Bonacchi 2012). New digital media and technologies have become a favoured way for communicating archaeological research to the wider public (Perry and Beale 2015), and it has been argued that they could change the way we think about archaeology (Morgan and Eve, 2012). Digital media can also be inexpensive, and thus can be easily and effectively utilised by archaeologists to widely share their work on the Internet (Morgan and Eve 2012, 524). Interactive media, such as hypertext narratives (Joyce and Tringham 2007), interactive digital narratives (IDNs) (Koenitz 2023), video games (Reinhard 2018), or digital maps (Watrall 2002), have been used by archaeologists in various DIY and non-DIY projects, in one form or another since the 1990s for public outreach (see for example discussion in Watrall 2002), with newer technologies including Virtual Reality (VR) (Morgan 2009, 2016; Eve 2012; Beale and Reilly 2017b; Graham et al. 2019), Augmented Reality (AR) (Eve 2012), or Mixed Reality (MR) (Eve 2014; 2017) emerging more recently.

This is not to suggest that collaborations in interdisciplinary projects between archaeologists and digital creators, artists, curators, photographers, illustrators and so on should be avoided. Interdisciplinarity and collaboration are appreciated and supported - this whole thesis is interdisciplinary and has collaborative elements. As Morgan and Eve point out (2012, 521), digital literacy and critical digital media creation should be opened up and not only done by heritage professionals. I would also echo other scholars' work on the need to recognise specialist roles as equally important and meaningfully interpretive as the archaeologist (see Perry 2017, 218-219; and discussion in Gardner 2017). Indeed, archaeologists need help to 'create, trace, understand, curate and archive digital things' as Morgan (2021, 1590) notes, but at the same time, it is important to know how to use tools to create (digital) interpretive media ourselves (Morgan 2009, 475; James 2015).

Creating interpretive media as an archaeologist to communicate research is important for many reasons. First of all, creating interpretive media helps archaeologists understand their own research, since they need to modify, adapt, and make their research accessible to non-specialists. This process alone is beneficial for the archaeologist and can lead to a better understanding of the project (James 2015, 1200; Perry 2018, 217; Morgan and Wright 2018, 145-146). Similarly,

the involvement of archaeologists in digital media creation has immense benefits for being able to communicate one's research apart from understanding their own research (e.g. Morgan 2009; Roussou et al. 2015). As James (2015) argues specifically about visual competence in archaeology - defined as 'the capacity to interrogate and evaluate images and visual media productions critically' (James 2015, 1190) - is a vitally important skill for the archaeologist, and the current lack of it needs immediate attention. Moreover, in DIY projects the mediator is absent (which in case of the involvement of professionals in projects as stressed above, their presence can also be beneficial; see also Galeazzi and Di Giuseppantonio di Franco 2017), and thus the information is not being interpreted by multiple people until it reaches the public, which limits the biases involved. Instead, the archaeologist can address their target audience directly (i.e. Opgenhaffen 2021). Interpretation is critical in public engagement with heritage and archaeology, especially to create a deep connection with the past, and therefore appreciation and consequent desire to protect it (Perry 2018, 217; Pujol and Champion 2012). Therefore, creating DIY archaeological projects is valuable for both the archaeologists and the audiences.

However, the impact of the media created in public engagement projects and thus the efficiency of the latter is rarely evaluated systematically (Perry and Beale 2015, Bonacchi 2012; Richardson 2014; Walker 2014, Galeazzi and Di Giuseppantonio Di Franco 2017, Ellenberger and Richardson 2019; see also Pujol and Champion 2012 on the evaluation of presence in cultural heritage). Most evaluation is done via grey literature by the students or the archaeologists who are creating the media in a DIY manner which are rarely published and thus the resulting methodologies are not generalisable. The lack of critical evaluation of archaeologists' practices is accompanied by a limited understanding of the different ways audiences interact with archaeology through digital media (Zuanni 2017). Therefore, more robust and systematic evaluation of DIY media for communicating archaeological research can lead to improvement in our own public outreach practices.

This thesis aims to fill these gaps by evaluating the impact of archaeological storytelling and digital media for communicating archaeological research. For this purpose, both analogue and digital media will be explored, with the prerequisite that the media must be created by an archaeologist with minimal funding and training, and without employing professionals to do the work. Therefore, a core aim of this research is to create a methodological framework for evaluating DIY archaeological projects.

This research is heavily interdisciplinary: from the methodology to the research design all the way through to the creation of the media and the data interpretation. It has been a wonderful challenge to bring all these different aspects together with the aim of creating something unique that contributes to archaeological media production and storytelling and forms the basis for future research. It is experimental practice-based research, the outputs of which are three media based on archaeological storytelling: a textual narrative, a Twine interactive narrative, and a VR video, all created by the researcher. The creation of the media incorporated aspects of (Bio)archaeology of Personhood and Public Archaeology, Postcolonial and Decolonial Theory, as well as Interactive Digital Narratives and Archaeogaming. The story which underpins the three media, was created by combining archaeological evidence and osteological reports, and uses as a case study the remains of the individual with the code name MYC_1V, buried in grave number five at Grave Circle A, a Bronze Age cemetery at Mycenae in Greece. The methodology of the research is philosophically underpinned by Pragmatism which allowed for a constant re-evaluation and adaptation of the research design in a fluid and flexible way. For the data collection, a Mixed Methods Convergent approach was used which allows for the gathering of both quantitative and qualitative data, with a stronger focus on the latter, which were then analysed using Reflective Thematic Analysis and further supported by the survey results. Therefore, it is an idiosyncratic (syn)thesis embracing interdisciplinarity research at multiple levels in order to effectively address the research questions. All these approaches are examined and discussed in detail in the following chapters.

Research Questions

This thesis addresses two research questions: How can archaeologists quickly and effectively communicate their research to the public without significant funding and with minimal training and what would be the best medium to do so? And consequently, what is the impact of different analogue and digital media on their understanding of the material? To investigate these questions, I created three archaeological stories, one analogue and two digital, with different levels of training and cost required to create them which are further discussed later on.

Case Study Topic

This research uses as its case study a particular individual, MYC_1V, buried in grave number five at Grave Circle A (GCA) in Mycenae, Greece. GCA is a Late Helladic I (LHI) (16th century BC) cemetery in Mycenae which contains six very richly furnished shaft graves. Grave five contained three individuals, and MYC_1V is the one found with the famous so-called Agamemnon's mask. The original excavations there were conducted in the late 19th century by Panayiotis Stamatakis and Henrich Schliemann under difficult circumstances which are described in Chapter Two. The skeletal remains were transferred to the National Archaeological Museum in Athens (NAM) after the completion of the excavations. They were re-discovered in 2003 after works at the museum as they have been misplaced (Prag et al. 2009, 232; Papazoglou-Manioudaki et al. 2010, 157), allowing for a new series of reexamination of the remains. Thus, there are recent osteological reports about the individuals buried in GCA. All these matters are discussed in detail in Chapter Two.

The story of the excavation at Mycenae is reflective of the notion of cryptocolonialism, which is central in this thesis and is explained in detail in Chapter Four. However, it is important to note early on what cryptocolonialism is and how the case study is related to it. Cryptocolonialism is a distinct form of colonialism, where the cryptocolonised country does not understand that is actually colonised by western powers who had constructed a national identity for that country (see Hertzfeld 2002, 2016, 2017 for an in-depth discussion). In the case of Greece to be more specific, the modern Greek identity was mostly constructed from the outside, by Europeans during the 18th and 19th centuries who idolised the ancient Greek past (i.e. the Athenian democracy or the idea of the Lacedaemonian warrior persona; see also Trigger 1984) and wanted to experience some of this glorious past through the ruins which were laying on the under-the-ottoman-rule Greek landscape. This led to aristocratic antiquarians to travel to the so-called 'Magna Grecia' (which includes parts of today's Greece, Italy, and Asia Minor) to discover antiquities which would reflect this glorious past. That consequently led to the construction of the Greek identity as the nation of the descedents of the ancient Greeks, a notion which was then used to revolt against the Ottoman empire and build a nation which would include in its borders all Greeks based on the standard 'triptych': common language, common culture, common religion. This is a discussion which is further expanded in Chapter Four, but this should give the reader an idea of what it means for Greece that it had its identity constructed and then the Greeks embraced this identity and perform under it since, making Greece a cryptocolony.

Cryptocolonialism is reflected in the relationship between Stamatakis, a Greek archaeologist who was appointed to supervise the excavations at Mycenae, and Schliemann, a rich German businessman with a passion for antiquities who funded those excavations. Again, this is further discussed in detail in the following chapter, Chapter Two, but it is important to note here that Schliemann was trying to discover parts of the Homeric world as it was depicted in the Homeric epics, despite those being poems and not historical sources. Therefore, he headed to Mycenae after excavating in Troy and illegally smuggling out of the country Priam's treasure, to find the graves of the 'Greeks' (the Achaeans in Homer's poems) along with Agamemnon, their leader. This is related to cryptocolonialism, since a western power (Schliemann in this case) constructs an identity, in that case the relationship between the Greek and the people buried in Grave Circle A, who we have little idea who exactly they were let alone them being related to modern Greeks. That led to Schliemann digging in a careless way, destroying the upper layers of later antiquities which he considered irrelevant to the past which he was trying to uncover. Stamatakis on the other hand, who was a Greek and an archaeologist, tried to preserve and carefully record all the antiquities despite their origin, as he perceived them as equally important, and not only the layers that an external power wanted to use to further support their theory and construct an identity. Therefore, Stamatakis is perceived as a resisting power against cryptocolonialism while at the same time, the Greek government with Schliemann's funding would proceed to the demolishing of the Frankish tower from the Athenian acropolis to restore the holy rock in its ancient glory, fully cryptocolonised and embracing the constructed identity. These are all further explored in the following chapters in more detail.

Aims of the research

The research has three aims. First, pedagogically, the research aims to communicate knowledge about the Aegean Bronze Age, specifically Grave Circle A (GCA). Communicating archaeological research accurately, authentically, and engaging is of utmost significance (Pujol and Champion 2012). For this purpose, I created a story which was then developed in three different forms: a textual narrative with footnotes, an interactive digital narrative (IDN) using Twine, and an immersive narrative as a VR video. Through the story, the users learn about the Bronze Age in the area as well as the history of excavations in the 19th century, and a series of reexaminations of the skeletal remains from GCA during the 21st century.

The second aim is to decolonise the history of the excavations at Mycenae and offer an alternative narrative to the colonial discourse that has been taught for years in Greek institutions and abroad. The excavations were conducted in the 19th century, a few years after Greece had gained independence, but remained under the influence of the Western industrialised and developed countries with various agendas. Colonialism is further explored in the following chapter as mentioned above.

The third aim of the research is to open up archaeological research to the public and refute any false ideas about the extent of archaeological knowledge, by explaining that archaeologists do not always have the answers about the past. It is an essential and ethical part of archaeological research dissemination to explain the limits of knowledge and allow audiences to make their own interpretations about the past (i.e. Hortolf and Högberg 2005; Hodder 2008). This is served in multiple ways in the story, and especially through the discussion of the reexaminations of the remains of MYC_1V, as well as through the interface of the three media which allow for clarity between which parts of the story are based on archaeological or osteological evidence, and which are fictive (after Wilkie 2003).

For the evaluation part of the research, a detailed methodology was developed, and it is presented in the following pages. The three media have been evaluated both in terms of addressing the research questions as well as serving the above aims of the research.

Researcher's Positionality

A core element of the research framework of this thesis is the embracement of subjectivity apart from creativity in practice-based research by acknowledging that the researcher is at the centre of the research (following Brown and Clarke 2006, 2019). This embracement comes with the responsibility to explain to the reader where the researcher stands, their potential biases, and what they bring into the research by providing them with a reflective report, the 'researcher's positionality statement' as is called in this thesis. Positionality, which is usually used in qualitative research, at its most basic level is a recognition that the social and political context of the researcher has an impact on the research (Day 2012; Gastaldo 2015; Waterston and Rylko-Bauer

2007). The way that a researcher perceives the social world largely depends on their position within it, therefore the way they approach, interact and interpret the research is affected by that (Campbell and Wasco, 2000; Smith, 2005; Rowe 2014; Holmes 2020).

My researcher's positionality statement can be found in Appendix II along with the literature which I used to create it. However, it is important to provide the reader with a summary of the main conscious biases that I carried with me when designing this research, collecting, and interpreting the data. First of all, I am a Greek archaeologist which arguably makes me feel closer to Stamatakis than to Schliemann, who I see as the representation of orientalism and western colonialism since he was not a trained archaeologist and bent the local rules and laws at the countries he wanted to excavate to conduct excavations in his own terms. Moreover, Greece as mentioned above, is a cryptocolony which is not widely understood or accepted by the Greeks first and then by the rest of the world which in my understanding makes the research of this thesis significant as it attempts to address the issue of how to decolonise cryptocolonised heritage.

I am a self-funded student and a first-generation person to finish school and attend university, which might seem unrelated but could potentially be linked to the fact that the focus of the thesis is on DIY archaeology rather than funded archaeological projects. The prerequisite of the three media is for them to be created by an archaeologist with minimal funding and training, to engage local communities, or stakeholders, and the public with their research. It is important to me for everyone to have access to archaeological research regardless of their status or funds. In Greece, archaeological research tends to be more closed, and publications of excavations sometimes take years to be done and for the reports to become available to everyone. There have been instances, especially in older excavations, that the field reports have been kept in the excavator's personal archive remaining unpublished and eventually go lost forever. I consider archaeology to be a public affair, and thus I would like it to be open and widely accessible.

Moreover, I am particularly interested in the ethics behind the handling of human remains by the archaeologists as well as in how we present death and dying of past people to wider audiences. Lastly, I am a prehistorian which means that the written sources which would explain social structures, or the everyday lives of past people are scarce and thus as prehistorians we tend to interpret prehistory based on limited sources and a great use of our imagination and critical thought.

Therefore, this background of me as the researcher at the centre of this research has affected the way I designed the stories to reflect issues of colonialism, handling of human remains, and

the struggle of the archaeologist to interpret the past and be certain about their interpretations. Moreover, since I consider that every research is inevitably biased and the process subjective, I chose to embrace this subjectivity and consequently chose a research framework that would allow me to conduct my practice-based research in a self-reflective way underpinned by the philosophical framework of Pragmatism. Additionally, the choice of my sample for the experiment was intentional. I experimented with three groups of participants from different countries: one group mainly consisted of either archaeologists or heritage practitioners and mostly from former western colonial powers; another group with people who were mostly trained in immersive and interactive digital technologies and from a former colony; and a group of non-archaeologists or heritage practitioners and without any training on digital technologies who were from a cryptocolony. I designed the surveys and interview questions with a focus on understanding the impact that the stories had on the users specifically on knowledge gain about the past (the Late Bronze Age at Mycenae in particular) as well as around these three key themes: colonialism, handling of human remains, and archaeological uncertainty. I focused more on the qualitative data that I collected from the interviews and from observing the participants during the experiment phases, and I interpreted them using Reflective Thematic Analysis which allowed me to be at the centre of the research as the researcher who interprets the data in a reflective manner. As mentioned above, the full positionality statement along with the methodology I followed to create it can be found in Appendix II.

Thesis Structure

Following this introduction, Chapter Two presents the case study of the research. In this chapter, the topography and history of the wider area of Mycenae and the surrounding cemeteries along with Grave Circle A are presented, as well as the history of the excavations. The relationship between Stamatakis and Schliemann, the two excavators at Mycenae, which is a core element of the story, is also discussed. Lastly, the reexamination of the bones in the 20th century is presented.

Chapter Three discusses the theoretical and practical background of the research. The chapter begins by explaining what archaeological storytelling is and providing the reader with significant genres and examples. Then, the core theories that have been used to create the media and act

as lenses to interpret the data are discussed: Archaeology of Personhood, Postcolonial theory, Decolonial theory and the notion of cryptocolonialism.

Chapter Four outlines the methodology of creating the three media in this research, along with the purpose and design of these three media explaining the plot, the characters, and the technical characteristics of the media. The chapter also discusses the research design, strategy, and the overarching philosophy which underpins the research.

Chapter Five discusses the experiment's design and implementation along with the data collection and analysis methods.

Chapter Six presents and describes both the quantitative and qualitative data. The quantitative data are presented in two main parts: first, through comparative tables between the pre- and the post-questionnaires, and then the chapter focuses on key topic areas from the post-questionnaires to understand which medium was more effective in knowledge acquisition. Then the qualitative data are presented in the form of a Reflective Thematic Analysis report, and thus the main themes are given, illustrated by quotes from the interviews. Lastly, the quantitative and qualitative data are presented in a merged way to highlight the impact of the media on the public.

Chapter Seven is the main discussion of the thesis. In this chapter, the results of the data analysis are discussed, analysing their significance and implications while addressing the research questions. In that chapter, the limitations of the research and suggestions for future research are also discussed.

Lastly, Chapter Eight concludes the thesis, considering how these finds may be used in digital archaeology. Four appendices follow the main body of the thesis: Appendix I contains the media created in this research along with information on how to use them. Appendix II contains material regarding the ethics of the research and the handling of the data, as well as all the necessary documents obtained to conduct this research. Appendix III contains the experiment material including the surveys and the interview questions. Lastly, Appendix IV contains the quantitative and qualitative data obtained during the experiment.

Summary

This research project assesses the impact of archaeological storytelling and digital media as tools for disseminating archaeological research. It adopts an interdisciplinary approach, encompassing various facets of methodology, research design, creative endeavours, and data interpretation. The study adheres to an experimental, practice-based research framework, which culminates in the creation of distinct media forms for conveying archaeological narratives aiming to understand the impact and effectiveness of these media regarding knowledge dissemination and consequently develop a methodology to evaluate DIY archaeological projects.

Chapter 2 - Background to the research

Case study: Grave Circle A, Mycenae

This chapter is a presentation of the case study of the research, which is the rest place at Mycenae where the individual MYC_1V was buried, which is Grave Circle A (GCA), a Bronze Age cemetery in Greece. The chapter also provides the necessary information regarding the 19th century excavations at Mycenae, as well as the history of the re-discovery of the skeletal remains from GCA in 2003. Moreover, it introduces the place and time period in which this individual lived and died, as well as the history of the excavations and research undertaken on the skeletal remains.

The chapter explores the three time periods that feature in the story. Osteological and archaeological evidence from the Late Helladic period is used in the story for the three media to recreate the life and death of this individual, and this evidence is described in this chapter. The 19th-century excavations by Stamatakis and Schliemann are also described, as is the rediscovery in the early 21st century of the skeletal remains and the consequent reexamination of them. The chapter is an important starting point for the reader to understand key information about the DIY project, such as information about the time and place where MYC_1V, the main character of the stories, lived and died, as well as the relationship between the two excavators, Stamatakis and Schliemann, and the conditions of the rediscovery and reexamination of the skeleton remains. The relationship of the two excavators is viewed through the lens of cryptocolonialism, a notion that we encountered in the introduction of this thesis and is also further discussed in Chapter Four. The information about the rediscovery of the skeletal remains is also an integral part of the stories and reenforces the idea that archaeologists do not always have the answers about the past, and new methods or discoveries can shed light in older excavations.

MYC_1V was buried in Grave Circle A (GCA, a Middle - Early Late Helladic constellation of six graves with multiple burials. It would have been in use until Late Helladic (LH) IIA (1635-1470 BC), before it was enclosed by a circular wall during the Mycenaean period (LH IIIB, 1330-1200 BC) to form a *temenos*, a sacred enclosed space. Below is a brief presentation of the geography and prehistory of the area and specifically of the citadel of Mycenae.

Periods		Time frame	Abbreviation	Time span (B.C.)
Neolithic		Early Neolithic	EN	6800-5950
		Middle Neolithic	MN	5950 - 5450
		Late Neolithic	LN	5450 - 4500
		Final Neolithic	FN	4500 - 3100
EBA		Early Helladic I	EH I	3100 - 2650
		Early Helladic II	EH II	2650 - 2200
		Early Helladic III	EH III	2200 - 2100/2050
MBA		Middle Helladic I	MH I	2100/2050 - 1900/1850
		Middle Helladic II	MH II	1900/1850 - 1700
LBA	Mycenaean period / Mycenaean century	Middle Helladic III	MH III	1700 - 1600
		Late Helladic I	LH I	1600-1500
		Late Helladic IIA	LH IIA	1500-1450/1440
		Late Helladic IIB	LH IIB	1450/1440-1425/1390
		Late Helladic IIIA1	LH IIIA1	1425/1390 - 1385/1370
		Late Helladic IIIA2	LH IIIA2	1385/1370 - 1330/1300
		Late Helladic IIIB1	LH IIIB1	1330-1250/1235
		Late Helladic IIIB2	LH IIIB2	1250-1200/1190
		Late Helladic IIIC Early	LH IIIC Early	1200/1190-1130
		Late Helladic IIIC Middle	LH IIIC Middle	1130-1090
		Late Helladic IIIC Late	LH IIIC Late	1090-1060

Legend:

- ⬛ (grey) Use of Prehistoric Cemetery
- ⬛ (purple) Use of Grave Circle B
- ⬛ (yellow) Use of Grave Circle A
- ⬛ (green) Citadel fortifications
- ⬛ (red) Extension of the walls to include GCA
- ⬛ (blue) Gradual decline
- ⬣ Burial of MYC1V

Table 1. Pre-historical chronology of mainland Greece created by the author based on multiple sources discussing Late Bronze Age chronology such as Manning 2010, Bonnier et al. 2019, Furumark in Wace 1953, and after consulting Dr Dickinson.

Topography

Mycenae is located in the Argive Plain in the Peloponnese, a peninsula in southern Greece. The Argive Plain is in the eastern part of the Peloponnese on the Gulf of Argos (Figure 1) (Jahns 1993, 188). The plain is coastal and occupies an area of 243 km^2, enclosed by mountain chains to the north, east and west, while to the south it faces the Aegean Sea as seen in Figure 1 below. The plain consists mainly of alluvial deposits dating back to the Bronze Age (Jahns 1993, 188). The coastline of the Argolid Gulf shifted multiple times as a result of post-glacial melting and alluvium deposits (Zangger 1993, 83-84).

During the Holocene, the sea level rose to its highest point in c. 2500 BC (Jahns 1993, 188). The coastline was much closer to the citadel of Tiryns than the present-day coastline, and thus Tiryns must have been the main port to the Argive plain (Maggidis and Stamos 2006, 3). The main places can be seen in Figure 1 below. The regression commenced in the Bronze Age due to the alluvial deposition of sediments and the coastline took its contemporary formation in approximately 1100 BC (Jahns 1993, 188). In the east/northeast of the citadel of Mycenae, a fault (2-4.5km in length, 1.5m in width, and 3m maximum vertical displacement) has been located, demonstrating traces of repeated reactivations in the past (Papanastassiou et al. 1996, 191-192) leading to significant seismic activity in the area (Maggidis 2006).

Figure 1. Google Earth imaging of Peloponnese. With the red dot is the Acropolis of Mycenae. Beneath is the Gulf of Argos. Eye at altitude: 273.28 miles.

The citadel of Mycenae in its final form occupies an area of 30,000 m^2 surrounded by a 900m fortification wall (Maggidis and Stamos 2006, 3). It is situated on a hill 40-45m above the Argive Plain and 278m above sea level (Iakovidids 1983, 23). The citadel is protected from the north, east and south by two mountains, Profitis Elias to the north (805m) and Zara to the south (660m), whose steep slopes prevent access into the citadel (see Figure 2). The west side of the citadel is the only way in and out (regarding the date and sequence of events related to the expansion of the fortifications at Mycenae, see Wardle 2003; 2015). Additionally, it is supplied with fresh water by the Perseia spring (Maggidis and Stamos 2006, 3), and thus the occupants would have access to water. Therefore, the citadel of Mycenae is situated in a strong geopolitical position overlooking the Argive plain to the south since it is positioned on an elevation, naturally protected by all three sides with the addition of strong fortifications on the north, and is also supplied internally by water.

(Pre) History of the area

The Argive Plain has most likely been inhabited since the Palaeolithic period (see Table 1 above for a detailed presentation of the chronology of the area). In the citadels of Mycenae and Tiryns, located on the plain, there is evidence of occupation in the Neolithic period (approximately 6000 BC), though it is unclear whether this occupation was continuous. Palynological investigations have shown a period of open deciduous oak woods, which could be an indication of human activity in the area (Jahns 1993, 187).

During the Early Helladic Period (EH) the development of small-scale societies in various mainland regions is documented. The complexity of those societies was hindered during the late EH period and the 'Coming of the Greeks', meaning the Indo-European speakers, the precursors to the Mycenaeans of the later phases of the mainland Bronze Age (Pullen 2010, 19). During the Early Helladic period (3200-2150 BC) there is evidence of occupation in Mycenae and nearby Tiryns, and in the EH II phase, the latter was an important centre with a major building (the 'Rundbau') (Weiberg and Lindblom 2014, 390). Mycenae has clear evidence of EH III occupation (Dickinson 2022, personal communication).
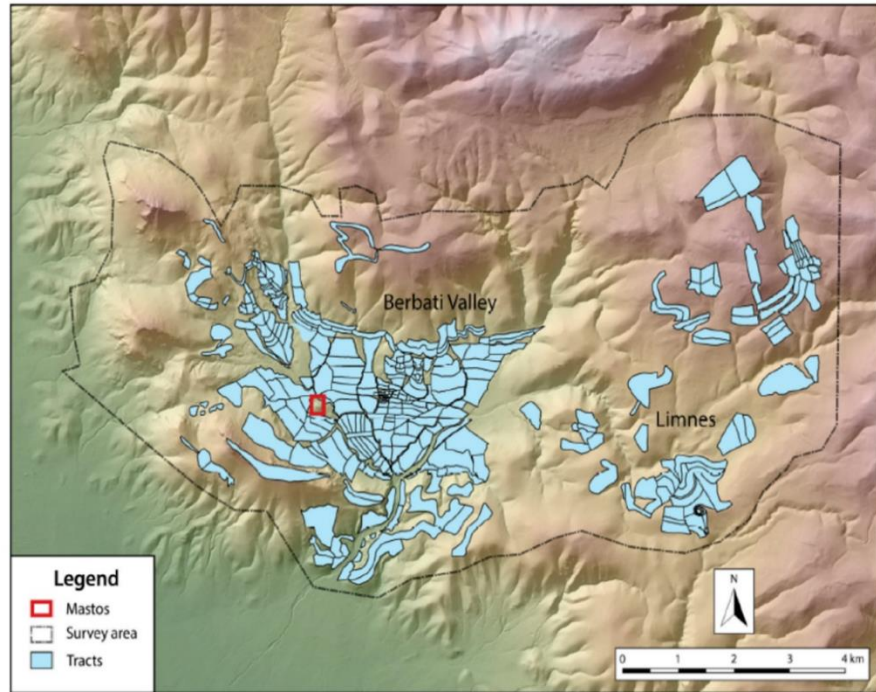
Figure 2. The Berbati-Limnes area (Bonnier et al. 2019, fig. 2).

After the collapse of the Early Helladic culture, a period that archaeologists classify as Middle Helladic (MH) began, during which most of the mainland was depopulated (Wright 2008, 230). The MH period spans and overlaps with earlier and later phases, i.e. Early Helladic III, Middle Helladic I, II, and III, as well as Late Helladic I (Bonnier et al. 2019, 74; see Table 1 above), and thus it is not a uniform period for all the mainland regions. It is widely accepted that there is no break between the Middle and Late Bronze Ages on the Mainland, but there is rather 'a steady and gradual evolution' towards LH I and II (Wace 1953, 85). According to Buck (1966), MH covers the period between 1900-1550 BC, and Manning (2010) identifies its beginning at 2100/2050, as seen in Table 1 above. The major centres of the Argive plain during the Middle Helladic period were Argos and Lerna, but the former may have declined after MH II, and part of the population may have moved to Mycenae (Wright and Dabney 2020, 3). Mycenae seems to have grown suddenly in importance in MH III (1700-1550 BC), as indicated especially by the contents of the Shaft Graves of the two Grave Circles (c. 1650-1500/1550 BC). Shaft graves were deep built graves usually rectangular designed to be reopened. The lower part of the shaft was built or cut out of the rock, and then a second level above it would be filled with clay and earth. The shaft grave was covered by a roof usually supported by timbers (Cavanagh 2008, 329-330). Both Grave Circles at Mycenae contained shaft graves and thus the whole period is characterised by this type of grave, in contrast to the later one, the Mycenaean, which is characterised by tholos tombs

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(Cavanagh 2008, 334). Tholoi (plural for tholos) where large round domed tombs constructed with rectangular rocks similar to the cyclopean fortifications. The consisted of the domed tomb, a wide road leading to the entrance of the dome, which is called 'dromos', and normally they were entirely covered with a pile of earth creating a mount.

The Late Helladic Period (LH; 1600/1550-1060 BC; see Table 1) which is also termed as Mycenaean, is characterised by the development of mainland settlements, the widespread appearance of cemeteries, shaft graves and tholos tombs among other changes. The development is not uniform for all mainland regions but is considered reflective of 'a social structure evolving toward a lineage-based society' (Wright 2008, 238). Since the beginning of LH I in around 1550 B.C., Mycenae had become a wealthy and influential centre, taking the leading position from Knossos (Wace 1953, 88). For the early Mycenaean period (LH I-LH II), the evidence regarding the expansion of Mycenae derives from mortuary architecture (see Figure 3) (Efkleidou 2021, 27). This period, during which the stratification of the society has been completed (Wright 2008, 238), is characterised first by rich shaft graves which were still in use (LH I) and later by tholos tombs (LH II-LH III). Mycenae had no less than 9 tholos tombs dated to this period, most of which were early Mycenaean in their construction (LH IIA-B, 1435-1410 BC).
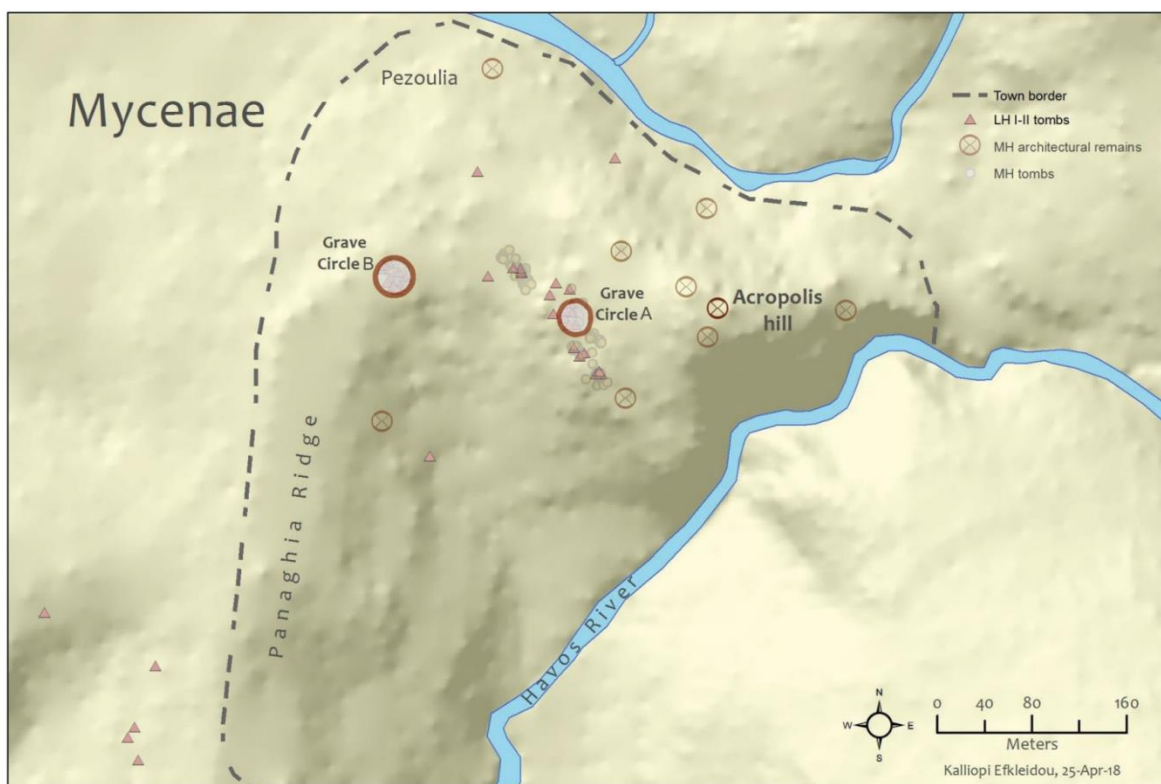
Figure 3. LHI and II period remains at Mycenae (Efkleidou 2021, fig. 1).

The LH IIIA2 and LH IIIB periods are characterised by large urban development in the Mycenaean palatial centres of southern mainland Greece (Efkleidou 2021, 27). In these periods, the citadel of Mycenae saw its first fortification of the Acropolis hill and the building complex known as Palace IV (French and Shelton 2005, 177). Cyclopean fortifications were also erected around the citadels of Mycenae and Tiryns from LH IIIA and extended in LH IIIB (arguably completed before 1270/1250 (Dickinson 2006, 20)). Both Mycenae and Tiryns expanded in the Mycenaean 'Palace period', and both suffered a series of damaging destructions, most particularly c. 1200 BC. Both continued to be occupied in LH IIIC until their final decline at the end of the Bronze Age, as seen in Table 1. However, Mycenae and Tiryns were never entirely abandoned. There was a significant LH IIIC Early phase for Mycenae followed by a similarly substantial Middle phase and a shorter Late phase of decline (Dickinson 2006, 13, 21).

Cemeteries

There are three main cemeteries of interest to this thesis in Mycenae: Grave Circle A (GCA) where MYC$_1$V was buried, the Prehistoric Cemetery, located outside of the Mycenaean walls which partly overlaps with GCA both in space and time as coloured in grey in Table 1, and Grave Circle B (GCB), an earlier cemetery which also contained some overlapping burials with GCA as marked in purple in Table 1. Collectively, the burial sites encompassed five familial generations during the period spanning from 1650 to 1500 BC. Notably, Grave Circle B commenced approximately half a century prior to the initiation of Grave Circle A, as seen in Table 1. In this research, only GCA is of interest, but it is useful to understand the association of the three cemeteries since GCA was not the first cemetery to be used in the area and GCA did not exist in isolation from other burials. However, the relationship between the people buried in each of these cemeteries or the reason for the inclusion of these specific six graves inside the Cyclopean walls in the Mycenaean era is yet to be confirmed.

Grave Circle A

Grave Circle A (GCA) (Figure 4, Figure 6) is located within the fortification wall and to the south of the Lion Gate, which is the main entrance to the citadel (for a detailed discussion on the finds, see Wace 1949). The first citadel wall was built in the mid-14th century (c. 1340, LH IIIA2) (Morgan 2005, 159). Around 1250 (LH IIIB), the citadel wall was extended to enclose the area of the six Shaft Graves (see Mylonas 1966, 19-33; Iakovidis 1983, plan 5; French 1989, 125; Wace and Stubbings 1954, 246). Therefore, the *peribolos*, which is the circular construction around the six graves enclosing them, is not contemporaneous with the Shaft Graves (Wace and Stubbings 1954, 246-247). The time difference between the last burials and the construction of the peribolos can be seen in Table 1. The *peribolos*, is considered to have been erected to enclose these specific graves and act as a *temenos*, an encircled sacred place (Wace and Stubbings 1954, 246-247).

Along with the extension of the fortification wall, a massive new gateway to the citadel was built, the Lion Gate, and a Great Ramp, which gave access to the palace passing directly by GCA (Morgan 2005, 159). According to Morgan (2005, 159), the addition of the gateway, the ramp and the city walls are indications that the aim of this refabrication was to make GCA the focal point, as it may have included the burials of the '[...] most esteemed, probably royal, ancestors' (Morgan 2005, 159; see also Wace, 1921-23, 122-5; Wace 1949, 62; Mylonas 1957, 114-21; 1966, 94-6;

Iakovidis 1983, 38-9). Later publications have challenged the notion of a single refabrication phase of the citadel's walls (Gates 1985; Laffineur 1987; 1990; 1995).

The exact sequence of the construction of the graves and the burials has long troubled researchers. The final burial(s) seem to have been in Grave I and are dated to LH IIA (Fitzsimons 2011, 84). Scholars seem to agree that Graves II and VI should be placed at the beginning of the sequence of construction, sometime in the late MH or early LH period (Wace 1949, 13; Mylonas 1957, 124; Mylonas 1966, 96; Dickinson 1977, 47-48, 50-51; Dietz 1991, 247-250; Graziadio 1991, 430-437; Mountjoy 2001, 8, 10; Fitzsimons 2006, 71-72 as cited in Fitzsimons 2011, 84). However, there is evidence for older burials in the area, possibly from MH III, but their association with the Shaft Graves is unclear and they were probably part of the Prehistoric cemetery (Dickinson, personal communication April 2022). The precise order of the construction of the rest of the graves in GCA varies from scholar to scholar, though it has been established that they were in use for no more than two generations (Dickinson 1977, 50). According to Dickinson (personal communication, April 2022), Graves III, IV and V (in which MYC_1V has been buried) form a group containing much richer goods than the other graves.

Figure 4. Plan of the site of Mycenae, showing the locations of GCA (no. 16) and GCB (no. 9) (Wace 1954, fig. 5.1).

Figure 5. Plan of GCB (Dickinson 1977, fig. 7).
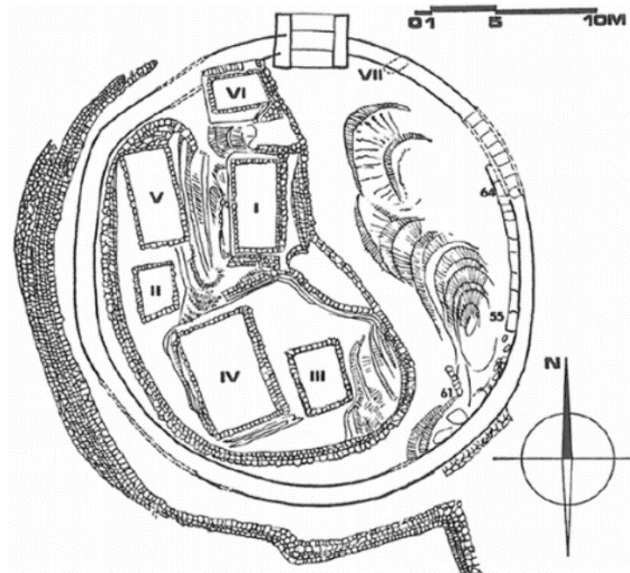
Figure 6. Plan of GCA (Mylonas 1966, fig. 19).

When the graves were first excavated in the 19th century, seventeen grave stelae were found (see examples in Figures 7 and 8) (Mylonas 1951b, 134). It has been suggested that these stelae were erected above the shaft graves along with small mounds of soil. However, this argument has been challenged and their initial use or position cannot be confirmed since some of these stelae were re-erected over Graves I, II, III and V when the *peribolos* wall was constructed in LH IIIB. Notably, nothing except an 'altar' was found over Grave IV, the richest and most used of the graves. This 'altar' has been described as a large oval structure measuring 13m on the north-south axis, hollow in the centre and has been interpreted as an 'altar' for libations (Gates 1985, 264-265) but it was not preserved.
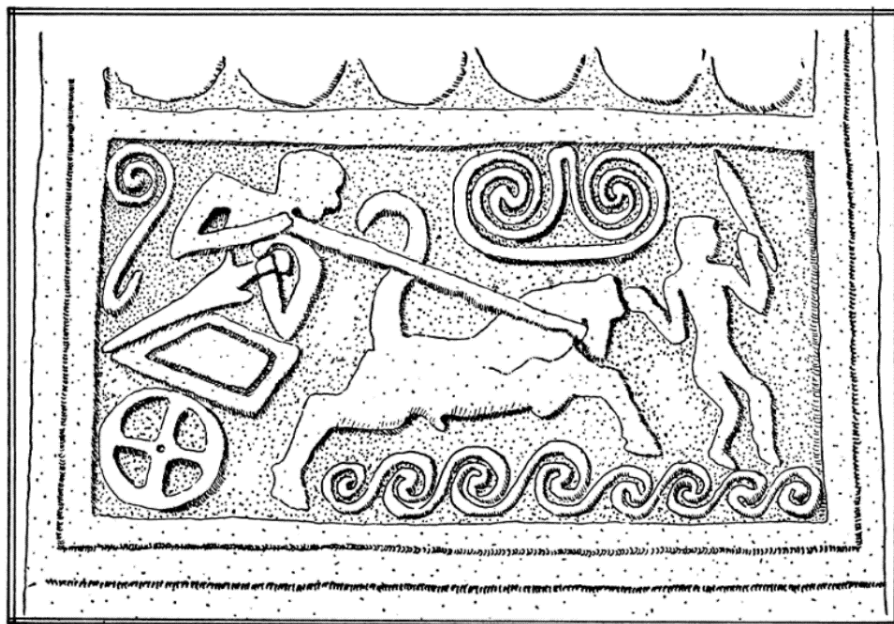
Figure 7. Stele no. 1428 (Mylonas 1951, fig. 2).
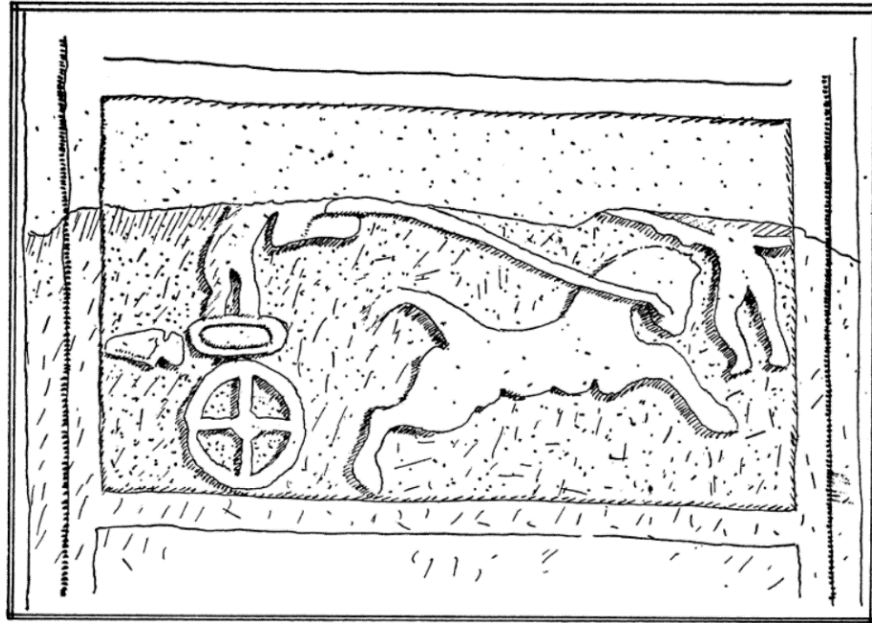
Figure 8. Stele no.1429 (Mylonas 1951, fig. 3).

The Prehistoric Cemetery

According to Wace (1980, 204), GCA seems to have been part of a prehistoric in use since Middle Helladic times (see also Gates 1985, 263; for a full report of the excavations of 1920-30 see Alden 2000). Morgan (2005, 160) also suggests that during the Middle Helladic period, the whole area of the so-called 'Cult Centre' was part of the Prehistoric Cemetery. The Prehistoric Cemetery was excavated partly during 1920-23 (see also Wace 1980). The chronological relationship of the burials between the cemeteries can be seen in Table 1.

The cemetery was located outside the citadel's walls, roughly between the Tomb of Aegisthus to the west and the South House to the southwest. Close to the cemetery, the contemporary Grave Circle B (GCB) is located. However, GCB is not considered to be part of the Prehistoric Cemetery (Gates 1985, 263-264). The burials in the cemetery date from MH through LH II (see Table 1). After this, there is a gap until a late use of the area for a LH III C pithos burial (see Wace 1950, 203-228). The abandonment of the cemetery c. 1400, according to Gates, 'marks a major change in the history of the town: the longstanding relation between the citadel and its cemetery was profoundly transformed' (Gates 1985, 263-264).

Grave Circle B

Grave Circle B (GCB) is an earlier cemetery in close proximity to GCA, located 160m to the west of the Lion Gate (Figure 4, Figure 5) (Mylonas 1955, 64). The cemetery was discovered in 1952 and excavated during the summers of 1952, 1953, and 1954 by the Greek Archaeological Society under the combined direction of G.E. Mylonas and I. Papadimitriou (for a summary of the excavations of 1952 see Mylonas and Papadimitriou 1955, 194-200). According to Mylonas (1955, 67), the graves from GCB contained a substantial amount of skeletal remains.

The circle encloses an area of approximately 28m dedicated to burials (see Mylonas 1955, 64-67). It is considered an important cemetery which marks the transition between the MH and the LH period. Almost all the original graves are likely to have been constructed in MH III, but several belong to LH I, meaning that most of the graves have been used between 1700 and 1500 BCThe cemetery was used once more, in LH IIA (1500-1450/1440 BC), for the construction of a stone-built grave which has the designation of its MH predecessor, Grave Rho (Mylonas and Papadimetriou 1955, 48). This is marked in Table 1 with purple to illustrate the time between this last burial and all the previous ones.

The last burials in GCB and the majority of those in GCA took place during the LH I phase (Graziadio 1988, 344). According to Graziadio, the entire burial sequence at the two grave circles, GCA and GCB, could have lasted for more than a century and could have covered four generations of people buried there (Graziadio 1988, 372). Harrell (2014, 4) suggests that the earliest interments in GCB were those in Graves Zeta and Eta, but it seems that there are several interments with less important goods, and some with no goods at all, from a similar period, e.g. graves Alpha 1 and 2, Lambda 2, Sigma (Dickinson, personal communication April 2022). Dickinson has suggested that GCB was still in use when Graves VI and II in GCA were used for the burials of their first occupants and the first interments took place in Graves IV, V and most probably III (Dickinson 1977, 51). In personal communication (April 2022), Dickinson suggested that burials continued in GCB for most of the period of GCA's use and that only the last burials in V (where MYC_1V was buried) and VI are likely to postdate the last in GCB, meaning that only the people buried in two graves in GCA were buried after those in GCB making the two cemeteries contemporary for a number of burials.

The relationship between the people buried within the older GCB and GCA is yet to be confirmed, and the same is true regarding the relationship between the people buried in the shaft graves and those buried in the tholos tombs. It has been suggested that the people who were buried in the

shaft graves were intruders (see Hammond 1967, Muhly 1979, Diamant 1988). However, this notion has since been challenged (e.g. Dickinson 1984; Hägg 1984, 120; Dickinson 1989, 132; Voutsaki 1999). Fitzsimons (2011, 77) argued that these were local MH people. The wealth found in the shaft graves has been attributed to an emerging elite group of people participating within a complex network in the Aegean world in the late-Middle and early-Late Bronze Ages (Graziadio 1988; Graziadio 1991; Dietz 1998; Voutsaki 1995; Voutsaki 1999).

History of Excavations and Research

History of Excavations at Mycenae

Mycenae was initially explored in 1841 by Kyriakos Pittakis on behalf of the Athens Archaeological Society. Pittakis conducted cleaning works at the Lion Gate, the Treasury of Atreus and the Klytemnestra tholos tomb (Iakovidis 2005, 163). The excavations at Mycenae were initiated by Henrich Schliemann in 1874-1876. Schliemann was a businessman and amateur archaeologist with a passion for Homer's world. He excavated GCA under the supervision of Panayiotis Stamatakis, the Ephor of Antiquities in the Archaeological Service (Dickinson 1976, 159; Prag et al. 2009, 235) and discovered five graves (see Schliemann 1880).

After the departure of Schliemann, Stamatakis continued the excavations at GCA, discovering a sixth grave. In January 1877, Stamatakis discovered 'Drossinos hoard', a hoard of gold vessels (Iakovidis 2005, 163) along with other objects next to a wall of the Granary House. At the end of the excavation works, the supporting wall of GCA was restored on the west and south sides, and the western half of the double row of standing slabs was reconstructed (Wace and Stubbings 1954, 244).

In 1886-1897, Christos Tsountas, Stamatakis' successor, continued the excavations with a focus on the citadel. He unearthed the *megaron*, a prehistoric palace, and other structures, and excavated five tholos tombs and numerous chamber tombs in the area (Iakovidis 2005, 163). In 1920, Tsountas, who was also appointed to the chair of Archaeology at the University of Athens during this time, agreed to the British School at Athens' proposal for excavations at Mycenae to take place under the direction of A.J.B. Wace. Wace continued the excavations and research in Mycenae with the British School, again focusing on the citadel, several buildings outside the fortifications and a number of chamber tombs. He produced many publications during the

excavations (1920-1957) (Iakovidis 2005, 164). Wace and Stubbings also undertook work at GCA, clearing the north-eastern sector of standing slabs and doing some minor digging at the southern end of the covering slabs still *in situ*. They also made a plan (Figure 9) and took photographs (Wace and Stubbings 1954, 244).
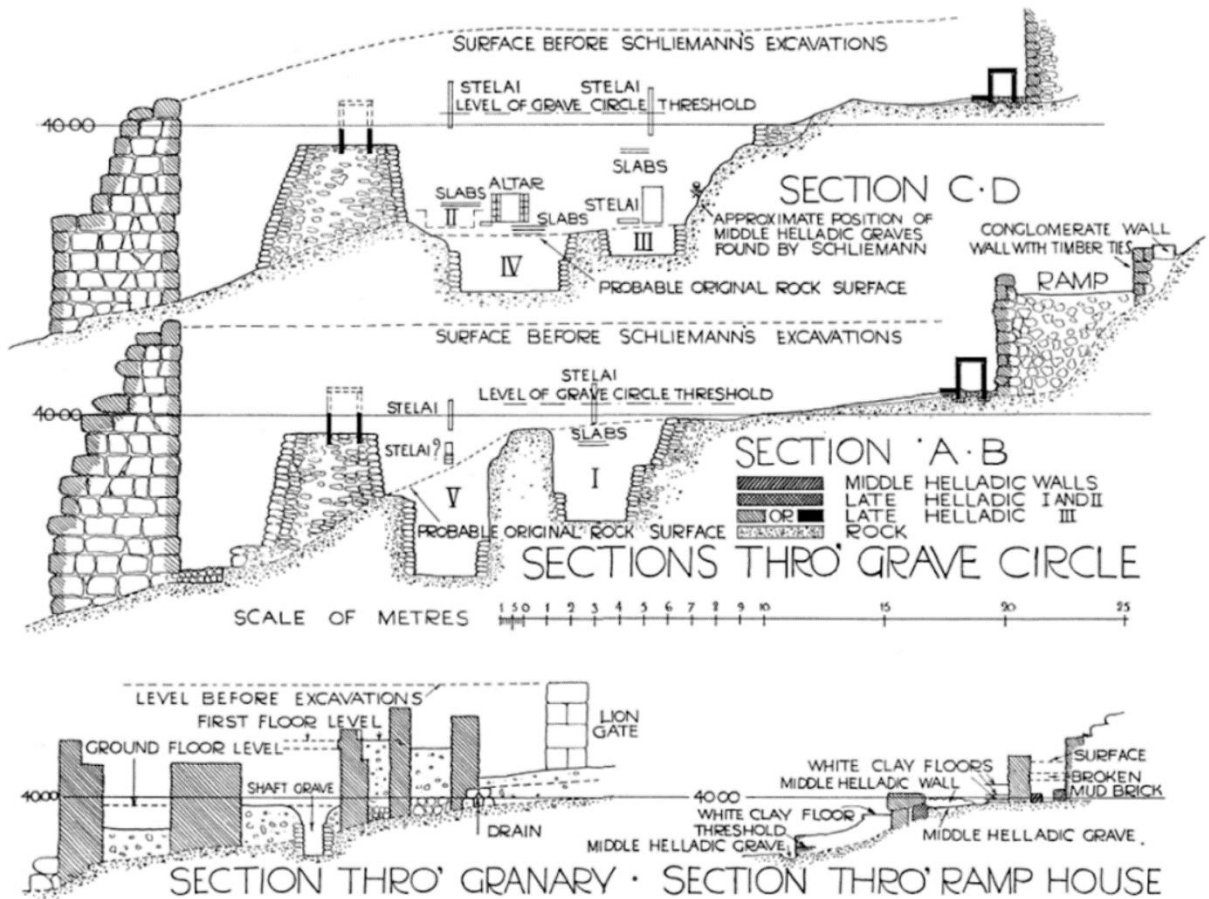
Figure 9. Plan of the sections through GCA, Granary, and Ramp House, (Wace and Stubbings 1954, Pl. XVII).

In 1952, the Greek Archaeological Service undertook some conservation work at GCA because the area was being damaged by the number of visitors (Wace and Stubbings 1954, 244). Lord W. Taylour continued Wace's work in the cult centre of the citadel (1959-1969), while the Athens Archaeological Society resumed investigation of the site after the discovery of Grave Circle B outside the walls. GCB was then excavated by Georgios Mylonas and Ioannis Papadimitriou (1951-1954) (Iakovidis 2005, 164). In 1958, Mylonas continued to investigate the citadel on behalf

of the Athens Archaeological Society, excavating sectors of the citadel as well as houses and chamber tombs outside the walls (1958-1988).

Spyros Iakovidis succeeded Mylonas and continued the excavations in the area (1988-2013). The work conducted during the 1980s and 1990s was mostly focused on study and publication rather than purely excavations (Shelmerdine 1997, 541). Iakovidis excavated several sectors and constructions inside and outside the citadel and published the results of earlier excavations, as well as conducting exploratory work inside the citadel close to the Lion Gate and on the northwest side of the acropolis (Shelmerdine 1997, 541; Iakovidis 2005, 165-166). He also undertook an extensive archaeological survey of the wider area along with Elizabeth French and the British School (see Iakovidis et al. 2003; Iakovidis and French 2003).

Along with Iakovidis, Christos Maggidis worked on Building K inside the citadel (2002-2008) and published findings on earlier excavations. At the same time, Maggidis conducted an extensive geophysical survey of the surrounding area that led to the discovery of the Lower Town (2003-2013), and he has been excavating sectors of the Lower Town since 2007 (see Έργον και Πρακτικά of Archaeological Society in Athens 2002-2015).

Excavations at GCA and the relationship between Stamatakis and Schliemann

A significant part of the story in this thesis is the early excavations at Mycenae and the relationship between Stamatakis and Schliemann in the late 19th century. Therefore, it is important to introduce the reader to the details of the excavations and research conducted in GCA in 1876 and 1877. Schliemann obtained a permit to begin the excavations in 1874 but the actual works began in August 1876 (for a detailed discussion on the history of the excavation, see Dickinson 1976). Stamatakis, the General Ephor of Antiquities in the Archaeological Service, was appointed to supervise the excavations (Dickinson 1976, 159; Prag et al. 2009, 235) (for a detailed discussion on Schliemann and Stamatakis' relationship during the excavations, see below; also Dickinson et al. 2012; Konstantinidi-Syvridi and Paschalidis 2018; Dickinson 1976; Schliemann 1880, 352-62).

The excavations were conducted over a very short amount of time and in adverse weather conditions (Konstantinidi-Syvridi and Paschalidis 2018, 112). Schliemann left the excavation on

4 December 1876, after the discovery of Grave V which he believed to be the last of the graves (Dickinson 2005, 306). He left in a hurry and frustration, informing Max Müller, a philologist and orientalist with whom he had a close relationship, in a letter written on December 31, 1876, that he did not intend to excavate in Greece again and complaining about Stamatakis (Meyer 1962, 95; Dickinson 1976, 164; Dickinson et al. 2012, 169). He published findings from the excavations relatively quickly, mostly through letters to the Times (Dickinson et al. 2012, 169).

After Schliemann's departure on 4 December 1876, Stamatakis stayed to clean the trenches and at this point he discovered many grave goods that had been overlooked by Schliemann (Vasilikou 2011, 140-143). In November 1877, Stamatakis returned to Mycenae and continued the research at GCA, there discovering the sixth grave (Prag et al. 2009, 235-236). Stamatakis was also responsible for the transportation of all the finds from Mycenae to Athens in 1892 (Demakopoulou 1990, 93; Koumanoudis 1892, 1-62). These were delivered by Koumanoudis, representative of the Archaeological Society, to Leonardos, ephorate of the National Archaeological Museum in Athens (Vasiliou 2011, 187). Moreover, in early 1877 Stamatakis began selecting and classifying artefacts for them to be displayed and made accessible to the public (Koumanoudis 1878, 25). The exhibition, curated and funded by the Council of Archaeological Society, opened to the public on 18 October 1877, and Stamatakis had personally designed the exhibition of the tombs (Konstantinidi-Syvridi and Paschalidis 2018, 117) (Figure 10).

Figure 10. Stamatakis' arrangement of the finds from GCA by burial (NAM Archive, Konstantinidi-Syvridi and Paschalidis 2018, fig. 141).

Panayiotis Stamatakis was a senior member of the Archaeological Service in Athens (Dickinson et al. 2012, 163). He was a self-taught archaeologist from Varvitsa in Laconia (Konstantinidi-Syvridi and Paschalidis 2018, 112) and was hired as an assistant to the General Ephor of Antiquities in July 1866 (Petrakos 2005, 117). In 1875, one year before the commencement of Schliemann's excavations, Stamatakis was promoted to the position of Ephor and later, in September 1884, to General Ephor (Konstantinidi-Syvridi and Paschalidis 2018, 112). Therefore, he was responsible for overseeing the excavations to make sure that they ran smoothly.

Schliemann is thought to have been inspired by the Homeric epics when he started excavating in Peloponnese and Asia Minor in an attempt to find Mycenae and Troy. He applied for permission to dig at Mycenae, but he could not wait and in February 1874 he began his excavations illegally (Dickinson 1976, 161-162; Meyer 1962, 92). Despite the fact that he was stigmatised as little better than a robber, he obtained a permit for Mycenae two months later. He was prevented from starting the excavations, however, by a lawsuit brought by the Turkish government for the recovery of the 'Treasure' that he had found in 1873 during his excavations at Hisarlik and removed from Turkey, clearly breaking the terms of his permit (Dickinson 1976, 161-162).

Schliemann's and Stamatakis' difficult relationship is documented in both Stamatakis' letters and notes (see Vasilikou 2011), as well as in Schliemann's letters to Max Müller (see Meyer 1962; cf Vasilikou 2011, 131). At some point, it seems that the two men did not even speak to each other directly (Vasilikou 2011, 203). Stamatakis also had a difficult relationship with Schliemann's wife, Sophia, who would often participate in the conflict, for example by insulting Stamatakis in front of the workers. This is noted in Stamatakis' letter to the General Ephorate of Antiquities on the 5th of September 1876 (Vasilikou 2011, 199-200), and in his letter to Koumanoudis, secretary of the Archaeological Society of Athens, on the 14th of September 1876 (Vasilikou 2011, 201).

Stamatakis insisted that all archaeological remains should be treated equally (Dickinson 1976, 45; Dickinson 2012, 164), a progressive attitude towards antiquities for this era when purism - the idea that all the Greek antiquities should be 'purified' by any later than the classical period elements - was the major trend in archaeology and conservation of antiquities (see Hamilakis and Greenberg 2022). Stamatakis was concerned about Schliemann's handling of the excavation, as clearly stated in his letter to the General Ephorate of Antiquities on the 15th of August 1876 (Vasilikou 2011, 194). Additionally, Stamatakis was adamant about the importance of keeping a detailed archaeological diary (Dickinson 2012, 164) and this seems to have added to the tension between the two men (Vasilikou 2011, 81, 131). In 19th-century excavations, it was not the norm

to accurately record archaeological finds (Dickinson 2012, 164; Nafplioti 2007, 92), demonstrating Stamatakis' forward-thinking ethos, professionalism, and commitment to archaeological science. His diary was lost for more than a century but was located again just two decades ago in the National Archaeological Museum in Athens (NAM) (Konstantinidi-Syvridi and Paschalidis 2018, 113). The diary demonstrates how much he cared about the antiquities. At the beginning of each grave's description, Stamatakis quoted relevant passages from either the Homeric epics or from ancient Greek tragedies (Konstantinidi-Syvridi and Paschalidis 2018, 114).

Schliemann had earlier excavated Troy (Dyck 1990). However, he had not previously excavated graves and his approach been mainly to clear them and take notes of the most interesting artefacts rather than carefully excavate and fully record them (Dickinson 2012, 164). Additionally, as demonstrated in Stamatakis' letters to his superiors as well as in his announcements in the press, Schliemann was in breach of the terms of the contract he had with the Archaeological Society of Athens which allowed him to undertake the excavations. This included bribing and hiring more workers than permitted in his contract, and carrying out multiple excavations at the same time, which again was against his contract (Vasilikou 2011, 87).

In contrast, Stamatakis - despite the constant pressure and mistreatment by Schliemann and his wife - methodically and carefully made plans of the graves, even indicating the positions of the buried bodies along with notes and sketches of the important finds. He also produced a rough drawing of the whole of Grave Circle A as seen in Figure 11 below.
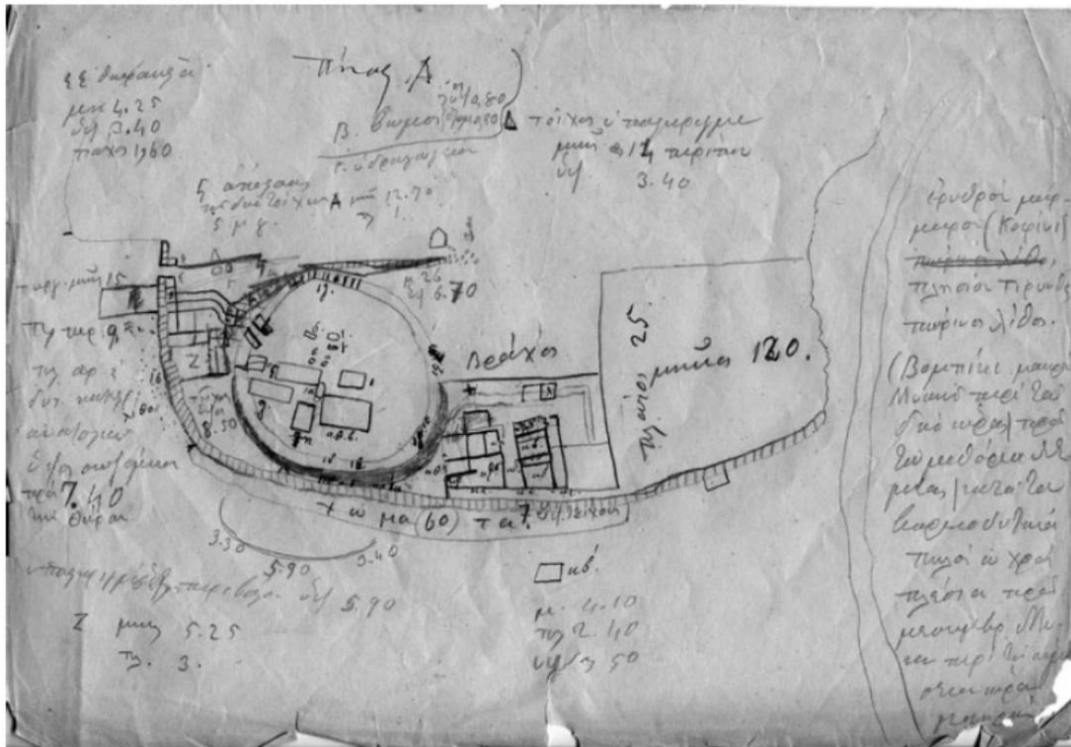
Figure 11. Plan of the Shaft Grave area in Stamatakis' original report (Dickinson et al. 2012, fig. I).

Schliemann was often absent from the excavation or would only visit twice per day (Vasilikou 2011, 192), despite often claiming that he personally retrieved artefacts, either singularly or with his wife (Dickinson et al. 2012, 166, 167, 170). On the contrary, Stamatakis was present throughout the excavation, constantly working to maintain control and supervise Schliemann. In deliberately ignoring Stamatakis' advice, Schliemann cultivated a hostile environment (Vasilikou 2011; Dickinson 1976, 161-162; Dickinson et al. 2012, 168).

Schliemann also tried to claim as his own the new finds discovered by Stamatakis after Schliemann's departure. Schliemann devoted the last chapter in his book *Mycenae* (1878, 398-415) to these finds (Konstantinidi-Syvridi and Paschalidis 2018, 115). He also went to great lengths to link his name with the discovery of the sixth grave - also discovered after his departure - by publishing in 1882 the *Catalogue des trésors de Mycènes au Musée d'Athènes* describing the burials according to Stamatakis' arrangement for the exhibition (Konstantinidi-Syvridi and Paschalidis 2018, 118).

It is also striking that Schliemann never discusses Stamatakis or his role in his published work or in his letters to the Times; he does mention him in one instance as a person simply assisting him to guard the treasures, referring to him as 'a government clerk of the name of Stamatakis' (Schliemann 1880, 352, Prag et al. 2009, 235; Dickinson et al. 2012, 168; Dickinson 2005, 307). Yet, as Dickinson and colleagues point out, Stamatakis and the local nomarch were there to keep a close eye on Schliemann since he smuggled the famous 'Priam's Treasure' out of Turkey and resultantly went to trial in Athens in 1874 (Dickinson et al. 2012, 167), and since Schliemann conducted illegal test excavations at Mycenae the same year (Dickinson et al. 2012, 168). According to his own diary, Schliemann had initially approached Eustratiadis, the counsellor and vice secretary of the Archaeological Society in Athens, to request that he be allowed to keep half of the finds as his own property after the excavations, to be hosted in a house in Athens that would have been purchased specifically for this reason (Vasilikou 2011, 21).

It appears that Schliemann tried to intentionally erase Stamatakis from the history of the excavations (Dickinson et al. 2012, 168) by dismissively referring to him as a government's clerk, or as the 'delegate of the Greek government' (Schliemann 1880, 139), avoiding his name. This detail has been used in this thesis' story as it is indicative of Schliemann's attitude towards the Greek archaeologist. In fact, it is considered that he went to such a degree of erasure, that he might have literally erased Stamatakis from a group photograph of the excavation. Figures 12-14 below compare a photograph of the excavation, where Stamatakis is likely to have been the seated person with glasses. This person is missing entirely in the xylograph version of the photo included in Schliemann's original publication of the excavations at Mycenae (Konstantinidi-Syvridi and Paschalidis 2018, 112). Unfortunately, it is not possible to confirm whether or not this person is actually Stamatakis (Konstantinidi-Syvridi and Paschalidis 2018, 112). However, from his appearance and the fact that he wears glasses (Prag et al. 2009, 235; Vasilikou 2011, 120–21), his isolation from the others, his pose, and mostly due to the fact that he is erased from the xylographic version of the photograph, it is very plausible that the person is Stamatakis (Konstantinidi-Syvridi and Paschalidis 2018, 112).
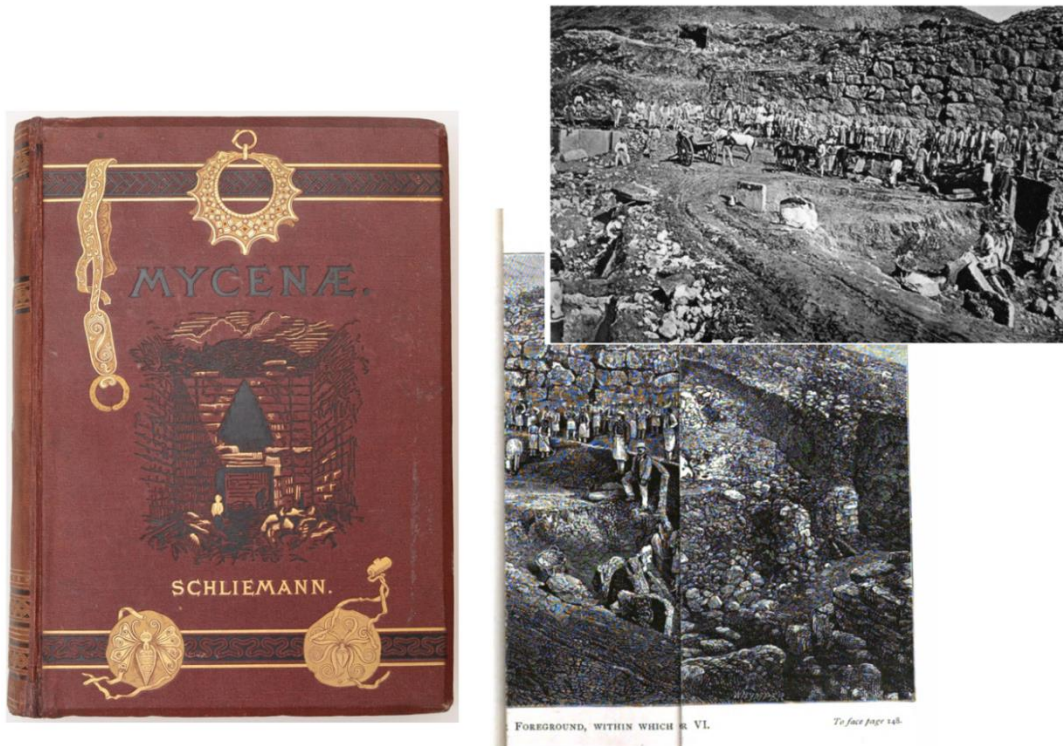
Figure 12. Schliemann's published book of the excavations at Mycenae (left); (top right) a panorama from the excavation at GCA showing the workers and Schliemann (copyright: DAI/D-DAI-ATH-1988/679 in Konstantinidi-Syvridi and Paschalidis 2018, fig. 131). The person in the bottom right corner has been identified as Stamatakis. The xylography of the photo (bottom right) published in the aforementioned book, where the person identified as Stamatakis has been erased.
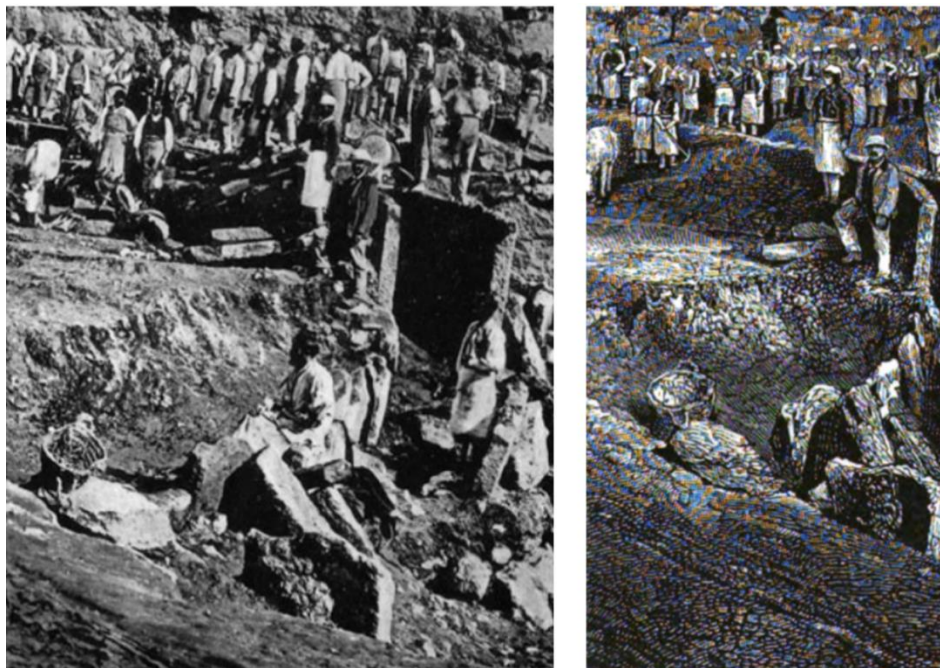
Figure 13. A close up of the previous photos side by side to illustrate the absence from the xylography of the person sitting on the stones of the actual photo.

Figure 14. A close up of the previous photos side by side to illustrate the absence from the xylography of the person sitting on the stones of the actual photo.

Aside from the two men's letters to their superiors, colleagues, and the press, their difficult relationship was also recorded by Dr A. Milchhoeffer, a member of the Deutsches Archäologisches Institut at Athens, who visited Mycenae in November. Milchhoeffer mentioned Stamatakis' open wariness towards Schliemann (Dickinson et al. 2012, 168; see also Calder and Trail 1986). Moreover, Schliemann's attitude towards Stamatakis appears to have been marked by a lack of respect, and his response to government officials more broadly seems to have been to ignore or defy them (Dickinson et al. 2012, 169). According to Dickinson and colleagues, Schliemann also seemed to have been 'perfectly prepared to lie and even cheat on occasion' (Dickinson et al. 2012, 170). As Vasilikou (2011, 20) pointed out, Schliemann's idiosyncratic character is reflected in his letters and demonstrates that he was nice and kind when he was expecting something in return, yet arrogant and sarcastic when people and agencies would refuse to satisfy his needs.

Schliemann had strong connections in diplomatic circles and within the Archaeological Society, allowing him to ignore officials and communicate directly with the Minister of Ecclesiastical and Public Education to remove anything he considered as an obstacle to his work (Vasilikou 2011, 124-125). It should also be noted that Greece was a newly founded state entirely dependent on

the Great Powers with a public sector heavily based on nepotism due to the Ottoman rule which would further allow such behaviours.

Stamatakis died on 19 March 1885 from malaria, just one year after being promoted to General Ephor of Antiquities. He had not yet had time to publish his excavations at Mycenae and elsewhere (Konstantinidi-Syvridi and Paschalidis 2018, 123). Schliemann expressed his sorrow for Stamatakis' premature death and described him as a distinguished archaeologist and went on to disclaim that his statements were in accordance with Stamatakis' research and notes (Dickinson et al. 2012, 169).

Stamatakis was buried at the First Cemetery in Athens and his tombstone was designed by the architect Wilhelm Dörpfeld (Koumanoudis 1887, 14). Yet his grave, along with his remains, were later removed at the direction of the city of Athens since he had no descendants to take care of the grave (Petrakos 1987, 282). It is striking, as Konstantinidi-Syvridi and Paschalidis (2018, 124) point out, that in the same cemetery Schliemann's mausoleum is still visible today, along with the graves of other archaeologists both Greek and foreign.

Rediscovery and new research on the remains of GCA

The third period mentioned in the story and the three media is the beginning of the 21st century and the reexamination of MYC_1V's remains. In 2003, during some building work at the National Archaeological Museum in Athens, the skeletons found in Grave VI were rediscovered (Prag et al. 2009, 233; Papazoglou-Manioudaki et al. 2010, 157). They had been accidentally misplaced in the storeroom with the Classical sculpture collection. This discovery triggered a new series of examinations of the bones from GCA at Mycenae (Prag et al. 2009; Nafplioti 2009, Dickinson et al. 2012). The project was supported by a small research grant from the British Academy and a small team of researchers was assembled in order to re-examine the skeletal remains in 2007 (the team members were Richard Neave, Avril Neave, and Denise Smith, all now members of the RN-DS Partnership, Dr Jonathan Musgrave (University of Bristol), Mrs Sarah Musgrave (Open University), Dr Argyro Nafplioti (then at the University of Southampton), and Professor A.J.N.W. Prag (University of Manchester)).

GRAVE V and individual MYC$_1$V (T)

Grave V was the first grave that Schliemann discovered during the excavations at GCA, but it was the last to be fully excavated (Schliemann 1880, 295-6, 301-2, 311-12, figs. 459, 474). The grave contained three individuals all considered to be male (Φ, Υ and T in Stamatakis' report) (Papazoglou-Manioudaki et al. 2010, 163-166). Individual Υ did not have a mask or breastplate, but he was associated with bronze vessels. Individual Φ was particularly praised by Schliemann as his face was covered with a golden mask (NAM No. 623, Figure 16), which was, according to Schliemann's description, 'the most beautiful mask ever found which depicts a bearded man' (Schliemann, 1878, 296-298, see also Papazoglou-Manioudaki et al. 2010, 163-164). Schliemann wrongly identified this body as Agamemnon and described it as a mummified body, which later triggered confusion and debate amongst scholars (for a detailed discussion on the 'mummy', see Schliemann 1880, 296-8, figs. 454, 473; Prag and Neave 1997, 114-6; Dickinson 2005).

Figure 15. Gold mask, Grave V (624). Papazoglou-Manioudaki et al. 2010, fig. 12.

Figure 16. Gold mask, Grave V (623). Papazoglou-Manioudaki et al. 2010, fig. 11.

Lastly, individual T (MYC$_1$V at the recent osteological reports), who is the main character of the stories in this thesis, had their face covered with a gold mask which has been widely known as 'Agamemnon's mask' (NAM No. 624), and their chest covered with a large plate. However, as seen above, Schliemann identified individual Φ as Agamemnon (See Dickinson 2005). It is now widely accepted that Schliemann was confused about which of the individuals he identified as the famous king of the Homeric epics, and in his publications, he did not clarify which body he thought was Agamemnon's. Dickinson suggests that Schliemann deliberately left this obscure because he was uncertain (Dickinson 2005, 306). Vasilikou (2011, 128) confirms that Schliemann gave the name 'Agamemnon' to the burial at the north side of the grave, not the south, therefore to individual Φ and not T.

According to the osteological reports, the person known as T in Stamatakis' diary, now referred to as MYC$_1$V, retained until adulthood a patent metopic suture, the suture that runs through the midline of the skull (Papazoglou-Manioudaki et al. 2010, 203). Also, there is shoveling in the palatal surface of the maxillary left second (lateral) incisor, Carabelli's cusp on the maxillary left first molar, and parastyles on the maxillary left and right second molars (Papazoglou-Manioudaki et al. 2010, 204), all specific characteristics of the teeth of an individual that are shared traits in

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families. MYC_4V, an individual buried in the same grave, also has a metopic suture present on a fragment of his frontal bone, similar to MYC_1V (Papazoglou-Manioudaki et al. 2010, 210). MYC_2V, another individual buried in the same grave, has shoveling of the crown in the maxillary right second (lateral) incisor (Papazoglou-Manioudaki et al. 2010, 208). Patent metopic sutures and shoveling of upper second incisors only occurred in individuals from Grave V. Moreover, a septal aperture, which is an anatomical trait on the forelimbs, was only recorded on the humeri of MYC_1V and MYC_2V (and MYC_1VI, an individual buried in grave six). These traits suggest, according to Papazoglou-Manioudaki and colleagues (2010), that the individuals of Grave V may have been closely related and could have belonged to the same family.

MYC_1V is the most robust skeleton in Grave Circle A, measuring 1.81m (Papazoglou-Manioudaki et al. 2010, 204, 218). The same observation was made by Schliemann (1878, 295-296): 'The bones of the legs, which were almost uninjured, are unusually large'. This particular individual has considerable entesophytosis recorded on the costal impression on the medial end of the right clavicle, located on the inferior surface of the medial end of the clavicle and in the enthesis of the costoclavisular ligament. Papazoglou-Manioudaki and colleagues (2010) associate this hypertrophic development with high mechanical loading of the sternoclavicular joint in the performance of physical activities. Moreover, excessive mechanical stress of the pectoralis major is indicated by the squaring of the anterior portion of the medial half of the shaft of each clavicle (Papazoglou-Manioudaki et al. 2010, 204). Also, a moderate hypertrophy of the enthesis of the conoid tubercle on the postero-interior portion of the lateral end of the clavicle is recorded and could also be activity related (Papazoglou-Manioudaki et al. 2010, 204). The same applies to the slight roughening of the site of attachment of the deltoid on the antero-superior surface of the lateral end of each clavicle. According to Papazoglou-Manioudaki and colleagues (2010), all these modifications probably reflect generalised stress on the pectoral girdle (see also Capasso et al. 1999, 39 cited by Papazoglou-Manioudaki et al. 2010). These elements have been utilised in the story to support the potential excessive use of a shield and the involvement of the individual in strenuous activities related to hunting or warfare.

Regarding whether or not MYC_1V was local to Mycenae, Dr Argyro Nafplioti published in 2009 a study of strontium isotope ratio ($^{87}Sr/^{86}Sr$) analysis that was applied to samples of dental enamel from individuals buried in the Shaft Graves of Grave Circle A at Mycenae in order to explore their local versus non-local geographical origin. MYC_1V seems to have results that fall slightly above the confidence limit, and thus in the story, they are presented as indigenous. This result may also

reflect the consumption of food resources cultivated or raised non-locally (Nafplioti 2009, 283-289), which further supports the idea that the individuals buried in GCA were perceived as elites of sorts. According to Dickinson (1976), the individuals buried in the Shaft Graves were 'among the earliest, if not the first of the new ruling groups who managed their business well enough to find enduring prosperity and power' (Dickinson 1976, 167). Beginning in MH II and increasingly during MH III – LH I the burials became wealthier, a clear indication of the emergence of leaders within the local communities. Wright has referred to them as 'Big Men' (2008, 239-245). These leaders potentially gained political power, perhaps by capitalising on their reputations as hunters, warriors and providers (Wright 2008, 241). According to Wright (2008), a man's reputation as a hunter was a primary attribute, as shown by the MH III and LH I-II rich burials that contained caches of boars' tusks, which may have been attached to helmets.

MYC_1V was buried with rich grave goods, swords, and many more precious items and pottery (Mylonas 1966, 92; Papazoglou-Manioudaki et al. 2010, 163-165). These burial goods reflect their high status and wealth. Moreover, the dental records of this individual reflect a healthy person, as only one of the nineteen teeth examined had a very small lesion (Papazoglou-Manioudaki et al. 2010, 204), perhaps indicating consumption of better food than grains which normally damage the enamel of the teeth.

Lastly, the cause of death for this individual is unknown. Based on the degree of closure of portions of the lambdoid and sagittal sutures on the cranial fragments presented, this individual was 25-35 years old at death. On the degree of dental wear, he could have been around 25 years old (Papazoglou-Manioudaki et al. 2010, 203). After discussions with Dr Nafplioti in 2021, death by illness is not likely since it would have left some indications on the bones. Therefore, in the stories the individual is portrayed as unaware of their cause of death and offers two guesses about it: the first one that they died during a battle, and the second that they died during hunting.

The bones were initially examined by Stamatakis and Schliemann during the excavations. J. L. Angel studied the anthropological remains for GCA in 1937 and his report, concerned almost entirely with six skulls, two each from Graves IV, V and VI, was published in 1973 (Prag et al. 2009, 239; Papazoglou-Manioudaki et al. 2010, 158, 167; see also Angel 1973, 384). A brief report containing cranial and post-cranial measurements along with photographs was incorporated into the publication of the skeletal remains from GCB (Papazoglou-Manioudaki et al. 2010, 167).

Therefore, the skeletal remains have been reexamined three times. Firstly, they were examined *in situ* by Stamatakis and Schliemann in the 19th century, with both men making notes and sometimes not agreeing with each other on the matter (for a detailed account on the different notes between Stamatakis and Schliemann see Dickinson et al. 2012, 165-166; for the unreliability of Schliemann's reports see also Trail 1995). Then, the skeletal remains were reexamined by Angel in the 1970s. Lastly, the remains were reexamined as part of the project 'Mycenae revisited' after their rediscovery in 2003.

Summary

In this chapter, the three time periods presented in the story used to create the three media were covered. First, the chapter described the Late Helladic period when MYC_1V lived. Second, the late 19th century excavations and specifically the difficult relationship between Stamatakis and Schliemann were explored, which highlights the dismissive behaviour from the latter to the first, as well as the attempts to resist this attitude by Stamatakis along with his determination to archaeological science. These notions are further explored in the Literature Review and the Discussion chapters under the lens of cryptocolonialism. Lastly, the rediscovery of the skeletal remains and Stamatakis' diary in the 21st-century were outlined, which led to a new series of reexamination of the remains. This reexamination has resulted in a significantly better understanding of the life of the people buried in GCA.

Chapter 3 - Theoretical Framework

In the previous chapter, the case study of the thesis was introduced to give insight into the time periods and contexts of the narratives that feature in this thesis. It is however equally important to understand the theoretical framework that underpins the creation of these narratives, especially since it is a multifaceted and interdisciplinary approach within archaeology Therefore, this chapter further explores the different paradigms within which archaeological storytelling manifests. The chapter begins by introducing the theoretical frameworks that underpin how these narratives can be created, namely DIY Archaeology, Public Archaeology and Digital Public Archaeology, and consider their digital counterparts. After presenting the basic theories around archaeologists as creators, I then discuss archaeological storytelling in general, and multimedia storytelling in particular as the narratives created in this research are both analogue and digital, and thus it is essential to discuss the differences between them. I also introduce the theoretical framework regarding the tools used to create the digital narratives in the thesis, namely interactive digital narratives (IDNs), 360 filmmaking, and VR.

After providing a background to archaeological storytelling, I then explore the stories archaeologists tell, with an emphasis on sensitive or difficult topics such as death and decolonisation of heritage, as these are fundamental in the narratives I created. The ethics of studying and presenting human remains are explored in this chapter, along with the theoretical background of researching and disseminating findings about death, with a focus on Public Archaeology of Death and (Bio)archaeology of Personhood. Lastly, I discuss the challenges of telling stories and the different methodologies that archaeologists have developed to overcome these obstacles.

DIY Archaeology: archaeologists as creators

This thesis is an experimental DIY archaeological project exploring how archaeologists can disseminate their findings through different media. DIY has gradually become part of our lived experiences, especially regarding media and communication systems (Ratto and Boler 2014, 1). The creative part of DIY, the making, is understood as a 'critical' activity, 'an activity that provides both the possibility to intervene substantively in systems of authority and power and that offers an important site for reflection on how such power is constituted by infrastructures, institutions, communities, and practices' (Ratto and Boler 2014, 1). This critical aspect of DIY making, and the potential to intervene to these steering and infrastructural contexts within archaeology is discussed below.

Discussion about creative practice in archaeology has become more frequent in recent years, and the implementation of concepts from the arts within archaeological research have gained ground (Baele and Reilly 2017b). I argue that DIY archaeology is an excellent reflexive approach to interpret primary archaeological data (following Perry 2017, 212). With new media, archaeologists can create their own media at low cost and share them widely and instantly on the Internet (Richardson 2013; Morgan and Eve 2015, 524; Beale and Reilly 2017a; Cerasoni et al. 2022). This can be as simple as a GIF (Morgan and Scholma Mason 2017) to more complicated projects such as Mixed Realities (MR) projects (Graham and Eve 2013; Cerasoni 2022).

However, Perry (2017, 213) argues that heritage interpretation - meaning 'the development and presentation of knowledge about the past for varied audiences' - is absent from many archaeological projects. This means that archaeologists do not focus on creating meaningful interpretations of archaeological data, bearing in mind that their target audience would be wider audiences that could consist of specialists, archaeologists with no specialisation in the project's subject, stakeholder of different sorts, or the general public which is an even broader category. DIY archaeology could be employed to remedy this. As Opgenhaffen argues (2021, 354), a praxis-oriented approach could potentially lead to an enhanced understanding of the use of digital technologies and practices by archaeologists. I would also argue that DIY archaeology is not enough, but we should also be reflective in our DIY projects to make sure we are achieving our goals (see also Pujol and Champion 2012). Of course, I am not the first person to argue that we should be reflective and critical of our DIY practices. Hugget (2015, 89), in his manifesto for an introspective digital archaeology, argued that we need to be more retrospective and self-aware to fully grasp the essence and impact of the utilisation of theoretical frame, documentation practices,

data interpretation and knowledge dissemination in Digital archaeology. This would require a conscious effort to further investigate fundamental processes and behaviours that underpin the tools, technologies, and methodologies we use in our digital archaeological practice.

The need for DIY approaches in archaeology was identified by Morgan and Eve (2012) more than 10 years ago. Beale and Reilly (2017b) talk about a 'creative turn' in archaeology, and notice 'the development of new, distinctively archaeological, praxis revolving around ideas of creativity'. This praxis is distinct for archaeology in regard to the use of new media and cutting-edge technologies in archaeological research and practice which began to rise during the creative turn. They argue that digital technologies and concepts of creative practice have played a key role in many innovative archaeological projects, but they note that there is not yet a theoretical framework to describe or explain how digital technologies and creative arts are incorporated into archaeology by the archaeologist themselves. They also highlight that some people have criticised DIY archaeologists for uncritically adopting tools and techniques from other fields and thus conclude that it is important for DIY archaeologists to reflect on their work and thought processes (Beale and Reily 2017b). However, a growing body of archaeologists is being formed who, via their innovative digital archaeology projects, are critically exploring both the advance of the methodology in research, but also what archaeology currently is as a discipline and where it is going (Perry and Taylor 2018, 16). Morgan (2022, 215), for example, argues in her article on recent trends in digital archaeology that she does not aim to just give a review of the discipline, but rather she intends to 'discuss digital archaeology as a site to think and theorize from'. This thesis aims to contribute to this body of archaeological reflective practice and assist in the development of a theoretically informed methodology of evaluation.

Digital Archaeology

One of the major fields where DIY projects have taken place is Digital (Public) Archaeology. The 'digital turn' (Costopoulos, 2016) in archaeology affected a whole range of quantitative and qualitative methods and computer applications, both in terms of the technological aspects (i.e. the development of software and hardware), as well as theoretical trends (i.e. interdisciplinarity, interconnectivity, openness, and sharing) (Perry and Taylor 2018, 14). As digital technology became incorporated into archaeology, the discipline gradually evolved into different sub-disciplines, for example digital archaeology and virtual archaeology (Opgenhaffen 2021, 369). Morgan (2022, 214) points out that digital archaeology has been also termed 'cyber archaeology'

(Forte 2011), 'cyborg archaeology' (Morgan 2019), 'virtual archaeology' (Reilly 1991), or 'phygital archaeology' (Reilly et al. 2021).

As Morgan and Eve (2015, 523) argue, '[w]e are *all* digital archaeologists' (original emphasis). As I see it, we are indeed all digital archaeologists mostly in the sense that we created digital artefacts to either study or disseminate our research to audiences, as the media created in this thesis (see also discussion in Hugget 2018), and I would argue that we immensely enjoy it. Morgan (2022, 224) has noted that 'there is an incredible joy and creativity to be found in working with digital technology in archaeology' and Graham (2020, 7) points out that '[d]igital archaeology requires enchantment [...] [which] as a concept captures the playfulness and craftwork and indeed magic [...], key elements in the useful employment of computers for the work of archaeology'. Therefore, creating digital artefacts and projects can be fun and rewarding for the archaeologists apart from the audiences, and as Politopoulos, Mol, and Lammes (2023) argue, fun and playfulness should be central in archaeology.

However, it is important to also be mindful of our digital creations and the technologies we are using. As Perry and Taylor (2018, 11) point out, there is a lack of meaningful evaluation of the digital technologies that archaeologists use, which leads to limited understanding of their impact on audiences and thus leaves room for critique against digital projects. Pujol and Champion (2012, 91) had claimed for example regarding interactive digital media, that there should be an evaluation process conducted that would determine whether or not the media have managed to effectively disseminate knowledge and thus achieved their purpose. Perry and Taylor (2018, 11) further their argument claiming that archaeologists are already critically engaged with a broad discussion in digital archaeology, but there is a lack of a solid framework for DIY digital archaeology (Perry and Taylor 2018, 15). Therefore, an more in depth critical discussion is needed (Ottosson Berggren and Gutehall 2018, 121), which this thesis aims to provide particularly regarding DIY archaeology.

Public Archaeology

Many Digital archaeology projects are linked with Public archaeology, since their audiences are members of the public or the projects deal with public heritage with the purpose of engaging the public. Public archaeology can be both a disciplinary practice and theoretical position (Richardson 2014, 22). It involves communication with the public (non-archaeologists and everyone who could

be interested in the archaeological research/project conducted), involvement of the public to the research or the project and aims to democratise and open up archaeological research and practice to wider audiences (Richardson 2014, 22). Public archaeology can take the form of funded or not funded DIY archaeological projects with the aim of informing and involving the local communities to archaeological research of a site. Examples of that could be conducting archaeological site open days, organising public lectures and talks to present archaeological research to community groups, schools, or museums, organising archaeological field schools where members of the public can participate in archaeological fieldwork or archiving of archaeological material and many more.

Public archaeology gained gradual appreciation and academic credibility in the 1990s (Bonacchi 2014, 379). It is defined as 'an examination of the relationship between archaeology and the public, where the 'public' of Public archaeology is represented both by the state - working in the public interest to protect, excavate and investigate society's archaeology on their behalf - and by the notional 'general public' - meaning those who are not professional archaeologists' (Richardson 2013, 1). However, according to Moshenska (2017, 4), Public archaeology has numerous overlapping definitions and nuances which are not universally accepted and can mean different things in different places and contexts.

Public Archaeology gained ground in the 1990s with the progressive work of Peter Ucko, Tim Schadla-Hall, Nick Merriman and Neal Ascherson (Moshenska 2017, 5). The concept has numerous overlapping definitions and interpretations, because of different national, organisational and educational traditions (McDavid 2004; Dakouri-Hild 2017; see also Richardson and Almansa-Sánchez 2015 for a summary of public and community archaeology). It has been argued that Public archaeology as a practice can led to the democratisation of research and the past because it engages the public with archaeological research (Richardson 2013, 2). As Boutin (2015, 18) notes, if we do not communicate our research or results to others, '[w]e risk creating echo chambers of rarified scholarship that homogenise knowledge, privilege practitioners' normativity, and disengage (or worse, alienate) the public.'

Public archaeology, when engaging with the use and creation of digital elements becomes Digital Public archaeology, and thus a closer look at what exactly this discipline is follows below, since this thesis has elements of this particular field of archaeology.

Digital Public Archaeology

Digital Public archaeology is a fairly new practice following rapid changes within digital technologies. These new technologies pushed archaeologists to disseminate their research through digital means for public outreach (Richardson 2013, 1). The growth of Internet technologies and the spread of the World Wide Web, along with the lower cost of software and hardware, led to the emergence of new participatory media platforms and thus opened up opportunities for Digital Public Archaeology (Richardson 2013, 4). This digital form of public archaeology utilises digital media, the Internet, and new (social) media to engage online audiences (Richardson 2013, 4). For example, a growing number of archaeologists are using blogs (i.e. Morgan and Winters 2015), Youtube (i.e. Duckworth 2019), and recently TikTok (i.e. Khan 2022) to communicate their research and interests to broader audiences. Social media has also been utilised to make archaeological research more transparent and democratise archaeology by fostering an active dialogue between archaeologists and the public (i.e. Bonacchi et al. 2023). The options could be expanded to other potential media, such as online platforms and websites, podcasts, webinars, open digital publications and many more which could act as 'public outreach platforms' to engage audiences with archaeological research.

Evaluating (digital) archaeological projects

Key argument in this thesis which follows the critique expressed above regarding the lack of evaluation of digital archaeology projects, is that the evaluation of archaeological projects and specifically of DIY digital archaeological projects is valuable to help the practitioners understand the impact of their creations on the intended audiences. Methodologies and tools for evaluating the impact of digital media are widely available within other disciplines, for example within the field of interactive digital narratives (see discussion in Murray 2018). Over the past twenty years, there has been a resurgence in the investigation of human experience via computational methodologies, driven partially by the exponential growth in computer capabilities, the refinement of efficient algorithms, and the accessibility of sensor technologies (Murray et al. 2018, 82). These advancements have led to the development of tools efficient to evaluate the impact of digital projects on audiences.

However, arguably there is not a standard evaluation methodology of DIY archaeological projects leaving the implications of such works rather unexplored, though this is gradually changing (cf. Morgan 2012; Richardson 2014; Human 2015; Apaydin 2015). Ellenberger and Richardson (2019) exploring the evaluation of funded public archaeology projects in the USA but in the UK argue that in the archaeological literature there is limited published work on whether or how scholars might formally evaluate their public engagement practice to understand whether and to what extend they have achieved their aims. The researchers argue that in the USA, it appears that there are some rather limited efforts by archaeologists to evaluate their own projects, and similarly in the UK there is a limited availability of evaluating practices indicating the extent and nature of conducted evaluations unless the project has external funding (Ellenberger and Richardson 2019 72-73). Similarly, Richardson elsewhere (2014, 153) argues that formal evaluations of digital archaeological projects frequently rely on simple metrics to gauge their results and impact, such as quantifying participant attendance, assessing fundamental demographic information, monitoring website traffic or social media engagement. This stresses the positivistic heavy reliance on quantitative data that is still present in our discipline instead of implementing qualitative data which can be much richer in content.

In digital archaeology, Galeazzi and Di Giuseppantonio Di Franco (2017) argue that within the discipline as well as within cultural heritage, there exists a need for a comprehensive examination of the diverse infrastructural possibilities at hand, coupled with a meticulous assessment of their potential to reshape the discipline. In order to fill this need, there is a critical imperative to devise novel methodologies that position the evaluation process as a pivotal and integral component for appraising digital infrastructures. These methodologies should encompass flexible evaluation processes and approaches capable of being customised to fit the specific infrastructure of other digital archaeological projects (Galeazzi and Di Giuseppantonio Di Franco 2017).

I would further add to the above that in instances where archaeologists evaluate their *funded* (non-DIY) archaeological projects, there is a tendency for the methodology employed to be superficially presented without any obvious attempt to establish a coherent methodology that could potentially be applied in similar projects. It is not uncommon to see reports lacking details on the sample size and composition, the data collection methods, the data analysis techniques, whether or not there were surveys or interviews and so on. Consequently, the authors of these reports on digital projects often proceed to present and discuss the results of their evaluation lacking the clarity in discussing the specific methods employed to assess those results (i.e. see the discussion of 'Narralive' by Vrettakis and colleagues published in 2020, Vrettakis et al. 2020).

There are notable exceptions where the researchers produce detailed reports outlining the methodology developed for the creation of the media and the evaluation of the impact of their project on their audience (i.e. the Conceptual Framework and Guide for the EMOTIVE project developed by Perry and colleagues, Perry et al. 2017) but often it seems that they are still more focused on outlining the process of the project and its perception by the participants rather than actively developing a methodology which could be employed by other similar projects. The literature produced by archaeologists and heritage practitioners with the sole purpose of developing a methodology for evaluating archaeological digital projects is scarce. Noteworthy examples that engage with this endevour include the work of Pujol and Champion (2012) who discussed empirical studies and consequent suggestions for evaluating Cultural Presence in digital archaeological projects offering insights on how to evaluate VR projects. Similarly, Galeazzi and Di Giuseppantonio Di Franco (2017) engaged in a coherent discussion and move on to tangible suggestions of how to evaluate 3D archaeological and heritage projects. Basaraba (2018) in her doctoral research is developing a qualitative methodology for evaluating non-fiction interactive digital narratives (IDNs) in digital heritage projects. Galani and Kidd (2019) through the utilisation of vignettes derived from qualitative studies that center on experiential aspects and involve study participants, discuss recurrent challenges pertaining to the evaluation of digital heritage experiences, specifically in light of their embodiment, multimodality, and transmedial characteristics. There is also emerging literature on the evaluation of interactive and immersive projects (i.e. Koutsabasis 2017, Vert et al. 2021), but these are produced by computer science scholars and thus are out of the scope of this discussion as they are not conducted by archaeologists, which is the focus of this thesis. There are multiple other fields such as Media Studies (for an overview see Hall 2004), Game Studies (for an overview see Mäyrä 2008), Narrative Studies (for an overview see Prince 1990, and more recently Ryan 2004) and so on that are not directly related to archaeology or heritage but are conducting significant research on the tools that archaeologists and heritage practitioners are using in their (DIY or not) projects, but unfortunately scholars from those disciplines rarely come together to discuss and conduct research. However, these methodologies are very helpful and could be employed by archaeologists to evaluate the impact of their funded or DIY digital projects.

Galeazzi and Di Giuseppantonio Di Franco (2017) concluded that cross-disciplinary training in methods and theories for archaeologists would be optimal for the development of similar projects, stressing again the need for the archaeologists to understand the tools that they are using. Pujol and Champion (2012, 16) concluded that a qualitative framework should be developed for

assessing digital archaeological projects. Galani and Kidd (2019) concluded that reflexivity in our evaluation of the projects or as they describe it a 'dialectical interrogation' of the usual ways of interpretation might aid us to 'avoid the reproduction of conventional ideas and traditions' in our theories and practices (Galani and Kidd 2019, 13).

It is therefore profound that since there is a lack of developed methodologies by archaeologists for evaluating the impact of their funded digital projects, perhaps there is an even greater lack of methodologies for evaluating DIY archaeological projects that are though widely produced by archaeologists. To return to the initial observation, DIY archaeology is rather unexplored and established methodologies that are flexible enough to be adopted by similar projects are scarce. This thesis aims to address this issue by developing a flexible mixed methods methodology that can be adapted by any similar DIY digital archaeological project and function as a framework for the further development and enhancement of methodologies in our practice.

Archaeologists telling stories

Archaeological Storytelling

A significant aspect of DIY archaeological projects is storytelling, which is also the basis for this research. As Praetzellis (2019, 280) suggests, '[a]rchaeologists are imaginative individuals whose creativity is stimulated by exposure to other times, other ways of living and thinking'. Similarly, as Nelson (2003) notes, archaeologists have long since created stories about the past to explain their findings. Moreover, Deetz insists, 'archaeologists *are* storytellers' (Deetz 1998, 94) and Praetzellis (1998a, 1) elaborates, 'every archaeologist should tell stories once in a while', while acknowledging the academic tendency to belittle popular writing. Gibb notes that storytelling and archaeological reporting are perceived to be different in essence; storytelling is thought of as 'literary' while technical archaeological reporting is considered 'scientific' (Gibb 2000, 2). However, there is a clear positivistic view in this perception (Deetz 1998, 95) and contrasting views will be discussed in detail below.

According to Praetzellis (2014, 5135), 'archaeological storytelling means the creation of prose, poetry, performance, song, or other modes *by an archaeologist* that incorporates archaeological data, has a narrative structure, and that transcends standard archaeological presentation'

(emphasis mine). In order to define narrative good example would be Henson (2019, 92) who, based on Chatman (1978) and Herman (2009), said: 'A narrative involves people (characters) doing things (actions), within settings in which things occur (happenings) that affect people's actions'. The most common forms of narrative are comprised of written text or vocalisation, as well as interactive and generative forms which have become more widely produced in recent years (Copplestone and Dunne 2017).

Many scholars have classified narratives into different categories based on different criteria. For example, Praetzellis (2014, 5136), understands the forms of archaeological narratives organised by structure or mode) as *stories*, *pedagogical dialogs*, *performances* and *novels*. Elsewhere Praetzellis (2019, 276) suggests some alternative modes such as *poetry*, *docudrama*, *multimedia* and *novelization*. Van Helden and Witcher (2019, 1-3) divide archaeological stories and literature into two main categories: completely *fictive* and stories that *communicate archaeological data* to the public and/or other archaeologists. In this research, following Praetzellis' (2014, 5135) definition, *archaeological stories are those created by archaeologists with the purpose of communicating archaeological research*. These can vary from textual or print stories to multimedia and digital narratives. However, creative approaches to archaeological narratives do not necessarily need to have a digital form, even when they are utilising digital technology as the links between analogue and digital methods and media can take a variety of forms (Baele and Riley 2017). It would be also important to note here that Gavin Lucas (2019) has offered an in-depth discussion on the theoretical framework of narratives in archaeology focusing more on the epistemology of narratives and giving an overview of how each of key paradigms have affected the notion of narratives in general. Lucas, while focusing on narratives instead of storytelling, makes the distinction between the narratives 'which offer and analysis of the nature of texts in archaeology and those which experiment with new forms of text' (Lucas 2019, 66). Archaeological storytelling as perceived in this thesis would fall into the second category.

While archaeologists have used storytelling through various media to relay aspects of the past for at least 100 years (Perry 2017), the concept of storytelling within archaeology became more popular amongst scholars in the 1970s and 1980s, with the emergence of post-processual approaches (Thomson and Harper 2000; see also Tringham 1991; Deetz 1996; Praetzellis and Praetzellis 1998; Edmonds 1999; Wilkie 2003, 2010; Yamin 2012; Tringham and Stevanovic 2012; Boutin 2014, 2016). Notably, in 1977, Deetz wrote six short fictional narratives for the opening of *In Small Things Forgotten,* illustrating the interaction between people and material culture (Deetz 1977). Since then, many archaeologists have used stories to present the results of

their excavations and research to the wider public or to other archaeologists (e.g. Praetzellis and Praetzellis 1984; Kane and Keaton 1994).

Archaeological storytelling became popular when Mary Praetzellis organised a dedicated session called 'Archaeologist as Storyteller' for the Society for Historical Archaeology's 1997 Conference on Historical and Underwater Archaeology (Gibb 2000, 1). The session included nine performances along with a short introduction by Adrian Praetzellis and some closing remarks by James Deetz (Gibb 2000, 1). A second session, 'Archaeologists as Storytellers II', presented a year later at the annual meeting in Atlanta, took place in a crowded room. Eight presentations by twelve performers took place, giving different perspectives on archaeological matters and analysis (Gibb 2000, 1; Praetzellis 2004, 84; Praetzellis 2015, 124). According to Adrian Praetzellis (1998, 2), Mary Praetzellis' intention was to create a safe place for colleagues to freely create and express themselves without having to justify their interpretations.

This freedom from peer pressure arguably led to significant advancements in archaeological theory and practice (Deetz 1998, 95). According to Praetzellis (2019, 282), these sessions were much more than just historical fiction and encouraged the archaeological community to discuss different interpretations of the data through novel means. Gibb argues that a new tool in archaeological interpretation was developed through these sessions, even if this was not the intention of the participants (Gibb 2000, 2; Majewski 2000, 18).

Three years later, a similar session was organised by Meredith Chesson at the American Anthropological Association's annual meeting, in which participants were encouraged to create intellectual and emotional attachments with the audience. The archaeologists were asked to either perform or narrate in order to make 'the archaeology come alive' (Praetzellis 2019, 283; AAA 2000, 34). Since Mary Praetzellis' first session in 1997, Adrian and Mary Praetzellis organised more sessions: two more at the Societies for Historical Archaeology (SHA), some at the American Anthropological Association (AAA) and Societies of American Archaeology (SAA) and a few public and academic events (Praetzellis and Praetzellis 2015, 130). These sessions utilised archaeological storytelling as an interpretation and communication technique for archaeological data and paved the way for unconventional and creative ways of talking and thinking about the past.

Multimedia storytelling

Since the two of the three media created in this thesis are digital, it is important to explore digital media for archaeological storytelling. Archaeologists have long used multimedia to tell stories. Multimedia is the combination of different media (i.e. text and digital media) and is an extensively broad term including works created in order to be experienced in real-time by the audience, and in those cases the focus is on the emotional response to the immersive experience (see Praetzellis and Praetzellis 1998, Bapty 1990, Lopiparo and Joyce 2003, Tringham 2010).

With the development of digital media, analogue forms of narrative have increasingly been replaced with digital multimedia narratives, which could take the form of immersive experiences, starting from simple websites with hypertexts (e.g. Chimera Web, see Tringham, Brukner, and Voytek 1992; also Tringham 2015, 30; Landow 1992, 2006) and video games (Murray 1997) all the way through to mobile applications (Perry 2017; Roussou et al. 2015) and different kinds of realities (Milgram et al. 1995), such as Augmented Reality (AR) (Eve 2012), Virtual Reality (VR) (Morgan 2009, 2016; Eve 2012; Beale and Reilly 2017b; Graham et al. 2019), and Mixed Realities (MR) (Eve 2014; 2017).

Digital media and multimedia interactive technologies are useful tools for exploring and presenting narratives of the past (Copplestone and Dunne 2017; Tringham 1994, 2015). Digital media when used by archaeologists aim to 'facilitate understanding and appreciation, communicate, safeguard, and respect the authenticity, as well as contribute to, promote inclusiveness, and develop technical guidelines for cultural heritage sites' (Pujol and Champion 2012, 85, citing Ename Charter). According to scholarly work, the exposure to archaeological data either physically or digitally has direct implications on people's understanding of the past (Giuseppantonio Di Franco et al. 2016, 184), and thus digital media are powerful tools for archaeologists in communicating their findings.

Multimedia and digital storytelling is typically based on interaction and immersion, two important terms that need further discussion. This thesis has utilised two digital media forms of storytelling: an Interactive Digital Narrative (IDN) and a VR-video based on a 360 film. Therefore, the discussion below will focus on these two media out of all multimedia of archaeological storytelling, while explaining how interaction and immersion have been utilised in this DIY project.

Interactive Digital Narratives (IDNs)

Interaction and Immersion in Media and Narratives

As Paul (2008, 68) and other scholars have pointed out (i.e. Usher 2014, 15), the term 'interactive' can be so broad as to be meaningless. Similarly, according to Thierry (2021, 77), the term interactivity is quite ambiguous and has changed in meaning over time. 'In the broadest sense, interactivity refers to a relationship between two or more agents, human or not, mediated or not by technical means of communication' (Thierry 2021, 77). On the same note, Pujol and Champion (2012, 97) claim that the term 'interaction' means different things to different people.

The term 'interactive computing' was first mentioned in 1967 in an article by Robert Taylor (Montfort 2016). However, it was not until the late 1960s that people began to discuss the relationship between humans and computers (Thierry 2021, 79). The human-to-machine interaction is based on the concept of 'dialogue' which was then used to describe the process of coding and triggering a response by the machine (Thierry 2021, 81). Interactivity in the context of computers was used from 1970 to 2000 as a term to refer to various situations of communication or bringing people together (Thierry 2021, 86-87).

Murray (1997) suggests that the characteristics that users experience during interaction are *agency*, *immersion*, and *transformation*. In this research, immersion and interaction are discussed since they are more relevant to the media created. Murray (1997) suggests that interaction is an immersive and transformative experience. In this context, immersion describes the ability of a digital artefact to hold our interest (Koenitz 2015, 92). Hansen and Mossberg (2013 as cited in Hudson et al. 2018, 212) define immersion as 'a form of spatio-temporal belonging in the world that is characterized by deep involvement in the present moment'. Similarly, Pujol and Champion (2012, 86), while discussing the notion of (cultural) *presence*, describe immersion as 'corresponding to the objective description (field of view and display resolution) of the interface's capability to engage the participant's senses in a digitally mediated environment'. However, the relationship between immersion and interaction, which can be either between other users or between the user and the virtual environment, is not yet clear, and immersion is generally considered to be a subjective experience (Hudson et al. 2018, 460). Immersion can be enhanced by interactivity with the virtual environment among other elements (Hudson et al. 2018, 212). Therefore, immersion and interactivity are complementary elements in digital narratives.

Interactive and immersive media and narratives in archaeology

In archaeology, practitioners who have used interactive media define it as the user accessing information and exploring stored content via multiple nodes (Deliyiannis and Papaioannou 2014, 2). Digital media in heritage and archaeology, according to Pujol and Champion (2012, 89), are 'interactive not just in terms of technology or responsive environments but also in terms of user participation, personalisation, and collaboration'. This corresponds with pedagogical concepts such as exploration, interpretation, and social exchange. Therefore, digital media are valuable tools for pedagogy, and thus effective instruments for the dissemination of archaeological research to audiences, which is a key concept explored in this thesis.

Interactive media and narratives have been used for archaeological research since the 90s with the pioneering work of scholars such as Ruth Tringham, Meg Conkey, Janet Spector, and Rosemary Joyce (Tringham 2015, 29). These first projects such as Tringham's *Chimera Web* (Joyce and Tringham 2007) and Joyce's *Sister Stories* (Joyce, Guyer, and Joyce 2000; Lopiparo and Joyce 2003) utilised hypertext and served a dual purpose: to make the archaeological process transparent to the public and legitimise the use of imagined narratives about people in prehistory by connecting them to the archaeological data (Tringham 2015, 29). Tringham has argued since the 1990s that digital media are better served to talk about the past than printed media, and that digital technology such as the Internet provided archaeologists with the ability to widely share their research (Trignham 2007, 328).

One type of interactive media is Interactive Digital Narratives (IDNs) and it is the one that has been used as one narrative form in this thesis. Koenitz (2023, 71) defines IDNs as 'a narrative expression in various forms, implemented as a multimodal computational system with optional analog elements and experienced through a participatory process in which interactors have a non-trivial influence on progress, perspective, content, and/or outcome where the narrative is understood as a flexible cognitive frame for mentally projected worlds'. IDNs are developed using authoring tools, which are software that help non-experts in coding develop IDN artefacts (Shibolet et al. 2018, 528). These tools can be used by archaeologists and historians to contextualise cultural heritage and turn it into meaningful information for the wider public (Malegiannaki et al. 2020, 2). These IDN artefacts can vary, from simple plain text with hyperlinks, to systems that allow extensive cross-referencing, linking textual or graphic materials, all the way through to complex designs and functions, including images, videos, and advanced graphics using coding (Boom et al. 2020, 34-35). Many IDNs are based on the use of hypertext. Hypertext,

(Minsky 1980; Joyce and Tringham 2007), has gained significant value as a tool for archaeological data sets as it allows the designer to create multilinear narratives for the player to explore different journeys and endings of each game (Copplestone 2016, 15).

IDNs are increasingly used in archaeology and cultural heritage projects (i.e. the CHESS project, Katifori et al. 2014; Roussou and Katifori 2018; the project EMOTIVE, Katifori et al. 2018), but as Murray (2018, 3) points out, despite the last 20 years having seen a growth of the theory and practice around the use of IDNs, the discussion has been fragmented across contributing disciplines. Therefore, a development of effective methodologies to evaluate the impact of such media created by archaeologists on audiences argued above, should also be supplemented by an opening of those discussions towards practitioners of other fields who are working on IDNs with the same evaluation aims (see for example the recent studies on IDNs in the 11th International Conference on Interactive Digital Storytelling published proceedings, Rouse, Koenitz, and Haahr 2018).

Twine

In this research, I used a tool called Twine to create the IDN. Other tools that an archaeologist could use for a similar DIY project include Ink and Yarn. This is a useful tool for archaeologists as it allows multivocality and also triggers the sense for exploration to the users, which is usually a relevant notion to archaeology. The user engages with the story as they interact and make active decisions which lead to a different evolution of the narrative (Copplestone 2016, 15). Through the process of creating an interactive story via Twine, the creator constructs parts of text, which are called 'passages', that are linked to other parts of texts, creating different paths and giving the creator the ability to explore more options instead of a linear storyline (Copplestone 2016, 11). Twine also allows the users to play heritage games without the need to be in an archaeological site or museum (Malegiannaki et al. 2020, 3-4; Roussou, Ripanti, and Servi 2017, 405).

Twine has recently been used by archaeologists and heritage practitioners to educate and engage audiences regarding historical or archaeological concepts and projects. The *Heritage Jam 2022 Game Edition* is a noteworthy example of a Twine workshop with the involvement of academics, archaeologists, and heritage practitioners who gathered and created Twine games regarding their

research interests (The Heritage Jam 2022). Similarly, within archaeology, there have been some notable events which have delivered training by archaeologists on how to use Twine, suggesting that it is a useful tool for archaeologists. For example, the VALUE Foundation has organised many workshops on the use of Twine as part of their conference series 'Interactive Past' as well as for teaching purposes (Boom et al. 2020, 34-35).

Aims of archaeological narratives: why do archaeologists tell stories?

Archaeological storytelling has been of interest to archaeologists because it filled a gap in disseminating results to the public. According to Wickham-Jones (2019, 38), archaeological storytelling helps identify gaps in archaeological knowledge, makes it possible to explore different possibilities and aspects of the past, and serves as a tool to present work to the wider public. This notion is supported by Grima (2017, 76), who suggests that the role of narrative in archaeology serves two purposes: first, *interpretation*, where the narrative is used to help the archaeologist better understand and contextualise the archaeological data of a site (i.e. Gero 1991; Praetzellis 1998; Praetzellis et al. 1997; Wilkie 2003; Yamin 2012), and second, *presentation*, where the narrative serves as a tool to present archaeological data to the wider public, stakeholders or even scholars of different disciplines (Gibb 2000; Spector 1993, 2001). In other words, archaeologists can use stories to both explore the past and present their results to others. Praetzellis (2014, 5153) has suggested that storytelling has both pedagogical and reflective advantages, with benefits for both the public and the author of the story, thus the archaeologist (see also Praetzellis and Praetzellis 2015, 128). It is noteworthy that archaeological storytelling along with the reasons which dictate its importance and the methodology of how to write stories has been discussed and evolved inside numerous paradigms and followed paradigmatic shifts from Culture Historical Grand Narratives towards post-modern space for Marxist, Feminist or Queer narratives. This space here focuses more on the pragmatic aspect of storytelling, on the 'why we need it' as archaeologists, and the problems of how we do it, rather than attempting an exhaustive discussion on how storytelling has been manifested in all the different paradigms.

Van Helden and Witcher (2019, 20-22) provide a well-structured and extensive list of reasons why archaeologists produce archaeological fictional narratives. First of all, to show rather than tell (e.g. Joyce et al. 2002, 122; Kavanagh 2019). That way, some practitioners try to avoid the authoritative voice of the archaeologists and open up archaeological practice to audiences. Moreover, to stimulate new or different understandings of the past for both the author and the reader (e.g. Green et al. 2004, 165-166; Green and Brock 2000; Holtorf 2010; Bernbeck 2013). Furthermore, to stress the importance of people rather than processes (Hodder 1999, 143), since storytelling and narratives encourage the reader to empathise with the characters in the story and to acknowledge their humanity (Praetzellis 2014, 5135). Another reason why archaeologists create fictive narratives is to give visibility to particular groups of people such as women, children, or enslaved people (e.g. Tringham 1991, 94 who focuses on women in prehistory; also Joyce and Tringham 2007, 333; Hauser 2016 who wrote the Iliad from a female perspective). Additionally, creating fictive stories helps the archaeologist engage deeply with the evidence base and make them face questions and problems that they need to solve before continuing the story (Gear and O'Neal Gear 2003).

Furthermore, according to Van Helden and Witcher (2019, 20-22), archaeologists create fictive stories to challenge teleological thinking, meaning to challenge the tendency to focus on the purpose of something instead of thinking more broadly about the past. Another reason for archaeological storytelling is to trigger an emotional response from the audience in the immersive experience, increasing agency and evoking empathy (Tringham 1991; 2019, 8; Yamin 2001, Perry 2019, Praetzellis and Praetzellis 2015, 128). The concept of empathy, and its importance in archaeology, is a common theme among researchers (see e.g. Boutin and Callahan 2019; Van Helden and Witcher 2019, Savani and Thomson 2019). Moreover, according to Elphinstone, the focus on human beings is exactly what fiction has to offer to archaeology (Elphinstone 2019, 55), and thus is a tool to humanise the past. Lastly, an additional and important function of archaeological storytelling is to engage, educate and convince the public (Majewski 2000, 17). Henson for example has suggested that fiction is the only way to engage the public as it offers the opportunity to describe characters and actions to create a more holistic understanding of the past (Henson 2019, 96).

Stories that archaeologists tell: death and ethics

The benefits of archaeological storytelling are clear. But there is also the question of what stories archaeologists tell. Archaeological narratives can vary from the imagined daily life of people in the past based on archaeological or historical evidence (i.e. Elphinstone 2009), to imagined narratives of the lives of people based on traces of illness or injury in their remains (Boutin 2011; 2014; 2015; 2016). Some of these stories are arguably more difficult to tell than others, and recreating the life and death of a person who actually existed in the past, lived, breathed, dreamed, and had their own desires and agendas based on a set of skeletal remains is indeed difficult (see also discussion in Williams 2012).

As Perry (2015; 2018) points out, archaeologists have been accused of having no soul (citing Selkirk and Selkirk 1973, 163). Perry (2015) interprets this claim as relating to sterile archaeological reports that lack empathy for the people they study, and she argues that 'our typical disciplinary workflows invite soullessness' (Perry 2018, 217). Human remains are arguably treated as artefacts (Williams 2012) by archaeologists who give them sample names and put them in bags after they excavate them, thus the whole practice reflects the notion that after death a person stops being human and becomes something else. Archaeological storytelling and narratives to disseminate our research on death and the dead could potentially help remedy this issue by cultivating empathy about past peoples to both archaeologists and our audiences (Perry 2018, 219; Boutin 2016, 18). As Katifori and colleagues (2018, 611) point out, '[t]he stories created should be about people and not objects, regardless of whether these people are invented characters, historical persons, or even the visitors themselves'. An example of that would be the 'Other Eyes' project, an Arts and Humanities Research Council funded project aiming to investigate the digital embodiment of past people through avatars (Colleen Morgan (2022, 217)).

The study and presentation of death in archaeology falls - among various others - into the sub-discipline of Public Archaeology of Death, and since Public (Digital) Archaeology has already been discussed, it is appropriate to briefly touch upon Public Archaeology of death. That is because a significant element of the narratives created for this research is recreating the life and death of MYC_1V, and thus it is important to elaborate on the theoretical framework and ethical considerations that underpin the stories.

Public Archaeology of Death

'Public archaeology of death (or public mortuary archaeology) is a recent and growing subfield of investigation that seeks to critically investigate the uses, abuses and intersections of the archaeological dead within contemporary practices, cultures and beliefs' (Williams 2019, 1). Therefore, as a discipline it spans legislative, political, and cultural contexts of death and its perception by the living. It is not only about the discovery of the remains, but also about their curation, display, and general handling, as well as the theory and practice of how we communicate death to the public (Williams 201, 2). Moreover, a key element of public archaeology of death is to critically evaluate archaeological projects which involve mortuary contexts (Williams 2019, 2). Furthermore, the discipline critically engages with the dissemination of archaeological discoveries and research through popular media, such as visual arts, literature, television, films, and video games (Williams 2019, 2).

According to Williams (2019, 3), *'all* mortuary archaeology - including field investigations and research, desk - and lab-based analyses and teaching activities, not just museum displays and public engagement activities, need to be considered 'public' in different, often multiple, fashions' (original emphasis). Therefore, all narratives and digital media forms of archaeological storytelling which investigate or disseminate knowledge about death in the past fall into the sub-discipline of the public archaeology of death. Consequently, the narrative created in this DIY projects draws from elements of the public archaeology of death, since the narrative it tells communicates aspects of MYC_1V's life and death to audiences. It also investigates the uses of the remains of MYC_1V, discussing aspects of the handling of those remains, and evaluates the impact of the narratives on the audiences.

The study and dissemination of knowledge about human remains raises deep philosophical and ethical issues, and has been investigated closely by archaeologists and heritage practitioners (e.g. Tarlow 2001; Márquez-Grant and Errickson 2017; Barilan 2006). Below, a short discussion on ethics regarding the handling of human remains will be presented with a focus specifically on narratives about the dead.

Handling of human remains: ethical considerations

Death and human remains are an integral part of archaeological research with multiple subdisciplines and specialisms that focus on various aspects of both. However, as Moshenska (2006, 91) points out, 'archaeology is an inherently uncanny subject'. That is because archaeological research has the ability to bring the dead into the world of the living (Moshenska 2006, 98), a phenomenon that Graham has put as '(digital) necromancy' arguing that archaeologists are creating 'zombies' to animate the dead (Graham 2020, 11). However, these 'zombies' while arguably necessary to understand and communicate the past, need attention regarding how we make them, what kind of zombies do we create and for which purpose.

Handling human remains and the ethics around it, , is not a new discussion among archaeologists. One scholar who has led the way in discussions around the ethics of handling human remains is Colleen Morgan. Morgan developed almost 15 years ago an ethics statement for the documentation and digital capturing of human remains while working on the Dilmun Bioarchaeology Project (Boutin and Morgan 2013 (2009)), noting that even the removal of human remains from their intended final resting place could be perceived as insensitive and disrespectful. In the ongoing 'Other Eyes' project (an AHRC-funded project led by Colleen Morgan, in association with Michelle Alexander and Guy Schofield) the team are using 'a consensus process based on anarchist principles, with advocacy for the dead, and participation of representative stakeholders' (Morgan 2022) which is reflective of the ethical considerations regarding the handling, study, and presentation of human remains. She also questions (2022, 220) whether digitally reconstructing dead people gives us 'a sense of power and control' over the past or we get overly excited entering the digital realm (see Morgan 2019). This statement puts archaeological research, and the handling of human remains in another perspective, raising consciousness around our practice, which is a key theme in this research and underpins the creation of the stories. As it is discussed in later chapters, through the person of MYC_1V, I have tried to touch upon relevant issues to study people's reaction towards these issues.

Handling human remains in archaeology is not straightforward. Sayer (2017) asks: 'So what does respect for the dead mean if it is not subjected to the needs of the living', while noting that respect towards the dead is a requirement in the British legal system, as it is in many other parts of the world. Archaeological codes of conduct, standards, guidelines and accords all require respectful treatment of remains and artefacts. However, respectful treatment towards the dead is rarely defined. Sayer attributes this lack of definition to the fact that the dead and the living are physically

different thus the relationship between them cannot easily be defined legally as it can be between living humans (Sayer 2017, 13). Archaeologists have been accused of looking at past people in a sterile way and being unimaginative when they need to interpret or disseminate their research to audiences (see discussion in Perry 2018). Perry (2017) suggests that we should strive to get better in interpreting the past and not be afraid to tell imaginative stories to 'build and nurture rich, humanizing interpretations of the past' (Perry 2017, 220). However, this also raises ethical concerns especially regarding archaeological storytelling, which are discussed below, as one could argue that this is a form of scholarly respect for the dead, which would be a valid point.

Archaeology of Personhood

The relationship between the dead and the living is a complex one and definitely not universal or intertemporal. It is well understood though that the dead are buried by the living (Tarlow, 2011); they may have been able to state their wishes about their treatment after death, but these preferences are not necessarily followed. The treatment of people after their death reflects the interests of the living, especially in terms of promoting specific social ideologies and power relations. In the same regard, it is the living who un-bury the dead and interpret their remains along with mortuary practices (Buck and Pipyrou 2014, 268). In this context, respect towards the dead is about the needs and wishes of the living, and so, according to Sayer (2017, 13), means 'inclusion, openness and accountability'. Similarly, and regarding storytelling, Boutin (2019, 290) notes that archaeologists who write stories based on human remains face difficulties especially because they are talking about 'actual embodied people' who lived in the past.

A discipline that focuses on the humanisation of skeletal remains is the Archaeology (or archaeologies) of Personhood. The discipline acknowledges that most of our current perception and interpretation of the past is through a Western lens and thus the cultural constructions and perceived identities of past people elude us (Boutin 2018, 18). 'Personhood' here refers to an autonomous and independently motivated and intentioned actor, instead of the Western notion of the 'individual'; scholars reject the Western notion of the individual as well as the mind-body dichotomy (see especially Meskell 2003) and recognise two facets in personhood: the person as a socially constructed collection of identities versus the unique lived experiences of the person (Clark and Wilkie 2006, 333-335).

However, it is difficult to interpret the everyday lives, rites and cultures of past societies, especially those without any written sources, simply because the archaeologists who are interpreting this past carry notions of their own cultural backgrounds (Fowler 2004, 12). As Boutin and Porter point out, this subjectivity and the risks of anachronistic thinking could explain why researchers struggle to integrate evidence from prehistoric excavated mortuary contexts into their analysis where there are no written sources to support their interpretations (Boutin and Porter 2014, 8; see also Perry 2018, 218). Boutin also argues that reimaginations and reconstructions of past lives are inevitably anachronistic, yet it is through such anachronistic practices that contemporary people understand the past and its people (Boutin 2012, 76). As Fowler points out, 'if we study only the human body we miss out on other features that commonly compose a person' (Fowler 2004, 7).

Osteobiography and Bioarchaeology of Personhood

Significant subdisciplines of the Archaeology of Personhood are Osteobiography and Bioarchaeology of Personhood. Osteobiography developed as archeologists and heritage practitioners began to talk about new ways to study the past and disseminate their research to the public (Boutin and Callahan 2018, 2), and thus it is particularly important in this research since it is a method of archaeological storytelling, and a tool for considering ethics about the handling of human remains. In the first case, a method for archaeological storytelling has been developed by Boutin under the name of 'Bioarchaeology of Personhood model' (Boutin 2011, 2016) which is discussed below. Consequently, it is also a tool which provokes thinking about ethical issues when reimagining and reinventing the lives of people in the past from their skeletal remains, and thus relates to the discussion about the ethics on handling and studying human remains above.

As a concept, Osteobiography has become popular fairly recently (Hosek and Robb 2019, 1). According to Boutin and Callahan (2018, 2), 'Osteobiography is a research method that requires its practitioners to engage critically with the production of scientific knowledge, because of the inherent tacking back and forth between the osteological data for one individual and for the population as a whole, and between the archaeological data from one mortuary context and the culture history of a past society' (for a discussion and history of the discipline see Hosek and Robb 2019). The term was coined by Saul in 1961 (Saul 1972; Saul and Saul 1989) and has its roots in the work of Krogman and Angel (Stodder and Palkovich 2012, 1).

Osteobiography is a significant component in the study of prehistory (Stodder and Palkovich 2012, 2), and can lead to a deeper understanding of the past, but its conceptual framework has not been defined (Hosek and Robb 2019, 1). As Hosek and Robb (2019, 1) argue, osteobiography stands in opposition to the heavily scientific and sterile statistical approaches of bioarchaeology, the study of skeletal remains and other biological materials recovered from archaeological contexts, leaning towards a reflexive and qualitative study of the past. Similarly, Boutin (2019, 286) argues that 'humanistic' methods employed by archaeologists such as creative writing or sensory exploration of the past are nonexistent in bioarchaeology and claims that implementing fictive osteobiographical narratives about past persons can be beneficial for the audiences. Consequently, the emerging sub discipline of socially oriented bioarchaeology focuses on matters of identity and life history, leading bioarchaeology towards becoming a more inclusive paradigm dealing with social matters (Stodder and Palkovich 2012, 2). Among the significant strengths of fictive osteobiographical narratives are the use of interdisciplinary evidence, the accessibility for both academics and the public, the effectiveness as a pedagogical tool, the articulation with other theoretical models (Boutin 2016, 18; Boutin 2019, 287), and their power to evoke empathy (Boutin 2016) and reduce prejudice (Bouikstra et al. 56).

Boutin (2011, 2012, 2016) has stressed the importance of exploring new ways for interpreting osteobiographical data, and specifically she has suggested that fictive narratives have both conceptual and practical benefits for this purpose. This approach has been discussed and utilised in this thesis under the model 'Bioarchaeology of Personhood' (Boutin 2011, 2016) (see also discussion and analysis in Long and Boutin 2018). It is a combination of archaeological and osteological data with sociohistoric contextual evidence that has 'the power to transform a burial of just one person into a prism through which a whole community and landscape could be seen' (Boutin 2016, 18). Boutin named this model after the 'archaeologies of personhood' (Boutin 2016, 18) and consequently the subdiscipline of Bioarchaeology of Personhood was born, and it is an interpretive format of osteobiography based on the creation of fictive narratives.

Archaeologists creating digital visuals: filmmaking, 3D reconstructions, and Virtual Reality

Another media form of storytelling is digital visualisation which not only enhances the accessibility of archaeological knowledge but also offers a multi-dimensional perspective that engages both scholarly and public audiences alike. As Cerasoni and colleagues (2022) point out, '[p]eople want to see the past, not only know about it'. Archaeologists use a variety of visualisation methods to record, interpret, and construct narratives about the past to effectively communicate it (Opgenhaffen 2021, 353). Visual communication of archaeological research has been integral to the discipline from the outset, with archaeologists making drawings, taking photographs, and creating reconstructions to present their archaeological arguments (Moser, 2012; Morgan and Wright 2018, 136; for an in-depth discussion on the history of field drawing see same article). However, despite the introduction of computers in archaeological science in the 1970s, it was not until later in the 1980s when digital technologies were utilised by archaeologists to visualise, analyse, and interpret archaeological data (Opgenhaffen 2021, 367).

However, James (2015) has been quite vocal about the lack of 'visual competence' that characterises archaeologists, despite the fact that, as Perry (2017) points out, archaeologists enjoy creating digital media. Opgenhaffen (2021, 354) notes that archaeological visualisation is an integrated part of archaeology instead of a subdiscipline (see also discussion in Morgan and Wright 2018). However, James (2015, 1190) points out that archaeological training and practice is characterised by shortcomings in visual competence, especially in regard to effectively communicating archaeological research. Incompetence in visual creation as argued by James can significantly impair archaeologists' ability to create effective DIY digital archaeological projects.

Despite the 'visual turn' of recent years, along with the wide variety of available media for the purposes of archaeological visualisation, the number of archaeologists who are skilled in creating visuals keeps shrinking (James 2015, 1190). James (2015, 1194) attributes this to the poor training of university students in visual skills after the 1970s. He points out three main reasons for this: larger numbers of students at universities which made it difficult for small group training in practical skills; demand for joint degrees which complicated the curricula; and the development of long-distance degrees, which also did not allow room for in person training in practical skills. These issues, in combination with the consideration that written texts are more valuable in

academia than the visuals accompanying them, created this lack of visual competence in archaeology (James 2015, 1194).

However, the value for archaeologists of creating and using visuals is substantial especially when considering their involvement in the making of DIY archaeological projects. Like narratives, visuals allow for reflection, exploration, and interpretation of the past in a way that just reading or talking about it cannot achieve (James 2015, 1200). Archaeological visualisation functions as both a product and a practice (Opgenhaffen 2021, 354). However, as with archaeological storytelling, visualisation in archaeology has also been criticised for being potentially deceiving and misleading for audiences since it is impossible to accurately represent people and places that left little evidence behind them (Wheatley 1993; Eiteljorg 2000). Similarly, Jeffrey (2015, 149) argues that digital representations of the past are varyingly viewed as scientific tools of interpretation or unnecessary technological paraphernalia with no actual value for understanding the past. This notion relates to wider conversations about the whole discipline of digital archaeology, which has been described as 'anxiety discourse' though in recent years seems to have been remedied (Morgan 2022, 214).

The criticism regarding digital visualisation in archaeology can be extended to the evaluation of those projects, as with any other form of archaeological storytelling for knowledge dissemination and public engagement discussed so far. I argue that it is important to understand and evaluate the impact of digital visuals on the audiences that they are intended for. As Opgenhaffen (2021, 354) points out, '[w]ithout understanding how archaeologists do, and how it came into being as such, it will be difficult to understand how digital visualization practices, and the technology that enables this visualization, are part of the wider archaeological discourse'. On a similar note, Perry and Taylor (2018, 17) argue that archaeologists potentially have not fully understood the positive and negative implications of digital technologies in archaeology, and they urge the 'development of a robust framework of reflexive practice for the application of critically engaged digital methodologies at a disciplinary level'.

Archaeological Filmmaking

A significant tool that archaeologists have used to create visuals is filmmaking. In this research, I follow Morgan's (2014, 325) definition of an archaeological film: 'a film *made by an archaeologist* in order to communicate some aspect of archaeological research'. The film that I created for this research also falls into this category: it is a film made by an archaeologist with the aim of communicating aspects of archaeological research. Therefore, a short literature review focused on archaeological films genres is given below.

Morgan (2014) has identified four archaeological film genres: *expository*, *direct testimonial*, *impressionistic*, and *phenomenological* films. *Expository* archaeological films are usually created for public outreach or for teaching about archaeology. They generally have a cohesive storyline in the form of a monologue, narrated by an external, omniscient voice, usually known as 'voice-of-god narration' (Morgan 2014, 330; Kiryushina 2020, 33). Morgan sees the films of this genre as particularly useful to the public since they are informative and widely accessible, as well as for the archaeologist-filmmaker as they can broaden the latter's horizons regarding stakeholders, audiences, and even ethics around archaeological practice, as well as being a steppingstone for the archaeologist-filmmaker towards more experimental films (Morgan 2014, 330). 'Mockumentaries' also fall within this category, which are films combining truth with fiction in a more critical way and often discuss the process of knowledge construction in archaeology (Morgan 2014, 330-331).

The second genre according to Morgan (2014, 331), is *direct testimonial* films, which provide a summary of the fieldwork conducted on-site in the form of archaeological video diaries. In these films, finds and excavation conditions are described, and they might also include small speeches by the archaeologists working on the site. The audience for this particular genre can be other archaeologists interested in the excavation, or the local communities and the general public and thus sometimes they follow the practice of site tours, and these films are usually embedded in a website about the site (Morgan 2014, 331-332). In this genre, the omnipresent omniscient narrator has been replaced by an inside narrator directly interacting with the archaeological evidence, normally providing their expert interpretations to the audience through a monologue (Morgan 2014, 331).

The third genre is that of *impressionistic* documentaries aiming to create an interdisciplinary space between archaeology and art in order to explore broader potentials for archaeological theory and practice (Morgan 2014, 332). Impressionistic archaeological films are favoured by post-

processual archaeologists since they focus more on the subjectivity of archaeological interpretation and lack the authoritative expert voice and didactic structure of the expository film. The audience of these films can again be both other archaeologists and the public, though sometimes the wider public can find them rather confusing as they might expect a more linear narrative (Morgan 2014, 332).

The last genre is *phenomenological* archaeological films. These films aim to put the audience in the shoes of an archaeologist both in time and space and thus they try to convey the sense of the landscape. The archaeologist-filmmaker captures the sensory landscape of the site which would not have been possible to communicate via a narrative or a photograph. The narration can be the archaeologist's monologue, or it might not even exist, and there is usually a single continuous shot (Morgan 2014, 333-334). This genre is also very subjective, capturing and conveying the archaeologist's understanding of the place to the audience, which again can be both archaeologists and the general public.

In this thesis, the film that I created is a 360 film adapted to be viewed with HTC Vive headset. The potential of 360 films in archaeological projects has not yet been fully explored, but there is a gradual growth in interest from people in education due to the pandemic (Ranieri et al. 2022, 1200). The details of the film along with the genres that it falls into are discussed in Chapter 4.

3D visualisation and Virtual Reality in archaeology

Archaeology as a discipline has always taken advantage of new technologies and methods borrowed from a wide variety of other fields of study. As Forte (2014, 113) suggests, '[w]e live in a cyber era: social networks, virtual communities, human avatars, 3D worlds, digital applications, immersive and collaborative games are able to change our perception of the world and, first of all, the capacity to record, share and transmit information'. 3D visualisation and Virtual reality as visualisation tools has been favoured by archaeologists for connecting and researching the past for more than 50 years (Morgan 2009, 469; see discussion in Perry and Taylor 2018, 14). Interactive 3D virtual worlds are far more auspicious than traditional media in terms of informing and engaging both the wider public and the academic community (Sanders 2014, 30).

As with any other medium explored so far, the use of 3D visualisation to research and interpret the past has been a controversial subject even among archaeologists. However, as Sanders

(2014, 30-31) notes, '[p]ast lives, events, and settlement changes did not happen in 2D, or in black and white, and they were not static, segmented slices of time [...]. Since the past happened in 3D, that is the way it should be visualised and studied'. And they wonder (2014, 31): '[w]hat better way to study the past, than to virtually experience it?', arguing that viewing the past from a 3D perspective, as the original inhabitants of the landscape would have seen it, allows archaeologists and researchers to ask new questions and explore new aspects in interpreting the past (Sanders 2014, 38). It is noteworthy though that the VR video that I created in this thesis is a present-day laboratory allowing for the stories of the main character and Stamatakis, the archaeologist, to tell their stories, and thus I did not have the same issues with constructionist storytelling as I would if I had tried to reconstruct the life of the main character in 3D for example.

Virtual Reality (VR) in archaeology

One of the most commonly used 3D visualisation tools for knowledge dissemination and public engagement in archaeology is Virtual Reality (VR), along with other forms of reality such as Augmented (AR) and Mixed Realities (MR). VR in archaeology, usually described with the term 'virtual archaeology', may include 3D modeling and visualisation of landscapes, built environments, or excavations, with the purpose of testing research questions and hypotheses, communicating results to the academic community and the wider public and/or engaging communities with ongoing archaeological research (Morgan 2009, 471).

Since the 1980s, archaeologists have been using computers to visualise archaeological finds by creating low-resolution 3D models (Reilly 1992). In the 1980s, archaeologists had already adopted geographic information systems (GIS) and global positions systems (GPS) along with various remote sensing technologies (González-Tennant and González-Tennant, 2016, 187-189). Gradually, with the improvement of the software, archaeologists began to digitally recreate whole archaeological sites and built environments (Forte and Siliotti 1997 as cited in Sanders 2014, 31).

In the mid-1990s, VR was primarily used for video gaming and cinema (Sanders 2014, 31), in a rather limited and arguably unsuccessful capacity, but in the late 1990s as computing costs declined significantly, archaeologists were able to access the technology to work on 3D projects (González-Tennant and González-Tennant, 2016, 187-189). However, the first virtual reconstructions of archaeological sites were just models, essentially empty built environments

without any cultural presence in their space (Forte 2014, 115). Forte (2014) labels this very first phase of virtual archaeology as the 'wow era', a period characterised by focusing on creating static photorealistic models to show off the capabilities of the software, without any interpretation value (Forte 2014, 116).

VR in archaeology has since developed, and has been used by archaeologists to document excavations, for data analysis, teaching, publications, museum interaction and display, gaming and public engagement (Sanders 2014, 31-33). At the start of the twenty-first-century, virtual heritage practitioners had developed numerous projects using 3D visualisation because both the hardware and software had dramatically improved, along with recognition of the benefits of the virtual approach to heritage (Sanders 2014, 37). However, as Morgan (2009, 472) points out, most digital reconstructions from archaeological projects in the early 2000s were undertaken without any explicit or comprehensible archaeological goal or research question.

The future of digital archaeology could include holographic reconstructions, laser-plasma virtual displays, auto stereo screens, and interactive avatars functioning with the help of artificial intelligence (Sanders 2014, 38). Avatars could help the audience connect with the research and thus commit to the work, and also the actual creation of the avatar, including clothes, footwear, and facial characteristics could prove helpful to the researcher, helping them to familiarise themselves with the digital tool and to start thinking about the daily lives of the people who used to inhabitant the site (Morgan 2009, 479-481). Moreover, avatars can increase empathy and create attachment with the user (Morgan 2019, 328). In her research project called 'Other Eyes', Colleen Morgan (2022, 217) is currently exploring the digital embodiment of past people through avatars of Roman people found in York.

However, VR is arguably not yet at the level which would allow for effective employment in archaeological research, either for studying the past or disseminating the results. The uncanny valley (see Mori et al. 2012) of many archaeological projects can lead to an unsettling or disturbing feeling that could further distance people from the past instead of helping them engage with it. This gap between what we want to achieve and what we can actually do with VR has been discussed by Stuart Eve (2013) who uses the Gartner Hype Cycle for Emerging Technologies. This model explores the idea that a technology passes through a 'hype phase' where the expectations by the creators about this technology are in peak state, gradually decreasing those expectations all the way to finally reaching a 'plateau of productivity', when people begin to explore the actual potential of this technology and apply it to their projects. However, Morgan (2019)

argues that experimenting with 3D technologies and striving for embodied interpretations in virtual reconstructions are beneficial for archaeologists even if they might feel uncomfortable. Similarly, as Mol and colleagues point out, the rise of virtual, interactive media is a fundamental element of the digital revolution (Mol et al. 2017, 8).

VR applications used for disseminating cultural heritage have been classified as 'virtual heritage', usually referring to the reconstruction of tangible cultural elements (Pujol and Champion 2012, 84). In the past, VR was assessed based on the degree of immersion and real time interaction (Forte 2014, 113). For example, Sanders (2014, 31) defines VR '[...] as interactive, self-directed, real-time navigation through a computer-generated 3D space displaying a simulated synthetic scene'. Whyte (2002, 2-3), when referring to VR, distinguishes between the system and the medium of VR. The system is the software and hardware used to create 3D models, while the medium involves three key elements: first, it allows a form of human interaction with virtual models; second, it allows the movement of the user in a three-dimensional space; lastly, the interaction between humans and digital objects within this three-dimensional space happens in real time. However, Forte (2014, 113) suggests, citing Champion (2011), that today these characteristics of VR are just options and what really affects our perception of VR is 'the experience, a cultural presence in a situated environment'. Cultural presence is a term coined due to the wide use of VR in archaeology (Pujol and Champion 2012). Pujol and Champion define the term 'presence' as 'the capacity of the technology to make the user feel transported into a remote place and be able to efficiently interact with it' (Pujol and Champion 2012, 83). Notably and in regard to the VR-video that has been created in this thesis, Ranieri and colleagues (2022, 1200) support that 360 films which are created to be experienced as VR environments are capable of offering the feeling of presence, as well as the sense of embodiment, and they can be much more realistic visually than constructed 3D environments, since they are exact images of the environment they represent.

According to current research, the most important elements in VR artefacts which make them suitable for knowledge dissemination are immersion and interactivity (Johnson-Glenberg, 2018; Makransky and Petersen, 2021). Immersion can be understood as the objective level of sensory fidelity provided by a VR system (Bowman and McMahan, 2007). For instance, VR provides high levels of visual immersion through head-mounted displays. Interactivity refers to the amount of freedom the user is given to control the experience, often through handheld controllers and a virtual body (Makransky and Petersen, 2021). While these definitions imply that immersion and interactivity are objective characteristics, it should be noted that they have also been defined as

subjective concepts (e.g., Mütterlein, 2018). These two features have been used to predict increased learning outcomes as a result of VR (Makransky, Petersen, and Klingenberg, 2020).

Arguments against the use of digital visualisation in archaeological research

Despite the great appeal of digital visualisation in archaeological research, there have been arguments against the use of it in cultural heritage from within the discipline. Archaeologists have regularly expressed their concerns regarding authenticity and the notion of the 'real world' in contrast to the virtual one (González-Tennant and González-Tennant, 2016, 187). However, as Forte (2014, 114) points out, '[t]he issue of authenticity of virtual worlds is quite complex and it is strongly linked with our cultural presence, knowledge and perception of the past', meaning that virtual worlds would never exactly replicate past worlds and even if they did, everyone has a different understanding of the past depending on their cultural presence and experience.

On a similar critical note, Jeffrey (2015) has argued that digital heritage visualisation is unable to accurately transfer information about the properties of the original object to the user, hence leading to a serious lack of engagement. According to Jeffrey (2015, 146), digital visualisation is a strange medium to achieve connection and understanding of the past, given the lack of materiality that characterises digital technologies. He summarises some of the problems with digital tools to conclude that 'these factors combine to create an apparently sanitized, distancing and disengaging artefact' (Jeffrey 2015, 146). Jeffrey argues that 'the object has no physical substance that we can sense, no weight, no texture, no smell and no temperature' (Jeffrey 2015, 145), a point that seems rather problematic because, by 'sense' the author appears to mean just the senses of touch and smell, ignoring an important sense which is vision. Without wanting to support that vision is more important than the rest of the senses, since ocularcentrism has been denounced in recent years (see e.g. Ingold 2000, Kavanagh 2004, Thomas 2009, Ingold 2011, Porcello et al. 2010, Eve 2012, Graham et al. 2019), it seems though paradoxical to completely ignore vision as a sense, which is a strong element in digital visual reconstructions. Arguably, especially in DIY projects where the funding and time are limited, digital visualisation is an important way to try to transfer information about the past, even if there is always the risk of lack of engagement.

Another argument posed against the use digital visualisation by Jeffrey is that decay is of the utmost importance in understanding things and clearly not present in digital visualisation of the

past. Again, this is a problematic notion as the preservation of objects/artefacts and places/archaeological sites is a high priority for archaeologists. In fact, that is exactly what archaeologists and heritage managers try to achieve by reconstruction, to halt the process of decay.

Lastly, Jeffrey states that 'ownership of all kinds of digital concepts appears to be a dying concept. […] We buy a license to consume a digital version of a book on eReader, we don't own the book' (Jeffrey 2015, 146). Contrarily, this last point also applies to physical heritage objects. For example, when someone buys a ticket to enter a museum or an exhibition or an archaeological site, they do not buy the place, or the objects included. They just buy a license to consume these heritage objects. More specifically, they buy some time to consume these objects and they cannot use this license again. However, this does not apply to the digital world because one could buy the license and then revisit the digital world as many times as they like. In fact, this is an additional reason why digital tools are a democratisation of heritage.

However, as Perry (2014) notes, the process of digital visualisation can actually help archaeologists to engage with the artefacts and the landscape, and assist them in their interpretations. Moreover, visualisation is considered an engaged social practice instead of a straightforward process, leading to the construction of a more 'democratic, inclusive, critical-engaged and truly reflexive network of media and people' (Perry 2014, 27). González-Tennant and González-Tennant (2016, 187) also suggest that it is important for archaeologists to experiment with new technologies in order to maintain a dialogue with other disciplines.

Linked to both digital visualisation and interactive narratives is another important field that archaeologists have used to disseminate their research to audiences: archaeological games, or archaeogaming. It is the last medium that will be discussed in this review as it is tied to the Twine interactive digital narrative (IDN) created for the thesis.

Archaeologists creating games: Archaeogaming

Archaeogaming is a term coined by Andrew Reinhard (2018). Reinhard (2018, 123/4937) defines archaeogaming as 'the archaeology both in and of digital games.' Pujol and Champion (2012, 88) argue that videogames are potentially one of the best media for the communication of cultural heritage and thus for the dissemination of archaeological research because:

'they are based on interactivity and exploration; they include human agents; they contain detailed material culture used in social situations; they allow a high degree of perceptual and interaction realism; they meet informal learning environment needs; they have proved to be very successful in collaborative learning; and they are supported by recent pedagogical theory.'

Archaeogaming has evolved into a formalised methodology commencing in 2013. This development is underscored by scholarly contributions from various authors, including Aycock, Therrien, and Copplestone among others (Reinhard 2019, 24). As Reinhard (2019, 24), points out there is a thriving academic community exploring the potentials of gaming within archaeology, with the University of Leiden having produced multiple publications on the matter. The Past-at-Play lab of the University of Leiden is doing regular streaming of members playing archaeological games online, cultivating fertile ground for further work in the field.

Gaming has been used by archaeologists, from simple narratives for role-playing games to interactive fiction (see discussion in Costikyan 2007, 5-10). For example, Oliver Dickinson, a prominent Aegean archaeologist, has created narratives for fantasy hero fiction and the role-playing game world of Hero Wars, Rune Quest, with the most well-known being the stories about Griselda (see note by Claire Loader in Dakouri-Hild and Sherratt 2005, 338). As Politopoulos, Mol and Lammes (2023, 1) argue, 'playing in and with archaeology, as is the case in archaeogaming, can be a positive force for change where there is a widely felt need for the scholarly, professional and societal reorientation of the discipline'.

However, archaeogaming has only recently begun to be recognised and accepted as a discipline by both scholars and the wider public (Reinhard 2018, 249/4937), as reflected in the sessions of recent conferences (i.e. TAG 43 (2022), CAA 2023, CAA 2024). There is a growing number of academics and archaeologists discussing specific games and their relation to the past (e.g. McCall 2019; 2020; Mol, Politopoulos and Ariese-Vandemeulebroucke 2017; Graham 2018; Politopoulos et al. 2019).

Despite the general hype for archaeogaming among scholars, there are also arguments against digital gamification (in the sense of the application of digital game playing and not archaeogaming as a discipline) in archaeology. For example, Jeffrey (2015) considers gamification via an interactive narrative to be a rather problematic approach for many reasons, including the need for clarification of how the past has been interpreted (for a discussion on the drawbacks of video games as teaching tools about the past, as well as suggestions on how to resolve the issues, see Boom et al. 2020). However, Forte (2014, 115) sees gamification as a way to change the rules of engagement with the past and as a tool to create a hybrid reality, combining the real and virtual worlds.

Game developers have long been interested in history and archaeology, therefore a plethora of video games with historical concepts, characters, gameplay or archaeological techniques, like excavations or surveys, have been created since the emergence of video gaming (Boom et al. 2020). In fact, many games use history or archaeology as their foundation for educational as well as entertaining purposes. Examples include the Assassin's Creed franchise, which is fundamentally a 'historical' game, and the fairly recent game 'Odyssey' which incorporates a non-combat mode for the user to explore the game's world, purely for educational purposes (Politopoulos et al. 2019). Historical video games, according to McCall (2019, 29), qualify as a medium for communicating historical aspects of the past, and thus are valuable tools for knowledge dissemination.

Archaeogaming, as with the other forms of digital archaeology discussed so far, has immense significance in archaeological research. First of all, it is an excellent tool to educate the public and students about specific contexts which are otherwise difficult to explain using traditional text-based education. According to Boom and colleagues (2020, 36-38), video games can be used to create analogies between the past and present to help students better understand abstract concepts, such as city formation, empires or societal collapse. Moreover, as Boom and colleagues (2020, 38) argue, archaeogaming is ideal to engage with the wider public and reach further than a classroom or a conference room. Furthermore, it can be used to break the deterministic patterns of exploring and communicating the past. As McCall (2019, 35) suggests, '[g]ames offer a sense of exploration, of control, of possibility, possibly a sense of sober consideration, not just passive determinism'.

Teaching and engaging people through video games is currently happening in both formal education and public heritage institutions (see Koutsabasis 2017; McCall 2016). Video games are

interactive, giving the opportunity for the user to make decisions which impact the progress of the story and the final outcomes. Hence, different players have different experiences and narratives depending on their own choices and mentality (McCall 2019, 33-34). However, as with the many other digital forms of media that archaeologists create and have been discussed above, the impact of gaming on people's understanding and experience of the past has not been explored, and thus there is a significant knowledge gap in how people learn about the past through gaming (Boom et al. 2020, 29).

Problems of telling the stories

This chapter has explored some of the media which archaeologists use to tell stories. It is now important to discuss and evaluate some of the objections to archaeological storytelling as an overarching theme, apart from the objections regarding each medium separately, which we have seen so far. Archaeological storytelling has long been frowned upon. The late Lewis Binford, for example, heavily criticised the use of storytelling as well as all 'post-processual' archaeology, labelling it as 'not archaeology' and 'anti-science' (Praetzellis and Praetzellis (2015, 129). South also warned of the risks of archaeology becoming less scientific using storytelling: 'Archaeological explanation does not need fiction to enrich it; because it then becomes fiction' (South 2005, as cited in Praetzellis and Praetzellis 2015, 134). Moreover, it has been suggested that storytelling is not an accurate way to either study the past or talk about it, since when archaeologists reflect on the past using stories, they only find and see themselves (Elphinstone 2019, 57); an idea reflected by Van Helden and Witcher (2019, 24) as well: 'Hence, rather than finding otherness in the past, we simply find ourselves' (Van Helden and Witcher 2019, 24), stressing the danger for anachronistic views of the past. However, archaeologists do not typically claim that their stories accurately reflect and describe past people. For example, Praetzellis (2019, 275) notes that '[w]e recognise that the writing process is self-revelatory, and, consequently, a step into a perilous realm.'

The first argument against the use of stories in archaeology is that there is a significant risk of misleading both the public and the academic community into believing that these stories are actually facts. As Lewis (2000, 7-8) insists, if archaeological stories are published separately

aiming to reach the wider public, they may be perceived by their readers as the end product of archaeological research and hence understood as fact.

Looking more closely into the objections regarding the potentially misleading nature of archaeological storytelling, the issue seems to lie in the difference between truth and imagination (see also Praetzellis 2019, 281). However, it is accepted that all research involves subjective interpretation (Pujol and Champion 2012, 89) and therefore even archaeological reports could be seen as potentially misleading. As Kavanagh observes, in the end, science, humanities and the arts do not present reality, but they are just methods of enquiry (Kavanagh 2019, 198). Uncertainty in fiction is usually seen as a problem that needs to be solved, but Savani and Thomson suggest that it can be a rich resource instead of a problem because narrative rejects certainty and conclusions and leaves space for multiple and diverse interpretations (Savani and Thomson 2019, 212).

On a similar note, Wickham-Jones observes that there is increasing recognition that our narratives will always be biased and dependent on our cultural backgrounds, and therefore archaeologists should continue writing stories since we can never overcome the boundaries of our own existence (Wickham-Jones 2019, 46). This notion is also expressed by Given, who argues that history itself can be fictive and subjective and that the same applies to academic writing, as it can be biased, thus leading to incorrect interpretations and assumptions (Given 2019, 178). Gibb (2019, 150) concludes that there is no simple solution to resolve the dilemma of how to tell stories about the past. The solution which Gibb offers is to acknowledge the potential misunderstanding and the ethical dilemmas in each archaeological project and accept the fact that there is no reasonable way for archaeologists to be sure that they accurately represent people of the past (Gibb 2019, 151). Similarly, according to Boutin (2019, 291), being explicit about which parts are fictive and which are based on evidence should solve this problem. Therefore, the problem of 'misleading' the public into believing that archaeological stories are fact can also be easily solved if the author of the story informs the readers or audience that the story is based on archaeological data and is one interpretation amongst others.

Another argument against storytelling is based on the notion that the use of fictive techniques is simply not required to achieve the stated objectives, or they can be achieved through other methods. Patton comments that the author can only include a small amount of archaeological or historical detail in the narrative, as the focal point is the human relationships, not the facts (Patton 2019, 79). It is a valid argument, but as Praetzellis and Praetzellis (2015) note, it was never

suggested that storytelling should replace the scientific interpretation of archaeological data. Instead, storytelling is an additional tool that could offer the means of addressing gaps in the archaeological record (Van Helden and Witcher 2019, 21) and bring today's people closer to the people of the past.

A final yet important argument against storytelling in archaeology is that it is disrespectful and unethical to invent past people's lives (see e.g. Bernbeck 2015, 261; Joyce et al. 2002, 125). Morgan (2019, 329) questions 'What are our responsibilities to the people of the past?' [when it comes to breathing life into past people]. She argues that despite the diversity of projects related to past people and societies, archaeologists must consider the full implications of recreating past people. Similarly, Gibb (2019, 148) wonders: 'by what right do I, as a white, middle-class citizen of a Western democracy, appropriate the legacies of people with whom I have no demonstrated connection, or upon whom Western powers imposed unequal power relationships?'. And he continues, quoting Bernbeck (2015, 261) that by reconstructing the pasts of other people, archaeologists are guilty of committing 'diachronic violence' and disrespecting people. It is not the first time Gibb raises these ethical questions. He has previously (Gibb 2000, 3) raised concerns about his depiction of past people, feeling that he could never be sure that his characters would have said the things he makes them say, act the way he thinks they acted or feel the same emotions as he believes. He refers to the people of past societies who left little obvious evidence of who they were and why they made particular choices as the 'silent people' (Gibb 2019, 149). Gibb argues that putting words in the mouths of these 'silent people' who lived millennia ago is potentially disrespectful (see also Praetzellis 1998).

However, as Gibb concludes in the end, as long as academics accept the dichotomies between fact and fiction or science and literature, the question 'why stories?' will continue to exist (Gibb 2000, 2). As mentioned above, Gibb believes that a definite resolution to all the ethical dilemmas regarding talking about past people cannot be entirely resolved (Gibb 2019. 150). His solution, apart from informing the audience that the stories are fictive, is to acknowledge and thank his subjects, and apologise for any unintentional harm caused (Gibb 2019, 166). I would add that following a specific methodology that allows for reflection and evaluation of the impact of those stories would add a layer of reflexivity on our intentions and results of the stories we create. Below is a short review of some of the methodologies that different archaeologists as storytellers have used to create ethical stories.

Approaches to archaeological storytelling: how do archaeologists tell stories?

Wickham-Jones argues that in order for fiction to be a useful academic tool, it must operate within accepted academic boundaries (Wickham-Jones 2019, 39). This is supported by Given who argues that if storytelling is to be used as a proper archaeological technique, it needs to have an explicit methodology, as with every other archaeological technique (Given 2019, 180). It is therefore obvious that archaeologists are not telling their stories without having thought about the implications of such a practice, and many have tried to produce a rubric to follow when creating archaeological stories.

However, different scholars follow different methodologies to create and support their stories. Majewski (2000, 18), provides readers with a meticulous methodology for creating archaeological stories: First comes preparation of the research design, which includes a chronology of human occupation and general history of the place. From there, primary and secondary research questions are raised. Then, a subjective brainstorming to interpret the archaeological data is necessary. Next, the archaeologist needs to decide which data sets or specific archaeological and/or historical data could be used in the story in order for the research questions to be answered. Lastly, the research design also includes a description of the methodology which will be used for each specific story.

Similarly, Patton suggests that one efficient way of producing fictive narratives is to 'translate' the archaeological language, which describes sites, stratigraphy, artefacts, distribution of patterns, taphonomy, and symbolisms into the language of novelists, describing personalities, intentions, relationships, desires, emotions, metaphors and so on (Patton 2019, 70-71). As he observes, readers of novels do not want to read that people in the past made cheese, but they expect to experience how they did it (Patton 2019, 73).

Other archaeologists had used a time traveller as a 'witness' observing past communities without interacting with them. Gibb (2019) for example, in one story he created a dialogue between two present-day archaeologists who went back in time to describe the lives of past people while they were observing them (Gibb 2019, 153, 158). According to Gibb, this technique imposes challenges, but these challenges are more technical than ethical (Gibb 2019, 165). In some of the

stories, the time traveller may act as a bilingual guide to help archaeologists communicate with the locals depending on the time period they are in (Spector 1993; Gibb 2019; Mithen 2003).

Praetzellis and Praetzellis (2015, 125) see storytelling more like a pinnacle of the archaeological process rather than being counter to or instead of scientific interpretation of archaeological data, and their main objective is to be transparent regarding fact and fantasy. Hence, they and their team first excavate, collect, analyse, and undertake archival research and ordinary contextualization and interpretation. When they finish with the more technical steps, the team prepares an Interpretive Report, and each individual explores the available data from their own perspective. Then they construct well-evidenced narratives based on the archaeological, archival, and interpretive data (Praetzellis and Praetzellis 2015, 127-128). For published projects they provide the user with a one-page graphic which connects the sources and the narrative, as well as a further reading list about the story, and they also use introductions discussing Objective Truth along with the role of the author (Praetzellis and Praetzellis 2015, 128).

Gibb (2019, 150) has also developed a thoughtful approach to archaeological storytelling framing it based on two questions: first, how can we achieve understanding of past peoples' views of the world, of themselves and of their own places in the world to advance our humanistic and scientific goals? And second, what is my ethical justification for attempting such an understanding? Gibb has further (2003, 2015, 2019) communicated his method of storytelling: 'First, I lay out the scientific problem, then describe the setting and the characters, and finally put into motion the characters in that setting' (Gibb 2019, 153). In more detail, he notes, 'I start with an abstract or argument that establishes the time and place of action and defines the subject, or central reflector. Any general comments about emotional intensity or ramifications of what will ensue are also appropriate. […] I then compile a list of characters […] describing each with a biographical sketch that is referenced to archival and archaeological sources or to characters from period literature […]'. He then lets the characters interact and just writes the story (Gibb 2015, 152).

Similar approaches have been adopted by other scholars (see Henson 2019; Ripanti and Osti 2019; Savani and Thompson 2019). Given also follows Gibb's concerns about putting words in the mouths of people in the past, so he tries not to. His protagonist is a survey archaeologist who encounters 'strangers'. Given argues that the way to create effective and honest narratives is to be clear with the public about which part is fiction and which is fact. He suggests two ways of doing so; references and an index with archaeological evidence (Given 2019, 178). References

in the form of footnotes have also been suggested by Boutin (2019, 291) in the bioarchaeology of personhood model as described above.

To remove the problem of dialogue, Tringham (2019) uses an experimental approach to give voice to prehistoric people without using words, acknowledging the fact that using English words and expressions while creating narratives about past people might be misleading and inappropriate. Instead, she suggests using intonation and rhythm of speech (prosody), 'empty speech', 'through away comments', 'speech fillers', 'speech disfluencies' and emotional vocalisations as a better way to create narratives that could gain a more 'objective' representation of past people (Tringham 2019, 6). Consequently, she has experimented with and created some short films using Autonomous Sensory Meridian Response (ASMR) techniques in order to evoke an emotive response among the audience towards the past and its people (Tringham 2019, 7-13).

In all these cases, despite the efforts of the authors to create more 'objective' narratives, the problems of 'authenticity' and 'factuality' have not been resolved. In Gibb's case, using 'external observers' to discuss what the people in the past were doing, instead of commenting on or interpreting their behaviour, seems more of an illusion of authenticity, since interpretation is unavoidable. For example, the whole scene is fictive and most likely never happened in the way Gibb describes it. Therefore, even putting these people in a story is a form of interpretation, which he explicitly attempts to avoid. Moreover, he makes his subjects perform specific actions without any evidence that they would have done them. For example, Gibb (2019, 160) describes in his story that the people exchanged 'mutual greetings' but this automatically assumes that the people he is describing used to greet each other. At first glance, this assumption seems 'objective' because the author does not mention or describe the way they greet each other. However, if we want to be accurate, the assumption that past people used to greet each other is still an interpretation. Moreover, he uses Jim as his main character, a 'superannuated, white, male, middle-class field archaeologist […] [who] earns his living through commercial archaeology […] but remains engaged in academic research through publication and conference participation' (Gibb 2019). Jim seems very similar to (James) Gibb. This character seems just a copy of himself so, again, a subjective addition. In fact, Gibb admits that Claudia, the second character in his vignette, is inspired by a real-life colleague (Gibb 2019, 166) and he also mentions elsewhere (Gibb 2015, 152) that he sometimes appears as a character in his own works. That being said, Gibb has always been honest and acknowledges the fact that storytelling is a reflective technique (Gibb 2019, 152).

The same applies to the stories of Given, as the reader has the feeling that his main character is a version of himself. This character is 'Hermon', a man who - as he says - keeps creeping back into his stories and appears in many different periods as the main protagonist (see Given, 2019: 180-181). Tringham's approach, although avant-garde and experimental, is still as subjective as the other means of storytelling presented above. The stories are - and will always be - archaeologists' interpretation of facts. In other words, everything formed in a story is the archaeologist's interpretation just as the 'dry' archaeological reports are the archaeologist's interpretation (see also Praetzellis 2015, 125). Moreover, using all these means mentioned above ('empty speech' and sounds) does not make the 'language' used universal. For example, nodding for yes is completely different among cultures today, as is the tone a person uses to express a question and the 'eh?', 'ah?' sounds a person makes when they have not understood something. There are still assumptions made about past people when using 'empty speech' or emotional vocalisations, so this choice still does not seem to solve the problem of putting words in the mouths of prehistoric people.

Despite not necessarily having been able to solve the problem of subjectivity of archaeological storytelling, it is though apparent that archaeologists as storytellers have always been preoccupied with developing methodologies to create more honest and open stories about the past. However, there is no uniform methodology adopted by the academic community since storytelling, as shown above, can take different forms and serve different purposes. The following chapter aims to provide a rigorous methodology regarding the creation of the narratives and consequently of the media in this thesis, addressing issues of authenticity and interpretation.

I would argue that even post-processual archaeologists are still trapped in a positivistic approach, desiring archaeology to be 'objective' and as close to the 'truth' as possible even when these notions have long since been abandoned. Given the importance of interpretation in archaeology, it is unfortunate that many researchers have rejected storytelling on the grounds that it is too 'subjective' and have instead tried to achieve the illusion of reality and truth.

Summary

Chapter Three explored the relevant literature to this thesis. DIY archaeology, Public archaeology and their digital counterparts were discussed, to explain the framework that underpins the creation of the narratives. Public archaeology of death, Osteobiography, and Archaeology of Personhood were also examined given the focus in the narratives on the handling of human remains. The golden thread that links everything is archaeological storytelling and the creation of narratives by archaeologists, and therefore the chapter also included a detailed account of what archaeological storytelling is, why archaeologists have utilised it, and its limitations, along with an examination of digital ways of archaeological storytelling, such as IDNs, 360 filmmaking and VR, since these are media forms used in this thesis. The main argument is that archaeologists and heritage practitioners might be for many reasons reluctant to tell fictive stories about people in the past including ethical considerations or positivistic considerations related to the lack of objectivity, yet storytelling is an important tool for interpreting and communicating the past.

Chapter 4 - Methodology of creation

Introduction

In this chapter I introduce the methods used in this thesis. The chapter is a detailed description of the methodology I designed and followed to create the narratives and the media forms in this research. The main objective that informed this methodology was to effectively communicate the archaeological research behind GCA and our current understanding of the life and death of the people buried in this cemetery through MYC_1V.

The research is experimental practice-based interdisciplinary research combining digital archaeology with osteobiography. This experimental approach allowed creativity in the design of the media, following a DIY approach. The methodology of creating the research project is underpinned by the philosophical framework of Pragmatism. DIY and Pragmatism are compatible, since to do DIY, one needs to be pragmatic and adaptable. Noteworthy, Chapter 4 works in a synergistic manner with the following one, Chapter 5, as the first describes the methodology I developed to create the project and the consequently the media, and the latter describes the methodology I developed to evaluate the project and the consequently the impact of the media on the audiences.

Research Design

Research Strategy

The research strategy is described as *practice-based research*. Practice-based research is defined by Candy et al. (2022, 2) as 'a principled approach to research by means of practice in which the research and the practice operate as interdependent and complementary processes leading to new and original forms of knowledge'. This definition highlights the four core elements of practice-based research (Candy et al. 2022, 2): first, *practice and research are complementary but distinctive*. In this research project, the practice part is the creation of the three media based on osteological and archaeological reports, and the research part is the design and execution of the experiment to gather both qualitative and quantitative data via interviews and surveys respectively. Second, *the research is based within a world-of-concern defined by practice*, which for this thesis is the communication of archaeological research to the wider public. Third, *the*

practitioner researcher is at the centre of the research. This element of practice-based research is also fully aligned with pragmatism, which is the philosophical theory underpinning this research (the subjectivity of the researcher is acknowledged in the Researcher's Positionality statement in Appendix II). Lastly, *the research aim is to generate new knowledge*, which in this thesis is to assess the impact of analogue and digital media for communicating archaeological research.

Practice-based research has grown in popularity within the humanities in recent years, combining a means of exploring the practitioner's personal research interests with the production of new knowledge that benefits real communities. Its origins in academia can be traced to the 1960s and 1970s when practitioners in multiple disciplines strived to discover new approaches to address their research questions while also including a practical element (Candy et al. 2022, 2).

Practice-based research supports experimental approaches, therefore is an appropriate research strategy since experimentation is core to this thesis. As Edmonds (2022, 591) points out, since the researcher discovers things as the research progresses, the study has to adapt and 'evolve, contract, expand or even change all together.' An important part of practice-based research is to keep notes on 'what went wrong or was rejected and what actions you took as a result' (Edmonds 2022, 591). This element is core for this research and is interwoven throughout this methodology chapter, as I go through each step of creating the media and the evaluation of their impact, indicating all the difficulties I faced and the solutions I identified. Lastly, the outcomes from a practice-based research project usually include an artefact (Edmonds 2022, 591). For this study, there are three artefacts: a textual story, an Interactive Digital Narrative (IDN), and a 360 film converted to a VR-video (see Appendix I).

Research Philosophy

Pragmatism

This research is underpinned by the philosophical framework of Pragmatism. Pragmatism derives from the work of Pierce (who first used the term), Mead, James, and Dewey and more recent works include those of Rorty (1990), Murphy (1990), Patton (1990), and Cherryholmes (1992) (Creswell 2003, 10). Pragmatism is not a singular paradigm, but in general, pragmatists tend to focus on actions, situations, and consequences in contrast to the focus on antecedent conditions

in post-positivism. Instead of focusing on the methods, researchers who utilise pragmatism as a philosophical framework focus on the research problem and use all available approaches in order to better understand the problem (see Rossman and Wilson 1985). Therefore, Pragmatism focuses on the reality of the research and on finding ways to remove obstacles that could hinder finding the answers to the research questions.

According to Price (2014), Pragmatism is an 'experimental naturalism' accepting the existence of an autonomous reality which does not depend on the person for existence yet interacts with humans in the creation of experience. Reality has its own structure, processes, and patterns of movement, which are not unknowable by principle. However, reality is infinitely complex and large, whereas humans are limited, and thus they cannot grasp every single aspect of it. Therefore, Pragmatism is different from Skepticism, which suggests that humans cannot know anything at all, and from Fallibilism, which claims that people may be wrong about anything. In pragmatism, all that someone can know about anything is to create the best - most truthful belief to produce enough evidence to support a theory (Price 2014, 3).

An important aspect of Pragmatism is the idea of active experience. According to Price (2014, 4), 'experience does not exist in our heads or in our bodies but in the interaction (or transaction) between ourselves and the world'. In this thesis, a prerequisite for addressing the research questions is for the media to be created by the archaeologist, so that they can effectively and quickly communicate their research in a small-scale DIY project, and design and implement an evaluation of their media. That is because this living experience of the whole process of creation, design, and implementation will allow for a deeper understanding of the mechanics of these processes and thus inform the development of a better methodology for future similar projects. As Price (2014, 4-5) points out, 'our experience is not a passively mirrored reflection of external reality [...] [but rather] is an active creation of sensations, pictures, models, and operations which we use to cope with reality [...] [and] our experiences are never just between us and the physical environment. They are social'. In research underpinned by Pragmatism, when faced with a problem, researchers have to work out a solution by relying on research methods, develop hypotheses on how to deal with the aspects that are problematic, and then act on the problem to test if the hypothetical solution will resolve the problems. This pragmatistic process is as scientific as any other technique used in the natural sciences (Price 2014, 4).

Methodology of creating the media

For this DIY research, I created three media and evaluated which was more effective in communicating archaeological research to the wider public in a short time period and with minimal funding though it is important to acknowledge my access to equipment and the help of volunteers (i.e. for the voice over in the VR-video). First, a textual story, as this is the least costly and can be quickly produced and distributed. Then, an interactive digital narrative (IDN), which is a type of media that has been widely used to communicate archaeological and historical information to the public. And lastly, a VR-video, which brings the element of immersion and has also been widely used in heritage for the same purposes.

The story that is the basis for all three media has been designed to target a mixed audience including younger and mature audiences. However, the media might not be appropriate for all age groups. For example, VR is normally recommended for children above the age of twelve, with some types (i.e., the Quest) requiring users to be above the age of fourteen. Hence, the VR version of the story would have been appropriate for people above that age limit. However, as will be discussed later, during the experiment phase of the research the VR story was only tested on adults due to the limitations of the ethics approval.

The Story
Key Objectives

The choice of using the two digital media (the IDN and the VR-video) was made on the basis that it is widely accepted that multimedia presentations with both words and pictures are more effective than media which contain words alone (Mayer, 2014). The basis for all three forms of media is a story about the burial and excavation of Grave Circle A (GCA). The story was designed to serve three objectives:

- Pedagogically, inform the users about specific aspects of the Bronze Age.
- Be open about the fact that archaeologists do not always have the answers about the past.
- Decolonise the history of excavations at Mycenae.

More specifically, the first objective is to communicate information about the Bronze Age and GCA in Mycenae. This is the main pedagogical objective of the media on which all three have been assessed. This knowledge includes information about the life and death of MYC_1V, a deceased person buried in shaft grave five in the cemetery, who acts as the main character in the story. Through the reconstruction of their life and death, participants are informed about our current knowledge of the Late Helladic I period in Mycenae.

The second objective of the story is to communicate the message that archaeologists do not always have answers about the past, in an attempt to open up archaeological research to the public by providing the users with both the osteological and archeological evidence to think for themselves as much as possible. These stories attempt to dismantle the perception of the archaeologist as a kind of expert or even a 'shaman', to use the words of Hamilakis (2007). This aspect also links to Pragmatism, which rejects the rule of 'enlightened' experts and advocates a participatory democracy aiming to provide methods for coping with difficulties in culture, science, social thinking and behaviour (Price 2014, 5). The limited knowledge about the past is indicated by a general uncertainty which is a golden thread in the stories and manifests as lack of information regarding the individual's death, their identity, aspects of their everyday life. Similarly, it is conveyed by the fact that there is a clear indication regarding which parts of the story are based on evidence and which are entirely fictional. Moreover, this aim is also served by presenting the users with the fact that new information came into light in the 21st century and changed much of the information known to the archaeologists.

The third objective of the story is to decolonise the excavation history of GCA, by bringing into the discussion the contribution of Stamatakis, the Greek archaeologist supervising Schliemann during the excavations, through his difficult times dealing with the latter in the field. This particular objective needs further clarification, and thus a brief presentation of the theories that underpin my attempt to decolonise the excavations at Mycenae is provided below.

Decolonisation of Heritage within Archaeology

As Smith and Wobst (2004, 4) claim, '[a]t heart, archaeology is a colonialist endeavour'. Colonialism and decolonisation of heritage have featured as major discussions among archaeologists in recent years (i.e. McGuire 1994, Davidson et al. 1995, Nicholas and Andrews 1997; and more recently Hamilakis 2018, Porr and Matthews 2019, Lane 2021, Montgomery and Fryer 2023). Decolonisation has two meanings: it is the historical process during which a new nation, after gaining its independence, draws from postcolonial theory to rebuild its identity, and it is also the attempts, underpinned by postcolonial theory, to undo colonial structures in both society and in academic research (Käyhkö 2018, 2). The decolonisation aspect of this thesis falls into the second category and will be discussed below.

The concept of decolonisation has received widespread attention since 2020, mostly catalysed by the global pandemic and the emergence of the Black Lives Matter movement (e.g. Franklin et al. 2020, White and Draycott 2020). In archaeology, entities such as the Society of Black Archaeologists, the European Society of Black and Allied Archaeologists, and the Indigenous Archaeology Collective serve as pivotal fora that facilitate the dissemination and amplification of radical and transformative endeavors carried out within the domain of archaeology (Fitzpatrick 2021, 29). Decolonisation within archaeology is underpinned by two significant theories: Postcolonial Theory and Decolonial Theory. The first offers a critical framework to explore colonial pasts from the vantage point of victims of colonialism, and the latter allows archaeologists to disengage themselves from the colonial perspectives and power that underpin today's world system producing geographical and social hierarchies (Lemos 2022, 28-29).

Postcolonial Theory

Postcolonial theory is defined as a 'body of thought primarily concerned with accounting for the political, aesthetic, economic, historical, and social impact of European colonial rule around the world in the 18th through the 20th century' (Elam, 2019). Postcolonial theory was introduced with Edward Said's seminal work *Orientalism* (1978) and has since expanded and been used by multiple disciplines including archaeology.

Postcolonial theory provides a critical framework which allows archaeologists to identify inequalities created by colonialism within the societies which they study. Moreover, it allows archaeologists to confront colonial legacies which have led to structural inequalities, often referred to as 'coloniality' (see for example Dussel 2000; Maldonado-Torres 2007; Mignolo and Escobar 2010; Shepherd 2019). Coloniality thinkers focus on the complicated relationship between colonialism and modernity and try to answer questions regarding the decolonisation of knowledge production and consciousness (Turunen 2020, 1014). In the field of archaeology some of these inequalities have been expressed in the form of exclusion of local communities by the archaeologists or heritage practitioners (Lemos et al. 2017; Lemos 2022, 20).

According to Lemos (2022), 'Postcolonial archaeologies aim to reconsider colonialism from the perspective of the colonized, subaltern, silenced actors not well reflected—or deliberately misrepresented—in colonial narratives and material culture'. This aligns perfectly with one of the three key objectives of this research, which is to discuss the important contribution of Stamatakis, the Greek archaeologist who was appointed to supervise Schliemann, and make his voice - which has been silenced - heard.

Decolonial Theory

According to Lemos (2022 28-29), 'Decoloniality happens essentially in the present, while postcolonial criticism allows us to (re)interpret the past, which can also have present-day implications'. Decoloniality is not the same as decolonisation. According to Lemos (2022, 21) 'Decolonization refers to the process of independence of former colonies - a process that resulted in various forms of nationalism, which reproduce coloniality instead of promoting the emancipation of former subaltern groups'. As a concept, it implies the process of de-anchoring oneself from coloniality (Lemos 2022, 21). However, it is important to remember that not all instances are the same (see Hamilakis and Greenberg 2022), and therefore de-anchoring oneself from coloniality can mean different things for different colonised people as it will be discussed below.

Decolonising efforts have been widespread within heritage studies and institutions (see for example, Tlostanova and Mignolo 2012; deSousa Santos 2017 for a discussion on decolonising white minds; also see Jilani 2018 for a discussion on decolonising museums). However, there is no universal model for decolonising heritage (Van Huis 2019), especially since colonialism looks

different for different people. In archaeology, these efforts overlap with postcolonial theory, yet remain distinct from each other (for a full discussion on the matter see Lemos 2022). However, it still needs a lot of discussion to understand the practical meaning (Lemos 2022, 19). Within the archaeological discipline, decolonisation is understood as the 'undoing' of colonialism, which requires processes to decentralise the dominant colonial ideologies.

Combining postcolonial and decolonial theory could lead to the development of a 'practical theory' which could help archaeologists overcome the standard division between theory and practice (Lemos 2022, 30). As Malig Jedlicki (2022, 889) points out, discussing the decolonisation of heritage requires difficult conversations and reflections on the meaning of cultural heritage within the communities of the affected people as well as within the practitioners' community. Furthermore, the decolonisation process requires a critical deconstruction of eurocentric western thought and the creative re-thinking and re-imagining of new, alternative possibilities to manifest this new decolonised future of heritage (Kølvraa and Knudsen 2020). However, decolonising efforts in archaeology have mainly focused on the emancipation of local and indigenous communities through collaboration with them, which has been criticised as having limited impact on the bridging of the division between 'Us' and 'Other' (Lemos 2022, 23).

In heritage, there are some examples of decolonising attempts. In their recent edited volume, Timm Knudsen and colleagues (2022) present a comprehensive new framework for decolonising heritage based on four features of decolonial thought: embracing *pluriversality* which aims to replace eurocentrism and western views of culture and heritage; understanding and interpreting this pluriversality as a tool to understand the intertwinement of cultures through the lens of 'othering'; the practical element of decolonising heritage; and the creative thinking of alternative practice tools to shape a decolonised future (Malig Jedlicki 2022, 889).

On the same note, Malig Jedlicki (2022, 890), following the ECHOES (Effect of climate change on bird habitats around the Irish Sea) project results, developed a framework for assessing heritage practices, which focuses on four modalities to confront and study the colonial past: 1) *repression*, which includes practices and actions to subdue communities or deny colonial pasts; 2) *removal*, which includes practices of removing offensive heritage from public places or archives; 3) *reframing*, which includes considering new frames of reference for the past; and 4) *re-emergence*, which includes allowing new voices to imagine new decolonial futures, thus offering possibilities for new actors, epistemologies, narratives and phenomenologies. This framework offers an alternative approach to decolonising heritage practices and considering how

decolonial methodologies are applied in relation to the past, present, and future (Malig Jedlicki 2022, 890). In this thesis, the third action, the reframing, has been equipped to decolonise the history of the excavations, since I have re-told the story about the discovery and handling of the remains of MYC_1V stressing the significant contribution of Stamatakis, who had been erased by Schliemann, in the discovery and care for the remains.

However, colonialism is not always directly visible or obvious, and sometimes even the colonised people do not understand that their heritage is colonised. This is widely known as 'cryptocolonialism' and it is discussed briefly below along with how it relates to this research.

Cryptocolonialism

It is important to clarify here the term 'cryptocolonialism' as it is a key element in the stories. According to Herzfeld (2002), cryptocolonialism is a condition in which a country is for all practical purposes treated as a colony, but it is told that it is independent and has to exercise its independence in accordance with the dictates of the colonial powers. By Herzfeld's definition, Greece is a cryptocolony as the modern Greek national identity was constructed by western colonial powers (cf. Hamilakis 2007), which in Greek historical texts appear as the so-called 'Great Powers' (Great Britain, France, Austria, Russia, and Italy). This notion is reflected in the fact that Greece was proclaimed an independent state by the three protecting powers (Britain, France, and Russia) with the treaty of London (1832) and the French scheme of regional administration was adopted (Alexandri 2002, 192). The perspective that this thesis takes on the subject of colonialism (following the work of scholars in the field of cryptocolonialism such as Michael Herzfeld (2002, 2016, 2017) and Yiannis Hamilakis (2007, 2022)) and the consequent attempt for decolonisation is different from other works on the matter because it focuses on the matter of cryptocolonialism, which is a different type of colonialism. That is because the people who are crytpocolonised do not know that and they have embraced the colonially constructed national identity. Therefore, decolonising cryptocolonised heritage needs a different approach than decolonising colonised heritage, where the people fully understand and know that they have been colonised and they want to deconstruct the colonialism from their heritage. Therefore, it is different from most current works focused on decolonisation of archaeological theory and practice. Rachel Ama Asaa Engmann (2019) for example coining the term 'Autoarchaeology' has designed a strategy that privileges the archaeological site's direct descendants in an inclusive and collaborative project at

Christiansborg Castle in Osu, Accra, Ghana (see also Schmidt 2016, Creese and Walder 2018, Acabado and Martin 2020). Something like that would first be impossible for this thesis, due to the complicated history of the construction of the Greek identity as well as due to the fact that Greece is a cryptocolony and the Greeks do not fully grasp the idea that they are colonised (see also Hamilakis 2007). Therefore, claiming that there are direct descendants from the people buried in Grave Circle A (GCA) would only further cryptocolonialism, instead of healing it. That is because Greece is an unusual - though not unique - case where 'colonialism and nationalism have worked in unison' (Hamilakis 2008, 2; see also Hertzfeld 2017, 887).

Consequently, it is important to establish that the decolonisation of archaeological theory and practice in this research is peculiar and different from other works in the field such as the ones mentioned above. That is because when a country is a cryptocolony, their identity is constructed by the Western colonial powers and usually this identity is rooted in a 'golden era' which in case of Greece is the Classical era. However, there are cases, such as the one explored in this thesis, that this constructed identity goes further back to the Bronze Age with people like Schliemann tying the contemporary occupants of the land with the Bronze Age people based on the Homeric epics and building a specific identity for them to perform under. Therefore, cryptocolonialism is a distinct form of colonialism and thus current trends on decolonisation do not necessarily serve the purpose of decolonising that heritage. That is because the cryptocolonised country needs to first understand that their identity and thus heritage is perceived from a different angle making it challenging to decolonise it without denying that heritage. This is further explained below with the example of Greece.

The roots of cryptocolonialism in Greece date to the 18th century and the discovery by the antiquarians of the 'ancient' Classical Greek ruins in Italy, Greece, and the Orient (the so-called 'Magna Graecia', which includes parts of today's Italy, Greece, and Asia Minor) in the spirit of Orientalism (see Said 1978; and Carastathis 2014). The Classical and Roman ruin structures inspired the many antiquarians who were visiting Greece as part of their Grand Tour - the cultural journey across Europe embarked upon by young aristocratic men in the 18th century - and those who idealised ruins and sought to discover new things as part of the Romantic movement. Johann Joachim Winckelmann and his division of Greek, Greco-Roman, and Roman art put the Classical era and its art in the spotlight, considering everything else as inferior, further contributing to the idolisation of classical antiquities (Morris 1994).

The people of Greece at this time did not have the same understanding about the Greek identity as today's Greek people (see Hamilakis 2007, 58). Having spent centuries under the consecutive rules of Alexander the Great, the Roman empire, the Byzantine empire, then Francocracy, and lastly the Ottoman empire (Dakin 1973), they were living in a multicultural and multiracial feudal system when they were 'discovered' by the western elite during the 'Grand Tour'. Consequently, Classical antiquities and their excavations constituted the 'mythological' basis upon which the new Greek nation was constructed (Hamilakis 2007, 63).

It took significant efforts by the so-called 'Phillelines', educated people and scholars who lived outside the Ottoman empire to gradually build a new, purified language ('kathareuousa', meaning the clean language), to fit the nation-building model of 'common culture - common language - common religion' that the European countries had used during the 19th century to identify their newly founded nations along with their borders (García 2013, 54). An example of this kind of national identity construction can be found in Trigger's discussion (1984) about the use of archaeology to construct identities: 'In eastern Europe, representatives of suppressed nationalities, such as the Czechs, turned to archaeology as a means of glorifying their national past and encouraging resistance to Habsburg, Russian and Turk- ish domination […]' (Trigger 1984, 358). This would be the case for Greece as well. The newly constructed Greek national identity, reinforced by the Neoclassical movement and Orientalism, was gradually adopted by the Greeks, who used it to support their claims in the space identified as 'ancient Greek' and consequently revolt against the Ottoman empire and make claims to their borders with the gradual collapse of the empire (Dertilis 2009). This was a fortuitous situation for the western powers for political reasons which fall outside of the scope of this research to discuss in depth, and thus they supported Greece in these claims. The newly founded state went through a great reorganisation (1828-1831), which was systematised during the reign of Otto (1833-1862) (Monioudi-Gavala 2019, 199), a Bavarian king that Greece accepted as its ruler. Accepting a Bavarian king was a strategic move, as the Greeks needed to prove to Klemens von Metternich, chancellor of the Austrian Empire who frown upon any plans for revolution in Europe, that they did not want to revolt against monarchy, but against their oppressor, The Sultan.

The purification phase was also reflected in archaeological endeavours. The Acropolis underwent a meticulous purification process to remove any artefacts or elements not associated with the Classical period, subsequently evolving into an authentically Classical environment (Plantzos 2011, 613). Classical antiquities and their evocations constituted the 'mythological' basis upon

which the new Greek nation was constructed (Hamilakis 2007, 63). As Artemis Leontis points out (1995, 40-66), the heterotopic Acropolis of Athens, presently under the jurisdiction of architectural restoration and scholarly attention, operates as an emblem not of Greece's historical grandeur but rather of its contemporary challenges (see also McNeal 1991; Hamilakis 2007, 85-99).

There is extensive research on the heterotopic construct of its national identity (following the Foucauldian notion; see Leontis 1995, 40-66; also see Plantzos 2008). Leontis (1995) in her seminal book focuses on the intricate connections between culture and geographical context, shedding light on the evolution of contemporary Greece. In that book she claims that a homeland is established not merely by habitation but rather through the process of mapping, arguing that modern Greek writers have been tasked with the intricate endeavour of redefining a *topos* or a distinct place for Hellenism within their national literary works. Yiannis Hamilakis' work has been focused on the construction of the modern Hellenic identity and materiality. In his most recent book written with Greenberg (2022) using Greece and Israel as comparative cases studies they engage in a discourse concerning the fundamental narratives, ethical underpinnings, and racial biases within the realm of archaeology and its broader implications undertaking an examination of subjects encompassing the colonial inception of national archaeologies, the function of archaeology as a purifying process. Their ultimate assertion is a plea for the decolonisation of archaeology, advocating for the establishment of alliances with marginalised communities and emerging political movements. Dimitris Plantzos' work has been focused on using archaeology as a political tool for constructing and defending modern Greek identity. For example, in his foundational 2012 article he discusses the employment of ceremonial re-enactments of classical antiquity as a means to both commemorate its historical legacy and promote its widely acclaimed Hellenic heritage scrutinising two ceremonial events orchestrated by Greek authorities in preparation for the 2012 Olympic Games in London, with a specific focus on the techniques of embodiment.

In agreement with the extensive literature on this subject, this thesis defines Greece as a cryptocolony and its identity heterotopically constructed to fit into the colonial narrative. Therefore, this thesis views Schliemann and his relationship with Stamatakis through the lens of Postcolonial theory and aims to decolonise the history of the excavations and bring to light Stamatakis' contribution to Mycenaean archaeology. Schliemann represents a 'colonial power' because he had western funds to excavate and publish, despite having been accused of robbery by the Turkish government. As discussed in the Case Study chapter, Schliemann went on to dig as quickly and efficiently as possible to find antiquities that supported the 'ancient Greek' identity that

had been imposed upon Greece. In particular, Schliemann wanted to prove a theory that the Trojan War as described in the Homeric Epics was actually true (Dickinson 1976, Dickinson et al. 2012, Vasilikou 2011).

Stamatakis tried to resist this false construction of identity by speaking out and working hard (but mostly with futility) to prevent Schliemann from destroying layers that were not 'ancient enough' (i.e., Byzantine or Roman structures) in order to find the 'treasure' which would prove his theory that the Trojan war as described in the Homeric Epics is actually true. Hence, Stamatakis is viewed in this research as a resisting element against colonialism, in the face of Schliemann who was trying to construct a specific national identity for the Greeks to perform under. Stamatakis understood the importance of the whole corpus of antiquities that lay on top and around Grave Circle A and did his best to preserve anything that he could, despite prevailing attitudes that this was unthinkable at a time when the antiquities underwent the phase of purification from post-classical structures, as mentioned above. As Fitzpatrick (2021, 29) points out, 'every moment that colonized peoples have fought back against colonists who were intent on looting and destroying their culture should be considered the forebearers of decolonial theory in academia'. Stamatakis clearly falls into this category.

Therefore, Stamatakis' understanding of the past and handling of the antiquities was incredibly progressive and resistant to Western colonialism. To further illustrate this point, one needs to keep in mind that the excavations in Mycenae took place in 1874-1876. It is noteworthy that only one year before, in 1875, the Frankish tower in the Athenian Acropolis had been demolished in the spirit of 'purification' of the antiquities of all 'foreign' attributes with Schliemann's funding (Baelen 1959, 242-243), an action that was later denounced by the historian William Miller as 'an act of vandalism unworthy of any people imbued with a sense of the continuity of history' (Miller 1908, 401). This was followed by the deconstruction and reconstruction of the Athenian Acropolis, the so-called 'holy rock', leading to the creation of a heterotopia (Leontis 1995, 40-66) - a place that never actually existed in the past. It is also interesting to note Trigger's (1984, 357) point that archaeological research began to expand in different countries during the emergence of nation states, indicating the use of archaeology as a political tool to establish national identities and assert claims on heritage or land, which better frames Greece's cryptocolonialism discussed above.

To conclude, decolonisation is an important aspect of the narratives I created for this thesis, and this will be discussed in the data analysis and interpretation chapters. Decolonising this aspect of Greek archaeology is not similar to current prominent decolonisation practices, such as the repatriation of remains (cf. Clopot, Andersen, and Oldfield 2022); instead, it is about reflecting and being transparent 'about the assumptions and positionalities of those producing and disseminating knowledge' (Ghaddar and Caswell 2019, 71). As Carastathis (2014, 13) argues, 'to 'decolonise' Hellenism (meaning the Greek identity) [...] is to interrogate the false exclusions on which its categorial logic is based and to generate new, autochtonous, multiplicitous narratives of the past animated by visions of a pluralistic, post-national, radically different future.' And as Hamilakis (2018, 520) argues, 'an archaeology of resistance should decolonise the self'. By bringing Stamatakis back into the discussion and demonstrating his attempts to resist the (crypto)colonialism that was imposed on him, this thesis makes efforts to decolonise this part of 19th century Greek archaeology.

Materials for the construction of the narratives

The textual narrative was created based on osteological reports and archaeological evidence. This was then adapted into an IDN and a VR video. Therefore, the digital versions of the story are not digital-born. The degree of validity for the sources is different; the osteological reports are recent (2010) and very detailed, but they can only give information about stress, traumas, or fractures (healed or not healed before death) on the skeletal remains.

There are also recent isotope analyses of the skeletal remains, which inform us about the diet of the people buried in GCA, as well as give information regarding the possibility of them being local or non-local (Nafplioti 2009). According to Alexander and colleagues (2014, 263), stable isotope analysis is a prevalent method of examining the collagen of skeletal remains and can offer direct evidence of the diet of individuals or populations. Isotope studies can also help to shed light regarding the place of origin of individuals and enhance our understanding of mobility and settlement (Stodder and Palkovich 2012, 3). Alexander also argues that the information from isotope analysis should be properly contextualised and used with other sources such as faunal assemblages and written texts to enhance its benefits. In this research, the results of the isotope analysis, and particularly that of strontium analysis which can inform on the non-local status of an

individual, are used in combination with excavation reports and publications, as well as other sources such as information on Linear B tablets. Strontium analysis can offer information about an individual's life (Holt et al. 2021) as well as reveal the diet a person had during their life and potentially indicate if they were local or non-local.

The archaeological reports used in this thesis are ambiguous since the excavation was conducted in the 19th century under difficult conditions, as discussed in Chapter 2. However, the artefacts from the graves are well studied, preserved, and published, and the diary of Stamatakis has recently been found, though unpublished since it is still under study. Therefore, I only had access to a few pages that have been uploaded online or published (i.e. in the 'Mycenaean Revisited' series) as seen in the story's material (see Appendix I). Luckily, the pages that I wanted to use with Stamatakis' sketch of grave V were available in Papazoglou-Manioudaki and colleagues' (2010) article. Moreover, the history of the excavations and new interpretations regarding Mycenae have also been published by multiple scholars, even very recently (i.e. French 2023, Maran and Papadimitriou 2019, Hall 2016, Dickinson 2005). Lastly, translated (based on Ventris and Chadwick translation of the tablets (1973)) inscriptions on the Linear B tablets have also been used as part of the archaeological evidence. However, these are considered to be a rather unreliable source of information about the Late Helladic I period since there is a significant time gap between the shaft graves at GCA and the tablets. The Linear B tablets are dated to the end of the Mycenaean era, with the earliest one recently found in Mycenae dated to LH IIB/LH IIA1/early LH IIIA2, and thus the earliest date would be 1440-1390 BC, while the graves date to LHI (1600-1500) with the final burial(s) in Grave V dated to LHIIA (1500-1440). Therefore, it is evident that there is a significant gap between the earliest samples that Linear B was in use at Mycenae and the burial of MYC_1V in grave five.

As Roussou and colleagues (2015) point out, creating narratives in archaeology leads to the recognition of missing information and helps to focus the creator more in terms of experiences rather than focusing solely on materiality. I also realised how challenging it is to interpret archaeological information and create a narrative that would effectively reflect my interpretation while being explicit that it is just an interpretation. I opted for the footnotes in the textual narrative which became hypertext links in the Twine following Boutin's (2014; 2016; 2019) bioarchaeology of personhood model (i.e. see the story about Beltani in Boutin 2016 or the story about the 'old man' in Boutin 2019), as I felt that it allowed me to be more open and descriptive about the information and the sources I was using.

Plot and Characters

For a full explanation of the storyline and the supporting evidence, it is recommended to read the story (Appendix I) as there are detailed footnotes which explain each detail mentioned in the main body of the text. Some of the reasoning behind the information used in the story will be given below during the description of the main characters. For the history of the place, as well as of the examination of the human remains, please refer to Chapter 2.

Tough

The main character of the story is Tough, a Bronze Age person from a wealthy family who is buried in grave five of GCA. The character is based on information about the individual with the code name MYC_1V in Papazoglou-Manioudaki, Nafplioti, Musgrave and Prag's report (2010), the code name *26 Myc* in Lawrence Angel's report (1973) and marked with the Greek letter *T* in Stamatakis' report (Papazoglou-Manioudaki et al. 2010, 200; Schliemann 1880, 295-296). Therefore, to reflect the uncertainty about this person's name and serve the objective of letting the general public know what archaeologists do and do not know, I created the character as being unable to remember their name. The character is confused after 'hearing' all these people referring to them by different code names, and they assume that their name must be Tough - which is the sound that the Greek letter T is pronounced. They attribute this name to their perception of themselves as strong and powerful in their life.

The *osteological information* is based on the osteological analysis and report by Papazoglou-Manioudaki and colleagues (2010), as well as the strontium isotope ($^{87}Sr/^{86}Sr$) analysis conducted by Nafplioti (2009). The information used in the story includes the following information: that they died between 25-35 years old and the reason of their death remains unknown (Papazoglou-Manioudaki et al. 2010, 203); that they were quite tall compared to others in this time period and robust (Papazoglou-Manioudaki et al. 2010, 203); that they likely experienced an illness at a young age based on hypoplastic lines on some of their teeth (Papazoglou-Manioudaki et al. 2010, 203); that they might have been relatives with the other two people buried in the same grave based on non-metric traits on their teeth (Papazoglou-Manioudaki 2010, 203); that they may have suffered from iron deficiency anaemia based on hypertrophy of the diploë, an abnormal enlargement or thickening of a spongy bone found in the skull which can be attributed to underlying diseases (Papazoglou-Manioudaki 2010, 203); that they might have engaged with strenuous physical activities due to - among other indications – enthesophytosis (the development

of bony proliferations that develop at an enthesis, that is at the attachment of a ligament, tendon or articular capsule onto the bone) on muscle attachment sites on the upper and lower limbs, as well as on hypertrophic development associated with high mechanical loading of the sternoclavicular joint in the performance of physical activities (Papazoglou-Manioudaki 2010, 203). This trait refers to the enlargement of thickening of tissues or structures in the joints of the enlargement or thickening of tissues or structures in the joint area which connects the sternum to the clavicle, due to increased mechanical stress or loading, such as carrying and using a heavy sword and shield, and wearing a heavy panoply; and that they suffered an injury on their leg and a fracture on their spine healed before death (Papazoglou-Manioudaki 2010, 203). The osteological information included in the story was finalised after consulting Dr Nafplioti, who examined the skeletal remains of the individual, as well as Dr Malin Holst and Professor Michelle Alexander, specialists in osteology and osteopathy.

The *archaeological information* used for the story is based on multiple sources and publications of the excavation. This information includes the following details from these sources: that the name and full identity of the individual remain unknown; that their remains were examined multiple times by multiple people, and parts have also been exposed to the public in the National Archaeological Museum (NAM) in Athens (Papazoglou-Manioudaki et al. 2010, 200); that their right first molar is missing (identified as missing after Angel examined their remains) (Papazoglou-Manioudaki 2010, 200); that they were buried with the so-called Agamemnon's mask and a large ornate breastplate among other precious grave gifts (Papazoglou-Manioudaki et al. 2010, 164); that another individual in the grave (Φ) had been wrongly identified as Agamemnon, the mythical king in Homer's *Iliad* (Dickinson 2005, Vasilikou 2011, 128); that the people buried in that grave were murdered and one of them had been mummified, which was a false assumption (Schliemann 1878, 337; 296-298); that the people buried in GCA were also wrongly identified as the Achaeans mentioned in the Homeric epics (Dickinson 1976, 161-162); that they spent their youth in Mycenae which is based on strontium analysis (Nafplioti 2009, 283-289) and belonged to a wealthy and powerful family (Dickinson 1976, 167; Wright 2008, 238, Cavanagh 2008, 334). Since there are no indications as to why the individual died so young, there are two potential scenarios based on the limited knowledge available about the people buried in the shaft graves: that the individual died in a battle or on a hunting trip. Warfare most probably would have been significant for the elites (Dickinson 2014, 70), despite the fact that the typical Mycenaean warrior persona has been challenged (see Dickinson 2006, 35-36; for more on the discussion, see Dickinson 2014, 67-68).

The archaeological information included in the story was finalised after consulting Dr Dickinson, a specialist in Aegean and Mycenaean archaeology.

The historical information used in the story covers the discovery and consequent handling of the remains through the years. The information used regarding the 19th century excavation is reflective of the relationship between Stamatakis and Schliemann. This is gathered mostly by Stamatakis' diary, Schliemann's publication of the excavation and letters to acquaintances of his, and Stamatakis' letters to his superior regarding the excavation which are published and discussed by Vasilikou (2011). Information includes Schliemann referring to Stamatakis with the diminishing term 'clerk' (Schliemann 1880, 352, Prag et al. 2009, 235; Dickinson et al. 2012, 168; Dickinson 2005, 307) and all the details regarding his attitude while excavating in Mycenae, such as the refusal to cooperate with Stamatakis (Vasilikou 2011, 194), the involvement of Sophia, his wife, which worsens the relationship between the two men (Vasilikou 2011, 199-201), the abrupt end of the excavations (Dickinson 2005, 306), and the transfer of the finds to NAM (Koumanoudis 1892, 1-62, Demakopoulou 1990, 93; Prag et al. 2009, 239). For more details, see Chapter 2.

MYC$_1$V's character (Tough) was the most challenging to write since very little is known about them (see Williams 2019, 2). Hence, they are an entirely fictional character with all their thoughts and words made up. This felt like a huge responsibility throughout the process of writing the story since I wanted to avoid making claims that this person most probably would have not made or discuss feelings that they might have not felt, but at the same time I realised that it is impossible to be 'authentic' or 'objective' to any degree (see Chapter 3 for a discussion on ethics in bioarchaeology and the limitations of archaeological storytelling). Therefore, I always had in mind that the whole story is completely fictional and inspired by osteological and archaeological evidence, without limiting myself from trying to use as many sources as possible to support the details of the story. That is because the purpose of the story is not for entertainment, but it is mostly educational, as far as possible based on the facts available.

I decided to create a more serious persona for the main character, conveying annoyance that people were disrespecting their remains while trying to find information about them, but without finally finding the truth about their identity or way of life and death. I also made the character unaware of some of the nuances and subtleties of relationships and cultures, such as the fact that Schliemann called Stamatakis 'clerk' rather than addressing him by his actual name, and unaware of cultural attitudes, such as the fact that contemporary people are keen to display human remains

in museums like artefacts (i.e. Charlier et all 2014) and that it is common to use a tomb stone with the name of the deceased. I did this to draw attention to specific attitudes and ideas that link to my research questions and objectives (e.g. the relationship between Schliemann and Stamatakis or the handling of human remains or that the name of the individual remains unknown conveying archaeological uncertainty).

Stamatakis

The character of Stamatakis is created based on the limited information on Stamatakis, mainly from letters that he exchanged with his superior, so everything that his character says in the story has actually been written by Stamatakis himself word by word. Unfortunately, at the time of writing this thesis, Stamatakis' diary, which was recently discovered, is yet to be published. From personal communication with Dr Kostas Paschalidis, curator of the Prehistoric, Egyptian, and Anatolian Antiquities at NAM, I was informed that the diary has already been digitised, but not yet published since it has not been entirely studied. Dr Paschalidis and a team of specialists have been working on it for a few years now. A first partial presentation of Stamatakis' diary can be found in an article written by Konstantinidi-Syviridi and Paschalidis (2018).

For the character of Stamatakis, I tried to reflect the ethos of a hard-working and concerned man, who was trying to follow meticulous archaeological procedures for excavation, such as proceeding with care, carefully making notes of all the finds, preserving the antiquities even if they were from later periods, and taking care of the skeletal remains. Through Stamatakis' character, the contrast with Schliemann's techniques is highlighted: rushed excavation, bribing the workers to work quickly while Stamatakis, who was supposed to supervise the excavations, had not arrived at the field, making rushed observations and trying to find evidence of the Homeric world despite what the artefacts showed, and discarding later structures without properly documenting them. In the textual story, Stamatakis' persona is perceived more through the details that Tough gives about him and Schliemann. In the Twine game, he is perceived more through his diary and the notes that the user can click to see more. In the VR-video, Stamatakis' character has an actual voice, and describes firsthand all the details about the excavations.

Dr Naflpioti

Dr Nafplioti's character is based on Dr Nafplioti, the osteologist who reexamined the bones after their re-discovery in 2003. In the textual story she is perceived with the footnotes that are based on her reports. In the Twine she is perceived through her diary similarly to Stamatakis, but again she is not taking part in the action. In the VR-video though sha has a voice as a character, which is rather neutral as she is writing her osteological report and making notes in her diary. She is presented as focused on the research and in the VR-video she is talking to herself in a monologue as if expressing inner thoughts. To make the transition from the MYC_1V narration to Dr Naflpioti's monologue in the film, I decided to change the film from colour to black and white (see Figure 43) to make it clear that this is happening in the near past. The ambience has also been changed to reflect the change in time, and I decided to include background voices since it is a shared lab and other people would have been working in other rooms.

The media
The textual story

To create the textual story, the model set out by Boutin's (2015) Bioarchaeology of Personhood has been followed. This model, as discussed above, suggests the use of footnotes to explain the validity of information mentioned in the story. A screenshot can be seen in Figure 17 below, but the whole story is available in Appendix I. This serves the purpose of this research since one of the aims is to communicate the message that archaeologists do not always have the answers about the past, dismantling any false ideas of authority to allow people to interpret the data on their own. Therefore, transparency regarding the key information mentioned in the story is important. Boutin (2019, 298) suggests that for osteobiographical narratives, the archaeologist also has to contextualise interpretations of both archaeological and osteological data within other contemporary sources and narratives, such as textual, iconographic and so on. All this information can be explained in annotations such as footnotes, endnotes, or marginal notes supporting the narrative (Boutin 2019, 298).

Regarding the style of osteobiographical narratives, Boutin (2019, 294-298) suggests three different writing styles depending on the target audience: an analytical style with technical language aimed at scholars; an analytical style in colloquial language accessible to the general public; and an affective style in colloquial language aimed at wider audiences. A combination of

the first and the third style has been implemented in this thesis for the textual version of the story using colloquial language in the main story but maintaining a more technical in the footnotes deliberately to keep the scientific style intact in an attempt to differentiate even further the fictive story from the evidence.

I first began with the osteological information about the individual to craft a story about their life and death. For example, their cause of death is unknown, so I had to create different scenarios about how they died based on archaeological information. Then, after I decided the main events of their life based on the osteological report, I filled in the gaps with the archaeological information. For example, there were dental indications that the other two individuals buried with MYC_1V could be closely related to them. Similarly, based on the osteological evidence about MYC_1V's potential involvement in strenuous activities, I added the archaeological information about them potentially being a warrior or a hunter based on finds in the grave and other contemporaneous Bronze Age cemeteries. I introduced details about Stamatakis's relationship with Schliemann, based on work from both of them (i.e. Schlieman [1880] 1967-1976), as well as older and more recent publications on the matter (i.e. Meyer 1962, Dickinson 1976, Dyck 1990, Vassilikou 2011, Konstantinidi-Syvridi and Paschalidis, 2018). Doing that, I have been explicit in the footnotes regarding which parts were fictional and which were based in evidence, as well as what kind of evidence.

With the addition of footnotes, the user of the story has the freedom to either read only the story or read as much detail through the footnotes as they would like. Some people might have an interest in bioarchaeology; hence they can look for details about the bones, or some people might have more interest in the archaeological background and the secondary story of Schliemann and Stamatakis, and thus they can read the footnotes that elaborate more on that subject. Footnotes have been used instead of endnotes for accessibility reasons, and especially to avoid people missing information because they would have to go to the end of the story to find what they needed. The footnotes are easier to access since the accompanying text is exactly below the main body of the story.

The narrative

I'm lying here on the cold examination table to be reexamined for the third time[1]! For Potnia's[2] sake!

Oh, these people! They won't let me rest in peace!

First this Schliemann mumbling some crazy stories about a guy called Agamemnon that he thought was my brother[3]. He also thought that my brothers[4] and all my relatives buried in the cemetery were murdered simultaneously and burned at the same time[5]! Weird man.

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[1] The bones were examined when excavated by Schliemann and Stamatakis for the first time (1876), then by Angel in 1937 (Angel's report remained unpublished until 1973) and again later in 2007 by a small team led by Dr. Nafplioti, who used isotope analysis in order to identify the geographical origins of the individuals (Papazoglou-Manioudaki et al. 2009, 234). The reason behind these recent reexaminations of the bones is the rediscovery in 2003 of two skeletons in the National Archaeological Museum of Athens excavated by Stamatakis in Shaft Grave VI at Mycenae. This triggered a whole new series of reexaminations of the bones of all the skeletons in order to get more detailed osteological reports. The project is called 'Mycenae Revisited' and has four parts: the first is a reexamination of the skeletons of two individuals of Shaft Grave VI that led to their facial reconstruction ('Mycenae Revisited Part 1': Papazoglou-Manioudaki et al. 2009); the second is a study of the remains of the majority of the individuals from Grave Circle A by strontium isotope analysis ('Mycenae Revisited Part 2': Nafplioti 2009); the third is a catalogue and full reappraisal of the skeletal remains from the other graves in Grave Circle A ('Mycenae Revisited Part 3': Papazoglou-Manioudaki et al. 2010); and the last one is a final discussion of what the graves contribute to the study of the development of Mycenae and the rest of the Greek mainland (Dickinson et al. 2012).

[2] Middle Bronze Age religion is not very well documented as there are not any written evidence about that. Potnia is a word well recorded on Linear B tablets and was referred to goddesses. Dickinson (personal conversation), notes: 'The famous fresco from the 'Cult Centre' shows a goddess with a down-pointing sword, either facing a priestess or another goddess with a staff. X (i.e., the main character) is just as likely to have sworn by "Potnia", who at Mycenae might be conceived as a warrior goddess and guardian of the polis, and has a good claim to have been at the head of any Mycenaean hierarchy (she is as big at Pylos as Poseidon).'

[3] This individual was buried with the famous so-called Agamemnon's mask (burial mask NM 624, fig. 1, 3) one of the most widely recognised icons of the Mycenaean period. However, Dickinson (2005) and some other scholars argue that Schliemann thought that this body (MYC$_1$ V), wearing the NM 624 golden mask, was Agamemnon; instead, they believe that Schliemann meant the northern one to be Agamemnon with the NM 623 golden mask (fig. 2) (see Dickinson 2005). In fact, even Schliemann seems to have been confused about which one was actually the mighty king, and he never made an attempt in the publication of his excavations to identify Agamemnon with any particular burial. Dickinson (2005) suggests that Schliemann deliberately left obscure the question of which one was Agamemnon's burial because he was uncertain (Dickinson 2005, 306). Vasilikou (2011, 128) also mentions that Schliemann gave the name 'Agamemnon' to the burial at the north side of the grave, not the south.

[4] Myc$_1$ V retained until adulthood a patent metopic suture (Papazoglou-Manioudaki et al. 2010, 203). Also, there is shoveling in the palatal surface of the maxillary left second (lateral) incisor, Carabelli's cusp on the maxillary left first molar, and parastyles on the maxillary left and right second molars (Papazoglou-Manioudaki et al. 2010, 204). Myc$_4$ V has a metopic suture present on a fragment of his frontal bone same as on MYC$_1$ (Papazoglou-Manioudaki et al. 2010, 210). Myc$_2$ V has shoveling of the crown in the maxillary right second (lateral) incisor (Papazoglou-Manioudaki et al. 2010, 208). Patent metopic sutures and shoveling of upper second incisors only occurred in individuals from Grave V. Moreover, a septal aperture was only recorded on the humeri of MYC$_1$, V and MYC$_2$, V (and MYC$_1$, VI). This suggests, according to Papazoglou-Manioudaki (2010), that the individuals of Grave V may have been closely related and could have belonged to the same family. However, we have to keep in mind that there is no hard evidence like DNA to prove that they were siblings.

[5] Schliemann's exact words are: '[…] - all these facts are so many proofs that all the twelve men, three women, and perhaps two or three children, had been murdered simultaneously and burned at the same time.' (1878, 337). Dickinson (personal conversation), notes: 'cremation is mentioned in the Iliad, but it was a well-known funerary custom in the

1

Figure 17. Screenshot of the first page of the textual version of the story.

The story begins in 2007 with the remains of the individual being re-examined by Dr Nafplioti in the lab, and gradually goes backward in time, first to the excavation of the bones in the 19th century, and then to the individual's life in the Bronze Age. The individual cannot remember their actual name, and the different code names that each person has assigned to them every time someone examines their bones make the situation harder. Also, the individual cannot remember how they died, but they make educated guesses about it. The individual is apparently suffering from memory loss due to the many times he has been 'brought back' from the dead to be re-examined. This reflects the fact that, when examining bodies, people lose or misplace parts of the individual (i.e., Dr Angel lost one of his teeth; the bones were misplaced), or in some cases treated them as artefacts rather than human remains (i.e. putting their arm up for exhibition, see discussion in Charlier et al. 2014).

The textual narrative is a first-person monologue where Tough is discussing everything he had heard during the excavation of their grave and the examination of their bones while also trying to remember aspects of their life. In the end, it is impossible for the character to remember their name or how they died, stressing again the fact that, despite reexamination, archaeologists do not have all the answers about the past. Other people mentioned in the story are the osteologists who examined the bones, namely Dr Angel and Dr Nafplioti, as well as the archaeologists who excavated GCA, Stamatakis and Schliemann.

Interactive Digital Narrative: Twine
The design of the game

The second medium of storytelling that was selected for this project is an Interactive Digital Narrative (IDN). Two important distinctions on interactive forms of narrative should be made here, as they have informed the creation of the IDN form of the story created in this research: *active* versus *passive*, and *digitally native* versus *digitally mimetic*. An active form of media is when the audience is actively participating to progress, engage, or construct the narrative. A passive media form is when the audience consumes information as presented to them and does not have the ability to actively participate in the construction of the narrative (Copplestone and Dunne 2017). According to Copplestone and Dunne's (2017) analysis, passive narratives are also usually linear, whereby the audience enters a pre-existing narrative structure following one node (pathway) after

the other until the end of the story. In contrary, active narratives offer the user an array of nodes that can be navigated in a sequence determined by the audience and not the author/creator.

However, it is important to note that there is no 'best' way of communicating archaeological research when it comes to the distinction between passive and active media form, and it depends on the aims of the project. Some projects might be purely educational and thus a main story based on archaeological evidence needs to exist, i.e. when presenting the results of archaeological research; whereas other projects may favour the need for the archaeologist to hear more and tell less, i.e. in a community archaeology project. Therefore, some media forms and narrative structures are better at telling a singular, authoritative story, while others are better at providing multivocality (Copplestone and Dunne 2017).

Interactive narrative media forms can also be divided into *digitally mimetic* and *digitally native*. Digitally mimetic refers to media forms that mimic the structure of print or analogue media forms that existed before them, whereas digitally native forms of media are those that can only exist in digital forms and do not rely on any print or analogue media in order to exist (Copplestone and Dunne 2017). As with active versus passive media narratives, both have their advantages and disadvantages, and it is not that one media form is better than the other. Therefore, a digitally mimetic medium is not necessarily inferior to a digitally born medium, and it depends on the aims of the project. On a similar note, Taylor and Dell'Unto (2021), have argued that skeuomorphic emulation - the imitation of the shape and form of another form when people are unable to cope technically with the new technology - is potentially an essential part of the use of new digital technologies and could prove a transformative process of the digital practice as a whole, and thus should not be perceived as negative.

The IDN was created via Twine and the title is 'Trowels and Bones' (see Figure 18 below). Twine is an open-source authoring tool for telling interactive, non-linear stories, allowing users to create games. Twine was created by Chris Klimas to make game creation an accessible procedure for people with limited or no knowledge of design or coding (Shibolet et al. 2018, 523). It is designed to be operated entirely by clicking and dragging boxes of text. As Twine uses web technology, the creator can use CSS, HTML and JavaScript to improve the appearance of the game, to add or improve functionality or to alter the player's interaction. JavaScript would also allow the creation of omnipresent synchratic narratives, where more than one story could happen at the same time, or implement time or location storylines (Copplestone 2016, 13-14; 17). The latest version, 2.3.13, also includes user-friendly simple command boxes for those who wish to polish the appearance

of their game without needing to write any kind of code. Therefore, Twine is a useful tool for beginners and of course for archaeologists with no coding experience who want to create interactive stories about the past or about their research to engage the public and explore options that would be impossible in the real world. In Figure 19 below, the passages used to create the game 'Trowels and Bones' can be seen.

Figure 18. Screenshot of the first page of the Twine version of the story.

Twine was chosen for this research because it is considered to be one of the best and most prominent authoring tools for interactive storytelling (Knoller and Shibolet 2008, Shibolet 2018), and IDNs are popular for public engagement, used both by museums and heritage institutions (for a discussion on the use of IDNs please refer to Chapter 3). Moreover, a core objective of this research is for the archaeologist to be able to create the media themselves since it is a DIY focused project, and Twine is a creator-friendly platform that does not require the creator to have knowledge of coding.

Figure 19.The passages of the game Trowels & Bones as seen in the creator's mode.

The Twine game includes the same information and elements as the textual narrative. That is because, in order to evaluate the impact on learning and enjoyment of each type of narrative media, it is necessary for the stories to contain the same information as possible. However, small differences were inevitable, with the main one being that the Twine story is created as a dialogue between Tough and the user, and not as a monologue as in the Text and the VR-video, and that the characters of Stamatakis and Dr Nafplioti have a more active role in the VR-video since it was not possible to include the element of active skipping parts or looking for more information in that medium.

The game begins with the voice of the narrator explaining that the user is inside a lab and gives the option to either move closer to the examination table or exit the lab as seen in Figure 20 below. The atmosphere at this point is rather eerie. The different options appear with blue colour which changes to orange if the user puts the cursor above each option, and then pink if this hyperlink has been explored before.
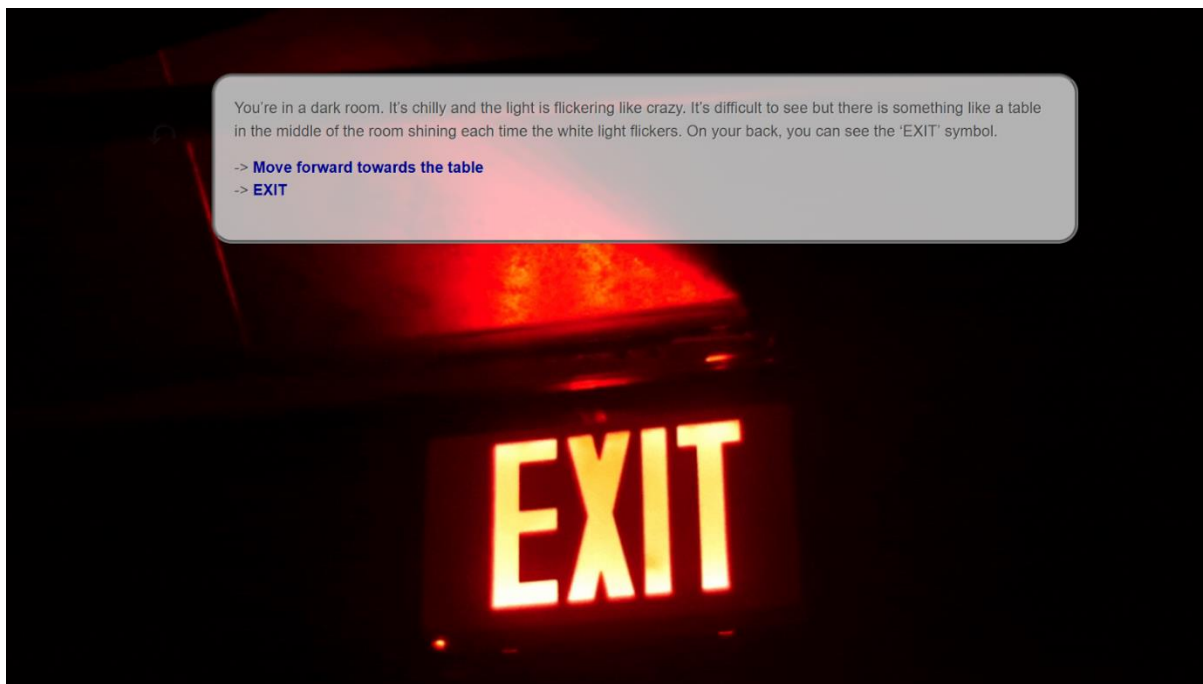
Figure 20. Screenshot of the Twine game. The user has the option to play by clicking on 'move forward towards the table' or exit the game by clicking on 'EXIT'.

The user always has the choice at these early stages to leave the game through a virtual exit door behind them. Most of the images in the game are created as gifs and thus they follow a repetitive video-like pattern, which adds some motion to the game. If the user decides to exit the game, the

narrator asks again to confirm their choice in a playful way, as seen in Figure 21, and if they insist, then they actually exit the game and a playful note appears, as seen in Figure 22. However, they do have the option to reload the game again and play it. The exit option does not have any effect on the story, since if the user selects to exit the game, they will not have begun the experience yet. It has been put there as an element of anticipation for the game, to enhance the eerie atmosphere of the dark room with the flickering light, also giving the sense of interactivity to the user.
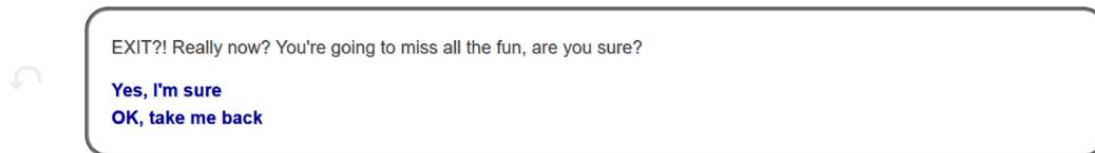
Figure 21. Screenshot of the Twine game. The user is asked again to confirm their choice to exit the game.
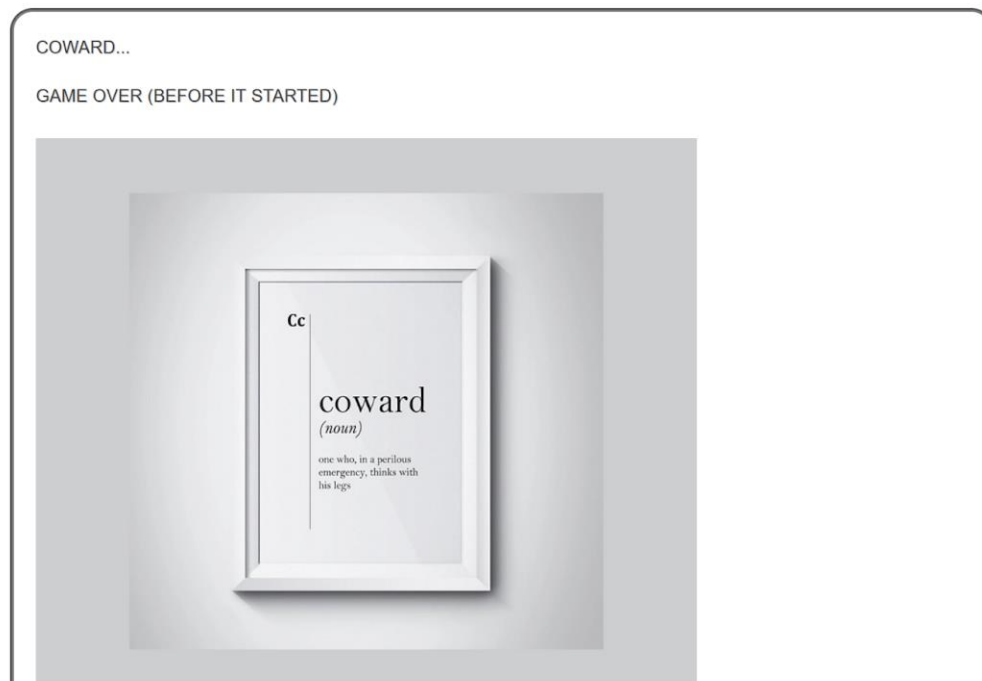
Figure 22. Screenshot of the Twine game. The message that appears if the user insists on exiting the game.

Supposing they do not do that, as they move towards the table to examine the skeleton more closely, they 'hear the voice' of the individual as if they are alive in the same room as seen in Figure 23 (essentially the Tough begins talking directly to the user in the second person).

As you step closer to the centre of the room your eyesight adjusts, and the surroundings start to become more visible. You're in a **lab room**. The walls are covered bottom-up with shelves and various testing tubes along with scientific equipment rest on them. At the corner, there is a fridge with a million drug bottles, small and large, in it.
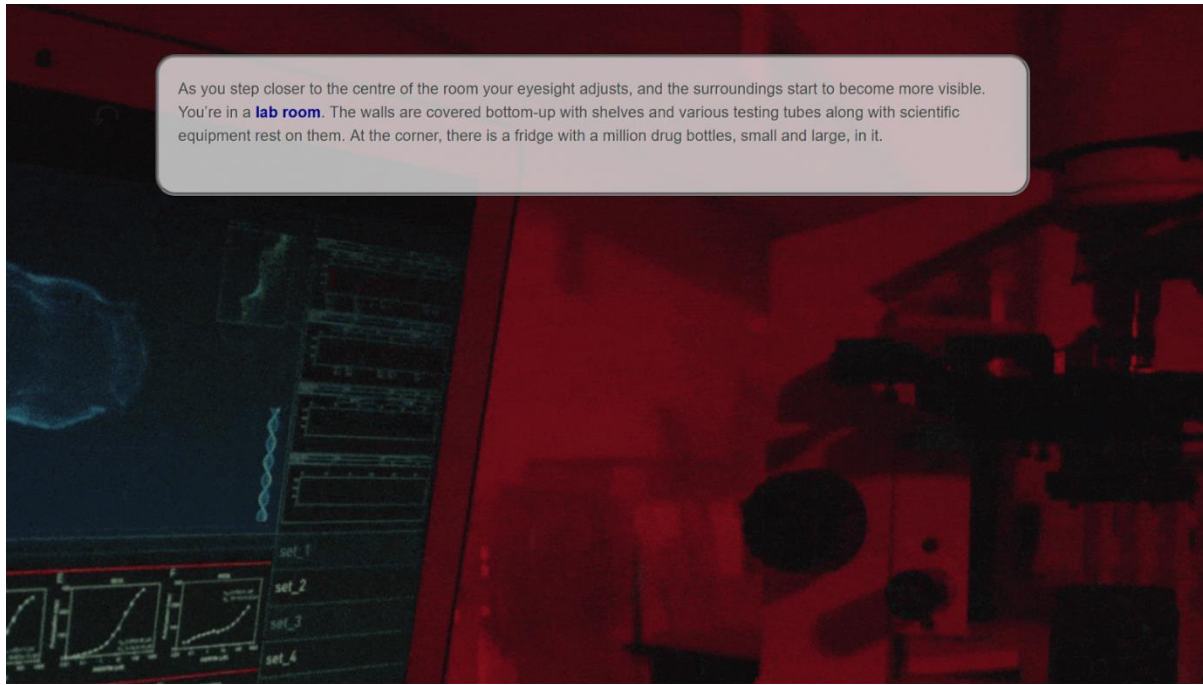
Figure 23. Screenshot of the Twine game. The user finds themselves in a lab room.

Tough's voice will follow them for the entire game and communicate through dialogue. An example can be seen in Figure 24 below.

'Who's speaking'? You repeat in a pretended sturdy voice.
'I told you, it's me', the voice this time is even deeper, like it comes from a grave.

'I can't see anything'. 'Show yourself now!' You shout louder now and almost burst into tears.

'I cannot believe it. You've been looking at my bones a minute ago. And I'm sick and tired of people messing around with my bones.'

'Wait, **what???**'
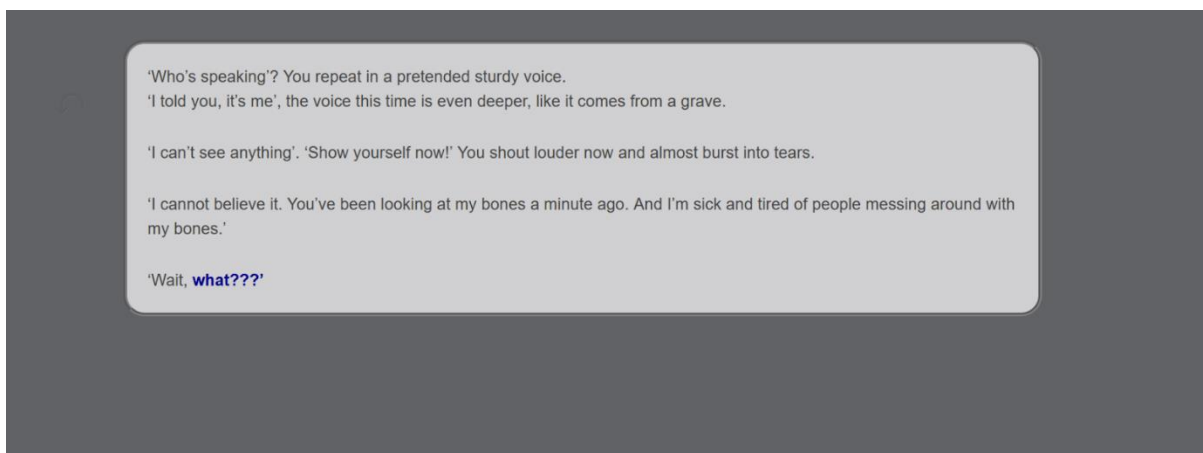
Figure 24. Screenshot of the Twine game. An example of the dialogue between Tough and the user of the game narrated by a third person external narrator.

The user soon realises that the individual has lost their memory and needs help to remember who they are. The main objective here is clear: to remember their name, which they have forgotten (see Figure 25). The user can click on each of the code names and learn more about the story behind them or just skip them and read the main story instead. As the story progresses, Tough gets the opportunity to talk about their history regarding people unearthing and then examining their remains. In this setting, they talk about the relationship between Schliemann and Stamatakis, as well as the series of examinations of bones, with the last one being by Dr Nafplioti.

'My name is…, I mean people call me…, oh I cannot believe it! I do not remember my name again!

Think! Think! … Yes!

I think I remember now. I am **Tough** ! Or at least that's what Clerk said. He said I'm Tough. It is a bit confusing, though, as the lady keeps calling me **MYC1 V** and this Angel guy called me **26Myc** . Maybe they did not know I am Tau. It does not feel right, though; I do not think that it suits me as a name, it feels a bit inappropriate. Anyway, maybe it is due to the curse that makes me forget things; who knows?'

'You don't remember your… name? Is there something else that you remember about you?'

'The only thing I can remember is that I had the luck to be grow up in mighty **Mycenae**.'

Figure 25. Screenshot of the Twine game. Tough attempts to remember their name.

Then, after setting the scene and establishing the location and the two main storyline strands from the original excavation through to the recent examination of the bones, the notion of the two notebooks is introduced (see Figure 26). The user has the opportunity to have a look at Stamatakis' notebook with the burial evidence, as seen in Figures 26-28. The user can either click on the different findings of the grave to learn more, or just skip them and only read the main story.

Figure 26. Screenshot of the Twine game. The user has the option to explore the two diaries: Stamatakis' which contains the archaeological information, and Dr Nafplioti's with the osteological report.
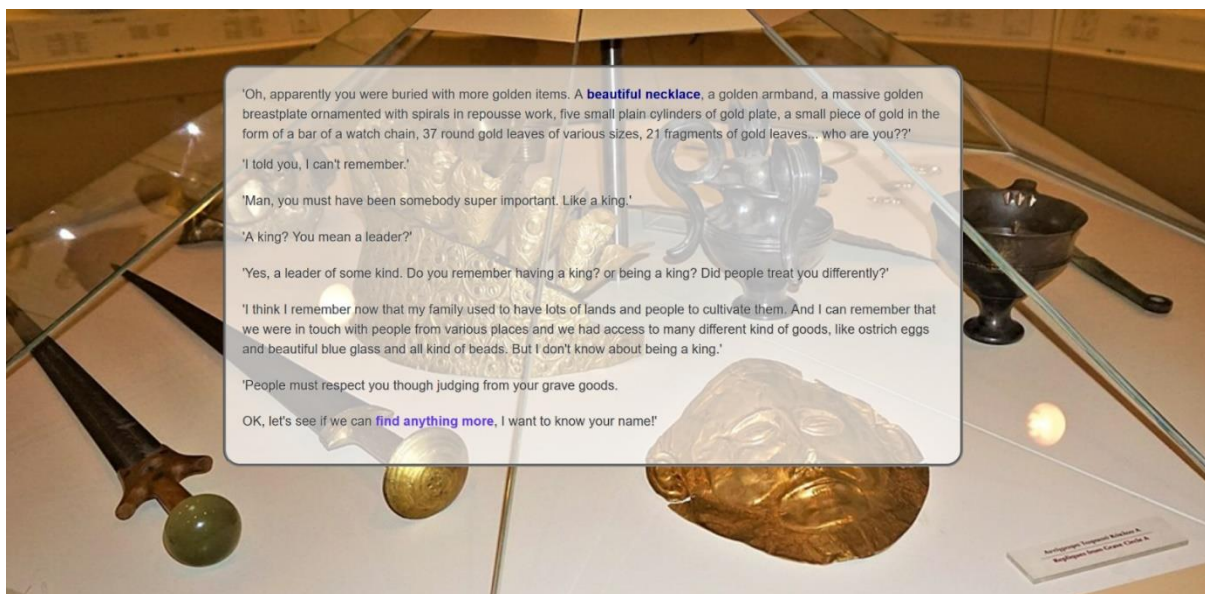
Figure 27. Screenshot of the Twine game. The user has the option to explore Stamatakis' diary and click on the links to further explore the objects found in MYC$_1$V's grave along with their potential explanation.

Then, the user can go back and explore Dr. Nafplioti's notebook which contains the recent skeletal report. The different elements of the report are presented as clues, which are exactly the same as the ones included in the textual story in the form of footnotes. The osteological jargon has been kept preserving the authenticity of the game, but at the same time explanations are provided to help the user understand what is happening in a similar manner to the footnotes in the textual version of the story as seen in Figure 29.

'Look, here! I found her notes on the bones. Let's have a look'

'Sure'

CLUE 1

CLUE 2

CLUE 3

CLUE 4

CLUE 5

CLUE 6

CLUE 7

CLUE 8

CLUE 9

CLUE 8

CLUE 9

Go back to the room with the notebooks
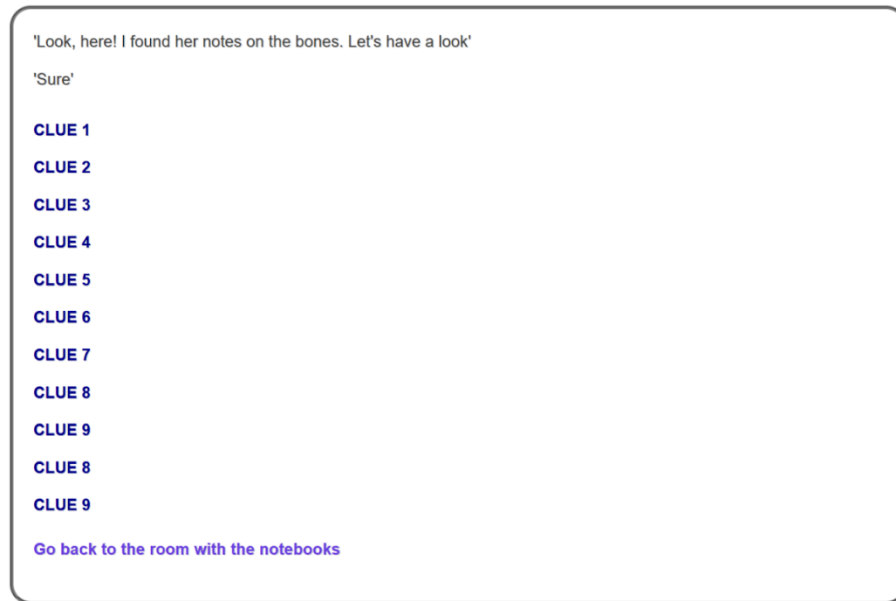
Figure 28.Screenshot of the Twine game. The user has the option to explore Dr Nafplioti's osteological report.

'It says here that you had hypoplastic lines on your bones.'

'What in the Underwold is that?'

Well, it says that it could be due to poor diet, diseases, or stress during childhood. Does this rign any bell?'

'Oh yeah! It might be this bloody illness I went through when I was 5. It was terrible. Half of the people in the village died, I got really lucky to survive.'

'I'm verry sorry to hear that.'

back

Figure 29.Screenshot of the Twine game. An example of the jargon being explained in the osteological report.

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Towards the end, the user has the option to choose between two different possibilities for how the individual died as seen in Figure 30 and 31. By giving the user the option to choose how the individual died, it is made even more clear that the whole story is fictional, and everything is just an interpretation. This concept is also reinforced by the fact that in the Twine game Tough is told that the data are just being interpreted to create Tough's life story (see Figure 31). However, it is also apparent to the user that while the story might be an interpretation of the data, it is still based on solid data.

'Go on.'

'So, you were somebody that deserved to be buried with tons of gold, massive swords, all kind of beads, vases made of precious metal and rare stones and extremelly beautiful jewlerry. And on top of that, a huge golden mask!'

'Yeap.'

'But, how did you **die**?'

'No clue really. What do you think?'

'Me? I don't know.'

'Well, you've seen the data. You're a smart one. What do you think?'

'Well. Let's see'

You died in the battlefield

You died during a hunting trip

Figure 30.Screenshots of the Twine game. The user is presented with two options of how Tough potentially died.

'I died on the battlefield?'

'Yes. **Mycenaeans were notorious warriors** who constantly looking to expand in the nearby areas. Your father decided that this time he would send you alone to this battle. After all, it would be a quick and easy one and you've already been in a few. You know what to do.'

'What are you talking about?'

'Well, you asked me to interpret the data and come up with a plausible explanation of how you died. And, that's exactly what I'm doing. As there are no marks on your skeleton that could imply a cause of death, but you died rather young, I believe you suffered a fatal wound that didn't leave any marks on your skeleton. Your death was quick. Now stop talking as you interrupt my train of thought.'

'Oh, excuse me, I guess. **Please, go on**'

Figure 31.Screenshots of the Twine game. The user is reminded that everything so far has been an interpretation of the data and not the actual truth.

In the end, the user gets to face the 'truth': we will never know the individual's name, at least not with the current methods and archaeological evidence that we have available. And that is the perpetual struggle of the archaeologist: seeking the truth without being able to actually find it (see Figures 32-33).

'Is that it?'

'Don't you like it?'

'Well, it sounds like an appropriate death, thank you.'

'So, what now?'

'Well, I need to accept that I am not sure how I died, and that no one is able to help me. However, I know that my family gave me a very honourable funeral, as was expected. I know as **Clerk made notes** of everything that my family put into my grave. Everyone speaks about his diary these days.

[...]

'But we still don't know your **name**.'

'Yeah. You can't say we didn't try, though.'
'We sure did. In fact I think you managed to remember a lot of things about yourself.'

'Yeah, thanks for the help it means a lot.'

'No worries. We could have been good friends back then.'

'Maybe. We'll never know.'

END

Figure 32. Screenshots of the Twine game. The user is reminded that unfortunately, the individual's name remains unknown along with many aspects of their life and death.

Well done, stranger!
You've come to the end of this story.

We hope you're left devastated by the bitter truth that as archaeologists we know very little about Prehistory, as Prehistory is a very discriptive word: PRE-history, meaning that it's the era before written history existed. So, the information about this period is scarce and archaeologists are left with limited answers to their eager questions.

We do hope however, that you will eventually manage to find answers to all these questions left behind by generations of archaeologists and you will be able to help people like our guy here to be seen and heard by many people.

May the odds be with you!

Trowels & Bones

Figure 33. Screenshot of the ending page of the Twine game.

The Twine game is a linear IDN, meaning that it does not allow much choice for the user regarding the evolution of the storyline. Therefore, the choices made by the user are limited to either exploring elements of the story or skipping them and reading the main story, in a similar way to either reading through the text's footnotes or skipping them. That way, each choice always drives the story forward, except if they chose to exit the game entirely at the beginning. Even when the user chooses how the individual died by clicking one or the other option, they can actually go back via the back arrow and also explore the other option. I created this option to match the information given in the textual and the VR versions of the story where both potential ways of dying are described.

One could argue that this linearity and lack of options in the IDN is disempowering as it potentially reinforces the authority of the archaeologist. However, as mentioned above, it has been done this way to match the information provided in the text and the VR-video, and adding more options would hinder the ability to compare the three media as they would not contain the same information. Further limitations and ways to move beyond this are being discussed in the Discussion and Suggestion for further research chapters of the thesis. Additionally, there is a constant drive to tell the user that archaeologists do not always have the answers about the past in all three forms of the story, which could arguably balance this lack of options and could help avoid reinforcing archaeological authority. However, it is a limitation of Twine, and other options are discussed in the Discussion chapter.

Implementation

To implement the story, Harlow 2.1.0 was used. As I am not a programmer, I watched YouTube videos and looked into Twine Wiki to find out how to use code to add individual images, background images, background colours, audio, and to modify the text format (e.g. colour, font). I added some CSS, HTML and JavaScript coding inside some of the paragraphs when I needed specific things to happen in that paragraph as seen in Figure 34 (e.g. a particular background photo to be inserted in a paragraph), and also in the StyleSheet, as seen in Figure 35, in order for the changes to be applied throughout the story (e.g. the text format).

Some of the coding worked, and some did not due to incompatibility issues with Harlowe 2.1.0, as Twine recently had an upgrade and most of the tutorial videos were older than 1 year hence the recommended writing engine was Sugar Cube. One of the major issues was adding audio to the story. After several attempts (see Figure 36), I managed to add music using an audio library for Harlowe designed to give format feature parity (or close to it) with Sugar Cube's audio subsystem. However, this was a temporary solution as the only compatible music tracks were not suitable for the soundscape that I was trying to create, and therefore I did not use background music at all.

Also, as all of the images, gifs, and audio needed to be directly taken from the web and not from a folder on my PC, I had to build my own website using wix.com and upload all the material I needed there.

```
Move forward towards the table                    ⤢   ✖

  ➕ Tag      room2 ▾

  • As you step closer to the centre of the room your eyesight adjusts, and the
    surroundings start to become more visible. You're in a [[lab room]]. The
    walls are covered bottom-up with shelves and various testing tubes along
    with scientific equipment rest on them. At the corner, there is a fridge
    with a million drug bottles, small and large, in it.
  •
  • <style> img {
  • max-width:100%;
  • max-height:100%;
  • }
  •
  •
  •
  • </style>
  • <img
  • src=https://images.unsplash.com/photo-1518152006812-edab29b069ac?ixlib=rb-
    1.2.1&ixid=MXwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHw%3D&auto=format&
    fit=crop&w=1500&q=80>
  • </div>
  •
  •
```

Figure 34. CSS coding in a paragraph.

Stylesheet

Any CSS entered here will override the default appearance of your story.

```css
tw-story[tags~=room1]{background-image:url("https://wallpoper.com/images
/00/33/27/56/dark-room_00332756.png")}

tw-story[tags~=room3]{background-image:url("https://images.unsplash.com
/photo-1478826160983-
e6db8c7d537a?ixid=MXwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHw%3D&ixlib=rb-
1.2.1&auto=format&fit=crop&w=1500&q=80")}

tw-story[tags~=page1]{background-image:url("https://static.wixstatic.com
/media/19e7c9_1a06bfe620f8411ba8291a4b68304832~mv2.jpg/v1/fill
/w_750,h_500,al_c,q_85,usm_0.66_1.00_0.01/Trowels-_-Bones-BLACK.webp")}

tw-story[tags~=voice]{background-image:url("https://i.imgflip.com
/2f3zko.jpg")}

tw-story[tags~=bonesnotebook]{background-image:url("https://www.photohdx.com
/images/2016/03/yellow-vintage-wrinkled-paper-background.jpg")}

tw-story[tags~=lookaround]{background-image:url("https://static.wixstatic.com
/media/19e7c9_8eb631d200e14235881c1e3d7dcfd10e~mv2.png/v1/fill
/w_750,h_423,al_c,q_85,usm_0.66_1.00_0.01/question%20mark.webp")}

tw-story[tags~=recap]{background-image:url("https://static.wixstatic.com
/media/19e7c9_4723ee45465a4bea8a4357b9185f53bb~mv2.png/v1/fill
/w_750,h_423,al_c,q_85,usm_0.66_1.00_0.01/gold.webp")}


tw-story[tags~=ending]{background-image:url("https://static.wixstatic.com
/media/19e7c9_2ef86c026dfd4ec08f7dbfa1ac02b814~mv2.png/v1/fill
/w_750,h_423,al_c,q_85,usm_0.66_1.00_0.01/p4_smaller.webp")}


tw-story[tags~=skeleton]{background-image:url("https://static.wixstatic.com
/media/19e7c9_bbb1744d730d4f97be01db2a2b72eaba~mv2.png/v1/fill
/w_750,h_423,al_c,q_85,usm_0.66_1.00_0.01/arrows.webp")}


tw-story[tags~=longstory]{background-image:url("https://static.wixstatic.com
/media/19e7c9_bbb1744d730d4f97be01db2a2b72eaba~mv2.png/v1/fill
/w_750,h_423,al_c,q_85,usm_0.66_1.00_0.01/arrows.webp")}
```

Figure 35. CSS coding in the Stylesheet.

Figure 36. Different attempts to add audio to the story.

VR video

The design of the video

The last medium is an immersive 360 film of the story in a virtual environment. The key element here is the immersion rather than the interaction of the Twine game, which is associated with the use of head-mounted displays and contrasted with non-immersive (desktop) VR (Makransky, Terkildsen, and Mayer, 2019). 360-degree videos are captured using omnidirectional or multi-camera setups, allowing for the simultaneous recording of all angles and viewpoints (Ranieri et al. 2022, 1200).

The film that I created for this research is a mix of the genres described by Morgan (2014) (see Chapter 3, 'Archaeological Filmmaking' section) and thus it could be described as an experimental intermixing mode of filmmaking (Morgan 2014, 335). It is divided into three parts, each one narrated by a different character and discussing different background, but all of them overlap with each other: it begins in the present day, with the main character (Tough) directly speaking to the audience about the examination of their remains and their life as a human in the Late Bronze Age. Therefore, this part is completely fictional, based on archaeological and osteological evidence and giving an internal perspective in a more didactic way. Then, their monologue is interrupted by the second character, Dr Nafplioti, who is reexamining the remains of the main character and writing her notes. The scene changes to monochromatic black and white to indicate the change of time since she is supposedly on her lunch break, and thus her monologue happened a few minutes ago. It is a monologue again by the osteologist speaking to herself while writing the osteological report. The scene is scripted yet based on the actual osteological report and narrated by Dr Nafplioti herself, and thus could potentially be classified as a direct testimonial film. The ambience in the room resembles that of an osteology lab and the room is an osteology lab, and thus the landscape and soundscape are evocative of the actual events and hence align with the phenomenological genre.

Lastly, the third part of the film is another monologue, this time by Stamatakis, one of the excavators at Mycenae narrating some events of the fieldwork. The script is based on the actual words that Stamatakis wrote in his diary, so could be classified as a direct testimonial film. The scenery is still the lab, but there is a 2D video of Mycenae and the excavated GCA along with some of the finds from grave V augmented in the 360 film. The sound resembles that of pickaxes and shovels, as well as chatter from workers, evoking past events and thus aligned with the

phenomenological genre. However, the film could potentially be classified as impressionist especially since it strives to convey the subjectivity of archaeological research, and present to the public different aspects of how archaeology is done, including the uncertainty regarding prehistory. Therefore, it also has a didactic character and thus could be classified as expository, since the main aim is educational and the intended audience the general public, including the local community or stakeholders, and people with general interest in Late Bronze Age or Mycenae. In this way, the film created for this research does not fit neatly into a single genre as described by Morgan (2014), but it has elements of all four of them potentially.

Implementation
Filming in PalaeoHub

The film was shot in the D/S007 room in PalaeoHub which is a lab located near the Environment Building on Heslington West of the University of York. For the set-up of the skeleton, I followed the osteological report in which each part of the skeleton has been recorded (see Figure 37 below).

Skeletal element	Completeness (%) and no. of fragments					
Left clavicle	~100%, 1 fragment					
Left scapula	0					
	No. of fragments	Proximal epiphysis	Diaphysis			Distal epiphysis
			Proximal 1/3	Middle 1/3	Distal 1/3	
Left humerus	2	15%	30%	65%	0%	0%
Left radius	0	0%	0%	0%	0%	0%
Left ulna	0	0%	0%	0%	0%	0%
Left femur	3	50%	30%	100%	95%	95%
Left tibia	1	0%	5%	95%	100%	100%
Left fibula	0	0%	0%	0%	0%	0%
Left innominate	0					
Left hand	Carpals	0				
	Metacarpals	0				
	Phalanges	0				
Left foot	Tarsals	Calcaneus (30%)				
	Metatarsals	0				
	Phalanges	0				
Left patella	95%, 1 fragment					
Right clavicle	~100%, 1 fragment					
Right scapula	0					

	No. of fragments	Proximal epiphysis	Diaphysis			Distal epiphysis
			Proximal 1/3	Middle 1/3	Distal 1/3	
Right humerus	2	25%	85%	100%	100%	15%
Right radius	1	80%	95%	100%	80%	0%
Right ulna	1	95%	90%	100%	80%	0%
Right femur	1	80%	95%	95%	100%	100%
Right tibia	1	0%	10%	100%	100%	100%
Right fibula	0	0%	0%	0%	0%	0%

Right innominate	30%, 1 fragment					
Right hand	Carpals	0				
	Metacarpals	0				
	Phalanges	0				
Right foot	Tarsals	Calcaneus (95%), talus (95%)				
	Metatarsals	0				
	Phalanges	0				
Right patella	0					
Sternum	0					

Vertebrae	Cervical		Thoracic		Lumbar	
	Atlas (95%)		1 thoracic (95%)		2 lumbar (~100%)	

Sacrum	0
Left ribs	0
Right ribs	0

Figure 37. The table with the information regarding MYC$_1$V's skeletal remains in the original publication (Papazoglou-Manioudaki et al. 2010, table 20).

I borrowed some parts of a disarticulated plastic skeleton which I then laid on the table to represent the way they would have been laid out for an osteological examination following the original osteological report: a cranium, left clavicle, left humerus, Left femur, Left tibia, (Left) calcaneus, left patella, right clavicle, right humerus, right radius, right femur, right tibia, right innominate, (right) calcaneus, and from the vertebrae: the atlas, one thoracic vertebra, and two lumbar vertebrae, as seen inf Figure 38 below.

Figure 38. The layout of the plastic skeleton on the table.

I went to the PalaeoHub to film twice: once on Wednesday the 18th of August 2021 and then again on Friday the 20th of August 2021 (see Figures 39 and 40 below). That was because after the first day of filming when I returned home and checked the film, I realised that someone had entered the room while filming despite the warning sign I had put on the room's door and thus the film was unusable (see Figure 41 below).
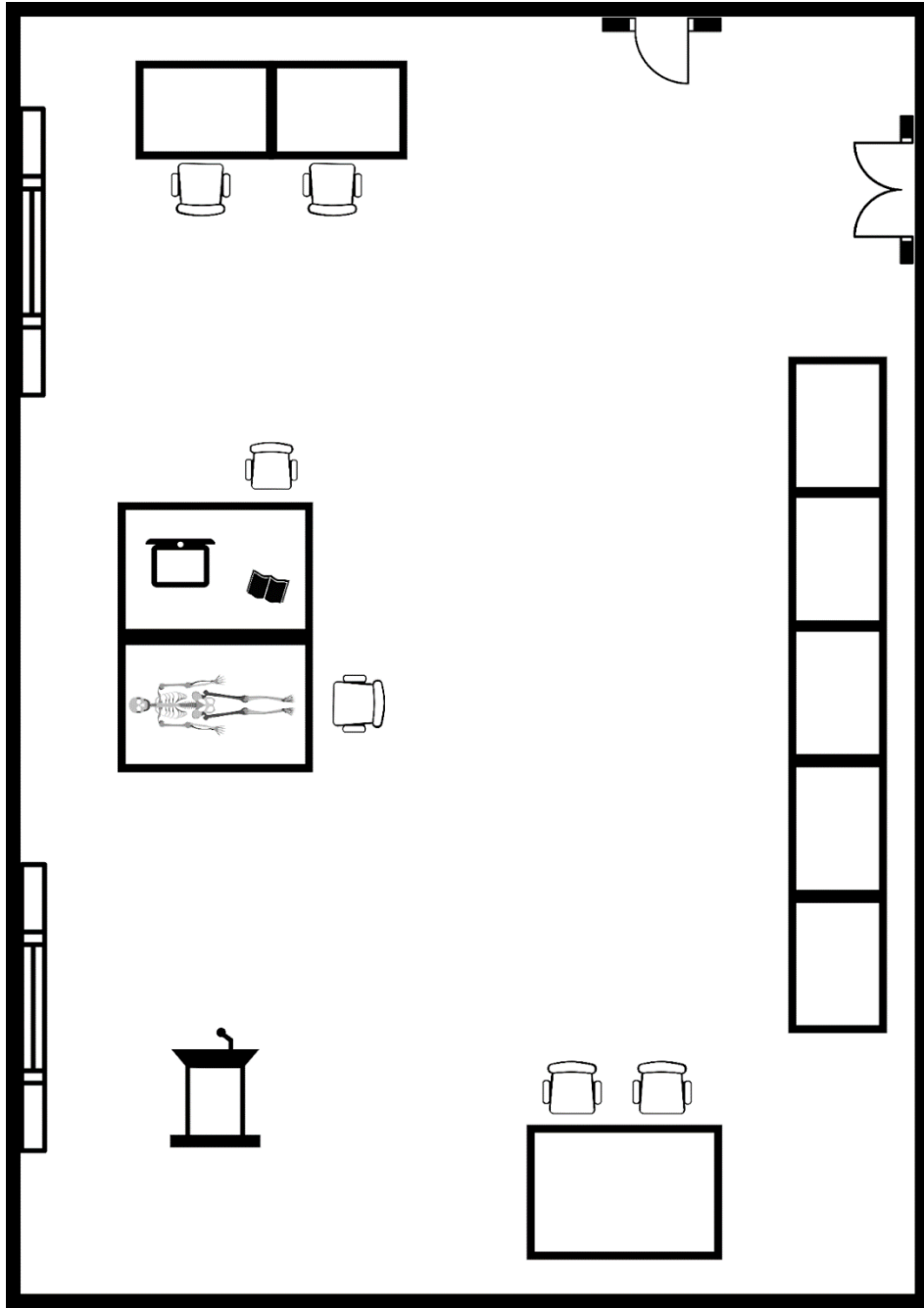
Figure 39. The D/S007 room at PalaeoHub and the set-up of the room for filming the 360 film video, not to scale.

Figure 40. First day of filming in the PalaeoHub. Shot from the Insta360 One camera.

Figure 41. A person entering the room. Screenshot from the 360 film.

The video was created by shooting a 360 film with an Insta360 One camera which was then edited with PremierePro and imported into the HTC Vive headset using Viveport. Hence, it is not a 3D environment built with software (i.e. Blender) but rather a 360 video of the lab room playing on a loop to give the impression that the user is inside the room. This kind of VR experience is usually referred to as VR-video (high immersion/low interactivity) which differs from VR (high immersion/high interactivity) (Petersen et al. 2022, 3). The reason for this choice is for the medium to be in accordance with the aim of the research, which is not only to effectively communicate archaeological research to the public but also for the archaeologist to be able to create the medium themselves with minimal funding and time. Creating a 3D environment using design software would require lengthy training which would not fit the purpose of this research.

After filming the video, it was necessary to make it compatible with the HTC Vice headset. Making the 3D video compatible with the Vive headset was a challenging process. It is not common for 360 films to be converted to 3D environments using VR goggles or headsets, and it was difficult to find information online on how to do this. After a lot of trial and error (see Figure 42 below for a workflow of the different phases of this process – also note that there is room for an iterative process in this workflow), I managed to introduce the 360 film video to the HTC Vive headset.

360 FILM TO VR EXPERIENCE
conversion process

FILM EDITING

1 I edited the 360 video with Premiere Pro to add sound and video effects to create an immersive soundscape. Then, I exported it in mp4.

SOLVING BUGS

2 The environment inside the 360 film was constantly spinning, which was an issue. It was impossible to resolve it in Premiere Pro, so I tried using Insta360 Studio 2021.

INSTA360 STUDIO 2021

3 I imported the mp4 file and clicked on:
- use FlowState stabilization
- Lock Direction

which solved the spinning issue.

I exported it again in mp4 and it was ready to be used in the HTC Vive headset.

FIGURE OUT HOW TO MAKE IT PLAY USING THE HEADSET

4 Once the video was inserted and edited, I tried to access it through the VR headset. Since it is unusual for a DIY 360 film to be watched via a headset, I had to research in the Internet for potential ways to make it accessible via the VR headset.

USING STEAMVR

5 I found that SteamVR could be used to insert the film into the VR environment but the video file was unreachable via SteamVR.

VIVEPORT

6 Since the file was unreachable through Steam only, after doing more research, I found Viveport, a PC VR subscription plan for gaming that supports all major headsets. I did not create an account, but managed to use it successfully to access the video from my C: drive and play it.

Figure 42. Workflow demonstrating the trial-and-error process of making the 360 film compatible with the HTC Vive headset.

I edited the 360 video with Premiere Pro to add sound and video effects. For example, I wanted the experience to begin in absolute darkness with the voice of Tough being heard in the dark, for it to be more immersive and closer to the Twine game, which began with the phrase 'You're in a dark room'. Then, the lights go on and the user can look around to understand where the voice is coming from, and eventually, they spot the skeleton of MYC_1V on the examination table. The environment is completely 3D and the user can actually walk around the room, but they cannot interact with the items. The end result is a 22-minute-long VR-video with three main characters: Tough (voiced by Mr Dan O'Kane); Dr Nafplioti (voiced by Dr Nafplioti herself who was kind enough to offer her knowledge and elaborate more on the skeletal remains while I was writing the story); and Stamatakis (voiced by Dr Dickinson).

Scenario

For the VR version of the story, it was essential for the story to be rewritten and adapted as a scenario with three main characters who speak during the film. In the VR version of the story, both the secondary characters of Stamatakis and Dr Nafplioti have their own voice to convey the same information used in the text and the Twine, as discussed above. The scenario can be found in Appendix I.

Sound

The ambience of the room changes during different parts of the story. I used Epidemic Sound for all the sounds in the film. During the main narration by MYC_1V's character, the ambience is that of a laboratory with the sound of different machines working in the background to immerse the user in the lab environment.
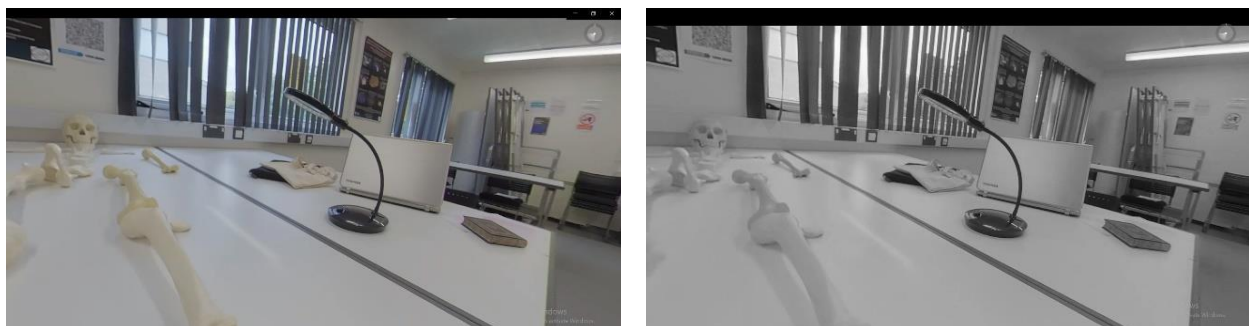
Figure 43. Screenshots of the 360 film during normal narration (left) and during Dr Nafplioti's narration (right). The film changes to grey to indicate that this happened in the past.

The ambience of the room changes again during Stamatakis' narration. The idea is that, similarly to Dr Nafplioti's section where the user is transported back in time to see Dr Nafplioti studying the bones (see Figure 43 above), during Stamatakis' section the user is transported to 19th century Mycenae and to the excavation of GCA and tomb V with Stamatakis making notes in his diary and expressing his inner thoughts. Hence, the ambience changes from a lab room to an external environment with workers talking to each other, while they dig and shovel the ground. Moreover, when Stamatakis is describing the excavations at Mycenae, the user is also visually transferred to Mycenae and the museum where the artefacts are today through a sequence of 2D videos of the place and the finds as seen in Figure 44 below. The initial plan was to shoot a 360 video both at Mycenae as well as at the National Archaeological Museum of Athens (NAM) where the finds of the graves are displayed today. That proved difficult due to filming and use of the footage restrictions by the local Ephorate of Antiquities and the National Archaeological Museum of Athens. I would have had to obtain special permission for shooting the footage and then I would not have been able to publicly use any of that footage, including during the experiment. Therefore, I decided to insert 2D footage from Mycenae and NAM which was kindly provided by ERT, the Greek public broadcasting corporation. It was not the optimal option, but as mentioned above, the point of the research is for the archaeologist to be able to create the media themselves and overcome these kinds of obstacles or adapt to the reality and timeframe of the project as part of the process, and thus overcoming these struggles and coming up with solutions is part of this practice-based research.

Figure 44. Screenshot from the 360 film. On the top right corner, the implemented 2D video of Mycenae can be seen.

As mentioned previously in this chapter, the three media types used in this research provide different approaches to learning. The VR-video is mainly immersive and lacks interaction, which is discussed as a potential limitation in the Discussion chapter. That is because, as discussed in Chapter 3, immersion can actually be enhanced by interaction, and moreover, according to Makransky and Petersen (2021), recent research suggests that the combination of immersion and interactivity is what separates VR from other types of educational multimedia in terms of learning effectiveness. However, as Ranieri and colleagues (2022, 1200) point out, 360 films experienced with VR headsets can offer the sense of presence and embodiment and can be better options than constructed 3D environments since they are exact representations of the environment.

The impact of the media has been evaluated through the evaluation methodology described in the next chapter, and thus the benefits and downfalls of the three media will be discussed in detail later in the thesis.

Summary

This chapter has presented the foundation of the research aiming to introduce the principles that have informed this research project. Therefore, I discussed the research strategy, which is practice-based research as defined by Candy and colleagues (2022) with an experimental element in alignment with DIY digital archaeology, and the research philosophy which underpins the research framework, which is Pragmatism. Then, I discussed the methodology that I developed to create the three media. The underlying model that I used to create the textual story in which the other two media are based is Boutin's bioarchaeology of personhood model (2015; 2019). I then developed the story into an IDN using Twine, and lastly into a 360 film which I made compatible with VR headsets. The key objectives of the story were first, a pedagogical one with the aim to disseminate knowledge about the past, meaning the Late Bronze Age in Mycenae focusing on GCA, the history of the excavations, and the history of the re-examination of the skeletal remains. The other objective was to communicate the uncertainty that is integral to archaeological research especially regarding prehistory, and the last objective was to decolonise the history of the excavations at Mycenae, by providing information on Stamatakis' significant contribution to the Mycenaean archaeology.

Chapter 5 – Methodology of Evaluation

Introduction

This chapter is a presentation of the methodology of the research, focusing on the methodology I developed to address the research questions and evaluate the DIY project I have created. The chapter, acting as a continuum from the last one, is a discussion of the methodology created to evaluate the three media, and thus this DIY practice-based research, aiming to directly address the research questions and consequently understand which medium is the most effective for disseminating archaeological research to audiences. The chapter begins with an analysis of the research type which is concurrent embedded mixed methods research design following Creswell's method (2009), as well as the quantitative and qualitative data collection methods and analysis in detail. It then proceeds to a detailed presentation of the experiment designed following a mixed methods approach to evaluate the impact of the three media on the audiences and understand which one of the three is more effective in communicating archaeological research to audiences. This includes paradata notes on the way I conducted the experiment since my aim is to develop a methodology that can be followed in future projects. Therefore, I considered it important to include as much information on the way I conducted the experiment apart from its design, along with discussion of difficulties and troubleshooting.

Research Type

This research uses *mixed methods,* meaning that both quantitative and qualitative data were collected to address the research questions mixing surveys and structured interviews. As an overarching philosophical framework, mixed methods research usually uses Pragmatism, which offers freedom to the researcher to use a variety of approaches to address their research questions (Doyle et al. 2009, 175), and is widely used in mixed methods studies (see Tashakkori and Teddlie 1998, Morgan 2007, and Patton 2007) since it allows the researcher to give their attention to the research problem and use pluralistic approaches to produce knowledge.

Figure 45. Quantitative, Mixed, and Qualitative Methods. Adapted from Creswell 2003, Table 1.3.

Mixed methods are defined as a research design where the researcher collects and analyses data using both quantitative and qualitative approaches or methods in the same research project or study as seen in Figure 67 above (Tashakkori and Creswell 2007, 4). According to Creswell (2009, 4), 'Mixed methods research is an approach to inquiry that combines or associates both qualitative and quantitative forms. It involves philosophical assumptions, the use of qualitative and quantitative approaches, and the mixing of both approaches in a study. [...] it also involves the use of both approaches in tandem so that the overall strength of a study is greater than either qualitative or quantitative research.' Historically, according to Creswell (2009, 204), the roots of the mixed methods approach can be traced back to the multitrait-multimethod matrix, an approach to assessing the construct validity of a set of measures in a study, of Campbell and Fiske (1959); and also to the conversion or triangulation (the practice of using multiple methods, data sources, or perspectives to validate and enhance the reliability of the findings) of different quantitative and qualitative data (Jock 1979). This led to its gradual development as a distinct methodology (Tashakkori and Teddlie 1998; Creswell and Plano Clark 2007). Since then, numerous researchers and scholars have incorporated mixed methods in their research (for a discussion on the initiatives that contributed to mixed methods see Creswell and Plano Clark 2007), and more have published books on mixed methods (for some prominent examples see Creswell 2009, 204;

Creswell and Creswell 2018, 235). However, it is important to note that mixed methods as an approach is still evolving and there is not a single way to conduct mixed methods research (Johnson et al. 2007). Mixed methods research often considered the 'third methodological movement', has emerged in response to the limitations of both qualitative and quantitative methods and is considered a way to overcome the dichotomy between positivistic and non-positivistic approaches (Doyle et al. 2009, 175). In this research, I follow a mixed method approach since I have collected both quantitative and qualitative data, and my approach and analysis take the form of a heuristic and visual exploration of the survey dataset, rather than a statistical interpretation of the data, as the sample was rather small.

Since the aim of the research is twofold - to understand which medium is more effective, and also to evaluate the impact of each of the media on the public - a mixed method approach is the most efficient way to address both research questions. That is because quantitative data can lead to understanding which medium was more effective in communicating new knowledge to the public through a heuristical approach which can reveal patterns in the data, but the qualitative data offer richer insights regarding the impact of the media. Moreover, mixed methods enhance the credibility of findings since they allow triangulation of the data (Greene, Caracelli and Graham 1989) and comparisons between datasets (Bryman 2006), which has been done in this research. Furthermore, this approach uncovers relationships among variables while revealing meanings, which is evident in this analysis and can lead to the discovery of paradox, contradiction and anomalies within the data which can further enhance understanding and lead to more in-depth study of the data (Greene, Caracelli and Graham 1989). Lastly, a mixed method approach utilises all the positive aspects of both qualitative and quantitative research methods, trying to minimise the weaknesses inherent within each one of them (Creswell 2003, 213).

For this research, a *concurrent* (sometimes referred to as convergent) *embedded mixed methods research design* following Creswell's method (2009) has been utilised. A concurrent design is when all the data are collected simultaneously (Creswell 2009, 206), and then to be compared or relate with each other, which leads to insightful interpretation of the data by the researcher as seen in Figure 68.
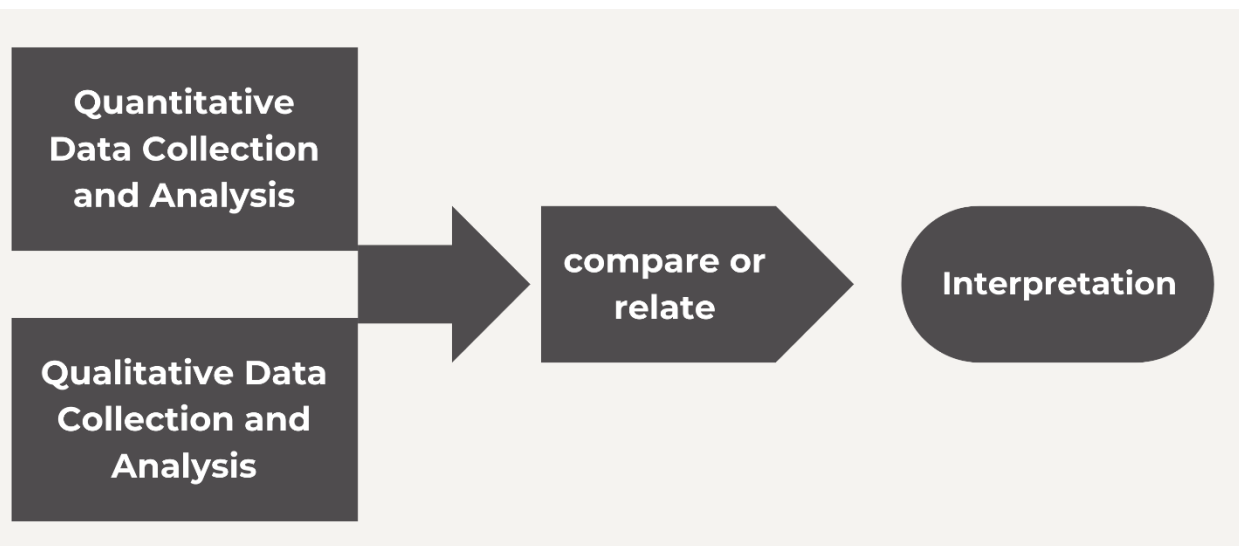
Figure 46. The concurrent (convergent) embedded mixed methods research design. Adapted from Creswell 2003, Figure 3.2.

The integration (merging) of the quantitative and qualitative data requires the researcher to compare the two datasets in a concurrent embedded strategy is often in the discussion chapter (Creswell 2003, 208, 214). In this research, the two datasets were analysed separately, yet they were connected in the sense that they were addressing the same research question: identify which medium was more effective. I integrated the datasets specifically at the point of contact by embedding the quantitative data with the qualitative data, using the first to further illuminate aspects of the latter, to further explore the research questions. This method is considered to be beneficial since it can lead to well-validated and substantiated results (Creswell 2003, 213-214).

Quantitative: Surveys

The quantitative data of this research is generated through surveys created and delivered using Qualtrics. These Qualtrics Questionnaires consisted of Pre- and Post-questionnaires (see Figure 69 below for a comparison of the content between the Pre and the Post Questionnaires). Both can be found in Appendix III. The Pre-questionnaires contained questions to assess any previous knowledge of the case study (i.e., if they knew who Agamemnon was, or Stamatakis, or Schliemann, or if they knew that the Trojan War is a myth and not a historical event, or their knowledge on Aegean Bronze Age burial customs, or even the place where the cemetery is located etc.). The Post-questionnaires had the same questions along with some additional questions regarding new knowledge obtained from the stories as well as regarding their

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experience (see Figure 70). This allowed me to assess the knowledge they had gained, as I could directly compare the pre and the post-questionnaires, as well as which medium was the more effective, according to the participants, to understand the content of the stories. The surveys contained both multiple choice and Likert-scale questions. Likert-scale questions is a tool that consists of items asking the respondents to rate their agreement with various declarative statements. It is commonly used to evaluate scale of agreement or disagreement because it is easier to interpret and to be explained to participants (Diyana et al. 2019, 159). The data were then analysed using Excel, a spreadsheet developed by Microsoft, which features calculation or computation capabilities, graphing tools, pivot tables, and a macro programming language called Visual Basic for Applications (Harvey 2006).
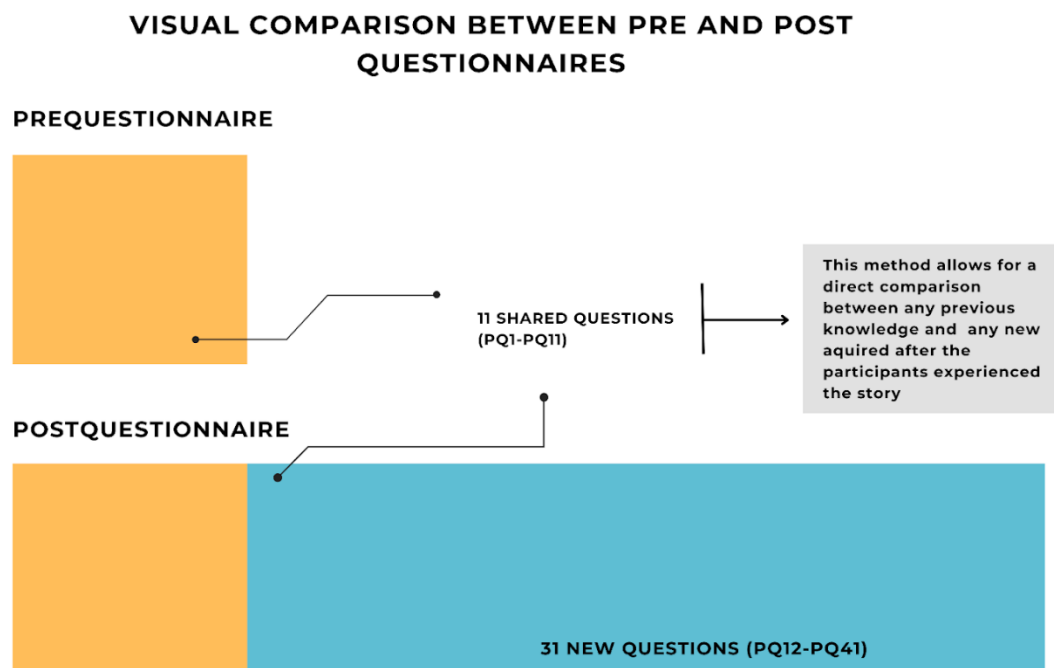
Figure 47. Visual comparison between the content of the Pre and the Post Questionnaires. The orange part is shared between the two Questionnaires, whereas the blue part is the new questions that the participants had to answer after they completed the experiment.

VISUAL REPRESENTATION OF THE QUESTIONS' DISTRIBUTION IN THE POST-QUESTIONNAIRE

| KNOWLEDGE QUESTIONS | | | | EMOTIONS QUESTIONS | MEDIUM QUESTIONS |
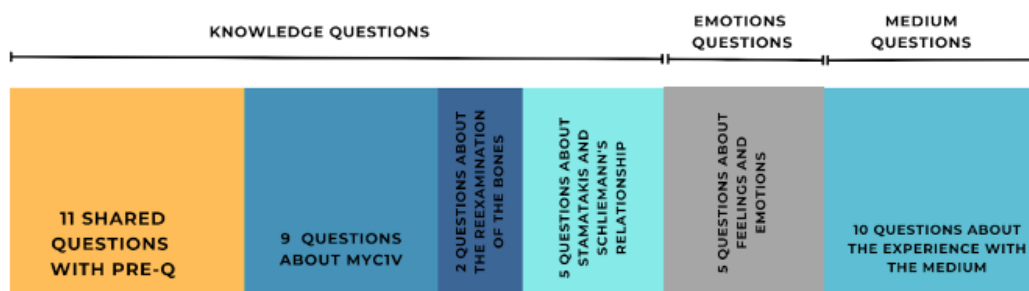
Figure 48. Breakdown of the content of the questions included in the post-questionnaire. The orange part is the shared questions with the Pre-questionnaire, and the rest are questions about knowledge on Late Bronze Age, and the content of the stories to understand the degree of knowledge acquisition after experiencing the medium.

Qualitative data: Interviews

The qualitative data collected during the interviews is an amalgamation of the transcribed interviews (the interviews can be found in Appendix IV) along with my observations and metadata notes which were integrated in the Excel sheet with the participants' replies (for example, whether a participant was experiencing VR for the first time or the sequence in which the participants were experiencing each of the media). The qualitative data were coded with NVivo 12, a qualitative data analysis (QDA) computer software package produced by QSR International, which helps organise qualitative data such as interviews (Kath 2016). The codes produced through NVivo were afterwards processed with Reflexive Thematic Analysis (RTA) as described by Clarke and Braun (2006, 2019) which is further discussed below to generate the themes which will be discussed in the Discussion chapter. The full codebook can be found in Appendix IV.

The interview questions can be found in Appendix III. They were constructed around four key objectives: first, to understand which medium was more effective for the purpose of my research; then to open up archaeological research to the public and refute any false ideas about the extent of archaeological knowledge, by explaining that archaeologists do not always have the answers about the past; also, to rehumanise the remains of MYC_1V; and lastly, to decolonise the 19th-century archaeology and excavations in Mycenae. I used some of the questions as a baseline but

allowed the participants to talk more on their experience and perception of the data following a more unstructured model of interview, in accordance with Pragmatism. When the discussion reached a stagnation point, I would ask another question from that list, that I felt had not been covered.

Interview Process

The interviews took place directly after the participants finished experiencing all three media. Then the three participants and I gathered around a desk to begin the interview. I made sure to record it on my laptop, as well as on my smartphone device. That was a measure to make sure the interview data would be safe in the event of losing one of the three devices, which indeed happened. Shortly after concluding the experiment and returning to the UK, my smartphone stopped working and unfortunately, I lost some of the photographs I took on each day of the experiment, along with the interview recordings. However, since I had the recordings in my laptop apart from the smartphone, the interview data was fortunately safe. I uploaded the interview recordings to an encrypted hard drive stored in a safe and locked box that only I have access to and were deleted from the laptop for security reasons.

Design and implementation of the experiment

The experiment was conducted in three phases in three different countries: in the UK at the University of York with two groups of three participants each; in Malta at Saint Martin's Institute of Higher Education with four groups of three participants each; and in Greece at a private rented office space in Athens with two groups of three participants each (see Table 2 below for a description of the groups). The total number of participants for this study was twenty-four people from different backgrounds. A detailed description and discussion of the groups are provided below along with details on the room set up, the equipment used, and paradata notes.

SUMMARY CHART FOR DATA COLLECTION	University of York, UK	St Martin's Institue of Higher Education, Malta	University of Athens, Greece
Method	Pre-Q, Post-Q Surveys and Interview	Pre-Q, Post-Q Surveys and Interview	Pre-Q, Post-Q Surveys and Interview
Duration	90 minutes	90 minutes	90 minutes
Data Collected	Quantitative & Qualitative	Quantitative & Qualitative	Quantitative & Qualitative
Schedule	February 2022	June 2022	June 2022
No. of participants	6	12	6
Sampling	University students and staff	Institute's students and staff & random individuals	Random sample
Relation with archaeology	related to archaeology	mostly not related to archaeology	not related to archaeology
Knowledge of case study	mostly no knowledge of case study	no knowledge of case study	knowledge of case study

Table 2. Details regarding the sample and the interview process.

Pilot Study

The pilot study for the experiment was conducted on Friday the 14th of January 2022 at the Digital Archaeology and Heritage Lab (DAH LAB) in room K/G60 in King's Manor at 10:00. The volunteers contacted me via email after the experiment was advertised through the Archaeology department's social media. Then, they were sent an email (see Appendix II) with the details on how to access the room, COVID-19 safety guidance, the consent form they had to sign in advance, and some notes of what to expect on the day and the approximate duration of the experiment. The pilot study was important as it allowed me to understand how long the experience would last, whether or not there would be any technical difficulties as well as ways to overcome them, whether or not the protocol I had created to follow before, during, and after the experiment was appropriate or it might need alterations, and whether or not there were any issues with the Qualtrics surveys and the interview questions. Indeed, I ended up altering some of the aforementioned material, which is discussed below.

Participants' profiles

Three volunteers participated in the pilot study, all of them connected to the University of York. Two of them were former archaeology students at the university, and one was a lecturer of archaeology at the university. One of the participants identified as a female, and two as males. Two of them had very good knowledge of the Bronze Age, and one excellent, but only one had knowledge of the case study (Grave Circle A at Mycenae). Two of them identified as White and one as Asian. Their full profiles can be seen in Figure 45. Obviously, the sample was not randomised or representative of the general population but as mentioned above, the purpose of the pilot study was mostly to identify technical issues or problems with the experiment's protocol and material. Moreover, it was conducted at the very beginning of the restrictions due to the COVID-19 pandemic, and thus it was impossible to open the experiment to the public. The participants wore a mask at all times, they did not come into contact with each other when experiencing the media and were interviewed individually due to the restrictions. The process that was followed on the day is described in Figure 54.

FEMALE
UNIVERSITY STUDENT
25-34
CAUCASIAN
BACHELOR'S DEGREE
HAVE STUDIED ARCHAEOLOGY IN THE PAST
GOOD KNOWLEDGE OF BRONZE AGE

MALE
UNIVERSITY STUDENT
25-34
ASIAN
BACHELOR'S DEGREE
HAVE STUDIED ARCHAEOLOGY IN THE PAST
GOOD KNOWLEDGE OF BRONZE AGE

MALE
UNIVERSITY STAFF
45-54
CAUCASIAN
PH.D. OR HIGHER
PROFESSIONAL ARCHAEOLOGIST/ACADEMIC
EXCELLENT KNOWLEDGE OF BRONZE AGE

Figure 49. The profiles of the pilot study participants.

Equipment

For the VR experience, an HTC Vive Pro 2 headset was used along with my laptop, which is a Toshiba Satellite P50-B-15P Laptop, Intel Core i7, 12GB RAM, 900GB SSD, AMD Radeon RX 480 graphics card, 15.6". For the video recording I used a Nikon D3500 camera with a microphone attached. For the voice recording I used my own device, which at the time was a Samsung A70. That also worked as a back-up voice recorder in case the camera's voice recording was corrupted. The Qualtrics surveys as well as the Twine game were loaded on K/G60's Computers, the specs of them are: graphics card (NVIDIA GeForce RTX 3080), processor (Intel Core i7-10700), and RAM (32GB).

Room Setup

The room where the pilot study was conducted was the K/G60 room which hosts the Digital Archaeology and Heritage Lab (DAH LAB) at King's Manor in the centre of York where the Department of Archaeology is located (see Figures 46-47). I went the previous day to set up the equipment and make sure it was working properly as the experiment was scheduled to take place the next day early in the morning. The desks were moved aside to create enough space for the VR experience (marked with grey colour in Figure 48). Some other desks were moved to form clusters in the middle of the room to allow space for me to create my workstation and make notes on my laptop as I was observing the experiment, and for the Text user to read the story. Since the lab has numerous computers, loading the digital material for the experiment (the Twine game and the surveys) was not a problem and there were plenty of options. The participants arrived and went through the process separately, and thus the use of space was not a problem.

I set up my workstation (laptop, voice recording equipment, notebook) at the first desk marked in purple on Figure 49 so I could easily observe the users and more importantly I would be close enough to the VR user in case they needed any assistance with the cable or if they felt nauseous. The camera was set up in the middle of the room across from the Text and the Twine users (marked in blue and pink on Figure 49 respectively). For the interviews, I moved to the same desk as the Text user marked in orange in Figure 49. That way, the camera was able to capture the whole process of the experiment.

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Figure 50. K/G60 (DAH LAB) interior.
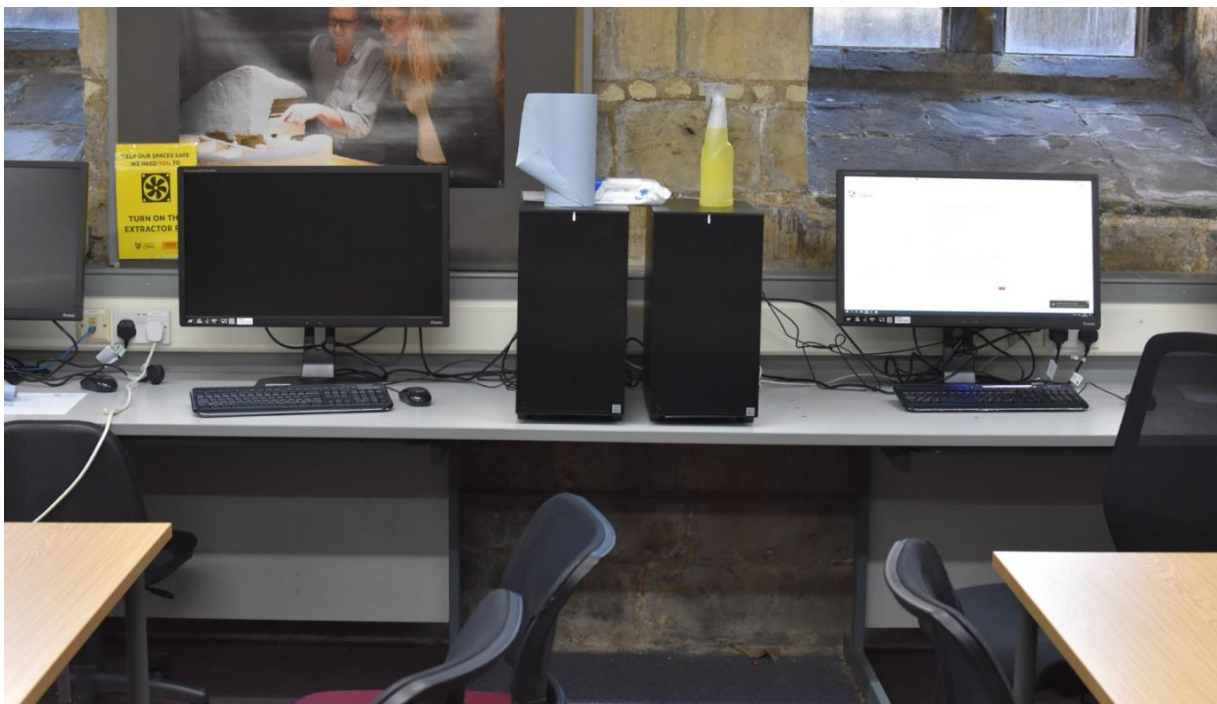
Figure 51. The PCs used to load the pre-, post-questionnaires and the Twine game.
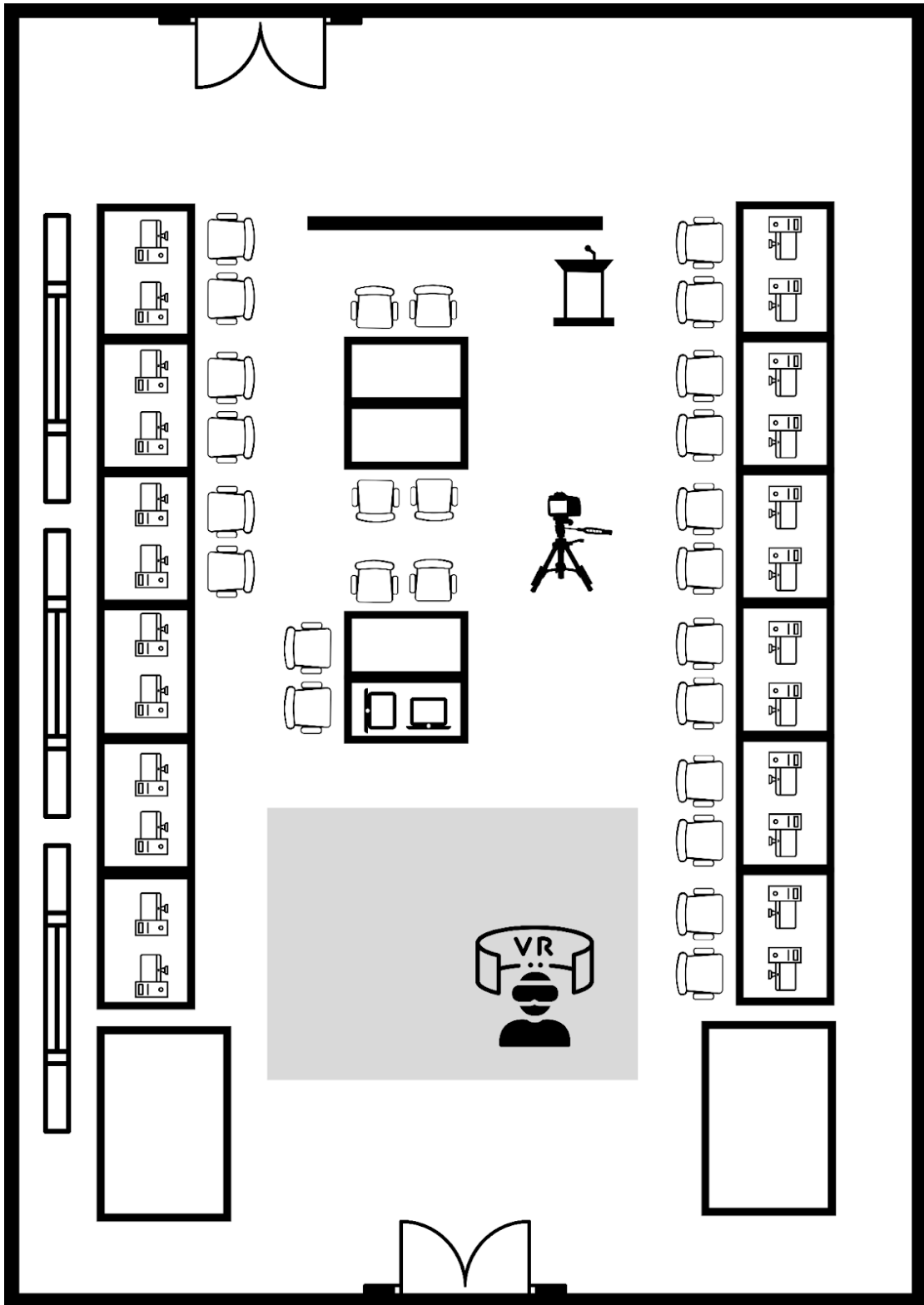
Figure 52. Layout of K/G60 not to scale.
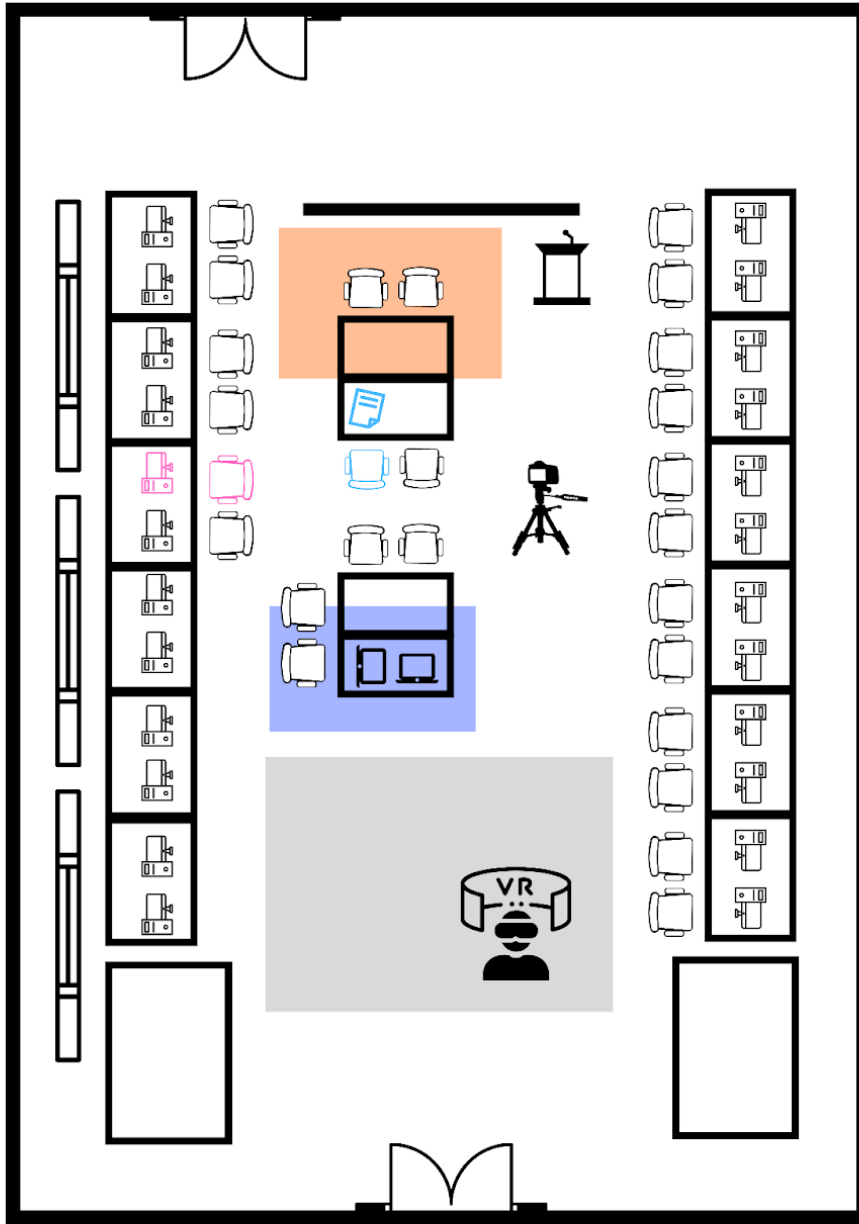
Observation position
Interview area
Twine user
Text user
VR area

Figure 53. Layout of K/G60 not to scale with the different places where people were experiencing each version of the story.

Figure 54. Participant experiencing the textual version of the story.

Figure 55. Participant experiencing the Twine version of the story.

Figure 56. Participant experiencing the VR video version of the story (courtesy of Dr Colleen Morgan, January 2022).

Figure 57. Participant experiencing the VR video version of the story (courtesy of Dr Colleen Morgan, January 2022).

Experiment Process

I met each individual separately instead of all three at once, as was planned for the actual experiment. That was due to the beginning of the COVID-19 pandemic and the consequent restrictions. The participants and I wore masks the whole time. The participants were given a printed version of the consent form which they had been emailed five days before the day of the experiment to sign. I explained the process and guided them to the appropriate desk to complete the pre-questionnaire survey. Then, each participant was guided through the medium that they would experience. The Text user was handed the printed form of the story (see Figure 50), the Twine user was assigned one PC where the Twine game had already been loaded (see Figure 51), and the VR user was assisted to use the equipment (see Figures 52-53). I then proceeded to begin the recording and make notes of my observations. After finishing the experience, the participants were guided to the assigned PC to complete the post-questionnaire, and then the individual interviews took place, which were also recorded both on camera and on my smart phone device. During these interviews, apart from the standard questions, I also asked the participants about their experience, and any remarks or suggestions that they might want to make on the process or the media to help me modify any aspects of the experiment.

PILOT STUDY PROTOCOL
CHECKLIST

01   **FILL AND SIGN THE CONSENT FORMS**

02   **PUT THE CAMERA ON VIDEO RECORDING**

03   **FILL THE PRE-QUESTIONNAIRE SURVEY**

04   **MEDIUM EXPERIENCE**

05   **MAKE SURE THE CAMERA IS WORKING**

06   **FILL THE POST-QUESTIONNAIRE SURVEY**

07   **PREPARE THE CAMERA FOR THE INTERVIEW**

08   **SWITCH ON THE RECORDING ON THE PHONE**

09   **INTERVIEW**

Figure 58.The initial protocol used in the pilot study.

The initial protocol (see Figure 54) that I designed to assist me in the process of the pilot study included all the steps that I needed to follow to make sure I would not forget any of these steps as it would affect the experiment. For the pilot study, each participant experienced only one version of the story, and were just briefly shown the other two during the interview. I had this list printed out and checked it regularly to make sure I was not missing a step. I had to make sure that each of the participants would be handed a consent form to read and sign upon their arrival, they would then complete the pre-questionnaire survey before they began the experience, and the post-questionnaire survey immediately afterwards. In the meantime, I had to check that the camera and the voice recording devices were working properly, while I was observing the experiment and taking notes. Lastly, I also had to prepare for the interview (e.g. prepare my notes and questions, change place if necessary, and make sure the voice recording devices working properly) while the participants were filling the post-questionnaire survey. The pilot study interview questions can be found in Appendix I.

As I was alone, I found it difficult to concentrate on the observation and note taking, while making sure the camera was working properly at all times, and also helping the participants with any questions or difficulties they were experiencing during the process. Therefore, after I studied the video recording of the pilot study, it became apparent that the video did not add much value to the data I was collecting; on the contrary, it hindered my ability to concentrate on the process of observing and taking notes. Moreover, the users were not reacting excessively or unexpectedly while experiencing the media: the Text user was just reading, the Twine user was just looking at a screen while scrolling or clicking, and the only interesting reactions were from the VR users and even then, only at the very beginning of the experience, which I was observing closely and taking detailed notes on every time something changed. Additionally, I did not plan to analyse the emotional reactions reflected on the body or the face of the participants, since I am not trained to do so, and thus an attempt of such could lead to obscured results as it would add an extra layer of the researcher's interpretation. Likewise, analysing emotional reactions would also require specialised knowledge and equipment capturing eye motion, and the change in pupil dilation, or breathing patterns and heart rate which could potentially reflect any changes in the emotions, and these processes would require both special equipment and knowledge. Lastly, for this research it was not necessary to study emotions in such detail, since I was mostly interested in the ideas and perceptions by the participants and not their bodily reactions to the media.

During the pilot study, the quality of the VR was not optimal as it was going through my laptop. That led to the VR user experiencing nausea and thus not being able to fully immerse themselves in the experience. Therefore, I decided against the use of this or any similar laptop for the actual experiment and I opted to always have a PC or a laptop with the recommended specifications by HTC, which are at least an Intel Core i5-4590 or AMD Ryzen 5 1500 CPU, 8GB of RAM and either an Nvidia GeForce GTX 1060 or an AMD Radeon RX 480 graphics card.

After examining the metadata notes from the pilot study, I made small adjustments to the VR video, and the surveys. The final experiment materials, after the changes following the pilot study, can be found in Appendices I and II. The changes in the VR video were necessary to balance the information included in all three media and include, as much as possible. It became apparent that the VR user did not recognise Schliemann's dismissive behaviour towards Stamatakis via the fact that he was calling the latter 'clerk', since this detail was not included in the VR-video but it was included in both the textual and the Twine stories. Therefore, I asked Dr Dickinson to record an additional phrase to reflect this in the VR video, and thus the final VR video includes a voice clip from Dr Dickinson as Stamatakis saying: 'Mr Schliemann treated me as if I was nothing more than a simple clerk'.

The changes in the surveys related to the demographics (see Figure 55). After revising them, it became apparent that the initial questions about ethnicity and education level were more suitable for an American population, and thus I curated them to be more appropriate for a European population since most of the participants would be from Europe. It is noteworthy that when I conducted the experiment in Malta, the question about educational level would not have been relevant if there was not a 'fill in' option, as in Malta there is an intermediate educational level between GCSE Ordinary levels and University called 'Diploma' and some of the participants had that instead of another option. Therefore, they were prompted to fill in the name of the degree via a free text option, and I also made a note regarding each individual's educational level while conducting the experiment there.

Lastly, after consulting with my supervisor, it was decided to also add an extra layer of protection for the data in case the given ID code was lost and the data compromised, and thus an additional question was added, asking the participants to come up with a personal code that only they would know. That way, if the data got lost, I could then contact them and ask them to let me know the

code, which would be easily retrievable since they selected a very specific combination of words as seen in Figure 56.

Changes in the Demographics section of the pre-questionnaire survey

Old question   **New question**

☐ D2

What is your ethinicity?

○ Caucasian
○ African-American
○ Latino or Hispanic
○ Asian
○ Native American
○ Native Hawaiian or Pacific Islander
○ Two or More
○ Other/Unknown
○ Prefer not to say

☐ D2

What is your ethinicity?

○ White
○ Asian / Asian-British
○ Black / Black British / African / Caribbean
○ Mixed / Multiple ethnic groups
○ Other
○ Prefer not to say

☐ D5

What is the highest degree or level of education you have completed?

○ Some High School
○ High School
○ Bachelor's Degree
○ Master's Degree
○ Ph.D. or higher
○ Trade School
○ Prefer not to say

D5

What is the highest degree or level of education you have completed?

○ Secondary
○ High School
○ Bachelor's Degree
○ Master's Degree
○ Ph.D. or higher
○ Trade School
○ Prefer not to say
○ None of the above
○ Click to write Choice 9

Figure 59. Comparison between the pilot study and the main experiment demographic questions.

New section with additional information

Essential Information

E1

What is your given code ID?

E2

Which medium are you experiencing?

- ○ Text
- ○ Twine
- ○ VR

E3

Please pick a code name that will help us identify your responses in case your given code ID gets lost. Fill in the 3 first letters of the place you were born followed by the 3 first letters of your grandmother's first name. For example, if you were born in Athens and your grandmother's name is Maria, your code would be: ATHMAR.

Figure 60. New section in the surveys regarding their given code by me, which medium the participants experienced, and a safety question.

Experiment

During each of the group experiments, the process was as seen in Figure 57 below. Initially, when the participants arrived at the location, they were given a printed consent form to sign and any questions or concerns they had been discussed and addressed (Figure 57, step 1). However, any questions which were related to the experiment process, or the research were not answered before the experiment, but the participants were reassured that we would discuss everything after the experiment. Along with the consent form, they were given a post-it with their code ID to fill in the pre-questionnaire survey so they would not be identified by name, but I could process the data normally. The code was the initials of the country (e.g. ML for Malta), then the date (e.g. 2206 for the 22nd of June), then the initials of their name (e.g. DS for Despoina Sampatakou), and lastly the medium they experienced first (e.g. TX for the textual version of the story). Therefore, a code would look like ML2206DS-TX. This code, apart from being necessary for anonymisation for data protection, was valuable in providing relevant information (i.e. the place

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of the experiment, the date, the name of the individual, and the medium they experienced first to cross reference if needed.

Then all the participants were assigned a computer where the Qualtrics pre-questionnaires had been loaded and they were given time to fill them out (Figure 57, step 2). Then, each of the participants was given a version of the story (Figure 57, step 3); one was handed a printed version of the textual story, the other was assigned a computer where the Twine game had been loaded to play; and the third was introduced to the VR headset to experience the immersive version of the story. After all participants were finished with the individual medium experience, they were once more assigned to a computer where the Qualtrics post-questionnaires (see Appendix III) had been loaded and were given time to fill them out (Figure 57, step 4). After the completion of the post-questionnaire, all three participants were allowed to experience the versions of the story that they had not experienced yet (Figure 57, step 5). For example, if a participant had begun with the textual version of the story, then after completing the post-questionnaire, they proceeded to also play the Twine game, and experience the VR version of the story. The order in which the participants experienced each of the stories was noted along with all the other relevant information during the experiment (see Appendix IV). Lastly, after the participants had experienced all three media, they were interviewed together (Figure 57, step 6).

EXPERIMENT PROCESS

1 WELCOME AND CONSENT FORMS

The participants were welcomed, I explained the first steps of the experiment and they were given the consent forms to sign.

2 PRE-QUESTIONNAIRE

The participants were assigned a computer where the pre-questionnaire has been loaded and they were given their unique code on a post-it.

3 FIRST MEDIUM EXPERIENCE

Each one of the participants experienced one medium.

4 POST-QUESTIONNAIRE

Then the participants filled in the post-questionnaire.

5 EXPERIENCING THE REST OF THE MEDIA

Each participant experienced the other two media that they have not experienced yet.

6 INTERVIEW

Lastly, we gathered for an interview to further discuss their experience.

Figure 61. Workflow of the experiment process.

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During the experiment, the participants were not allowed to talk to each other until the group interview. I observed the participants while making notes on their reactions to the medium they were experiencing, the order in which each participant experienced the media, and any issues the participants had (e.g. some of the demographic questions were not appropriate for the Maltese groups, or taller participants experienced the VR slightly differently). I also noted which of the participants had experienced VR before, as I believe it is important especially if they were exposed to the VR video story first, as it could potentially have affected how captivated they were by the medium. Therefore, I made sure to ask all the participants during the interview whether or not they had experienced VR before, and if so in what context and frequency. These observations and notes are discussed along with the data in the discussion chapter. The detailed participants' profiles from each phase can be found in Appendix II and in Table 3 in the next chapter.

First phase: University of York, UK

Room Setup

The first phase of the experiment was conducted in the UK on two consecutive days: on Thursday the 24th of February 2022 at 12:00 pm in K/G07, and on Friday the 25th of February at 10:00 in K/111. For the experiment, two rooms were used: K/G07 room at King's Manor was used for the first group (see Figures 58-59), and K/111 room for the second group due to booking availability at the time (see Figures 60-61). I went both days very early in the morning to set up the equipment and check that it was working properly. Mr Dan Brock, the Digital Archaeology and Heritage technician and departmental computing officer at the Department of Archaeology, offered technical support in setting up the department's laptops that I used for the experiment.
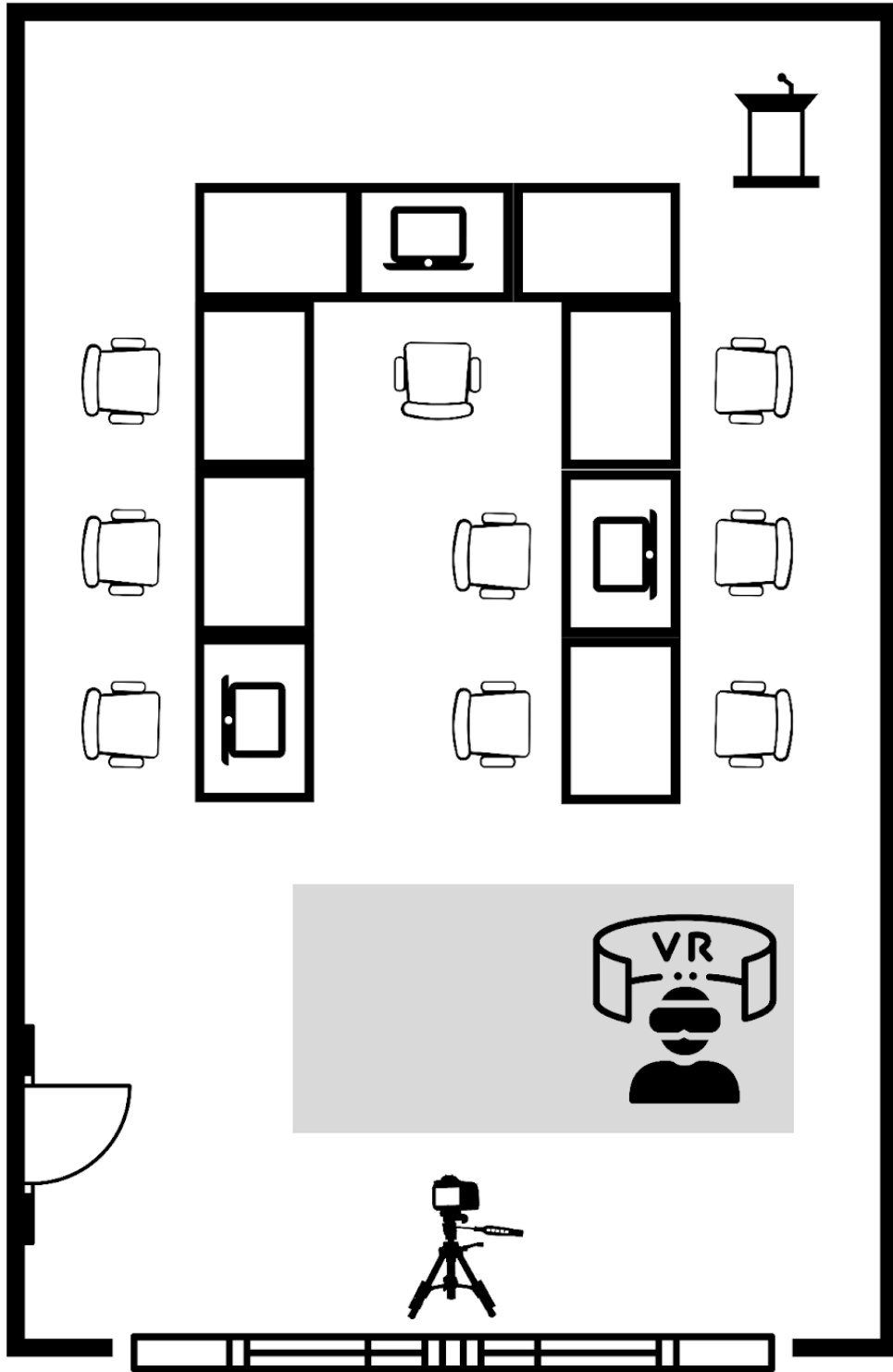
Figure 62. Layout of room K/G07 at King's Manor not to scale.
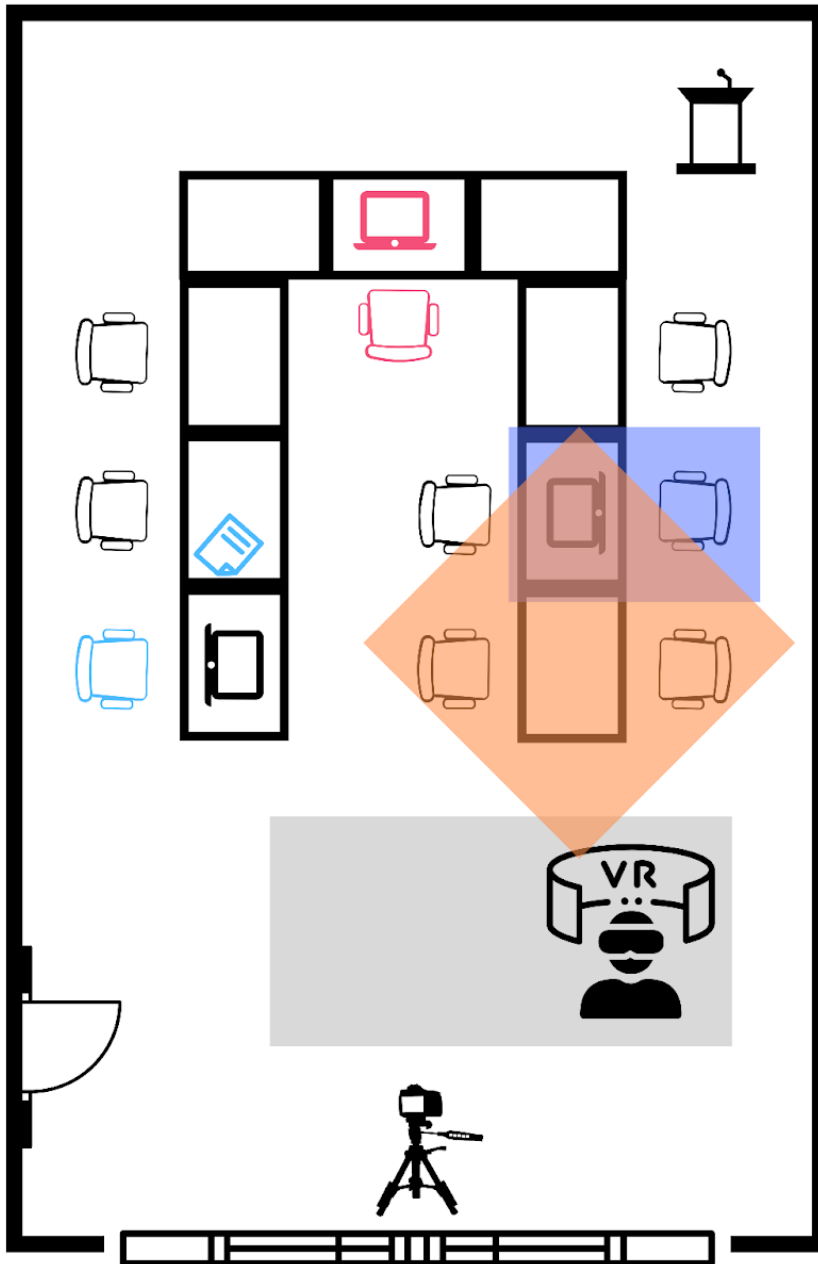
Figure 63. Layout of room K/G07 at King's Manor not to scale with the positions of the participants, the VR, the observation area, and the interview area.
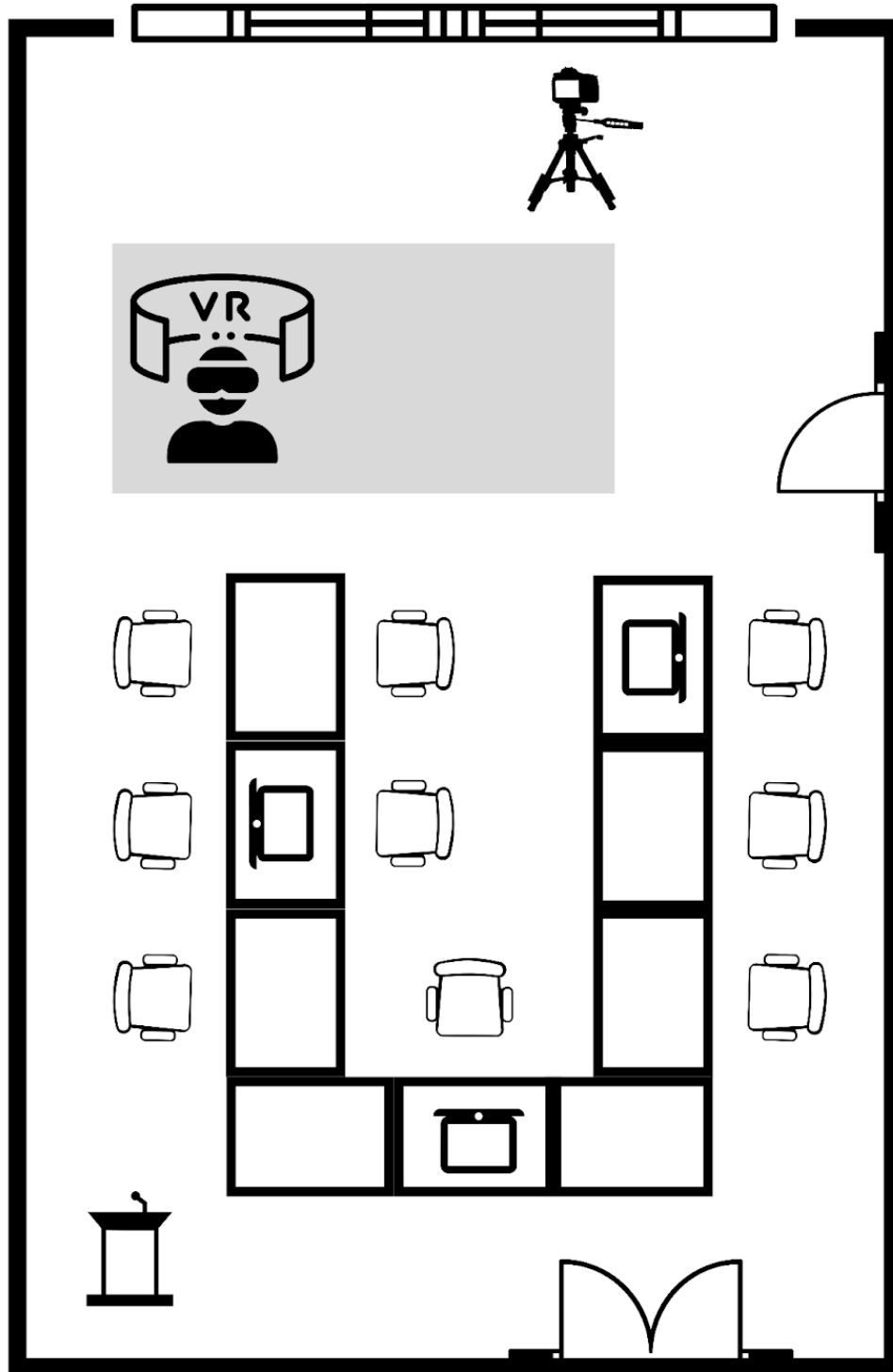
Figure 64. Room K/111 at King's Manor not to scale.
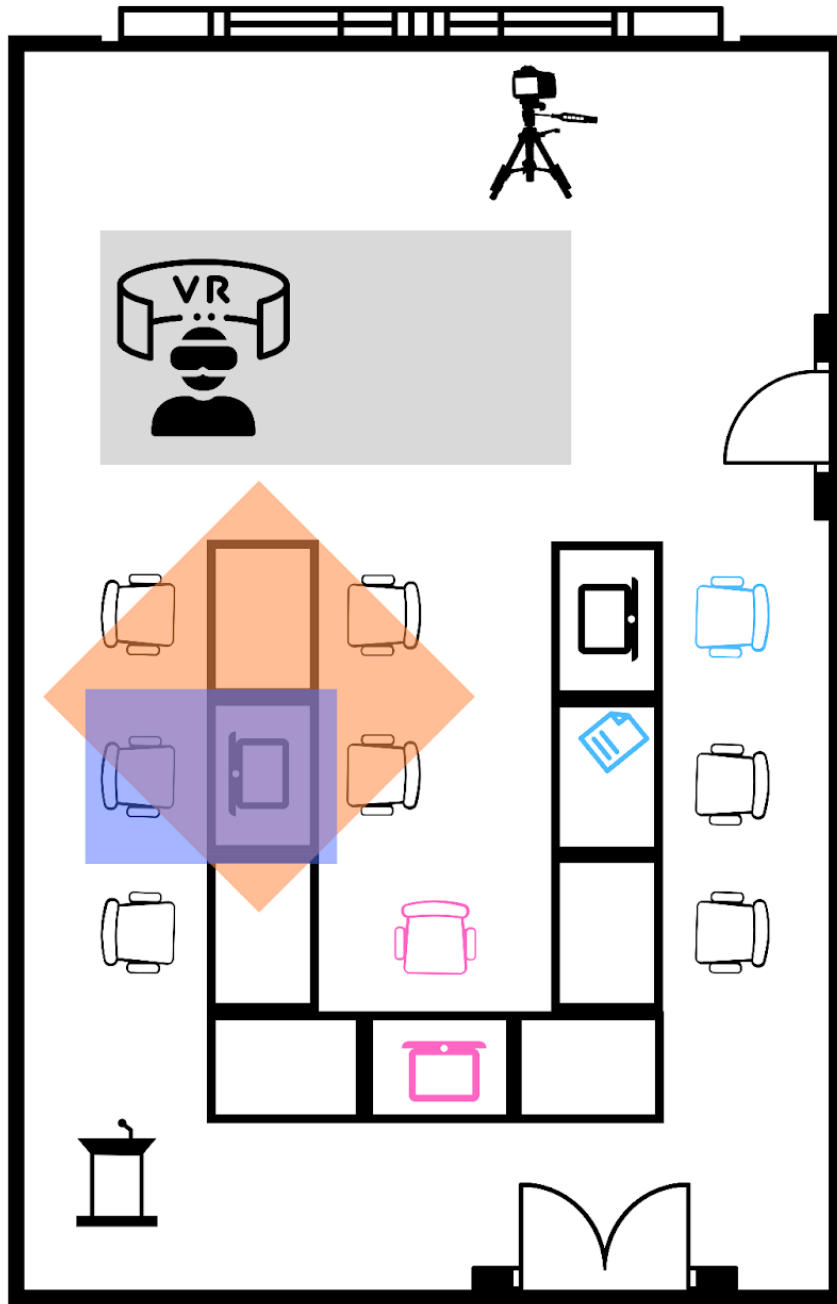
Figure 65. Layout of K/111 at King's Manor not to scale with the positions of the participants, the VR, the observation area, and the interview area.

Equipment

For the VR experience, an HTC Vive Pro 2 headset was used along with a custom-made laptop that the Department of Archaeology lent me for both days. The specifications of the laptop are Windows 10 Home 64, AMD Ryzen 9 3900 12-Core Processor, NVIDIA GeForce RTX 2070, 32GB RAM, 256GB SSD. The Department also loaned me two additional laptops for the experiment: one for the Twine story, and one for the Qualtrics questionnaires. I also had my own Toshiba laptop which is described above. Therefore, the VR video was already set up on the custom laptop which was solely used for that purpose, and thus the VR user had to use their own phone device or my laptop to complete the pre and post-questionnaires; the Twine game along with the pre and the post-questionnaire were loaded on the second laptop for the Twine user to use; and the third laptop was used by the Text user to fill in the pre and post questionnaires. The textual version of the story was printed out in colour and given to the Text user after they completed the pre-questionnaire.

Despite having decided against using a camera on the day of the experiment as mentioned above, I still used the same one I had for the pilot study once more in case some interesting data was captured. However, I did not monitor it the whole time, but I rather focused on observing and making detailed notes of the experiment which led to richer data. After this first phase and after studying the video recording of the day again, I confirmed that I would not record the whole experiment, and I would rather focus on note taking and the discussion with the participants regarding their emotions and perceptions of the story and the media. For the voice recording I used my own device as previously, which at the time was a Samsung A70 and I also recorded the interview on my laptop.

Second phase: Saint Martin's Institute, Malta

The second phase of the experiment was conducted at Saint Martin's Institute of Higher Education (SMI) in Malta. The initial intention was to conduct the experiment solely in the UK. However, after visiting the SMI for an INDCOR PhD Training school in September 2021, I experienced the Institute's work with Virtual Reality in heritage settings and I thought that it would be a great opportunity to be able to test my stories there since the SMI had all the equipment and technical knowledge I would need for the experiment, and the people there were also interested in my research since it explored digital applications in heritage.

The experiment at SMI was conducted on three consecutive days: on Tuesday the 21st of June 2022 at 18:00, on Wednesday the 22nd of June 2022 at 9:30 and then again at 18:00, and on Friday the 24th of June 2022 at 12:00 pm. The sample was gathered after the SMI advertised the experiment to their students and staff, as well as after I advertised it via my social media and a few volunteers emailed me expressing their interest in participating. The process was not without difficulties, as some of the participants contracted COVID-19 and were not able to participate in the experiment, but I managed to form four groups of three participants each and proceed as planned.

Room Setup

For the experiment, only one room was used, situated on the ground floor of the institute (see Figures 62-64). I arrived early in the morning all three days to set up the equipment and check that it was working properly. Mr Jeremy Grech, lecturer at the Institute, and Mr Kluivert Bonello, IT admin, offered technical support in setting up the Oculus headset and made sure the process ran as expected. The room was large enough and already had many computers. Therefore, the choice of sitting was not a problem for the participants. I chose to sit at the very back of the room marked in purple on Figure 63, so I could have a better view of the room. For the interview, we gathered at the front desk where the Text user was sitting marked in orange in Figure 63. The Text user marked in blue on Figure 63 was facing towards the wall, and the Text user marked in pink on Figure 63 was facing the other wall. Similarly, the VR area was put in the middle of the right side of the room marked in grey on Figure 63. Therefore, there was no eye contact or communication between the users during the experience. The pre and post-questionnaire surveys, as well as the Twine, had already been loaded on the computers, and the text had been

printed out in colour and put on the desk facing down, so the process was very linear and the participants went through each phase without experiencing any difficulties.
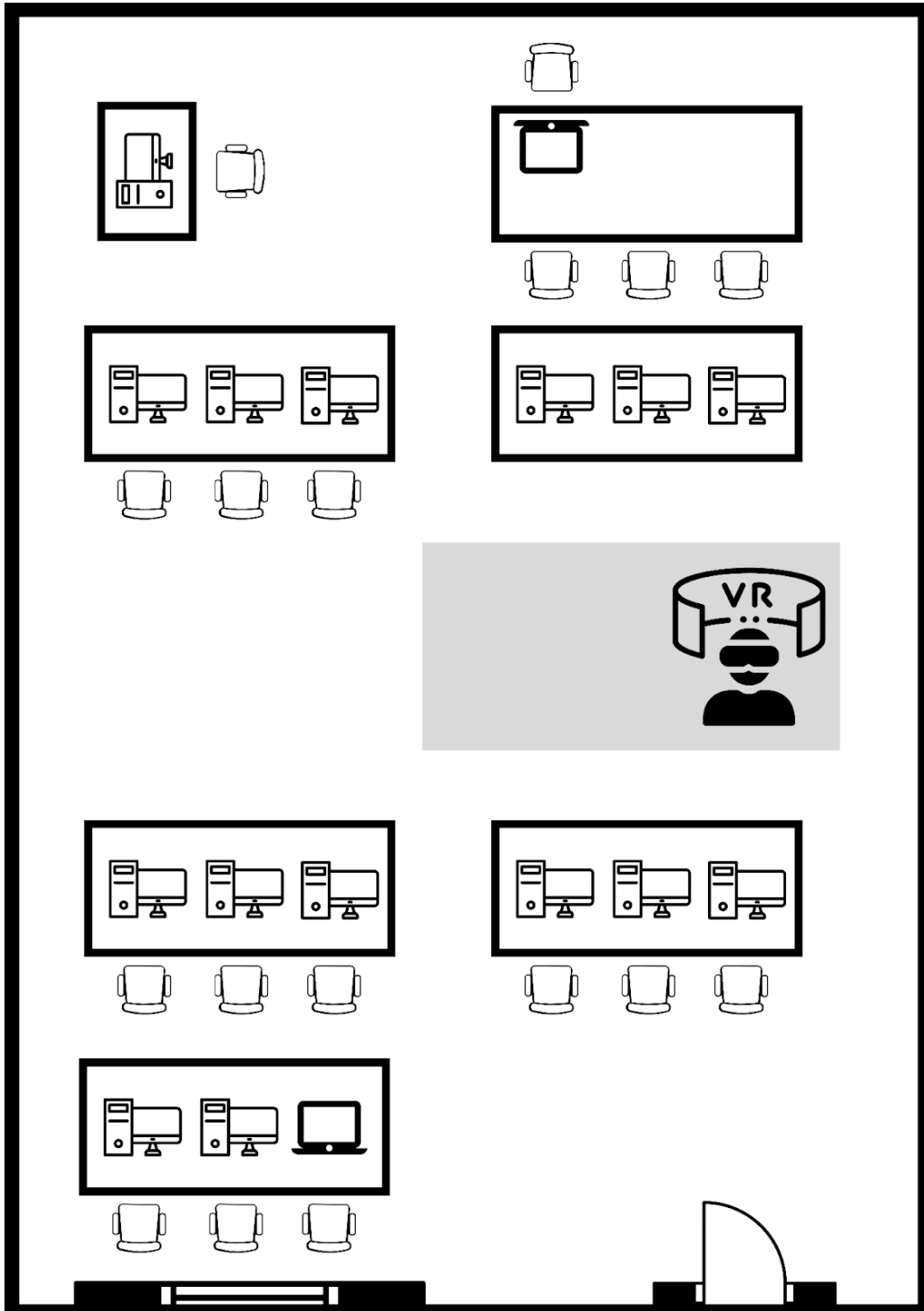
Figure 66. Layout of the room used for the experiment at SMI not to scale.
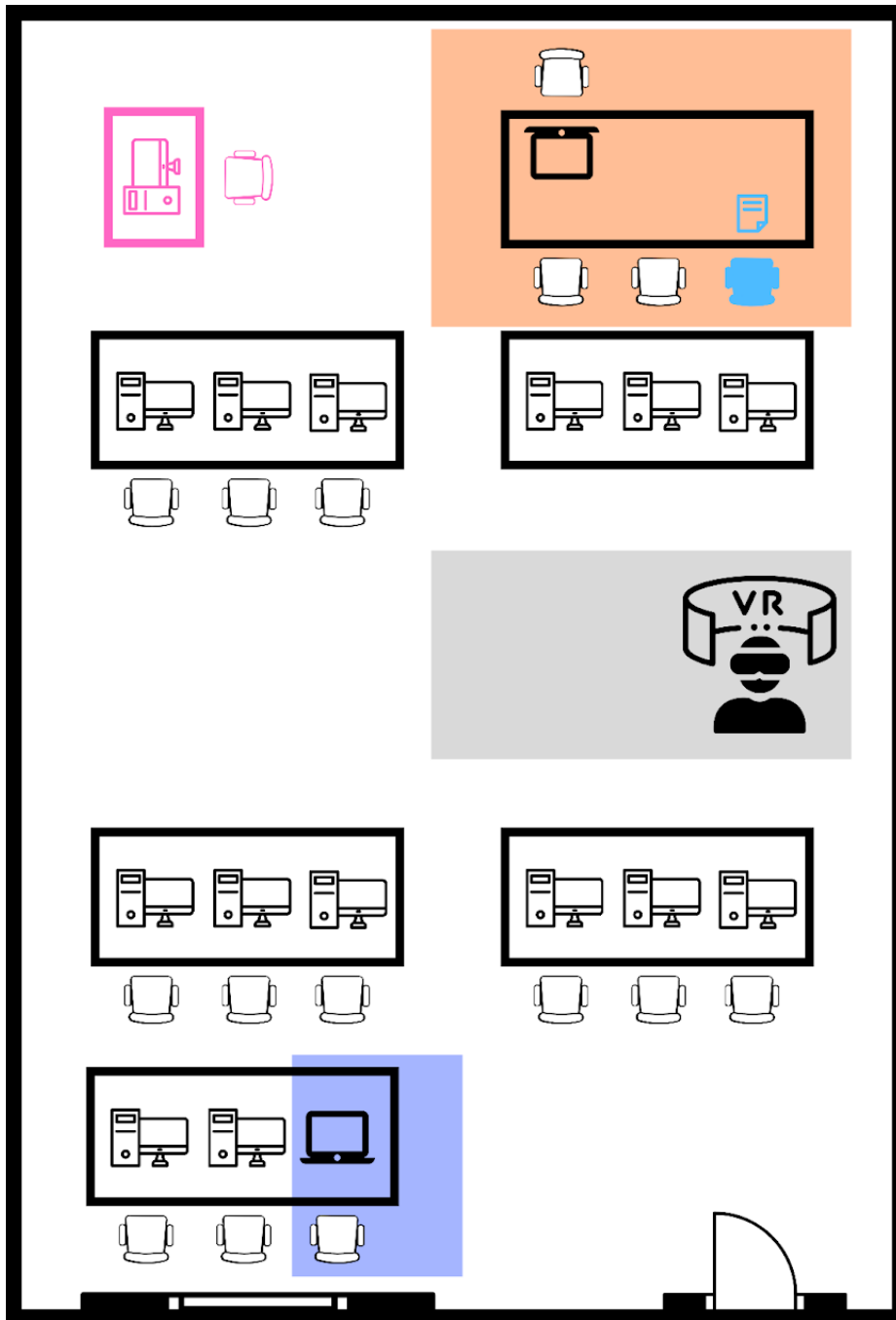
Observation position
Interview area
Twine user
Text user
VR area

Figure 67. Layout of the room used for the experiment at SMI with the positions of the participants, the VR, the observation area, and the interview area.

Figure 68. The room setup at SMI.

Equipment

The room already had some computers which was extremely convenient for the experiment. The specs are Intel Core i7-8700 CPU, 16GB of RAM and a Nvidia GeForce GTX 1060 graphics card. The headset that was used for the experiment was an Oculus Quest 2 which also allowed for testing the research's material via a different headset than the previous phase. The set up of the headset had already been conducted for me by the Institute's staff and was then recalibrated once as some taller participants were experiencing technical issues. I also had my own Toshiba laptop with me to take notes and record the interview, which was also recorded on my Samsung A70 device.

Third phase: National Kapodistrian University of Athens, Athens

Since I arranged to collect additional data from Malta, I decided to also conduct a third phase for the experiment, this time in Greece. This would benefit my research on many levels. First, I would have a bigger sample to study which is optimal for both quantitative and qualitative research. Secondly, the sample would not only be bigger, but it would also be much more diverse and would allow for a more in-depth analysis especially regarding colonial discourses. That is because the majority of the participants in the UK groups were people from countries who traditionally are considered to be 'colonisers'. The participants in the Maltese groups were all locals and Malta is a former British colony with strong politics and discourses around the concept of colonialism. Meanwhile, Greece is a cryptocolony, a concept that Greek citizens are generally not aware of and that would create an interesting contrast between the other two phases. Therefore, I advertised the experiment through my own social media, and I formed two groups of three participants each.

The initial arrangement had been for this phase of the experiment to be conducted at a lecture room at the School of Philosophy in the National and Kapodistrian University of Athens at 9:00. However, upon arrival to test the equipment on the day of the experiment, the internet connection was not stable, and the mobile signal was low, so I was not able to create a hotspot with my phone device to fix the internet connection issue. Moreover, the room's PC did not match the required specs for the VR. Therefore, I decided to move the experiment to private rented office space in the centre of Athens. The participants arrived promptly, and the experiment went as scheduled but with an hour's delay since I had to set up the experiment's equipment once more. However, since I had left plenty of time in between the two groups, I just moved the first group to 10:00 instead of 9:00, and the second group started as scheduled at 12:00 pm.

Room Setup

For the experiment, only one room was used for the two Greek groups (see Figures 65-66). I had to set up the equipment quickly as the participants of the first group had arrived and waited. The room was large and already had a few computers which were capable enough to handle the HTC Vive Pro, and therefore the seat allocation for the participants was quick and efficient. I chose once more to sit at the very back of the room marked in purple on Figure 65, so I could have a better view of the room. For the interview, the participants joined me at the space marked in orange on Figure 66. The Text user marked in blue on figure 66 was again facing towards the wall, and the Text user marked in pink on Figure 66 was facing the other wall. The VR area was put in the centre of the room since there was a lot of space marked in grey in Figure 66. Therefore, as in SMI, there was no eye contact or communication between the users during the experience. The pre- and post-questionnaire surveys, as well as the Twine, had already been loaded on the computers when I was setting up the room, and I have put the printed copy of the story on the desk that the Text user would use. The process went on without any difficulties for both groups.
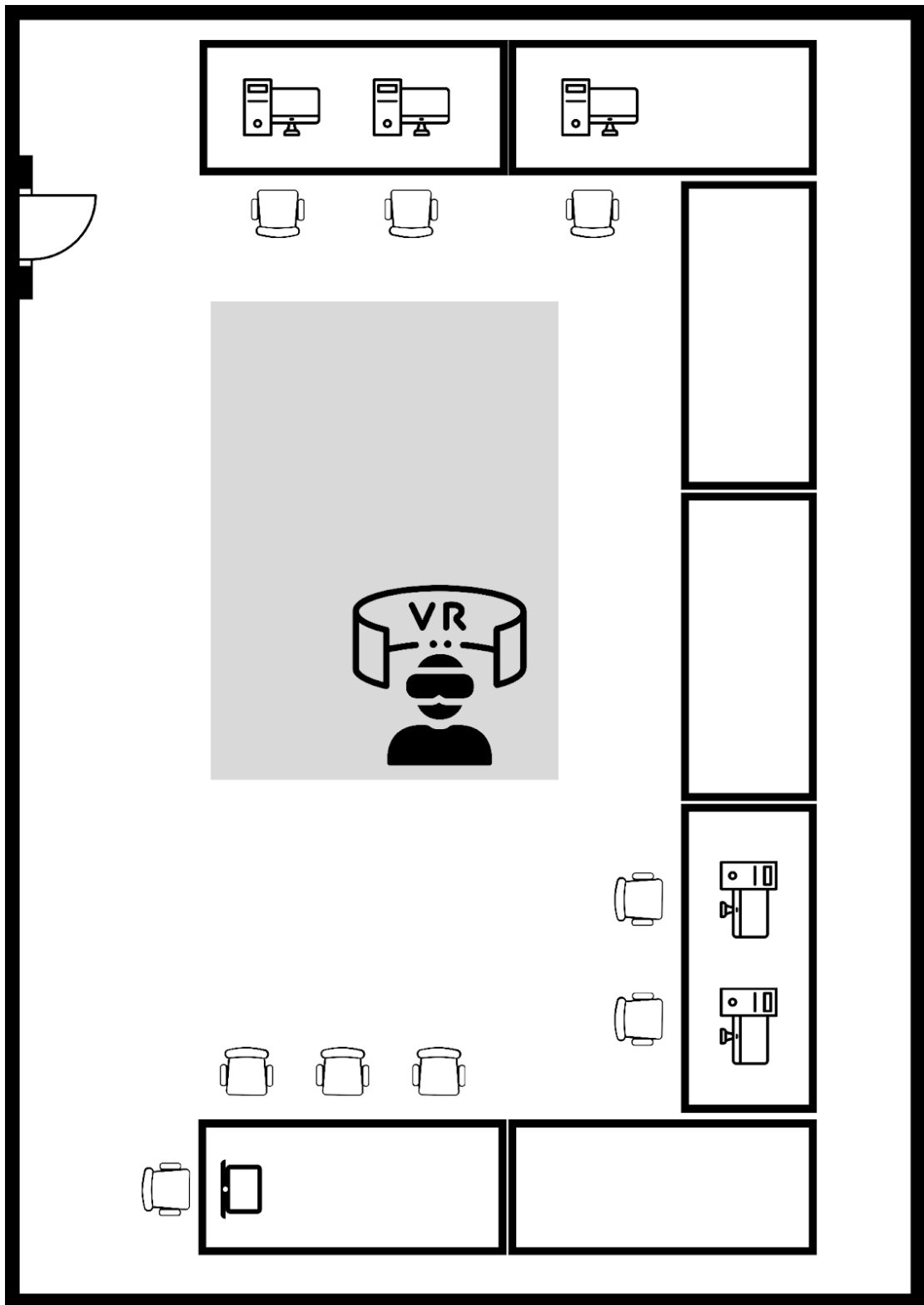
Figure 69. Layout of the room used for the experiment in Athens not to scale.
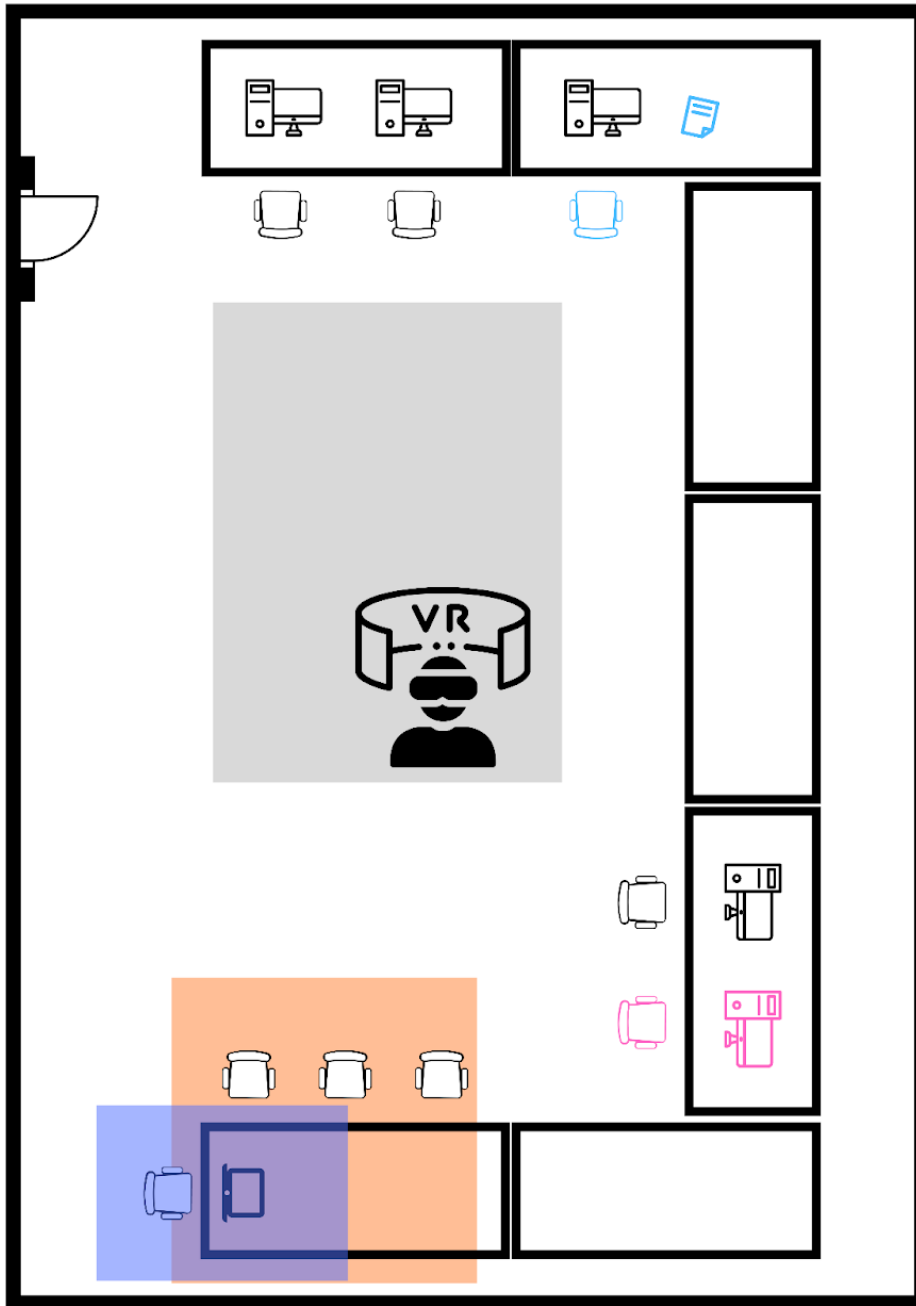
Observation position
Interview area
Twine user
Text user
VR area

Figure 70. Layout of the room used for the experiment at Athens with the positions of the participants, the VR, the observation area, and the interview area.

Equipment

For the third phase of the experiment, the HTC Vive Pro 2 was used. One computer was solely used for the VR video experience as it met the HTC specifications (Intel Core i5-4590 CPU, 8GB of RAM and an Nvidia GeForce GTX 1060 graphics card). The other one was used for the Twine story. Therefore, the participants had to use their own phone devices to fill in the pre and post-questionnaires via the links that I shared with them. As with the two previous phases, I had my own laptop with me to take notes and record the interviews, which were also recorded on my phone device (Samsung A70).

Data Collection Methods

Sampling Strategy

The sampling strategy used to recruit participants for this research was *purposive non-probability sampling*. It is *purposive sampling* since the selection of the participants required some judgement from the researcher, bearing in mind diversity (Vehovar et al. 2016, 330). That is because in all three instances the sample had some characteristics in common which also contradicted each other's; the UK groups were archaeologists or heritage practitioners mostly from countries which had been colonisers in the past but they did not know much about my case study; the Maltese groups were mostly non archaeologists or heritage practitioners and they did not know anything about my case study, but they were from a country which had been a former colony; lastly, the participants from the Greek groups knew about my case study since it is related to their heritage, they were not archaeologists or heritage practitioners and their country is a cryptocolony though they did not know this (see Table 2).

Non-probability sampling is a branch of sample selection that uses non-random ways to select a group of people to participate in research (Qualtrics 2023). In the case of this research, the sample was non-randomised due to COVID-19 and ethical restrictions. Regarding COVID-19, the pilot study and the first phase of the experiment in the UK were conducted during a national lock-down which clearly restricted access to the public. Therefore, in both instances, the participants were from the University of York, since these were the only people, I could access and only in small

numbers. The ethical restriction posed by the University of York was for my research to only be conducted with adults. Therefore, all participants were over eighteen years old. In Malta I opted for students at the Saint Martin's Institute of Higher Education which was the hosting institute of the second phase of the experiment, as well as individuals who were acquaintances of either staff at SMI or other people in Malta. In Greece I had access to an even broader sample of participants, but most of them were acquaintances of mine through different settings (i.e., professionally).

Data Analysis Techniques

The methodology I followed to analyse the qualitative data is *(Reflective) Thematic Analysis* (Clarke and Braun 2006). Thematic Analysis (TA) or Reflexive Thematic Analysis (RTA) is characterised by flexibility when compared to other qualitative analytic approaches, such as Discourse Analysis, Grounded Theory or Interpretative Phenomenological Analysis (IPA) which are all bound to a particular theoretical epistemological and ontological background. Discourse Analysis is more focused on the use of language in context, examining how it functions to convey meaning, create social interactions, and construct reality (Gill 2000, 172). Grounded Theory is focused on generating theories directly from data and is guided by the principle of making stops along the data collection analysis to analyse the findings so far (Charmaz 2014, 1). It is similar to RTA, but RTA is more flexible and focuses on identifying patterns or themes within the data, rather than grounding the themes to the data. Interpretative Phenomenological Analysis is used more to explore in-depth the subjective experiences and perspectives of individuals and aims to understand how people make sense of the world while grounded in phenomenology (Smith and Fieldsend 2021). Therefore, IPA focuses more on each of the participants while RTA focuses more on the role of the researcher.

In their 2006 paper, Braun and Clarke described RTA as an approach that was poorly demarcated, rarely acknowledged, yet widely used as a qualitative analytic method, especially within psychological studies (Braun and Clarke 2006, 77). The most important aspect of RTA is that it is quite simply a method for identifying and analysing patterns of meaning within data. In other words, it focuses on the researcher as the means of making sense of the data by producing

themes. In the reflexive approach of RTA, the researcher has an active role when interpreting the data (Braun and Clarke 2019). This interpretation takes the form of codes and themes. Codes represent the researcher's interpretations of patterns of meaning across the dataset. Hence, RTA is a reflection of the researcher's interpretive analysis of the data conducted at the intersection of (1) the dataset; (2) the theoretical assumptions of the analysis, and (3) the analytical skills and resources of the researcher (Braun and Clarke 2019). In the words of Braun and Clarke (2019, 207): '[F]or us, qualitative interview data, for instance, are typically 'messy', produced in a context where the interviewer is responsive to the participant's developing account, rather than adhering strictly to a pre-determined interview guide', which clearly demonstrates the flexibility and freedom in the data analysis of the method, while recognising the subjectivity of the interpretation. This core element of RTA is in full alignment with Pragmatism, since the latter encourages and allows flexibility in data interpretation.

RTA goes beyond identifying things to offer interpretation and discussion of the significance, meaning and implications of the patterns that have been identified. RTA offers a way to engage with the data in an interpretive way which can be combined with different epistemological and ontological backgrounds. Therefore, it is considered to be the most suitable method to analyse the qualitative data of this research, since this is a practice-based project grounded in multiple theoretical frameworks. Three additional decisions regarding the framework, the orientation, and the coding have also been made along with the use of RTA as the main interpretive approach for the qualitative data in this research. These are described below.

Inductive VS deductive framework

The questionnaires and interview questions were designed to produce both qualitative and quantitative data that would shed light on the research questions and key objectives. Accordingly, the data analysis follows a more deductive approach (Braun and Clarke 2013) since I began with specific research questions in mind when collecting, analysing and interpreting the data. However, during the interviews, I allowed room for participants to express additional ideas and remarks, and these have been taken into consideration during the interpretation of the qualitative data and the generation of the themes. That means that I ended up with themes that were created based on the research questions (i.e., 'positive comment on VR'; 'feeling towards Stamatakis'), but I have also ended up with themes that have been generated by participants' comments (i.e.,

'archaeology has changed'). Therefore, the framework of this research is fluid, as Pragmatism allows it to be. I used a mix of inductive and deductive analysis throughout. It is inductive in the sense that I did not expect anything, I was recording what people said and then analysed it (e.g. to find out how they felt during the experiences), and deductive in the sense that some questions related to the questionnaire and the perception of the participants (i.e. the relationship between Stamatakis and Schliemann).

Experiential VS critical orientation

In this research, a *critical orientation* has been adopted. A critical orientated research follows an inquisitive approach when analysing the conveyed meanings within the dataset, utilising them as a means to investigate nuances. Usually, it seeks to comprehend the determinants shaping and the ramifications stemming from the specific interpretations of the researcher. Consequently, the weight is put more on the researcher's interpretation compared to those of the participants. In this research, the sample is a very diverse mix of biases towards heritage and technology, with different connections with colonialism, and for this reason, it is more important to focus on interpreting the discourse and dynamics of the groups in relation to the research questions. Therefore, critical orientation has been considered as a more reasonable and suitable tool to interpret the data.

Semantic VS latent coding

In this research, both *semantic* and *latent* coding has been used. Semantic codes are those that capture the superficial or surface meaning of the data. Latent codes are the opposite; they are used to capture underlying meaning that is not directly spoken by the participants (Byrne 2021, 1397). No attempt was made to prioritise semantic coding over latent coding or vice versa. Rather, semantic codes were produced when meaningful semantic information was interpreted, and latent codes were produced when meaningful latent information was interpreted. Therefore, many data extracts can fall into both coding categories. For example, a descriptive (semantic) code might be 'feeling upset' as that was the participant's exact wording during the interviews but may also have been coded with a latent code of 'colonialism' because the reason that the participant felt upset could have been within the context of colonialism, for example that Schliemann's behaviour

reminded them of the looting conducted by western colonial powers in their country, which would be something mentioned in the interviews despite the word 'colonialism' might have not. This decision reflects the underlying theoretical assumptions of the present analysis, as the constructive and interpretive epistemology and ontology were addressed by affording due consideration to both the meaning constructed and communicated by the participant and my interpretation of this meaning as the researcher.

Data saturation and Sample Size

According to Morse (2015, 587), 'saturation is the building of rich data within the process of inquiry, by attending to scope and replication, hence, in turn, building the theoretical aspects of inquiry' (Morse 2015, 587). On the same note, richness in data is evident when the researcher - who 'had conducted the interviews themselves, transcribed the data themselves and coded and categorized it themselves' (Morse 2015, 588) - begins to generalise when talking about their data.In this research, I conducted the interviews myself, transcribed, coded, and categorised the data as well, which gave me an in-depth understanding of them. Saunders et al. (2018) argue that saturation has attained widespread acceptance as a methodological principle in qualitative research, and it is mainly used to indicate that further data collection is unnecessary. However, it is important to note that in this research I have not used the tool of data saturation to understand whether or not my sample was enough. That is because I follow Braun and Clarke (2019) who argue against data saturation and point out that it is often used as an option for explaining a data sample when the sample is rather small or the resources rather tight (Braun and Clarke 2019, 203). They suggest that specifically in RTA, data saturation is neither useful nor a theoretically coherent concept (Braun and Clarke 2019, 2012). In the words of Braun and Clarke: 'Whether data saturation is a useful concept for (R)TA research depends on how (R)TA and qualitative researching are conceptualised, and how data saturation itself is defined and determined. And even when these latter are clarified, the usefulness of data saturation for reflexive (R)TA, specifically, is still questionable' (Braun and Clarke 2019, 206). Since this research fully embraces the subjectivity of the researcher and their own way of interpreting the data, and consequently has adopted the RTA model as suggested by Braun and Clarke (2006, 2012, 2014, 2020), do not consider data saturation as an absolute factor in validating the data or trying to imply that the themes produced are the objective truth.

Braun and Clarke (2019) argue that the concept of 'information power' might be more useful to researchers who apply RTA in their research. According to Malterud et al. (2016, 1753), 'information power indicates that the more information the sample holds relevant for the actual study, the lower number of participants is needed'. They suggest that the sample size should be determined based on five dimensions, which have an impact on the information power of the sample: (a) study aim, (b) sample specificity, (c) use of established theory, (d) quality of dialogue, and (e) analysis strategy (Malterud et al. 2016, 1754). They suggest that 'a study will need the least number of participants when the study aim is narrow, if the combination of participants is highly specific for the study aim, if it is supported by established theory, if the interview dialogue is strong, and if the analysis includes longitudinal in-depth exploration of narratives or discourse details' (Malterud et al. 2016, 1756).

In this research, the study aim is specific, since I am evaluating the impact of three specific media of communicating archaeological research to the audiences and trying to understand which one is more effective for this purpose. Moreover, the sample is specific, since it is not fully randomised as discussed above, but it is comprised of people who share specific characteristics relevant to the aim of the research. Furthermore, the research brings together aspects of well-established theories and methods, such as archaeological storytelling, Digital archaeology, Archaeogaming, Public archaeology, Osteobiography and Bioarchaeology of personhood, and tries to synthesise them in order to interpret the data and address the research questions. Regarding the quality of dialogue, in this research, there was strong and clear communication between me and the participants during the semi-structured interviews. The fact that the interviews were semi-structured also adds value to this point, since they allowed me to ask follow-up questions and give space to the interviewees to further elaborate on ideas or key concepts. Lastly, the analysis strategy in this research is RTA, which by definition is a reflexive organic process of interpreting data intended for an in-depth analysis of narratives or discourse, and thus requires a smaller sample (for analysis and examples of each one of the steps, see Malterud et al. 2016, 1754-1756). Therefore, based on this methodology, the sample size of 24 participants is a sufficient sample to address the research questions. However, it is important to also return to Braun and Clarke's argument above that due to the reflexive and organic nature of RTA, analysis can never be complete (Braun and Clarke 2019, 210).

Reflective Thematic Analysis: Implementation

Braun and Clarke (2006, 2012, 2014, 2020) proposed a six-phase process, as seen in figure 71 below. These steps are a recursive and iterative process, which requires the researcher to move back and forth through the phases as necessary (Braun and Clarke 2020). These phases have been followed and used in this research to analyse and present the data in this chapter. As will become apparent, I have gone through multiple 'back and forth' in between phases, even when I reached the fifth phase where the themes should be defined.
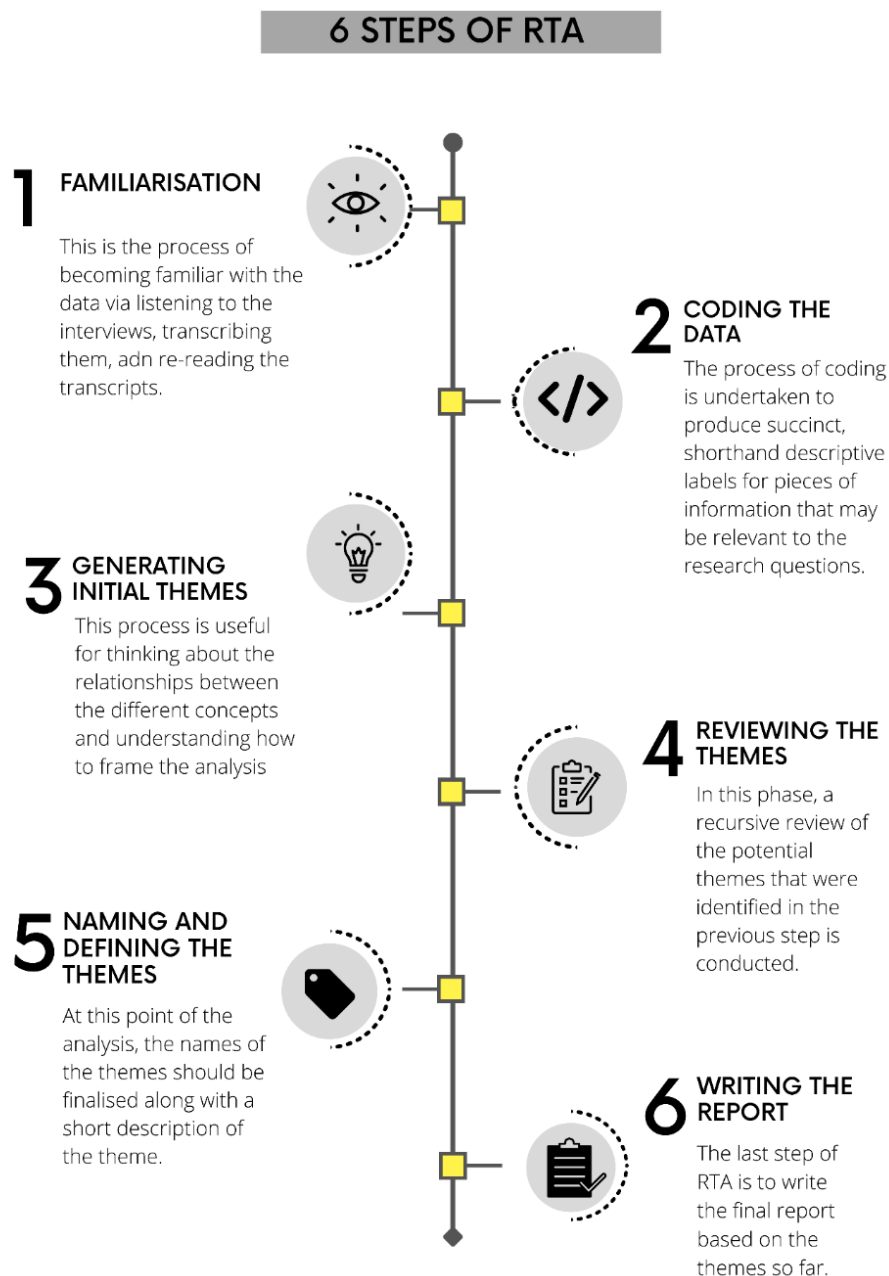
Figure 71. The 6 suggested steps of Reflective Thematic Analysis.

Phase one: Familiarisation with the data

I began by listening to the interviews before beginning the transcription, and at the same time, I reviewed the metadata notes which contained observations during the experiment and the interview. During this phase, I made some additional notes on my metadata notes, such as highlighting interesting things that a participant might have said, for example, that they were experiencing nausea.

A significant part of the familiarisation with the data was the transcription of the interviews. In RTA analysis there is no required notation system, but it is good practice to always explain how the data have been transcribed (Braun and Clarke 2020). The interviews were transcribed from recorded audio following an *intelligent verbatim transcription* (Summa Linguae Technologies 2021), where the complete, accurate script is slightly edited for readability, conciseness, and clarity. Therefore, repeated words, pauses, coughing, laughing, noises, inflections, breaks, pauses, tones etc. have been omitted to avoid distraction from the meaning. However, filler words such as "you know," "yeah," "like," and "hey" have not been removed to avoid affecting the originality of the text as little as possible.

I had to listen - pause - transcribe, and then listen again multiple times to be sure I understood correctly what the participants were saying, especially with people like myself who were not native English speakers, hence sometimes either the meaning was not clear, or the pronunciation made the transcription difficult. I chose to keep the Greek interviews in Greek (see Appendix IV) to better reflect what the participants said, and when I wanted to use quotes to explain the generation of some of the themes, I translated only these quotes. The process of transcribing the interviews was the most time-consuming part of the analysis, as I had to go through the interviews several times, to make sure I captured the meaning as accurately as possible. When the transcription of all interviews was complete, I read each transcript numerous times and went back and forth between them and the metadata notes. At this point, some themes had already begun to become apparent.

Phase two: Coding the data - Generating initial codes

Codes are the fundamental building blocks of themes (Byrne 2021, 1399). The process of coding is undertaken to produce succinct, shorthand descriptive or interpretive labels for pieces of information that may be of relevance to the research question(s). Codes are supposed to be brief but offer sufficient detail to be able to stand alone and inform on the underlying commonality among constituent data items in relation to the subject of the research (Braun and Clarke 2012; Braun et al. 2016).

The preliminary iteration of coding was conducted using NVivo 12. The complete codebook is available in Appendix IV. The process for coding the data can be seen in Figure 74. At the beginning, I created some codes before reading the interviews again, such as feelings (e.g. 'surprised' or 'sympathy' as seen in Figure 72 below) to have a basis ready. The initial codes changed a few times, as during the process I realised that some of them were not mentioned at all, or they were not inclusive, or some could be merged together, or there were completely new mentions of feelings as seen in Figure 72 below.

At the beginning of this phase, the codes were broad and descriptive, following what the participants mentioned during the interviews. The initial codes were also very short and based on the research objectives (see Figure 72 below, e.g., 'Emotional Feeling' with subcategories of 'Happy', 'Sad', 'Curious', etc.). As I continued to listen to more interviews, I realised that some of the codes, for example, those relating to engagement with the medium, required further clarification, thus I proceeded to generate subcategories of codes. An example is the initial broad theme of 'Positive comment' which was then further defined as 'Positive comment for Twine' with a subcategory of 'Engaging'. Another example is the codes relating to emotions, which were not based on things the participants directly said necessarily and for this reason I had to make separate notes when participants hinted at feelings, then go on and create the codes.

Codes
Mention of emotion/feeling

	Files	References
Happy	0	0
Interesting	6	14
Fun/enjoyed it	1	2
Sad	0	0
Surprised	0	0
Sympathy	0	0
Upset or Angry	0	0

Example of codes at the beginning of the coding process

Codes
Mention of emotion/feeling

	Files	References
Annoyed	2	2
Confused	2	2
Feelings for the dead	7	14
Happy or Excited	1	1
Interesting or Curious	8	24
Fun or enjoyed it	5	6
Not having an emotional connection	3	5
Sad	1	1
Surprised	2	2
Sympathy for Stamatakis	5	8
Upset or angry	4	8

Example of codes at the end of the coding process demonstrating the changes to the codes based on the interviews

Figure 72. The example of the initial codes for feelings before and after the coding process was complete.

The process of revising the codes multiple times was not unexpected; RTA is a recursive process, and the researcher is not supposed to follow a linear path through the six phases, but rather to keep revisiting the codes (Braun and Clarke 2014) (see Figure 77). Hence, every time I coded an interview, I had to double-check that the codes were still valid and reflected the new material I was coding. At the end of the interview material, I had revisited the codes four times and the resulting codes were much more descriptive and accurate.

I also used mapping and reviewing process, during which I returned from the codes to the coded data. During this process I followed Braun and Clarke's (2012) suggestion to make notes on my self-reflection of the data. I added notes on the printed scripts of the interviews about my feelings or thoughts when I was reading the interviews. I also created new latent codes and I noticed new aspects, such as that some people experienced childhood flashbacks with the media or that the people who were related to heritage were much keener to interpret Schliemann's behaviour as colonial (for an in-depth discussion and analysis, see the Discussion chapter). Lastly, I kept a separate file with notes and observations that I made during the re-reading of the interviews and a Canva image seen in Figure 73. where I visually mapped some ideas and concepts to help me better understand the data, which is a process recommended by Braun and Clarke (2020).

ethical questions about how we treat the dead in heritage - concept of respect towards the dead

a few people mentioned that they felt that a character was a real person, and that they felt connected with them (and maybe the past?), and one said they felt like the dead was a family member

Osteological report was hard to follow in VR

Tech glitches i.e., distortion, jittering, level issues back in Twine,

worried about looting or not doing proper work and compromising the archaeological data

sympathy about archaeologists - struggles of the job
+ a participant said that they find archaeologists more interesting than the finds

some participants mentioned that they forgot that the media were created by me (not an expert) and they were fully immersed in the experience

the story evoked curiosity about the people and that era

people didn't like to be passive, but they prefered to be active i.e., the Twine had interaction with clicking and it was formed as a dialogue (these are 2 things mentioned by participants)

almost none of the participants have ever heard of Stamatakis and their knowledge of Schliemann was positive

Code mapping leading to initial themes

would have prefered a combination of the three media

less inclined to read through the footnotes rather than just clicking the unfolding text in Twine

participants mentioned that they gave wrong answers before the story and correct answers after

people were trying to memorise things and read all the details as they were expecting the post-Q

however, some of the participants loved it and went on to read the whole part of the footnotes

A participant from the UK group + a participant from the ML3 group said they could see the VR in a museum setting

some participants liked that they began with either TX or TW as then the VR was just an additional amusement for them since they already knew all the info

first encounter bias

mentioned that order matters

important that the story was based on facts

participants asking about accuracy

impressive how new technologies have helped to understand past and new excavations

Figure 73. Example of the mind map created to assist with the generation of the themes. Simple symbols and colours have been used to indicate relationships between notes or which ones are about technical aspects. The full map was gradually processed while looking at the notes and codes and trying to identify broader initial themes.

Process of generating the codes

1 GENERATE INITITAL CODES

Began to code while reading through the interviews.

2 CODE REVISION

Every time I coded an interview I had to double-check that the codes were still valid and reflected the new material I was coding.

3 MIND MAP

At this point, I shifted into a mapping and reviewing process, during which I returned from the codes.

4 SELF-REFLECTION

I followed Braun and Clarke's (2012) suggestion to make notes on my self-reflection of the data.

5 NOTES ON PRINTED INTERVIEWS

I added notes on the printed interviews about my feelings or thoughts when I was reading the interviews.

6 RE-WORKING THE VISUAL MAP

I kept a separate file with notes and a Canva file where I visually mapped some ideas and concepts to help me better understand the data.

7 ADDITIONAL NOTES AND OBSERVATIONS

Making notes of the observations while coding the interview data.

Figure 74. Workflow of the process for generating the codes.

Phase three: Generating initial themes

This process of generating some initial themes after making notes and observations on the codes from the previous phase was useful for thinking about the relationships between the different concepts that had been identified in the data and understanding how to frame the analysis. It was needed to highlight the relevance of these particular themes and address the research questions, while also situating this research within the wider scholarship. Hence, this process was important to undertake individually but also as part of the bigger whole as well.

This phase of generating initial themes begins when all relevant data items have been coded. The focus shifts from the interpretation of individual data items within the dataset to the interpretation of aggregated meaning and meaningfulness across the dataset. The coded data is reviewed and analysed to identify how different codes cluster with each other and may be combined to form themes or sub-themes according to shared meanings, as seen in Figures 75 and 76. This will often involve collapsing multiple codes that share a similar underlying concept or feature into one single code. Equally, one particular code may turn out to be representative of an overarching narrative within the data and be promoted as a sub-theme or even a theme (Braun and Clarke 2012).

Codes

Mention of emotion/feeling

	Files	References	
Annoyed	2	2	
Confused	2	2	
Feelings for the dead	7	14	┈┈┈> the code is mentioned 14 times in 7 out of 8 interview files
Happy or Excited	1	1	
Interesting or Curious	8	24	┈┈┈> the code is mentioned 24 times in all interview files
Fun or enjoyed it	5	6	
Not having an emotional connection	3	5	
Sad	1	1	
Surprised	2	2	
Sympathy for Stamatakis	5	8	
Upset or angry	4	8	**Example of clusters**

Figure 75. Example of codes-clusters within the interview material after coding.

Codes

Interesting addition or comment by participant

	Files	References
Archaeology has changed	4	8
Respect towards the dead	5	11
Combination of media	6	26
Curiosity and exploration	3	3
Difference from other media	1	1
Endagerment of artefacts	5	11
Looting	3	4
Order of experience	6	13
Suggest a different medium	3	3
Target audience	3	4
The story made me think something I've never thought before	4	4

Codes

Negative comment on VR

	Files	References
Boring	0	0
Confused by accent or vocab	3	5
Expected interaction	7	17
Getting distracted from story	2	2
I didn't like it	2	2
Long length and tiring	2	2
Miscellaneous negative comment	3	4
Unsure what to look for	5	8
Not very engaging	1	1
Osteology hard to follow	3	5
Overwhelming amount of information	2	2

Figure 76. Example of codes-clusters within the interview material after coding.

Phase four: Reviewing themes

In this phase, I conducted a recursive review of the potential themes that were identified in the previous phase (Braun and Clarke 2012, 2020). Braun and Clarke (2012, 65) have proposed a few key questions that the researcher could follow and address in order to effectively review the potential themes and safely continue to the next phase, which is to identify, name, and describe the final themes:

- Is this a theme (it could be just a code)?
- If it is a theme, what is the quality of this theme (does it tell me something useful about the data set and my research question)?
- What are the boundaries of this theme (what does it include and exclude)?
- Are there enough (meaningful) data to support this theme (is the theme thin or thick)?
- Are the data too diverse and wide-ranging (does the theme lack coherence)?

According to Byrne (2021), the analysis conducted during this phase involves two levels of review. The first level is a review of the relationships between the data and the codes once more, to be sure that the themes are reflective of the codes and that they form a coherent pattern. If they are, it can be assumed that the potential theme is a reasonable reflection of the data and may contribute to the overall narrative of the data.

The second level should review the themes in relation to the data set, to check whether and to what degree the themes provide the most apt interpretation of the data in relation to the research questions, which could be reviewed and rephrased in the previous phase. According to Byrne (2021), these two levels of reviewing the initial themes are important to demonstrate that data and codes are appropriate to inform a theme and consequently that a theme is appropriate to inform the interpretation of the dataset (Braun and Clarke 2006). After going through these questions for each one of the themes, I ended up with the final themes as seen in Table 51 in Chapter 6 and discussed in detail in Chapter 7.

Phase five: defining and naming the themes

At this point in the analysis the names of the themes should be finalised. Each individual theme and sub-theme (if it exist) will be described in relation to both the dataset and the research questions. However, all themes should be tied together to create a coherent narrative that is consistent with the content of the dataset and informative in relation to the research questions (Braun and Clarke 2012).

Data extracts have been used in the description of the themes later in the research to support each of the themes. These themes have been presented both illustratively, meaning that they will describe verbatim what participants said (Byrne 2021), and analytically, by interpreting what was said and contextualising this in relation to the available literature (Braun and Clarke 2013; Terry et al. 2017). Hence, in Chapter 6 which is the Data presentation and description chapter, the themes have been presented in a more illustrative way based on direct quotes from the interviews, and some themes have been discussed in greater length and in a more analytical way in the following chapter, the Discussion chapter.

Phase six: producing the report

Braun and Clarke (2012) suggest that the last two phases of RTA can be blurry and that a 'final' phase would rarely only occur at the end of the analysis. As opposed to quantitative research methods wherein the researcher conducts and then writes up the analysis, the write-up of qualitative research is very much interwoven into the entire process of the analysis (Braun and Clarke 2012). According to Braun and Clarke (2006), the following should be taken into consideration during this phase:

- The analysis should consist of analytic commentary, data extracts and themes;
- Finalise the order in which to present the themes (to create a coherent narrative and be prepared to let go of themes that actually do not work in this narrative);
- Select vivid and compelling examples of data for each theme (but demonstrate patterning between themes so do not only quote one participant);
- Final analysis of selected examples (if using data analytically);
- Relate analysis to the research question, literature and wider context.

At this point, when producing the report (the full report can be found in the Data Description chapter under the Qualitative Analysis section), it is suggested to rearrange the themes in a coherent and meaningful manner to help the reader better understand the data analysis which will follow. Where relevant, themes should build upon previously reported themes, while remaining internally consistent and capable of communicating their own individual narrative if isolated from other themes (Braun and Clarke 2012). After finishing the whole process, I went through the printed interviews one final time to make sure that I had not forgotten any relevant quotes.

Summary

In this chapter the methodology developed to evaluate the three media has been presented with specific details on how I conducted the experiment to collect the quantitative and the qualitative data. The research is a mixed methods practice based research, following an embedded concurrent design. The data were collected via surveys and interviews created and delivered with Qualtrics in three different countries: the UK, Malta, and Greece. Then, the quantitative data were analysed using Microsoft Excel, and the qualitative data were coded using NVivo and analysed using Reflective Thematic Analysis (RTA).

Chapter 6 - Data Presentation and description

Introduction

In this chapter, the quantitative and qualitative data sets supporting this research will be presented for the reader to get an in-depth understanding of the data collected and analysed during this research. The chapter is primarily descriptive to serve as a presentation of the data while the interpretation and discussion will take place in the following chapter, Chapter 7, where a synthesis of both the qualitative themes and quantitative data will take place. I have distinguished between the text (in yellow), Twine (in pink) and VR (in blue green) throughout the chapter as seen in Figure 77, to make it easier to follow the data description and interpretation.
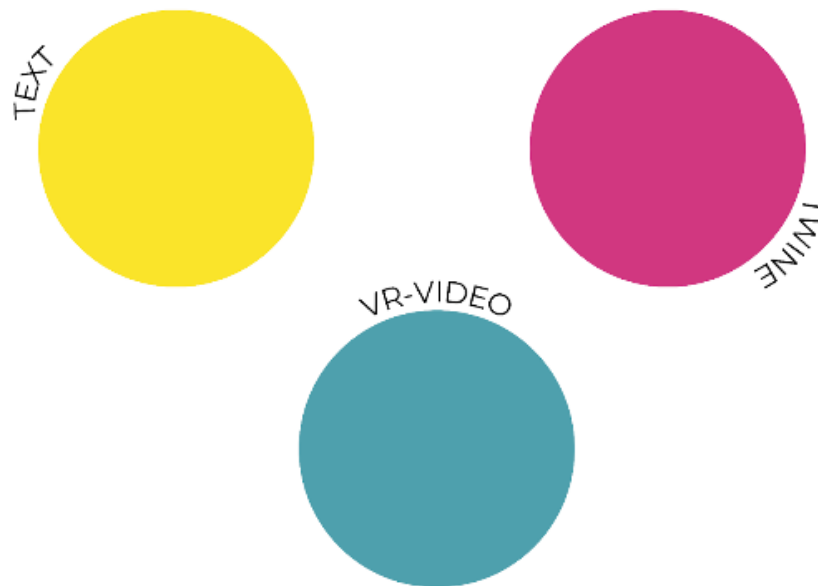
Figure 77. The three main colours that are used in the tables and charts to distinguish between the three media.

Quantitative Data

Demographics

As mentioned in Chapter 5, the participants were from three different countries: the UK, Malta and Greece. They had differing occupations, relationships with archaeology, knowledge of the case study, educational level, gender, and age. The most significant characteristics relevant to this research are whether or not the participants had a relationship with archaeology, the degree of knowledge of the case study, whether or not they were from a country traditionally considered to be a coloniser, or from a country that has been (crypto)colonised and, and lastly their background specifically in terms of familiarity with interactive and immersive technologies. This is reflected throughout the data presentation below, where there is further analysis of specific questions that are relevant to each of these categories to further illustrate some nuances.

Gender, race, age, and employment status had less impact on the data and therefore are not discussed in depth. However, they are discussed reflectively in the limitations of the study and the suggestions for further research at the end.

Regarding the participants' relationship with archaeology (see Figure 78), 13% (n=24) were either an archaeologist or a heritage practitioner, 17.4% had studied archaeology at some point, 56.5% had no formal education in archaeology but an interest in it and enjoyed visiting archaeological museums and lastly, 13% were just curious about the past.

Relationship with archaeology

None, I'm just curiou…
13.0%

I've studied archaeol…
17.4%

I'm a professional ar…
13.0%

Some, I enjoy visitin…
56.5%
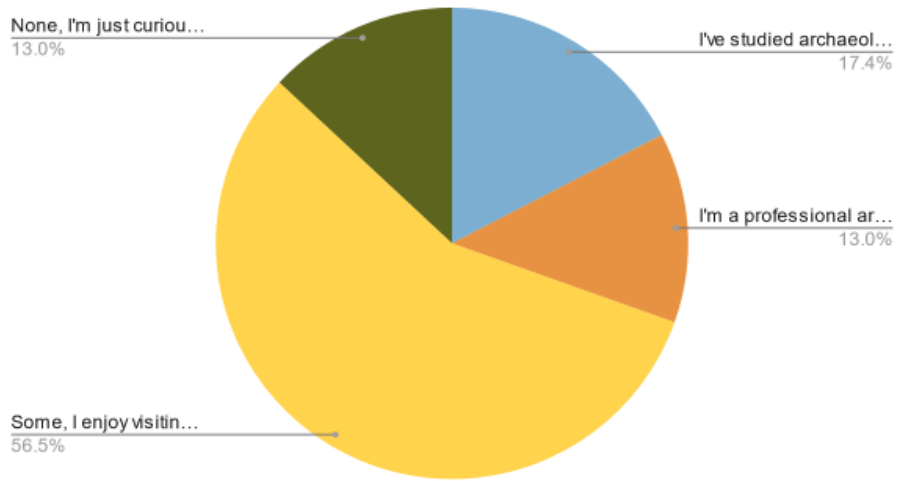
Figure 78. Participants' relationship with archaeology.

Regarding their knowledge of the case study (see Figure 79 below), 25% (n=24) did not know anything about GCA or MYC_1V or the general context of Mycenae in the Late Bronze Age, 37.5% new a little bit about the case study, 16.7% had good knowledge of it, and lastly 20.9% had an adequate knowledge. It is notable here that this is not necessarily linked to someone being an archaeologist. For example, there were archaeologists and heritage practitioners with no specific knowledge of the case study, and there were many people with no education or interest in archaeology that knew about the case (i.e. the Greek participants).

Knowledge of case study

Adequate
16.7%

Not enough
37.5%

Some
20.8%

None
25.0%
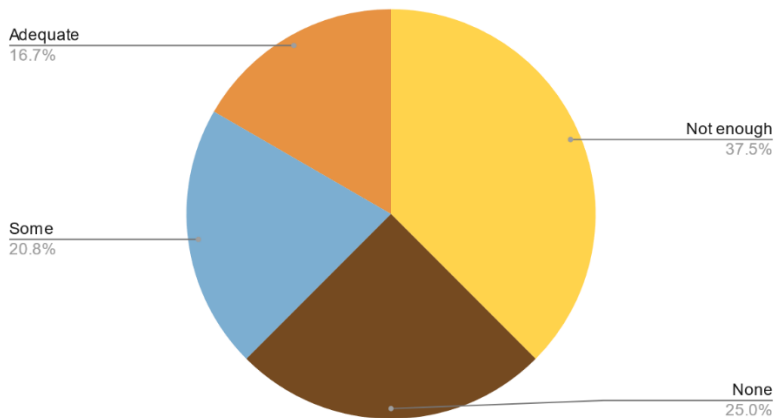
Figure 79. Participants' knowledge of case study.

Regarding their gender (Figure 80), 50% (n=24) identified as females, 45.8% (n=24) identified as males, and one participant out of the 24 (4.2%) identified as a non-binary person.

Gender

Male
45.8%

Non-binary /...
4.2%

Female
50.0%
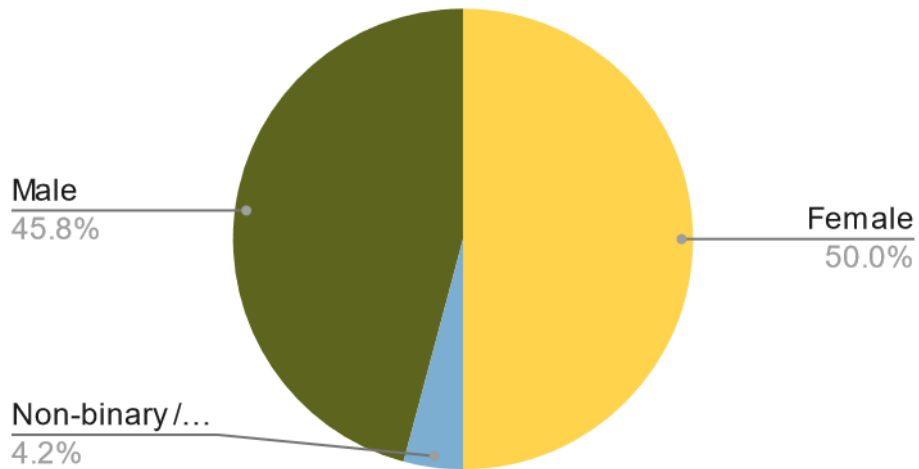
Figure 80. Percentages of gender distribution among participants.

33.3% (n=24) of the participants were between 18 and 24 years old, 29.2% were between 25 and 34 years old, 16.7% were between 35 and 44 years old, 8.3% were between 45 and 54 years old, and 12.5% were between 55 and 64 years old (see Figure 81).

Age

55-64 year...
12.5%

45-54 year...
8.3%

25-34 year...
29.2%

18-24 year...
33.3%

35-44 year...
16.7%
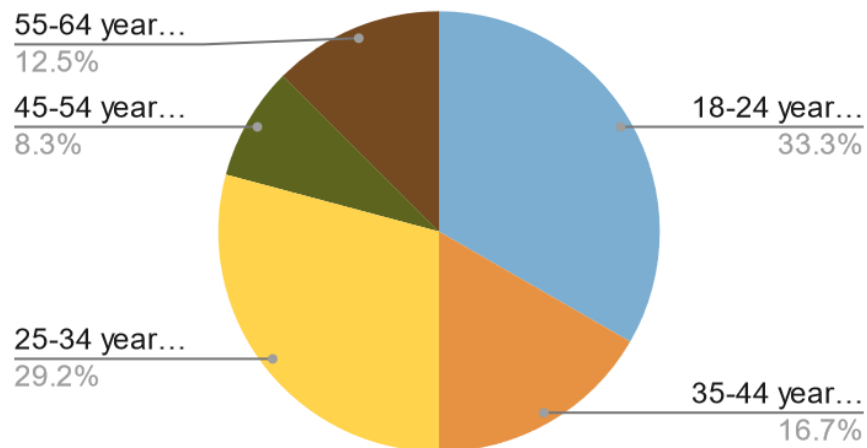
Figure 80. Participants' age distribution.

Regarding their employment status (Figure 82), 41.7% (n=24) were students and the same amount were working full time, 12.5% were retired, and 4.2% were unemployed.
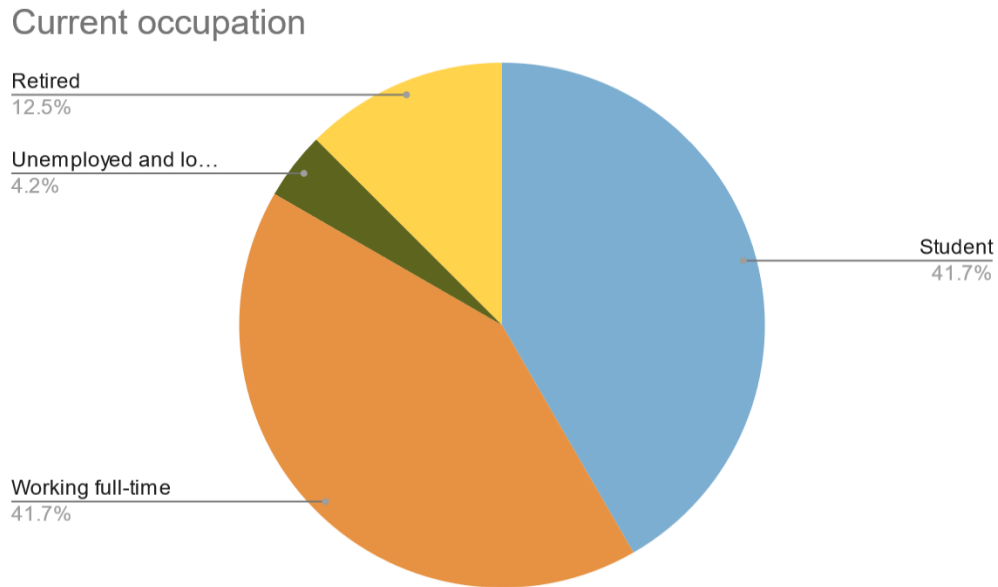
Figure 81. Participants' employment status.

Lastly, regarding the educational background of the participants, 29.2% (n=24) had finished high school, 16.7% had completed an intermediate level between high school and university (a diploma), 33.3% had earned a bachelor's degree, and 20.8% had a master's degree or higher (see Figure 83).
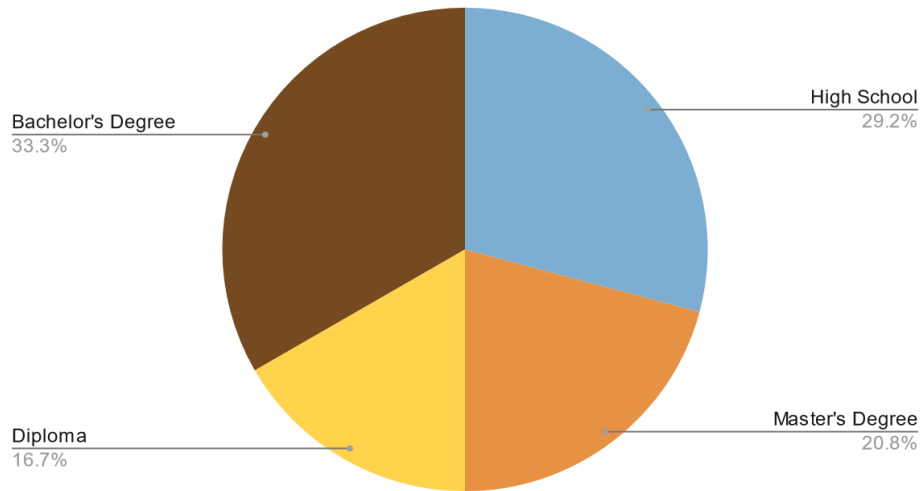
Figure 82. Participants' educational background.

Participants' profiles

As described in Chapter 5, the survey data were anonymised and the participants given a code (for the process, see Appendix III). However, for this chapter where quotes from the interviews will be used to further illustrate some elements of the analysis, I have chosen to use pseudonyms instead of the participants' codes to avoid the sense of dehumanisation.

Therefore, below in Table 3 the pseudonyms of the 24 participants along with key information about them can be found which will assist the reader with cross-referencing quotes and information if needed.

	Archaeologist/ Heritage Practitioner	Knowledge about Case Study	Significant familiarity with digital technology	From a colonised country	From a former colonising western power
ALEX		X		X	
ARBOR			X	X	
BAILEY			X	X	
BILLIE	X		X		X
CAMERON			X	X	
CARTER	X			X	
CHARLIE		X		X	
DEVIN			X	X	
DREW		X		X	
GLENN	X				X
JAMIE	X			X	
JO				X	
KAI			X	X	
KYLE	X				X
MAX		X		X	
MAXWELL				X	
NOE			X	X	
NOOR	X			X	
OAKLEY	X				X
RILEY			X	X	
SAGE		X		X	
SASCHA			X	X	
TRISTAN		X		X	
TRIX	X				X

Table 3. Participants' details regarding relationship with archaeology, knowledge of case study, familiarity with technology, and country.

Notably, based on their responses, none of the archaeologists or heritage practitioners had specific knowledge of Mycenae or GCA and only one out of the eight said that they had some knowledge of the Bronze Age in general, meaning that none of these participants specialised in Late Bronze Age (see Table 3 above).

Regarding their familiarity with interactive and immersive technologies, nine out of the 24 participants had significant familiarity either because they worked in or studied computer studies or game design, or were creating VR immersive experiences for heritage projects, or had used interactive digital narratives (IDNs) for their research (see Table 3 above).

Six out of the 24 participants were Greek and thus they knew about Mycenae and GCA, but their knowledge was encyclopedic and not archaeological (see Table 3 above). 19 out of the 24 participants were from either a former colonised country or a current cryptocolony, and the remaining five were from countries traditionally considered to be western colonial powers (see Table 3 above).

These details are pointed out whenever the data analysis calls for some additional illustration, i.e. if a participant makes a specific comment about colonialism in the qualitative data I mention whether or not they are from a colonised or a colonising country, and similarly, if a participant does not find the VR-video to be immersive, I elaborate on whether or not they have experience of these technologies or it was their first time experiencing VR.

Comparative Presentation of the pre- and the post-questionnaires results

As discussed in Chapter 5, the first 11 questions of the surveys were exactly the same to help evaluate any new knowledge acquired after being exposed to the story. The post-questionnaire survey also had 31 additional questions to further explore the new knowledge acquired and allow for a comparison between the three media (Text, Twine, and VR video). After that, all three participants experienced the rest of the media and lastly were gathered for an interview.

In the first section below, the data from the comparison between the pre- and the post-questionnaires is presented. These are drawn from the first 11 questions of the questionnaires which were exactly the same in the pre- and post-questionnaire to help evaluate any previous knowledge on the subject of the stories as well as to assess any new knowledge acquired after experiencing a medium (see Table 4 below for a summary of the pre-questionnaire questions). These data are presented in graphs, with the three media along the X axis, comparing the pre- and the post- questionnaire responses as well as offering an overview of the responses before and after across the three media. Orange has been used as the standard colour for incorrect responses, blue for correct responses, and grey for any replies expressing uncertainty. On the Y axis is the number of participants. All the percentages are on the basis of $n=8$, since the total number of respondents for each medium is eight. That is because all 24 participants experienced only one medium of the three before the interview, and thus the responses to the pre- and post-questionnaires are based on eight participants each time. It is important to note that the results of these comparative questions might have been affected by the fact that the participants had seen the questions once before experiencing the story in any of the three forms, therefore it is possible that they were consciously or unconsciously looking for the answers to these questions in the stories.

PQ1. Where is Greece?
PQ2. Where is Mycenae?
PQ3. Who was Agamemnon?
PQ4. Do you recognise this?
PQ5. Do you know who excavated Mycenae?
PQ6. When did the excavations take place?
PQ7. Do you know what was found during the excavations at Mycenae?
PQ8. Are these finds in Mycenae now?
PQ9. The Trojan war was an event that happened during the Bronze Age.
PQ10. The Trojan war is a mythological conflict narrated by Homer in his poem, the Iliad.
PQ11. How did the Bronze Age people in Greece treat their dead?

Table 4. Pre-questionnaire Questions (true or false responses).

In the first question (PQ1, Table 5) regarding identifying Greece on a world map, all of the participants replied correctly before and after the questionnaires.

Table 5. Participants' responses to PQ1.

For the question 'Where is Mycenae?' (PQ2, Table 6), 25% of the Text users replied correctly before the experience, and 75% after the experience; 37.5% of the Twine users replied correctly before the experience, and 75% after the experience. Lastly, 25% of the VR users replied correctly before the experience, and 62.5% after the experience (n=8). There were similar results in the post-questionnaire, with the Text and Twine scoring slightly higher than the VR.
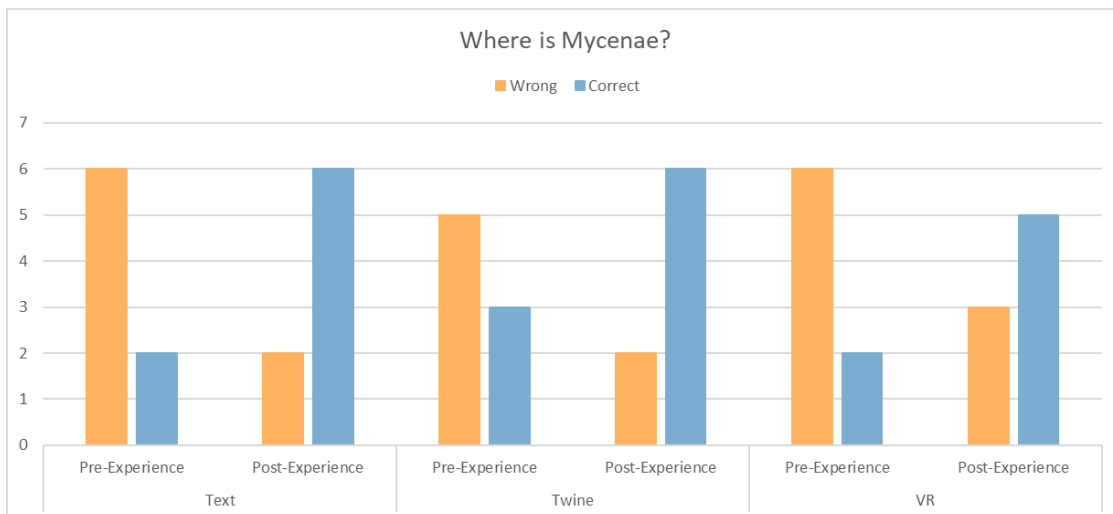
Table 6. Participants' responses to PQ2.

For the question 'Who was Agamemnon?' (PQ3, Table 7), 12.5% of the Text users replied correctly before the experience, and 50% after the experience; 50% of the Twine users replied correctly before the experience, and 50% after the experience; and 37.5% of the VR users replied correctly before the experience, and 50% after the experience (n=8). It seems that people had similar answers in the post questionnaire, and it is notable that the number of wrong answers increased as well. This could mean that either the question was not properly phrased, or that this particular issue was not clearly explained in the stories. In the stories, Tough is surprised that Schliemann identifies his brother as being Agamemnon, implying that this was not the case, but perhaps this was not entirely clear to the participants.
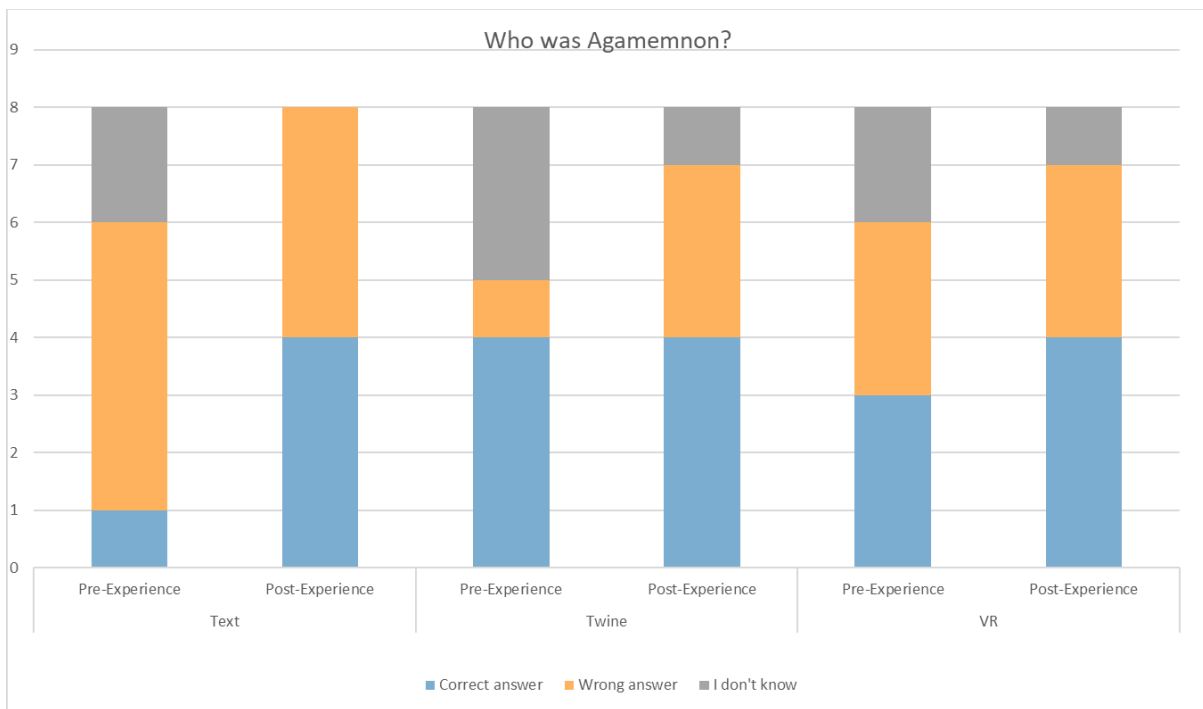
Table 7. Participants' responses to PQ3.

For the question on whether or not the participants could identify the so-called Agamemnon's mask (PQ4, Table 8), 50% of the Text users replied correctly before the experience, and 100% after the experience; 25% of the Twine users replied correctly before the experience, and 87.5% after the experience; and 75% of the VR users replied correctly before the experience, and 100% after the experience (n=8). At first glance, it seems that Twine has the lowest score post-experience, but it also had the lowest correct scores before the experience. For example, 50% of the text users did not know what this mask was before, and then 100% of them learned. However, in the Twine, 75% of the users did not know Agamemnon's mask before the experience, and then 87.5% recognised it after the experience, meaning that before the Twine story, only 2 out of the 8 participants could recognise the mask, and afterwards 7 out of the 8 participants could recognise it, which is a significant increase.
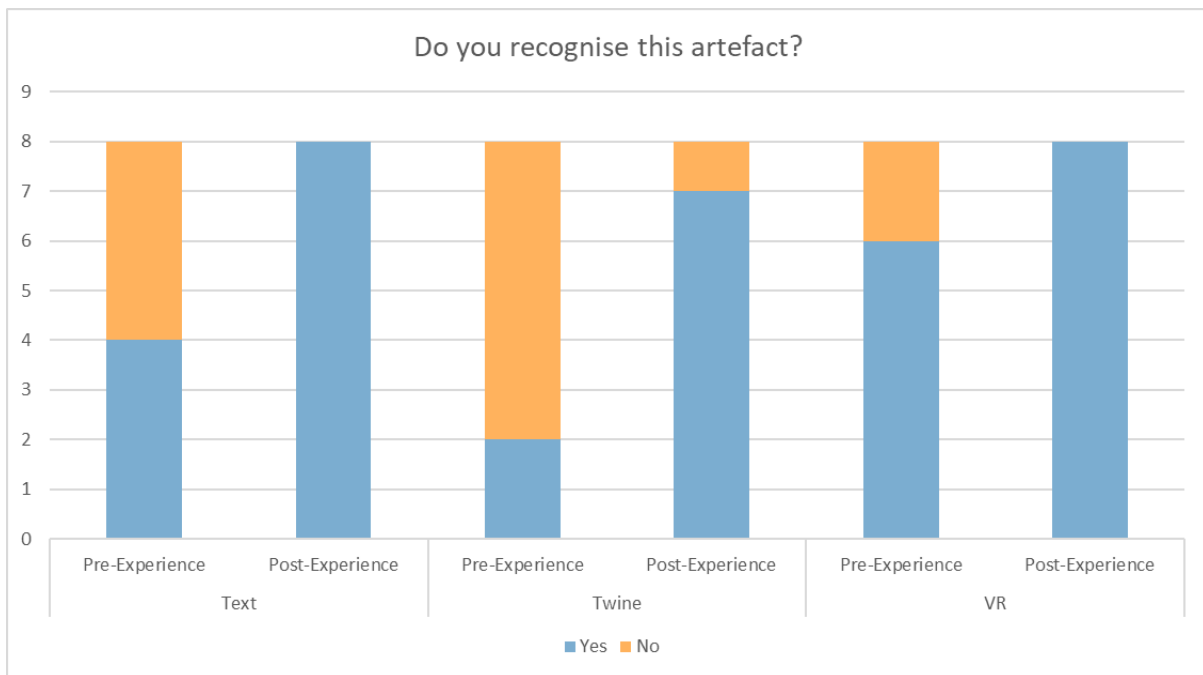
Table 8. Participants' responses to PQ4.

For the question regarding who excavated Mycenae (PQ5, Table 9), none of the Text users replied correctly before the experience, and 12.5% after the experience; none of the Twine users replied correctly before the experience, and 75% after the experience; none of the VR users replied correctly before the experience, and 37.5% after the experience (n=8). Therefore, none of the participants knew the correct answer before being exposed to the medium. Notably, all participants gained some knowledge about the excavators of Mycenae. However, Twine seems to be the most effective medium by far since 6 out of 8 participants (75%) replied correctly after playing the Twine game, which is a significant rise and indicator of effective knowledge gain. Respectively, the Text in this case seems to have somehow confused the participants, despite the fact that it is clearly stated in the footnotes that both Stamatakis and Schliemann excavated Mycenae. Therefore, this might be an indication that most (if not all according to the quantitative data) of the participants did not actually pay much attention to the footnotes of the text, but rather concentrated on the story.
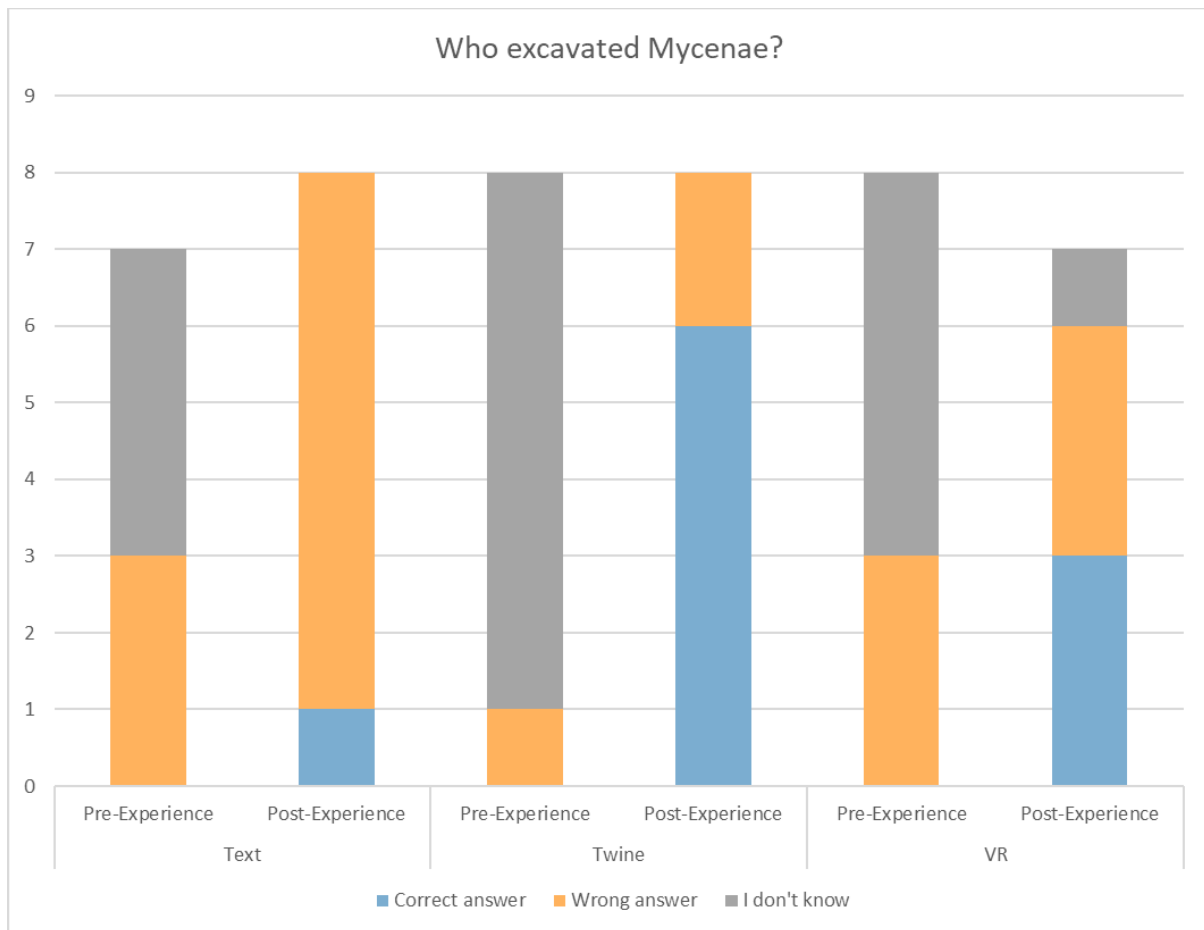
Table 9. Participants' responses to PQ5.

For the question regarding when the excavation took place (PQ6, Table 10), 50% of the Text users replied correctly before the experience, and 37.5% after the experience; 25% of the Twine users replied correctly before the experience, and 87.5% after the experience; 37.5% of the VR users replied correctly before the experience, and 50% after the experience (n=8). Similarly, in this question, 87.5% of the participants who experienced Twine managed to reply correctly to the question, which again is significantly higher than the responses from the other two groups. This is also much higher if the initial percentage of correct answers from the Twine participants is taken into consideration (25%).
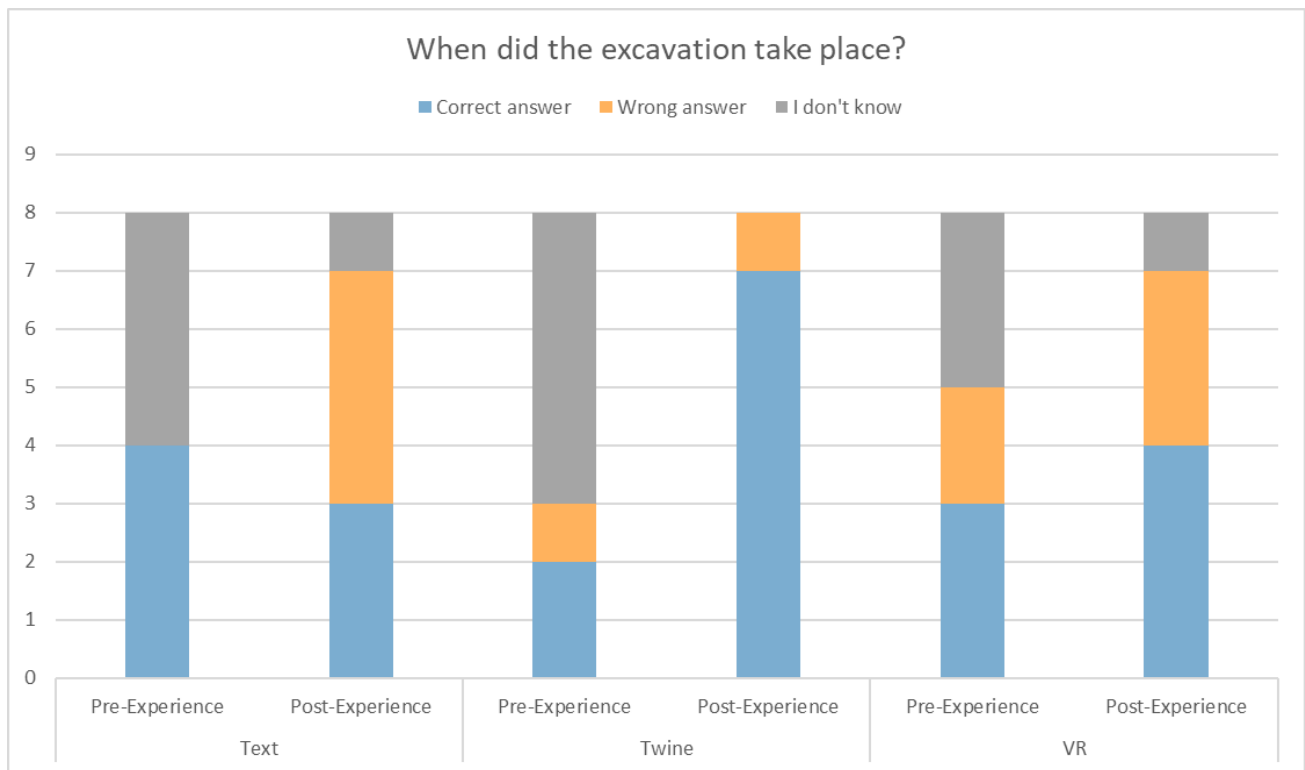
Table 10. Participants' responses to PQ10.

For the question regarding the finds at the shaft graves (PQ7, Table 11), 50% of the Text users replied correctly before the experience, and 100% after the experience; 25% of the Twine users replied correctly before the experience, and 100% after the experience; 50% of the VR users replied correctly before the experience, and 100% after the experience (n=8). In this question, the participants of all groups replied correctly (100%). However, if the initial percentage of correct answers in the pre-questionnaire is taken into consideration, Twine seems to be more effective, since it had the least correct answers to begin with and the same results with the other two media (100%).
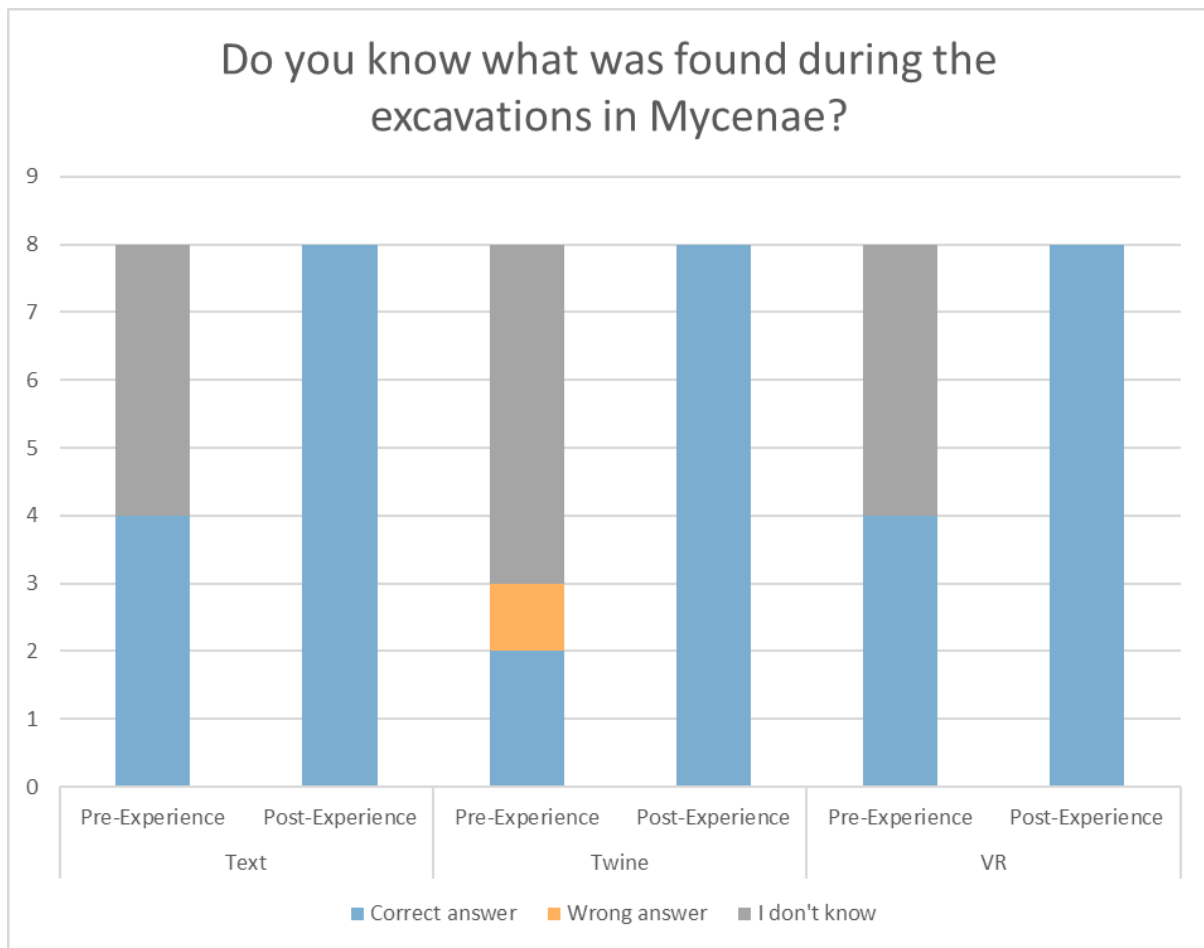
Table 11. Participants' responses to PQ7.

For the question regarding where these finds are kept today (PQ8, Table 12), 12.5% of the Text users replied correctly before the experience, and 37.5% after the experience; none of the Twine users replied correctly before the experience, and 37.5% after the experience; 12.5% of the VR users replied correctly before the experience, and 37.5% after the experience (n=8). This question was perhaps not phrased well and will not be taken into consideration in the analysis, since it is not very clear in the story whether the finds are in Mycenae or in Athens. It is mentioned in the footnotes and the drop-down text, yet maybe was not apparent enough.
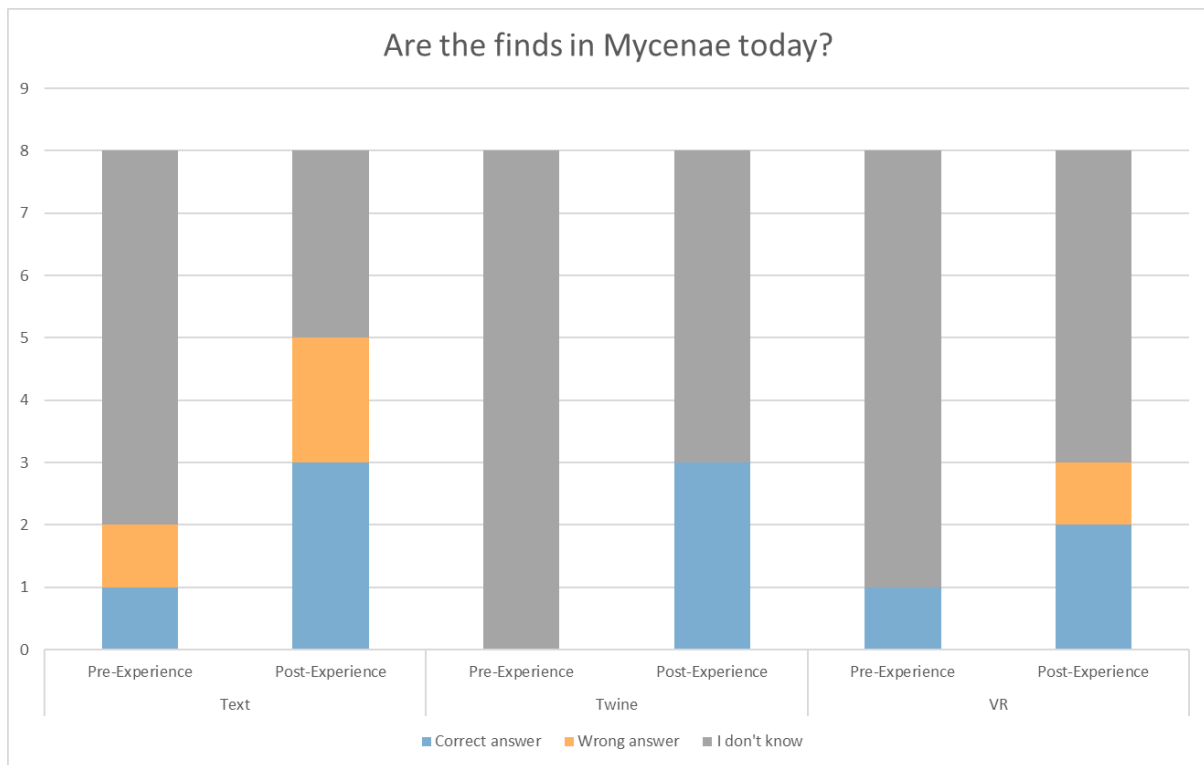
Table 12. Participants' responses to PQ8.

For the question regarding whether the Trojan war actually happened during the Bronze Age (PQ9, Table 13), none of the Text users replied correctly before the experience, and 25% after the experience; 25% of the Twine users replied correctly before the experience, and 25% after the experience; and 25% of the VR users replied correctly before the experience and none after the experience (n=8). This question also provides unclear feedback about whether the participants understood that the Trojan war was a legend in the Homeric epics and not an actual event. It is implied in all three versions of the story, similar to the implication that Agamemnon was not a historical king, but again the participants did not pick this up in the stories. It is understandable though since both concepts would require further explanation for those who had no previous knowledge, or for the participants (i.e., Greeks) who had false information about it.
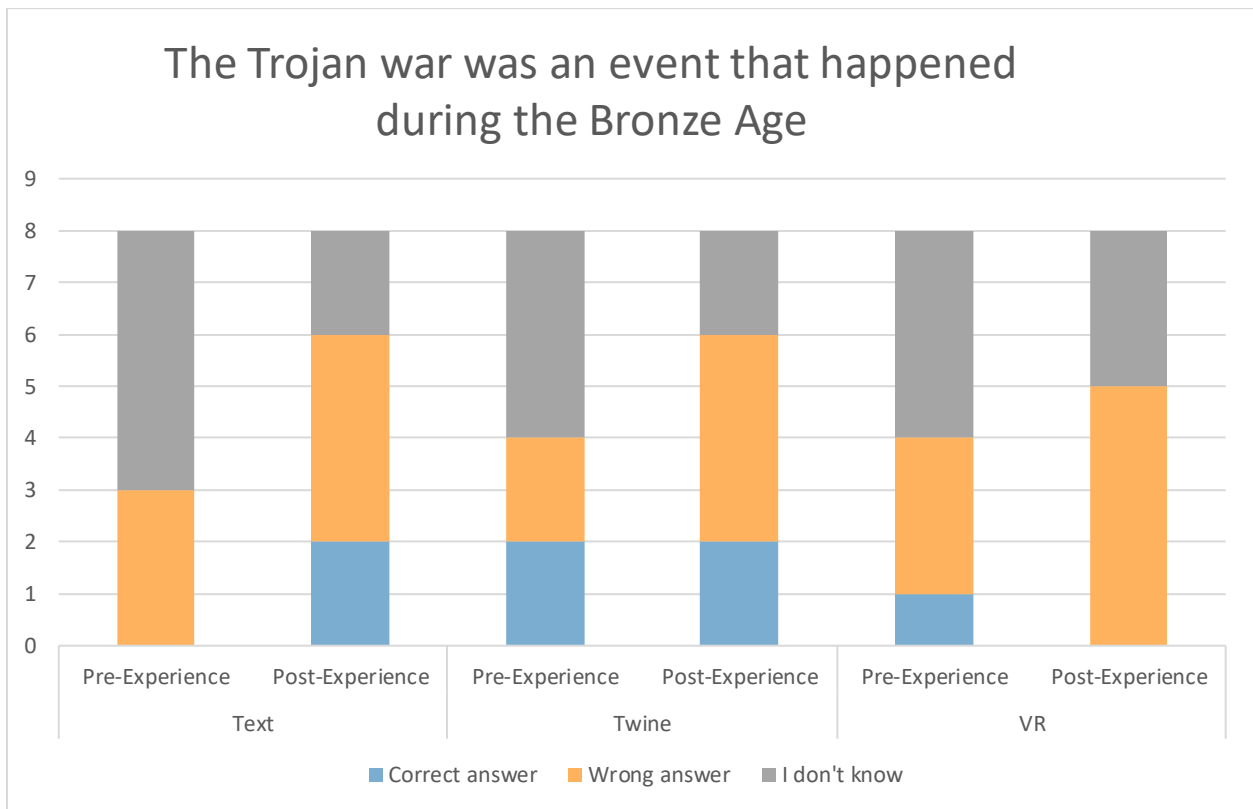
Table 13. Participants' responses to PQ9.

For the question regarding whether or not the Trojan war was an actual event (PQ10, Table 14), 37.5% of the Text users replied correctly before the experience, and 62.5% after the experience. 62.5% of the Twine users replied correctly before the experience, and 62.5% after the experience; and 50% of the VR users replied correctly before the experience and 62.5% after the experience (n=8). This question added value to my understanding of the results since it asks for the same information as the previous question, with different phrasing. It seems that the participants understood that they had most probably answered the previous question incorrectly, or they had more time to think about the answer, or this phrasing was clearer to them. Almost all participants scored highly in both the pre-questionnaire and post-questionnaire questions, and it appears that the experience did not really affect their opinion, as the percentages of correct answers before are largely the same as after.
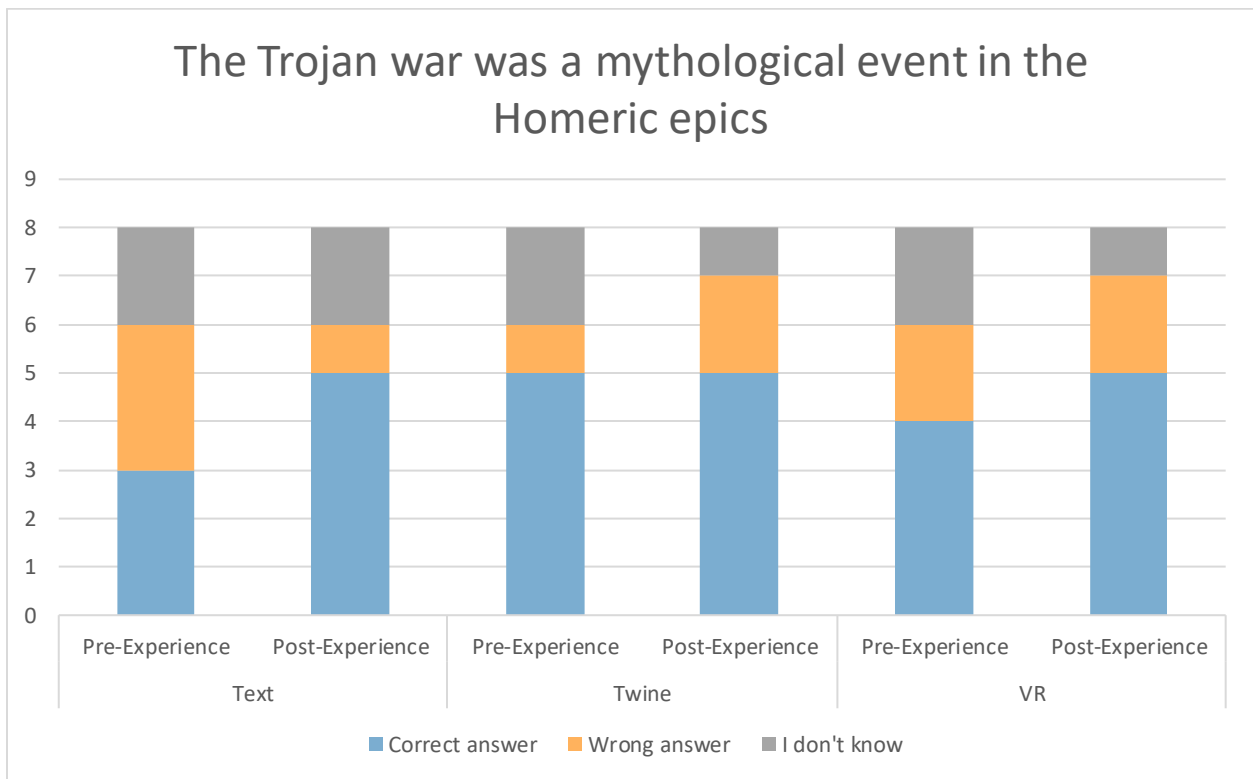
Table 14. Participants' responses to PQ10.

For the question regarding the treatment of the dead in the Bronze Age (PQ11, Table 15), 37.5% of the Text users replied correctly before the experience, and 75% after the experience; 12.5% of the Twine users replied correctly before the experience, and 75% after the experience; and 37.5% of the VR users replied correctly before the experience and 75% after the experience (n=8).
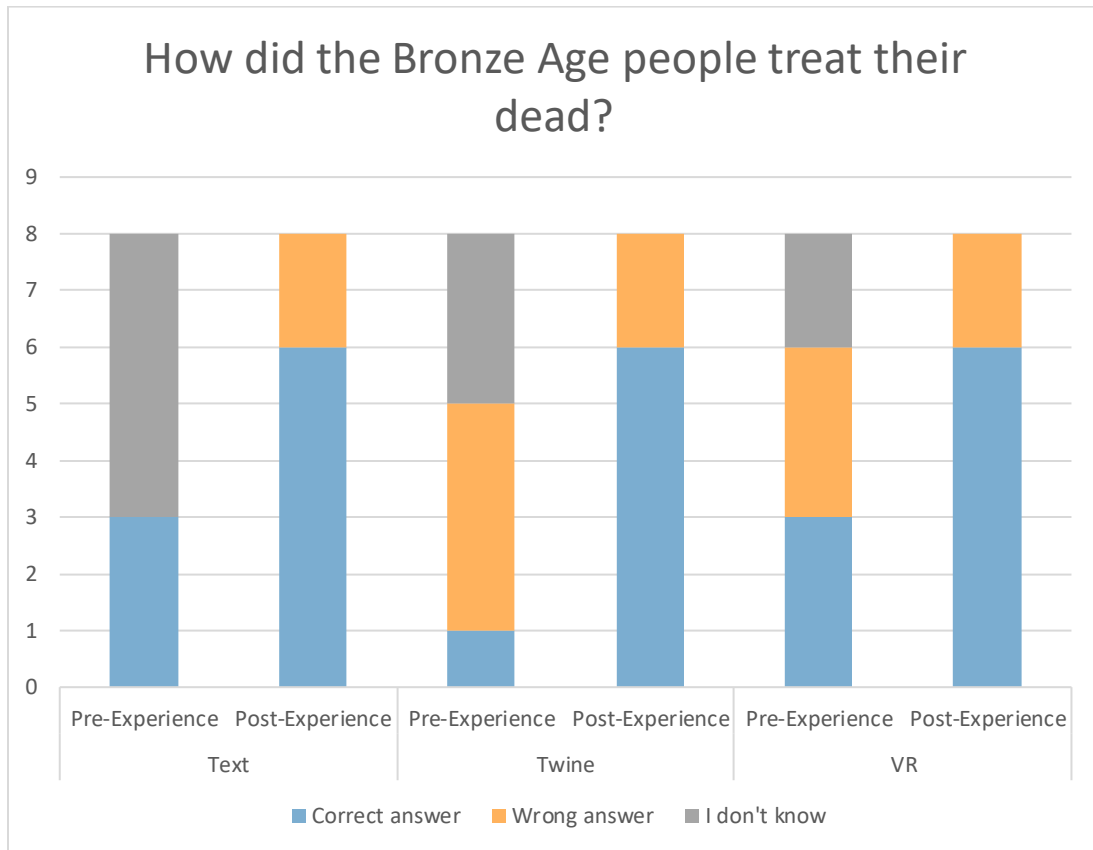
Table 15. Participants' responses to PQ11.

This question is relevant to the handling of human remains both in the past and the present, which is a continuous thread throughout all three versions of the story. Therefore, it is important to understand if there was a change in knowledge after the participants were exposed to the story. It is revealing that in all three media, there was a significant rise in correct responses after the story, meaning that all three media contributed to knowledge gain, with Twine being the most effective one since only one participant gave a correct answer before the story but six out of eight gave a correct answer after the story.

In conclusion, from the comparison between the pre- and the post-questionnaires and as evidenced through the use of fact-based questionnaires to determine information retention, it is apparent that Twine was the most effective medium to communicate archaeological research to the public. The following section of this chapter presents the comparison between the three media on the basis of entirely new knowledge gained. Hence, the focus of the analysis will be to understand again which medium is the most effective in communicating archaeological research to the public, yet this time looking into completely new knowledge gained through the stories. This will allow for a comparative analysis and discussion in the next chapter between the findings of this section (the comparison between the pre- and post-questionnaires) and the following section (the post questionnaire results).

Post Questionnaire Data and Results

Questions about MYC_1V

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Questions about MYC1V

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PQ12: What was the individual's name?
PQ13: Where did the individual live?
PQ14: Was the individual wealthy?
PQ15: Were they of tall stature?
PQ16: Were they a warrior?
PQ17: How did the individual die?
PQ18: Were they buried with precious items?
PQ19: Did the individual wear a golden mask?
PQ20: The individual was identified as Agamemnon, the mythical king, by Schliemann.
PQ21: Stamatakis was appointed by the Greek government to supervise Schliemann.

PQ22: Dr Nafplioti recently reexamined the bones using new techniques.
PQ23: Dr Angel also examined the bones.

Table 16. Post-questionnaire questions related to MYC_1V.

This is also part of the quantitative dataset but is studied and presented separately as the results address a different aspect of the research question and therefore some inconsistency with the question numbering should be expected. This dataset contains responses to the questions that aim to capture the new knowledge acquired specifically about MYC_1V. The possible responses of the questions PQ12-PQ23 are 'yes', 'no' and 'not sure'. The accepted answer depends on the question, so it will be clarified after each one of them below. Responses to these questions, combined with the qualitative data that will be presented next, allow for interpretation regarding whether or not the participants had understood the message that archaeologists do not always have the answers about the past.

For the first question in this section, the participants were asked what the individual's real name (PQ12, Table 17) was. The point of this question was to examine if the participants had understood that archaeologists do not know the real name of the deceased individual even after multiple examinations of the bones. The responses to this question are also indicative when combined with the qualitative data of whether or not the participants had also understood the message of the story, that archaeologists do not always have all the answers about the past. The participants had to choose between different names (such as Agamemnon), code names (such as MYC_1V), or 'unknown'. In the table below the latter is considered the correct answer and everything else is considered to be wrong. 50% of the Text users responded correctly, whereas the users of the Twine game had a 100% success rate, and 75% of the VR users gave a correct answer (n=8).

What was the individual's name?
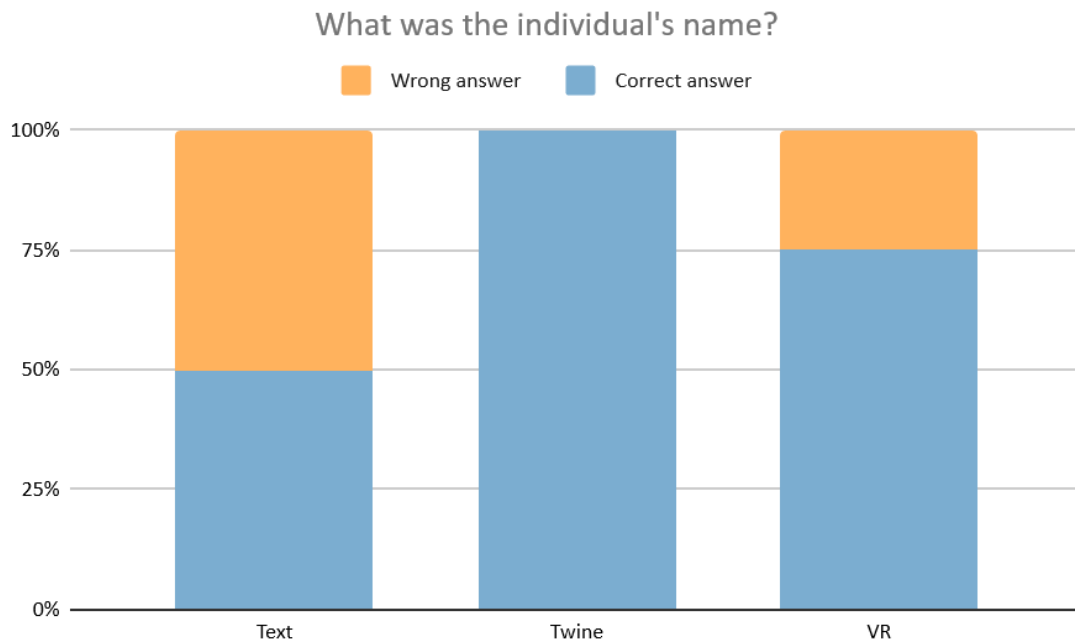
Table 17. Participants' responses to PQ12.

Then, the participants were asked where the individual was born (PQ13, Table 18). As previously, the participants had to choose between different options including famous Greek places, such as Athens, Crete, and Mycenae, with only the last one being the correct answer. All of the participants, no matter the medium selected the correct answer.

Where did the individual live?
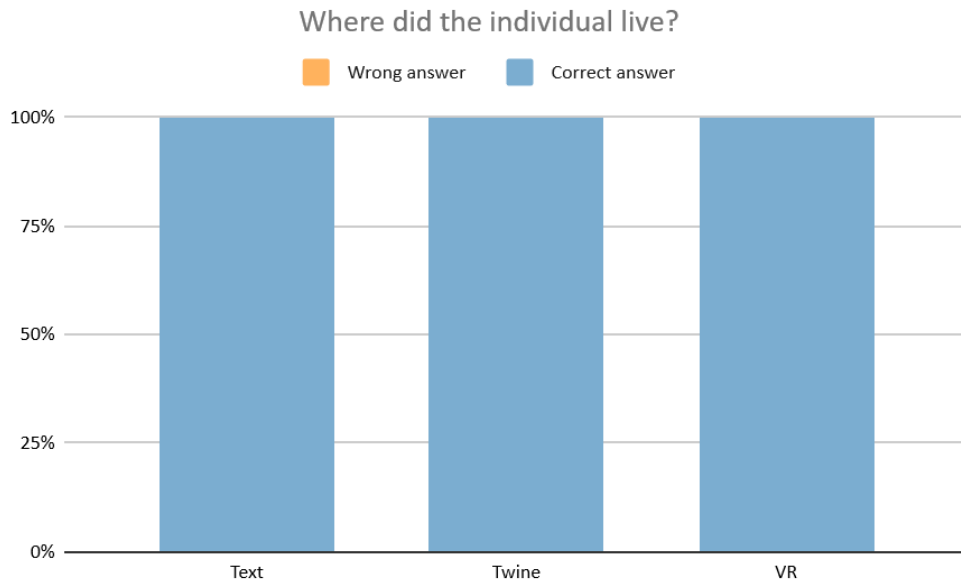
Table 18. Participants' responses to PQ13. – where did the individual was born - fix

The participants then were asked whether the individual had been wealthy (PQ14, Table 19). They had to choose between three options: 'yes', 'no' and 'not sure'. Only the answer 'yes' has been counted as a correct response. 100% of the Twine users responded correctly, whereas 87.5% of Text or VR users responded correctly (n=8).
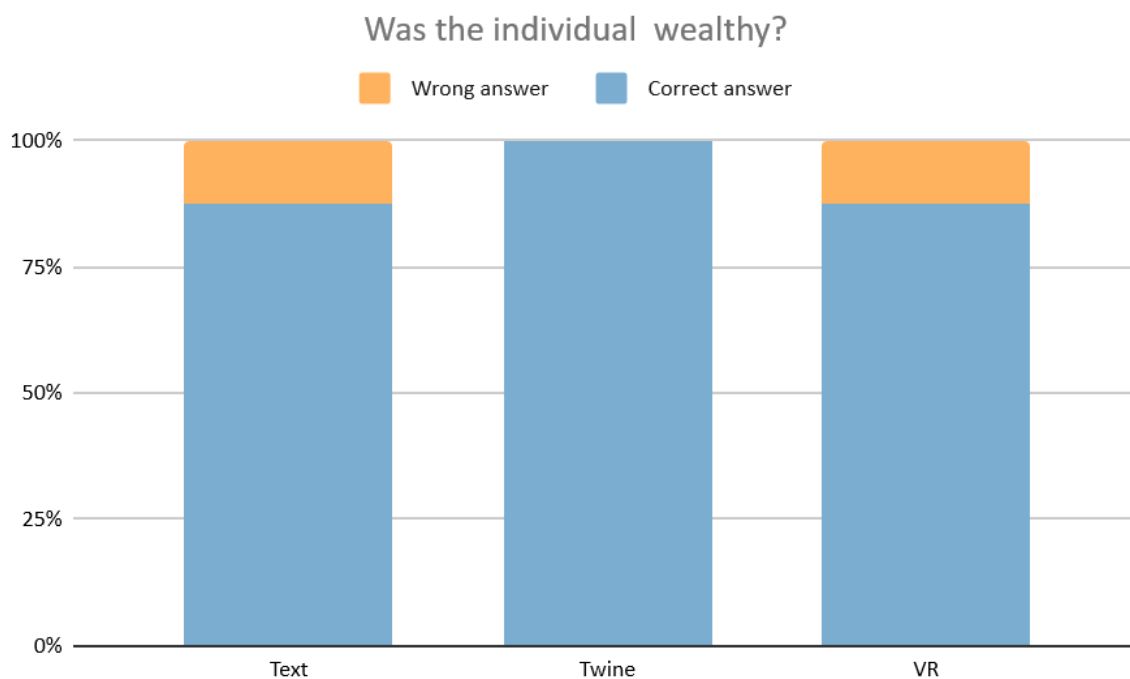
Table 19. Participants' responses to PQ14.

The participants were then asked (PQ15, Table 20) whether or not the individual was tall as this is something that is known for sure, since this individual was 1.81 m which is above the average stature. The participants had to choose between three options: 'yes', 'no' and 'not sure'. As previously, only the answer 'yes' has been counted as correct. 100% of the Twine and Text users responded correctly, whereas 75% of the VR users gave the correct response (n=8). This is particularly interesting given that in the VR the participants actually saw a plastic skeleton laid on the examination table, and I thought it would be important to further explore why they might have thought that the individual was not tall. After checking with a PalaeoHub laboratory technician, the plastic skeleton would have been 166.9 m meaning that it was approximately 0.12m shorter than the skeleton of the individual. Therefore, the participant who responded that MYC_1V was not tall seems likely that could have been influenced by the plastic skeleton and did not pay attention to the narration.
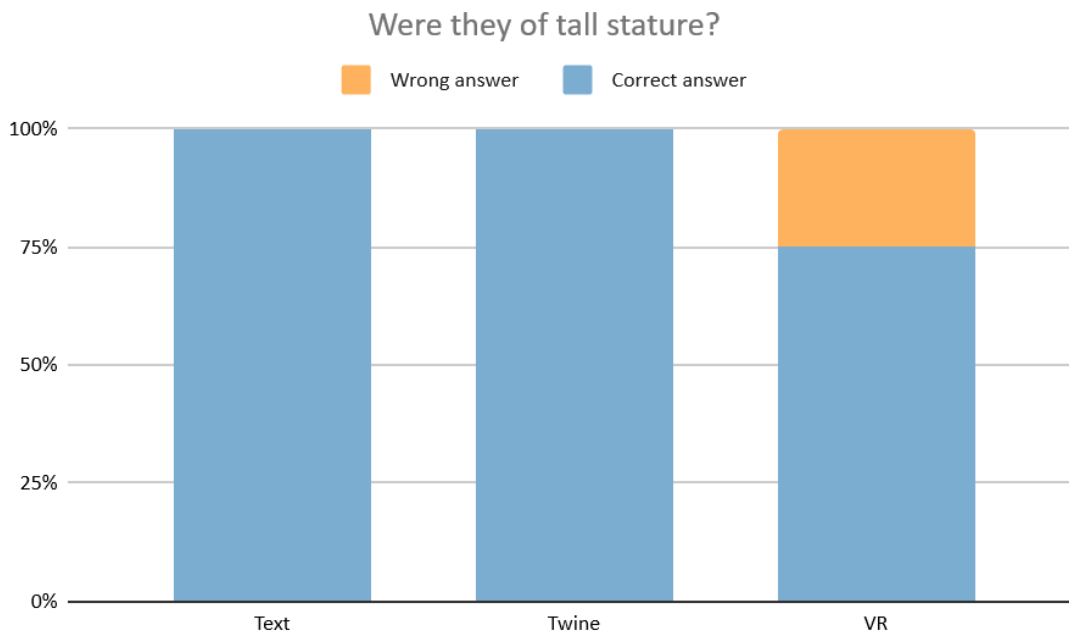
Table 20. Participants' responses to PQ15.

Right after that, the participants were asked whether the individual was a warrior during their life (PQ16, Table 21). In this question, the correct answer should be that we cannot tell for sure. 25% of the Text users, 37.5% of the VR users, and 50% of the Twine users responded correctly (n=8).
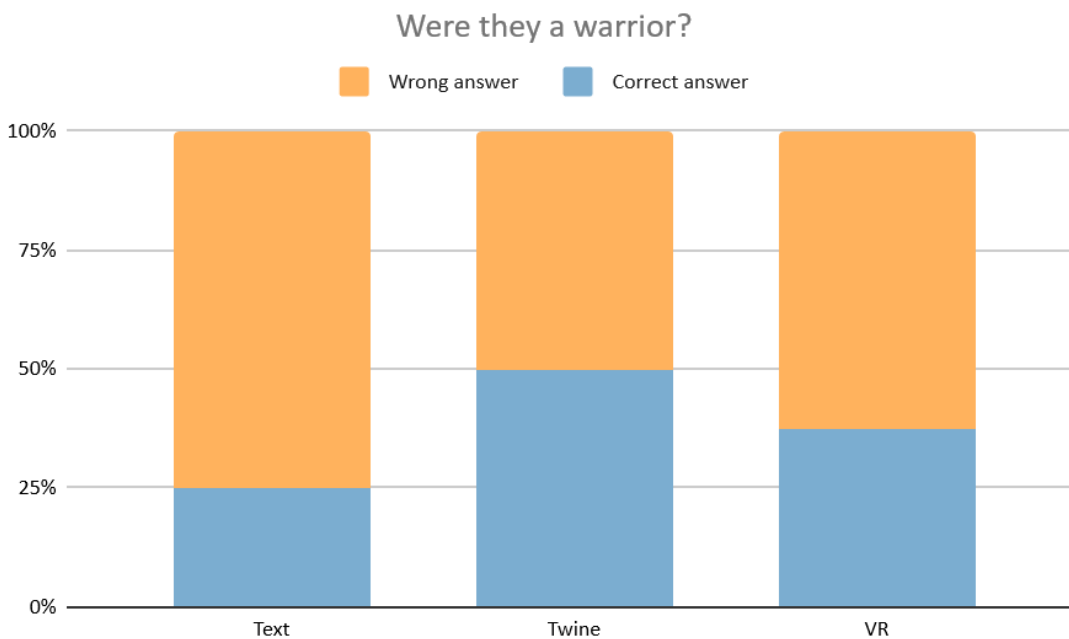
Table 21. Participants' responses to PQ16.

Then, the participants were asked about the way the individual died (PQ17, Table 22). Here again, the participants were expected to confirm the uncertainty of the archaeological research, by responding that we cannot know for sure. 75% of all media users managed to respond correctly (n=8).

How did they die?

◻ Wrong answer   ◻ Correct answer
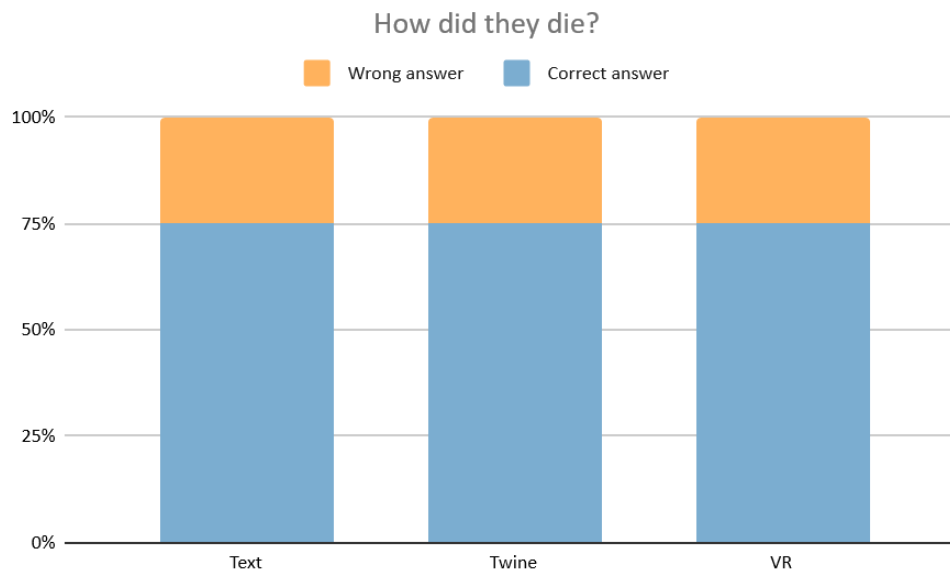
Table 22. Participants' responses to PQ17.

Afterwards, the participants were asked whether or not the individual was buried with precious items as in all three versions of the story they were shown images of the finds from grave five where MYC_1V was buried (PQ18, Table 23). This question has the same structure as every other question so far, with possible answers 'yes', 'no' and 'not sure'. Only 'yes' has been counted as a correct response. 100% of the Text and VR participants answered correctly, whereas 87.5% of the Twine users gave the correct answer (n=8).

Were they buried with precious items?

Table 23. Participants' responses to PQ18.

In the next question (PQ19, Table 24) the participants were asked whether or not the individual had been buried with a golden mask on their face. As previously, the possible answers in this question are 'yes', 'no' and 'not sure'. The correct answer is 'yes'. 100% of the Text and the VR users responded correctly, whereas 87.5% of the Twine users answered correctly, which is interesting if the results of this question are compared with those from question three (n=8). In that question, 7 out of 8 of the Twine users responded that they recognised the so-called Agamemnon's mask and exactly the same number of Twine users responded correctly to this question, that the individual was buried with a golden mask.

However, it is noteworthy that Twine users scored the lowest of the three media users in this question. This is significant because so far through almost all the questions, Twine has been shown to be the most effective at increasing knowledge, and the golden mask is quite prominently demonstrated in all three versions of the story. However, in the Text, the images were attached at the end of the story as they would have been in a published version, and in the VR the mask is prominent at the end of the story, whereas in the Twine the users had to click on a hypertext link ('[...] Agamemnon that he thought it was me [...]') to see the mask. Therefore, this is most probably an indication that one participant out of the eight who experienced Twine as their first medium skipped this link. Hence, this potentially demonstrates that 12.5% (n=8) of the Twine users skipped some parts of the story. During a subsequent conversation with a participant, they

disclosed that they kept skipping parts of the story because they were afraid that they will not be able to go back to the main story if they clicked on the hyperlinks to read more details, which further supports this observation that only one participant seems to have been constantly skipping parts of the story. When combined with question PQ29 below about skipping parts of the story (where 62.5% of the Twine users responded that they skipped some parts of the story, meaning that five out of eight people did not click on some hyperlinks), this shows that Twine is quite effective at allowing users to skip the parts that they are not very interested in, but this has a potentially negative effect on knowledge gain. Therefore, it could be suggested that it is optimal to use this flexibility of Twine only in parts of the story that have a more filling role in the story rather than important aspects of it.

Did the individual wear a golden mask?
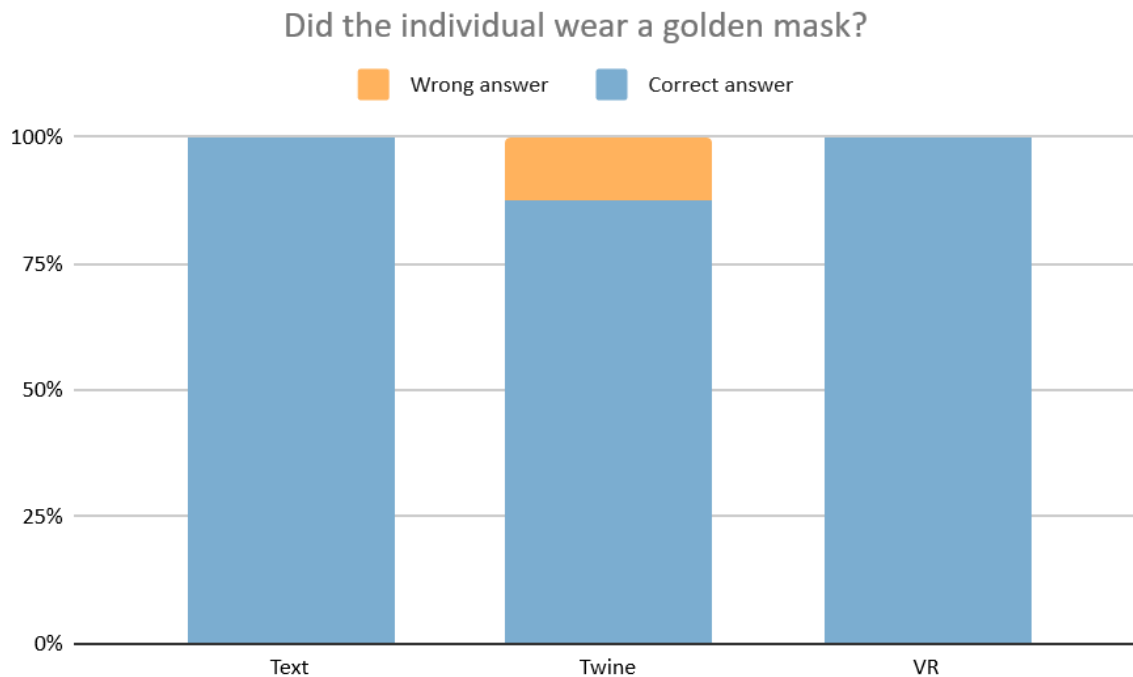
Table 24. Participants' responses to PQ19.

The next question was about whether or not Schliemann identified this individual as Agamemnon (PQ20, Table 25). Here the participants were also given the hint that the latter was a mythical king and not an actual king, as it did not matter at this point if they had this knowledge or not. The correct answer here should have been 'yes'. 62.5% of the Text users, 75% of the Twine users, and 12.5% of the VR users (n=8) gave a correct answer which again shows that Twine was more

effective than the other two media - and especially the VR video in this case - to communicate this piece of information.

The individual was identified as Agamemnon, the mythical king, by Schliemann
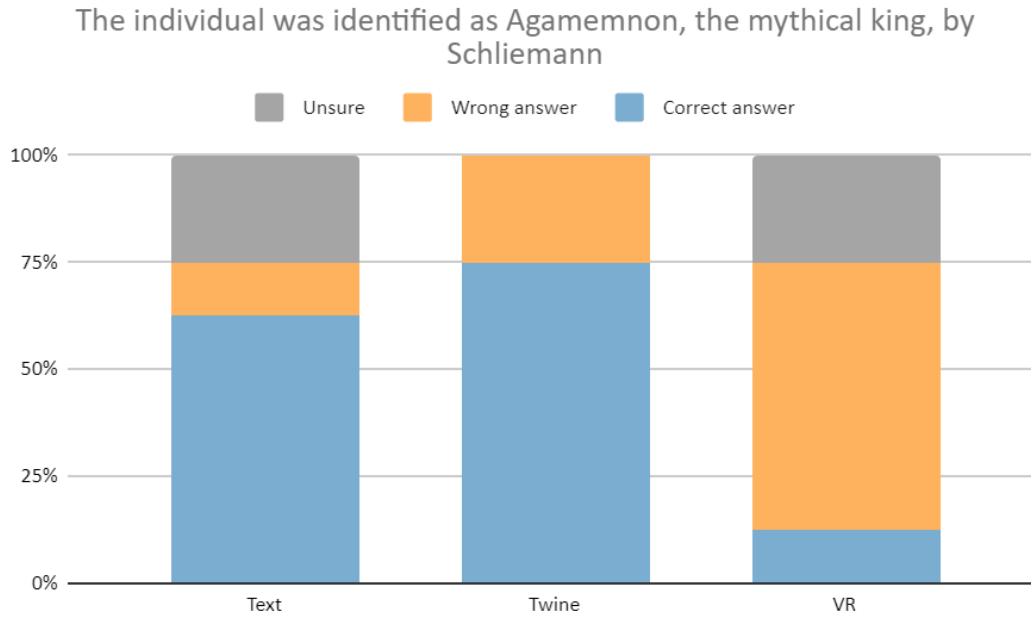
Table 25. Participants' responses to PQ20.

Then, the participants were asked (PQ21, Table 26) about whether or not Stamatakis was appointed by the Greek government to supervise Schliemann during the excavations. As previously, the correct answer to this question is 'yes'. 75% of the Text and the Twine users, and 50% of the VR users gave a correct answer (n=8).

Stamatakis was appointed by the Greek government to supervise Schliemann
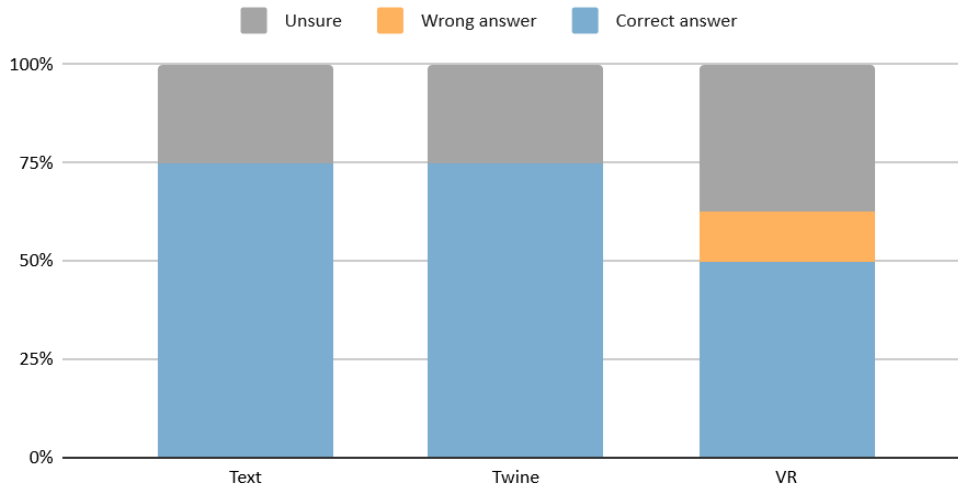
Table 26. Participants' responses to PQ21.

Similarly, in the next question (PQ22, Table 27) the participants were asked whether or not Dr Nafplioti reexamined the remains of the individual using new methods. This and the following questions are related to the concept of the series of examinations of MYC_1V's skeletal remains which also links to the qualitative theme of 'handling human remains' that is described and analysed later. As previously, 'Yes' should have been the correct answer. 62.5% of the Text users, 87.5% of the Twine users, and 100% of the VR users gave a correct answer (n=8). It is not a surprise that the VR users scored higher than the Twine users here, given that it is established that some Twine users were skipping parts and the same is expected by the Text users who might not read the footnotes. In contrast, in the VR this is a prominent part of the film as Dr Nafplioti is an actual character of the film spending time examining the bones.

Dr Nafplioti recently reexamined the bones using new techniques
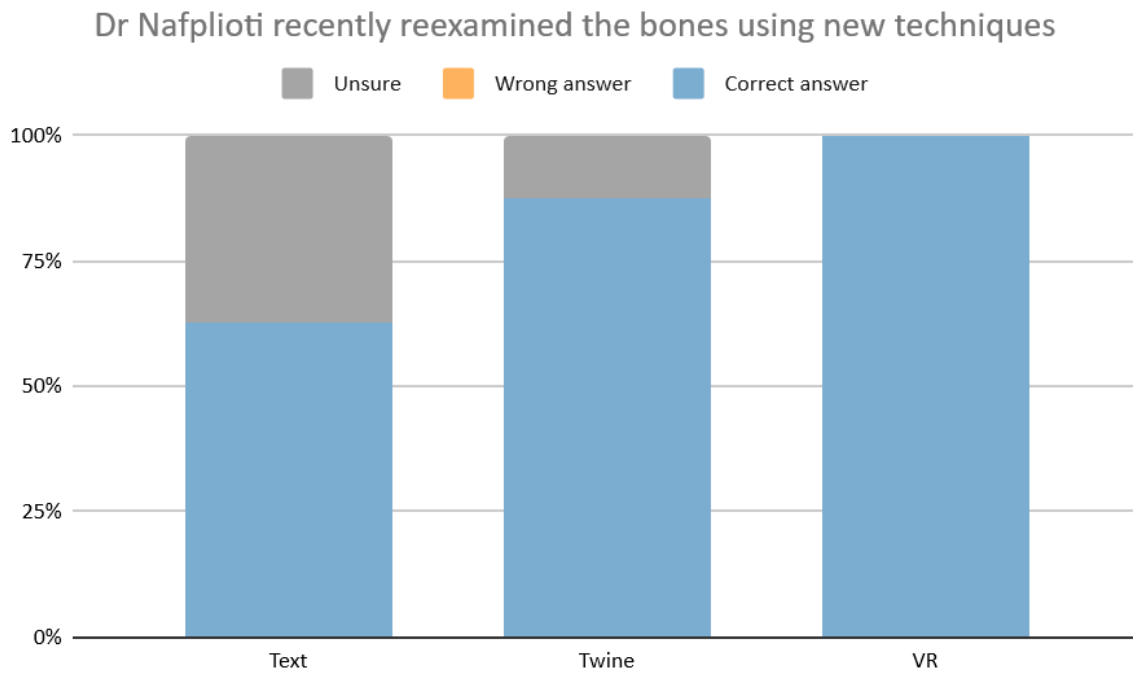
Table 27. Participants' responses to PQ22.

This assumption is also confirmed by the next question (PQ23, Table 28), which shows the participants' responses to a similar question about Dr Angel this time, who was not a character in the 360 film for the VR video. In this question, the VR users scored the lowest. 87.5% of the Text users gave a correct answer, whereas 75% of the Twine users, and an equal percentage of the VR users also responded correctly (n=8).

Dr Angel also examined the bones

Unsure   Wrong answer   Correct answer
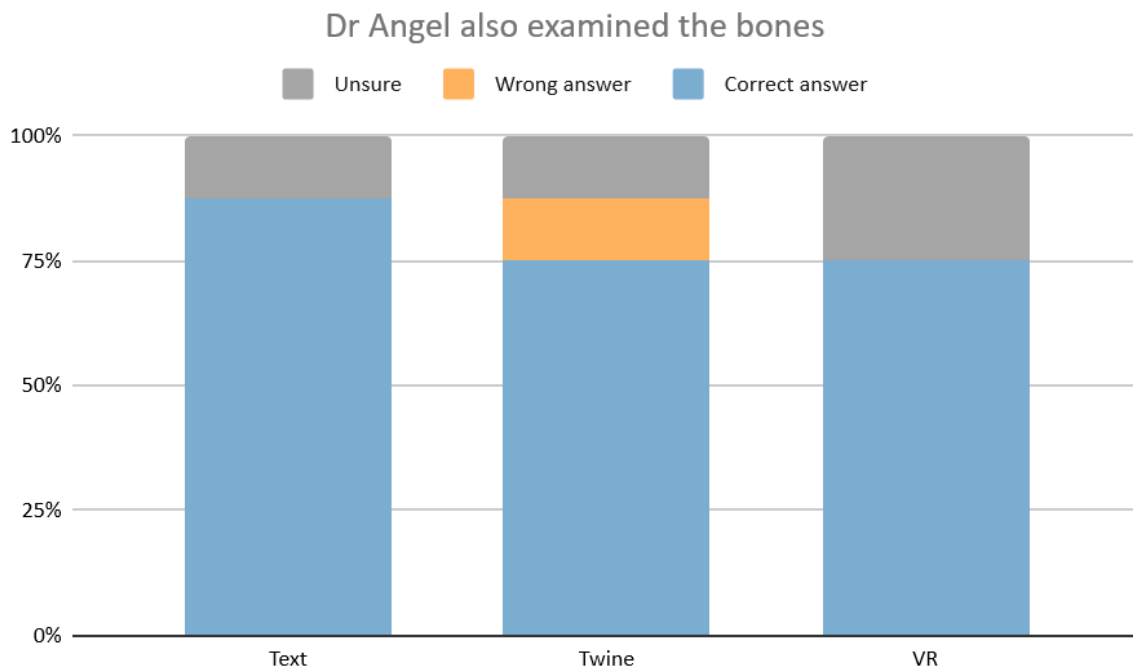
Table 28. Participants' responses to PQ23.

In general, the participants who experienced Twine gave the most correct responses in this part of the questionnaire, meaning that Twine seems to have been the most effective medium for new knowledge. However, knowledge about the reexamination on the bones, as well as the finds in the grave, seems to have increased slightly more through the VR, maybe because of the strong visual engagement of the medium and the fact that the reexamination by Dr Nafplioti was a whole narrative part in the film. This will be further expanded upon in the Discussion chapter.

Questions about the relationship between Stamatakis and Schliemann

Similarly to the previous set of post-questionnaire questions, this section also reports on the quantitative dataset but is studied and presented separately as the results address a different aspect of the research question and therefore some inconsistency with the question numbering should be expected. It is noteworthy that there might be a difference in the numbering because I follow the numbering of the questionnaire to maintain the searchability of the data across the main body of the thesis and the appendices with the excel sheets. This set of questions also follows a different format, with answers along a Likert scale: 'Strongly agree', 'Somewhat agree', 'Neither agree nor disagree', 'Somewhat disagree', 'Strongly disagree'. For the majority of the questions, the responses have been grouped as 'positive/correct' or 'negative and neutral/incorrect', as this was a more efficient way to analyse these data. This is always clearly explained in the description of each individual question and the accompanying data table.

Questions about the relationship between Stamatakis and Schliemann

PQ24: Schliemann was cooperating during the excavations at Mycenae.
PQ25: Stamatakis did not assist Schliemann during the excavations in Mycenae.
PQ26: Stamatakis was hostile towards Schliemann.
Q69: Schliemann caused problems and mistreated Stamatakis.
PQ38: Stamatakis received less respect than he deserved.

Table 29. Post-questionnaire questions about the relationship between Stamatakis and Schliemann.

The first group of questions falls into the decolonisation theme of the research, with the aim to bring Stamatakis back into the narrative of the Mycenaean excavations, and challenge the colonial view that Schliemann was the only major figure who contributed to the knowledge about Mycenae. The point made in all three media was that Schliemann was quite dismissive of Stamatakis, and he refused to cooperate with him, aggravating an already difficult situation between the two as discussed in the Background Chapter. These are important questions as they

helped to identify whether and to what degree the participants understood that Stamatakis was treated unfairly by Schliemann and the latter was a troublemaker. These questions are analysed and discussed along with the qualitative results from the interviews as they fall under the theme of 'colonialism'.

The first question (PQ24, Table 30) asked the participants whether or not Schliemann cooperated during the excavations. The correct answer here would have been 'No'. 62.5% of the Text users, 62.5% of the Twine users, and 75% of the VR users gave the correct answer demonstrating that VR was slightly better than the other two media in that regard (n=8).
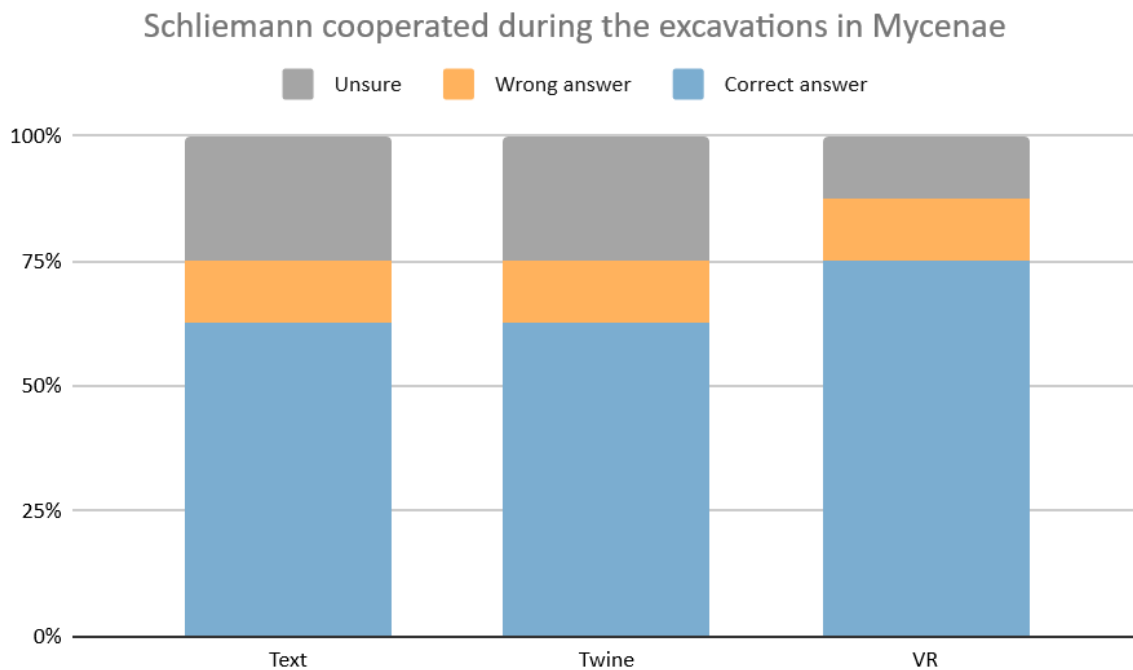
Table 30. Participants' responses to PQ24.

The next question (PQ25, Table 31) was the reverse of the previous one, asking whether or not Stamatakis assisted Schliemann during the excavations in Mycenae. The participants here were expected to disagree with this statement, since it was stressed in the stories that Stamatakis did everything he could to assist Schliemann during the excavations, but the latter was hostile towards him and refused to cooperate. 50% of the Text users, 25% of the Twine users, and 62.5% of the VR users gave a correct answer which again demonstrates that VR was a more effective medium to communicate this information (n=8). It is significant that the Twine users scored the

lowest in this question, maybe because as mentioned above, the users had been skipping parts of the story, so they most probably did not have an informed opinion on the matter.
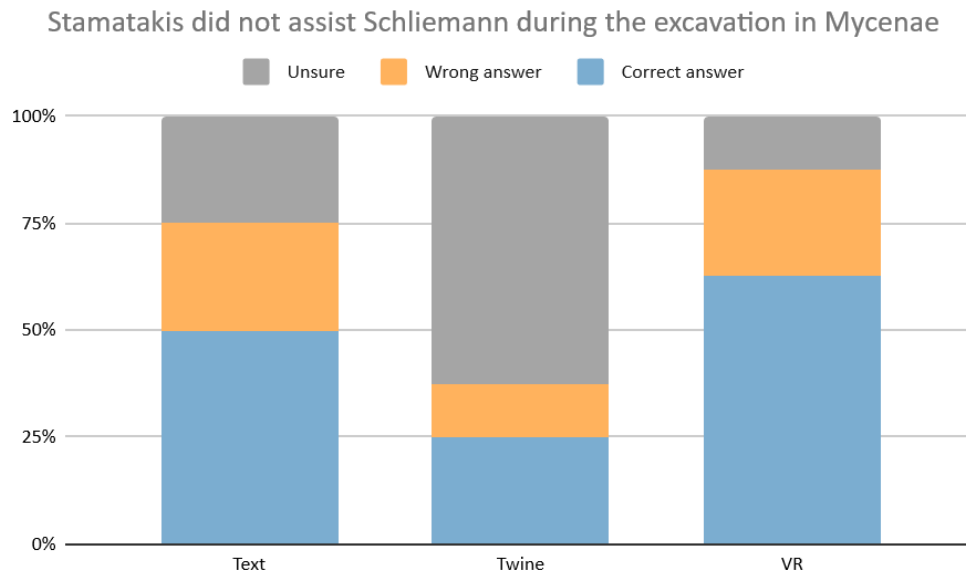
Table 31. Participants' responses to PQ25.

The next question (PQ26, Table 32) built on the previous two by stating that Stamatakis was hostile towards Schliemann and expecting the participants to disagree with that statement. However, it was admittedly a not very well-phrased question, since obviously in the stories Stamatakis is presented as being upset with the situation and with Schliemann's behaviour towards him, and thus there seems to be a degree of confusion amongst participants, as only 37.5% of the Text and Twine users, and 25% of the VR users gave a correct answer (n=8).

Stamatakis was hostile against Schliemann
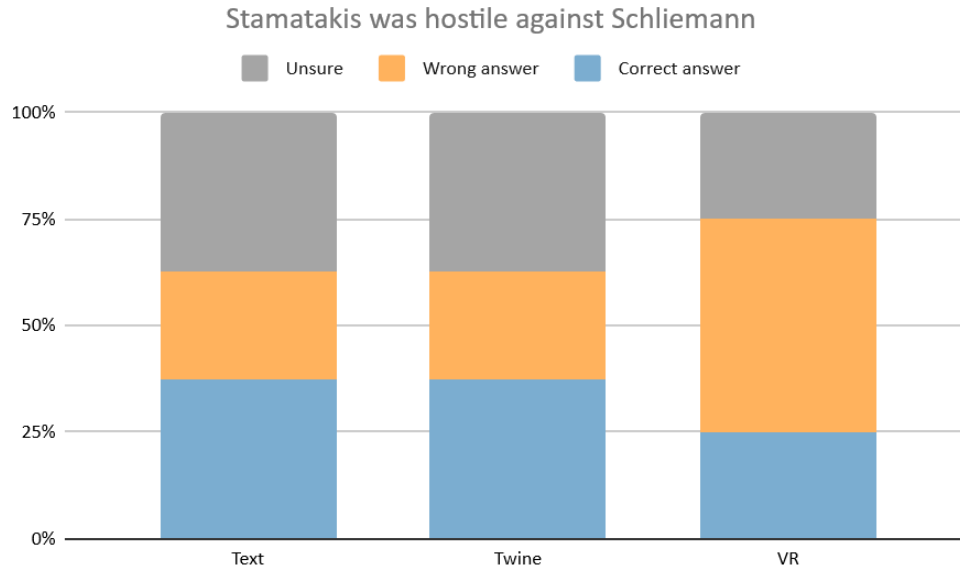
Table 32. Participants' responses to PQ26.

The next question (Q69, Table 33) is also an opportunity to double-check the participants' responses, stating that Schliemann caused problems and mistreated Stamatakis. In this question, participants were expected to agree. Hence, both 'Strongly agree' and 'Somewhat agree' are considered as correct answers. 75% of the Text and the Twine users, and 87.5% of the VR users gave a correct answer. This question was much better phrased than the previous one, and probably for this reason the participants gave more correct answers and no wrong answers.
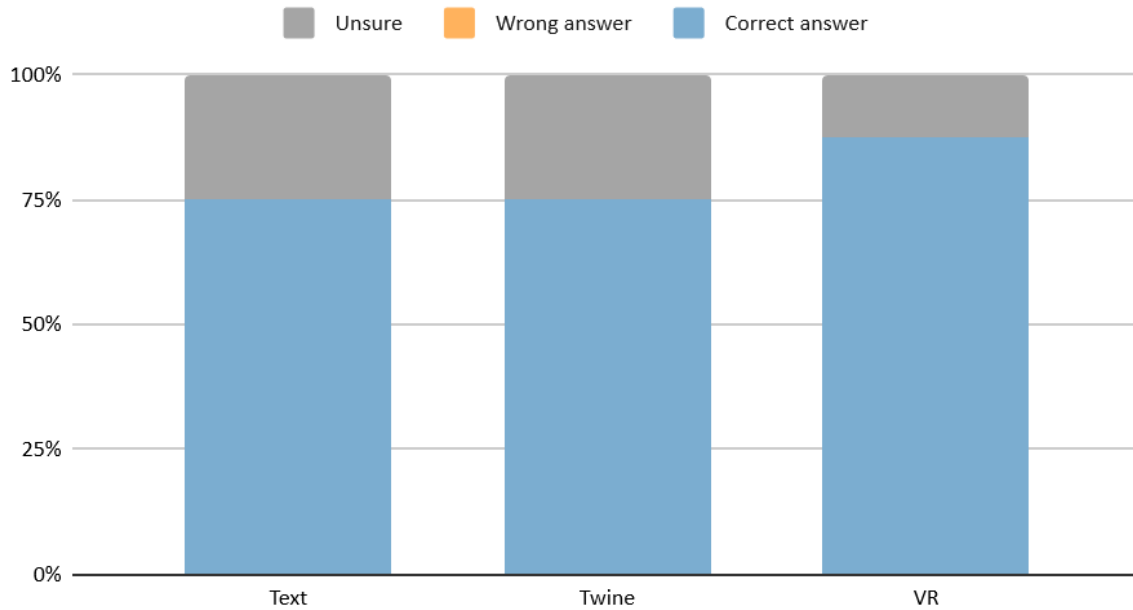
Table 33. Participants' responses to Q69.

The last question (PQ38, Table 33) captured participants' opinions on whether Stamatakis received less respect than he deserved. 75% of the Text users, and 62.5% of both the Twine and the VR users agreed that Stamatakis received less respect than he deserved (n=8). As previously, it is important to note that in the VR video, Stamatakis' character actually speaks and is quite vocal about the mistreatment he experienced. This could have had a significant impact on the results. However, it is striking that both the Twine and the Text users, despite not hearing Stamatakis' suffering directly, and taking into consideration that they might have skipped some related parts, gave higher percentages of the correct answer compared to the VR.

Stamatakis received less respect than he deserved
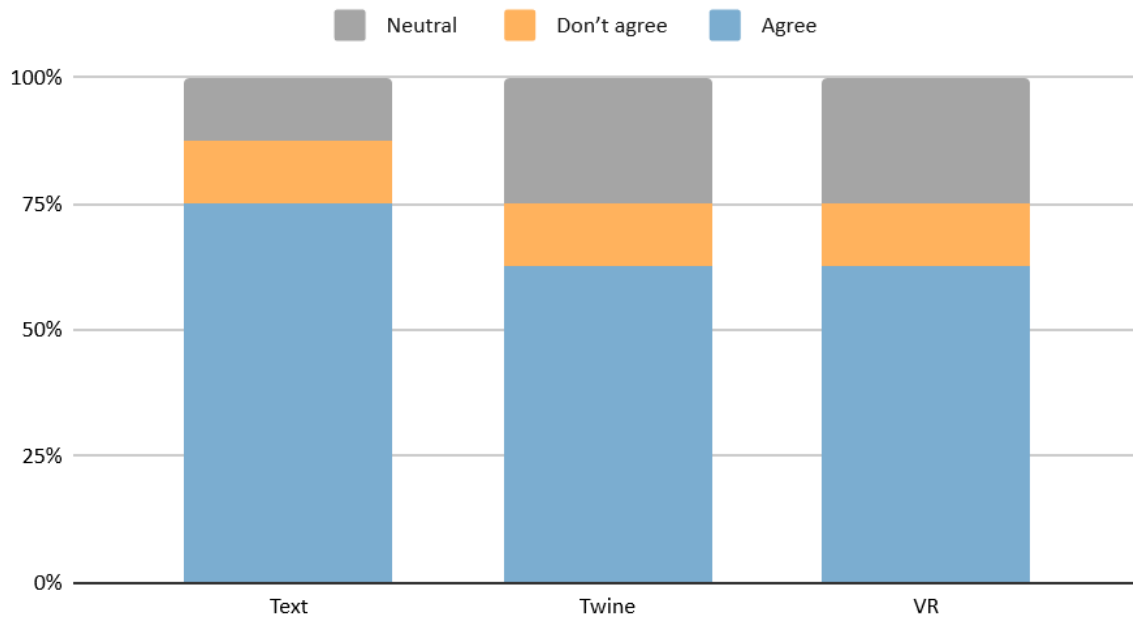
Table 34. Participants' responses to PQ38.

In general, it is difficult to explicitly distinguish one medium as better than another in knowledge gained based on this section of the questionnaire. It seems, though, that the VR video users understood the situation slightly better. This is arguably because there is a whole monologue from Stamatakis' character in the video, which seems to have made a noticeable difference in the results. However, it is noteworthy that the qualitative data demonstrated that the participants did not focus on the unfair treatment of Stamatakis by Schliemann, but rather on the potential harm that their relationship could have had on the archaeology of the place, which is indeed supported further by the quantitative data above. This is discussed in detail in the following chapter.

Questions about Users' Experience and Understanding

This second part of this group of questions is devoted to the interface of the media, the accessibility, and the user's experience (see Table 35 below). As with the previous questions, there might be a difference in the numbering because I follow the numbering of the questionnaire to maintain the searchability of the data across the main body of the thesis and the appendices with the excel sheets. These questions, combined with the qualitative data in the form of themes later in this chapter, were useful to address both research questions of this thesis.

Questions about users' experience and understanding
PQ29: I skipped some parts of the story.
PQ30: The interface was easy to use.
PQ31: The story had gaps in the narrative.
PQ34: The story was a good length that I could easily follow.
PQ27: The story helped me to better understand the Aegean Bronze Age.

Table 35. Post-questionnaire questions on users' experience.

For the first question (PQ29, Table 36), the participants were asked whether or not they skipped parts of the story. This is an important question as it sheds light on previous questions where participants failed to respond correctly. These questions were also on a Likert scale, but for the purposes of the analysis 'Strongly agree' and 'Somewhat agree' have been counted and presented as 'Agree', 'Neither agree or disagree' as a neutral response, and 'Strongly disagree' and 'Somewhat disagree' as 'Disagree'. Since Likert data are categorical and not quantitative, this is a common practice when comparing two categories (in this case whether the medium was effective and the survey responses). The initial design included all Likert options in case they were needed during the data analysis, which is a choice in alignment with Pragmatism as explained earlier in this thesis.

25% of the Text and the VR users, and 62.5% of the Twine skipped some parts of the story (n=8), making Twine the medium with the most skipped parts. This is observation is important as a) it demonstrates the flexibility of the medium as, even after skipping parts, the Twine users scored, in general, more correct answers than the other media users, and b) it explains the incorrect responses by the Twine users in some of the previous questions, especially those about the finds in the grave, the examination of the bones, and the relationship between Stamatakis and Schliemann. However, , it is important to note that out of the eight Twine users, the same user kept making mistakes, meaning that this specific participant must have not clicked most of the links and just read the story. Therefore, this question does explain the wrong responses to the previous questions, but at the same time, it is important to note that the percentage of users who claimed that they skipped parts of the story is greater than the wrong responses (62.5% said they skipped parts compared to an average of 18.75% who either gave a wrong response or did not know) demonstrating that skipping parts does not necessarily lead to wrong answers, thus further supporting the positive aspect of Twine being flexible as a medium.
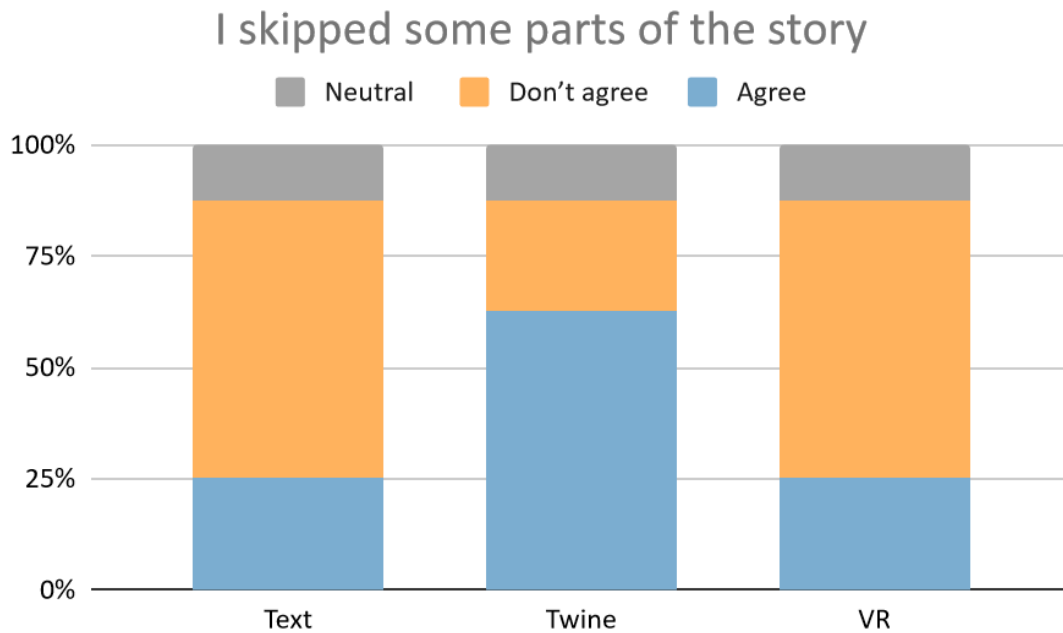
Table 36. Participants' responses to PQ29.

The next question (PQ30, Table 36) was about the interface of the medium and asked the participants whether or not this was easy to use. 62.5% of the Text users, 100% of the Twine users, and 87.5% of the VR users found the medium interface easy to use, making Twine the

most user-friendly medium of the three (n=8). This also further supports the flexibility of the medium demonstrated through various questions so far.

The interface was easy to use
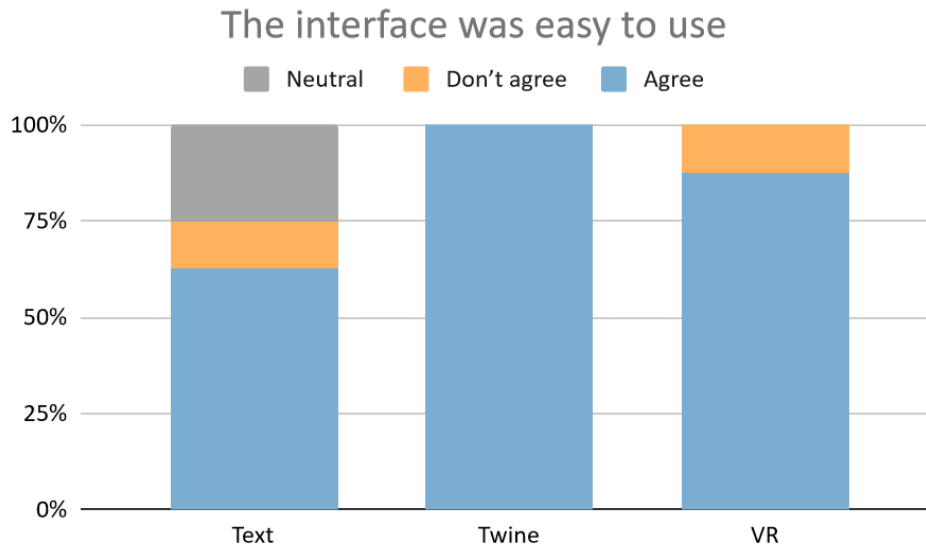
Table 37. Table 32. Participants' responses to PQ30.

The next question (PQ31, Table 38) wanted to explore whether or not the participants believed that the story was coherent. 37.5% of the Text users, 12.5% of the Twine users, and none of the VR users considered that the story had gaps in the narrative (n=8). This is also an interesting find since it makes the VR the medium that the users believe had almost no gaps in the story. It is a significant finding since many participants in the interview said that they were tired from the long narration and the lack of interaction, which could potentially indicate a lack of engagement as well due to gaps in the narrative.
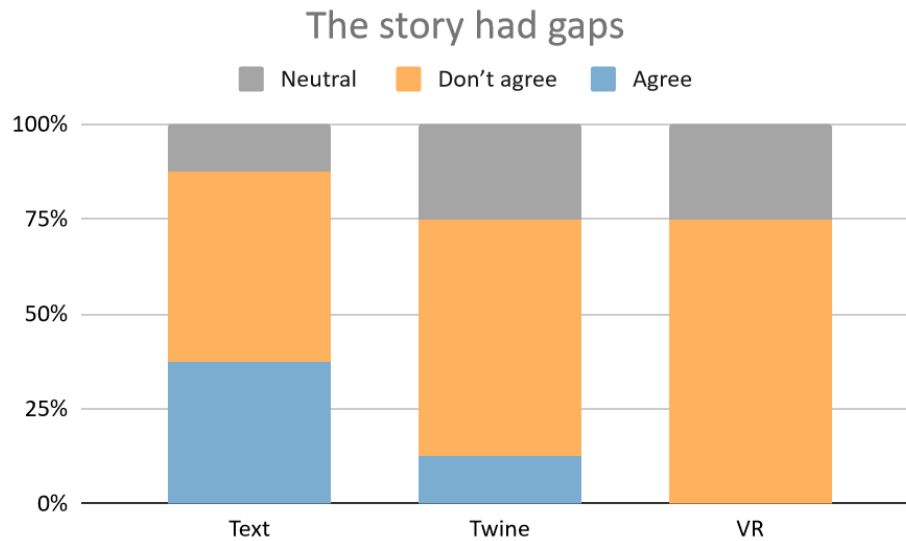
The story had gaps

Table 38. Participants' responses to PQ31.

The next question (PQ34, Table 39) is an extension of the previous one, asking the participants whether the story had a good length that was easy to follow, and thus trying to explore whether the length was suitable or rather tiring and boring. 75% of the Text and the Twine users, as well as 100% of the VR users found the length of the story good and easy to follow. As previously, this is a particularly surprising result, since a significant number of participants during the interview said that the VR video was quite lengthy and, combined with the fact that there was no interaction with the virtual environment, some of them felt disengaged and tired. It is therefore interesting to explore further whether the participants who explicitly said during the interviews that the VR video was long, and tiring were experiencing VR as the first medium or they already knew the story, and thus they found it tiring to listen to it for the second or even the third time. This is discussed in the next chapter.

The story had a good length that I could easily follow
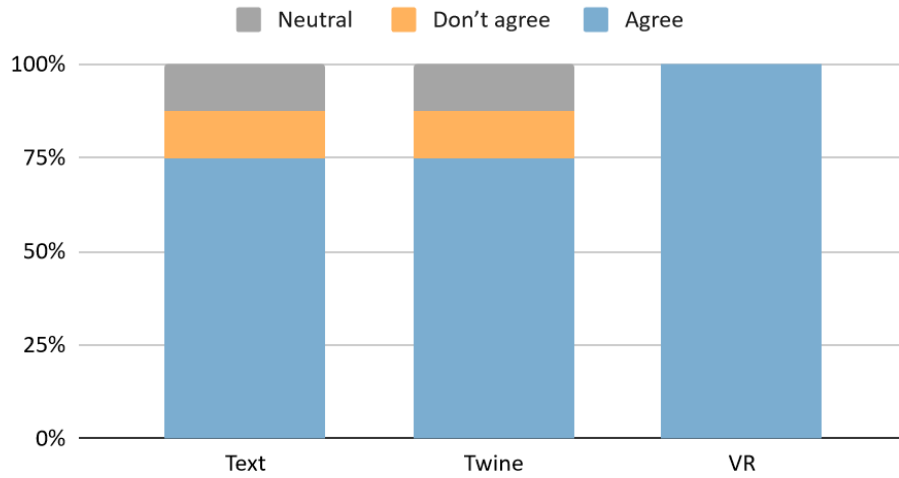
Table 39. Participants' responses to PQ34.

The last question (PQ27, Table 40) of this group was designed to capture the opinion of the participants regarding whether or not the story helped them to better understand the Aegean Bronze Age. Most of the participants seemed to agree, but the Twine users had the most 'strongly agree' reactions (62.5% and 100% agreement overall, n=8).

The story helped me to better understand the Aegean Bronze Age
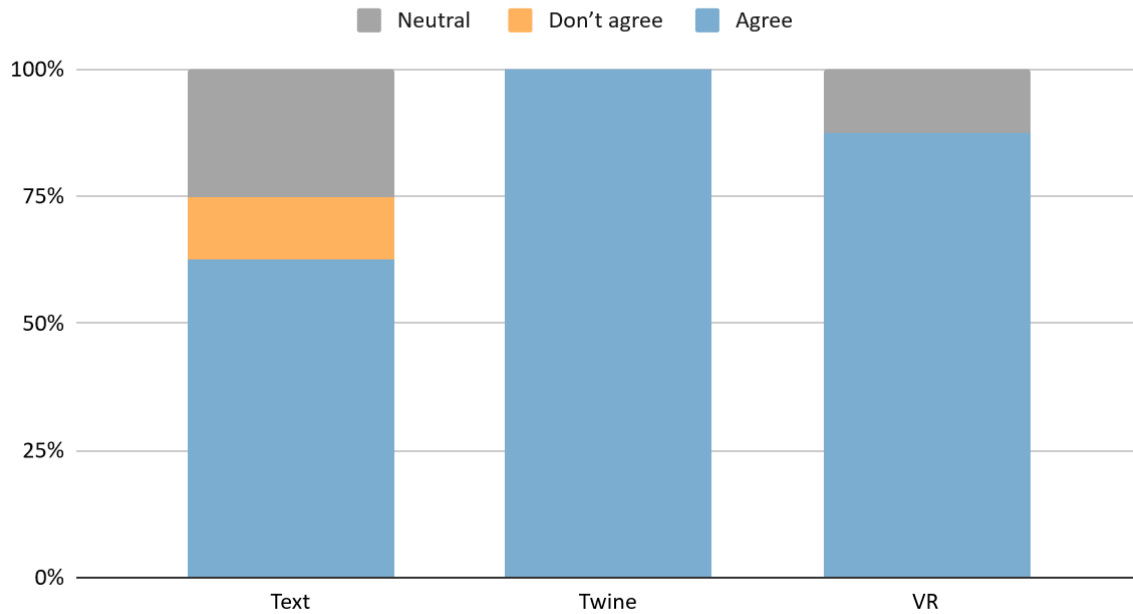
Table 40. Participants' responses to PQ27.

Questions capturing emotions and reactions

The last group of questions of the post-questionnaire were designed to assess the direct impact of the media on the participants, exploring emotions, preferences, and reactions (see Table X below). The participants had not yet experienced all three media so the responses record the impressions of the participants *towards the medium they experienced first*. Since these questions capture emotions and reactions, all Likert responses have been recorded, analysed, presented, and discussed to effectively capture any nuances which otherwise would have been unnoticed. The colours of the tables have changed to also visually capture the medium (i.e. yellow for Text, pink for Twine, and blue for the VR-video).

Questions capturing emotions and reactions

PQ28: The story was easy to follow.
PQ32: I enjoyed the story.
PQ33: I felt bored at some points.
PQ35: I felt an emotional connection with the character.
PQ36: I felt sad that I could not know the individual's name.
PQ37: I felt sorry for Stamatakis because of the way he was treated by Schliemann.
PQ39: The story was interesting.
PQ40: The story was immersive.
PQ41: The story was engaging.

Table 41. Post-questionnaire questions regarding emotions and reactions.

The first question (PQ28, Table 42) was designed to capture the opinion of the participants regarding whether or not the story was easy to follow. This question, combined with PQ30, can shed light on how user-friendly each medium was. It seems that the Text was the least preferred among the respondents which also aligns with the responses on question PQ30, since only 62.5% of the Text users said that the interface was easy to navigate. Also, in question PQ31 above regarding the story, 37.5% of the Text users believed that the story had gaps (n=8). In this question, most of the participants seemed to agree that the story was easy to follow, with the Twine users having the most 'strongly agree' reactions (62.5%, n=8). However, the VR percentage of 'somewhat agree' is quite high as well (75%, n=8).

The story was easy to follow
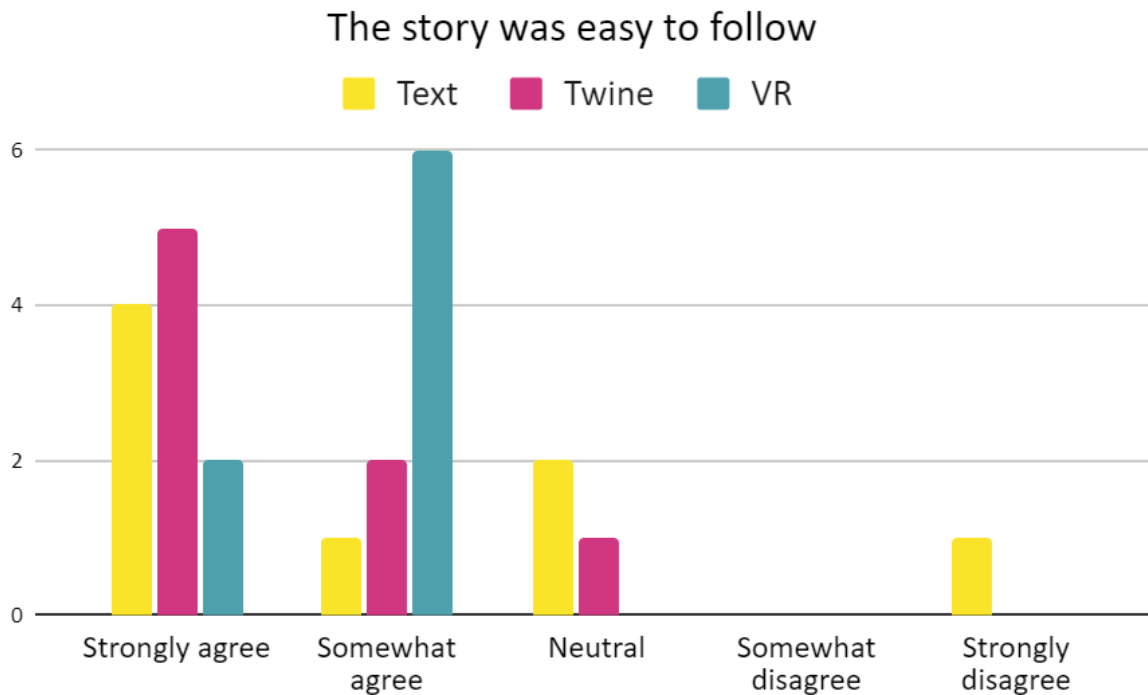
Table 42. Participants' responses to PQ28.

The next question was designed to capture the degree of enjoyment that the users experienced from each medium (PQ32, Table 43). Most of the participants seemed to strongly agree that they enjoyed their experience, but once more Twine users had the highest percentage (87.5%, n=8). However, both the other groups of participants (VR and Text) also scored highly in this question (62.5%, n=8), demonstrating that all media were mostly perceived as enjoyable by the participants.

I enjoyed the story
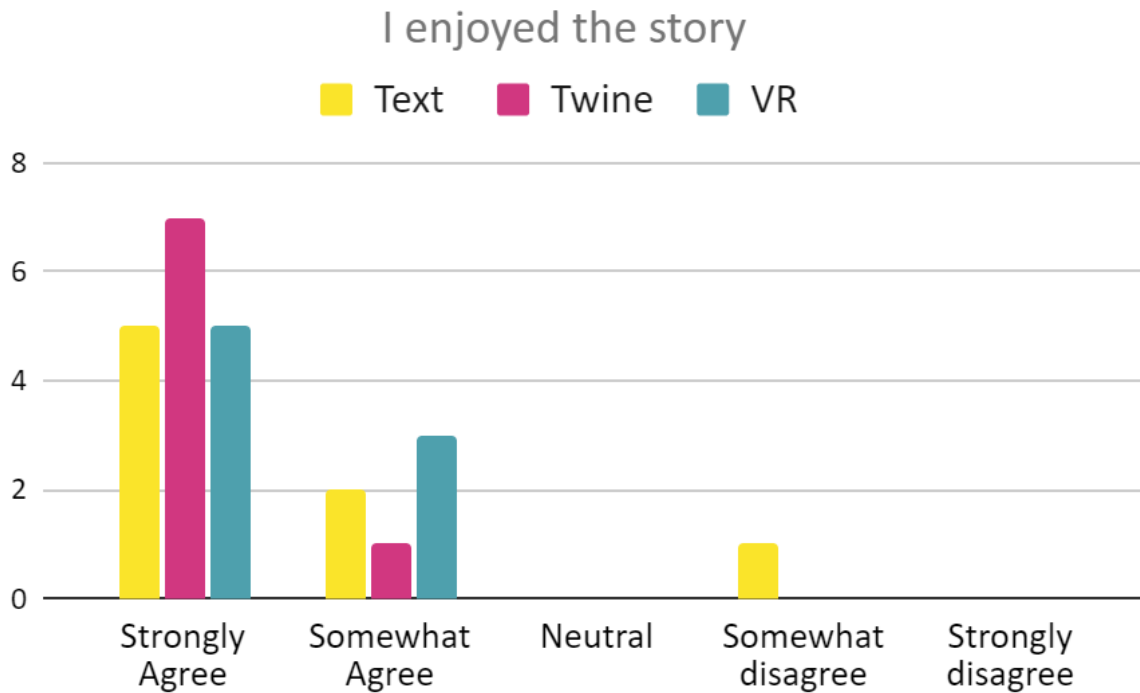
Table 43. Participants' responses to PQ32.

Then the participants were asked a reverse version of the previous question (PQ33, Table 44), where they had to indicate whether or not they felt bored while experiencing the medium. In this question, it is noteworthy that the participants who responded 'strongly disagree' scored the same (37.5%, n=8) regardless of the medium. However, the participants who disagreed the most in total, meaning that they did not feel bored at any point of the story, were the VR participants (combined score of disagreement: 100%, n=8). This is again striking given that many participants during the interviews mentioned that they found VR not so immersive and engaging as it was quite lengthy, and they were expecting interaction with the environment which did not happen.

I felt bored at some points

Legend: Text (yellow), Twine (pink), VR (teal)

Response	Text	Twine	VR
Strongly Agree	0	0	0
Somewhat Agree	2	1	0
Neutral	0	3	0
Somewhat disagree	3	1	5
Strongly disagree	3	3	3
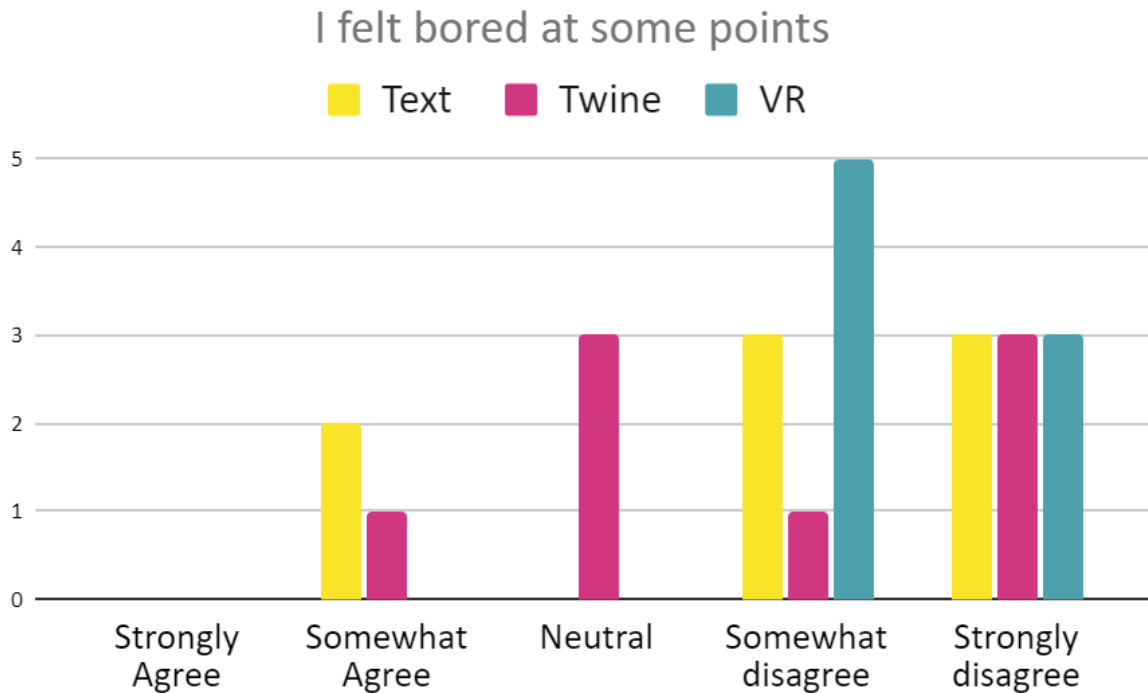
Table 44. Participants' responses to PQ33.

The next question (PQ35, Table 45) asked the participants whether or not they felt an emotional connection with the main character. This is one of the most important questions and participants were asked the same question during the interviews, after they had experienced the other two media as well. Therefore, this question aims to capture the degree to which the participants felt an emotional connection with MYC_1V after experiencing the first medium, so then the results could be compared with the qualitative responses on the same question. The results are further discussed in the next chapter.

I felt an emotional connection with the main character
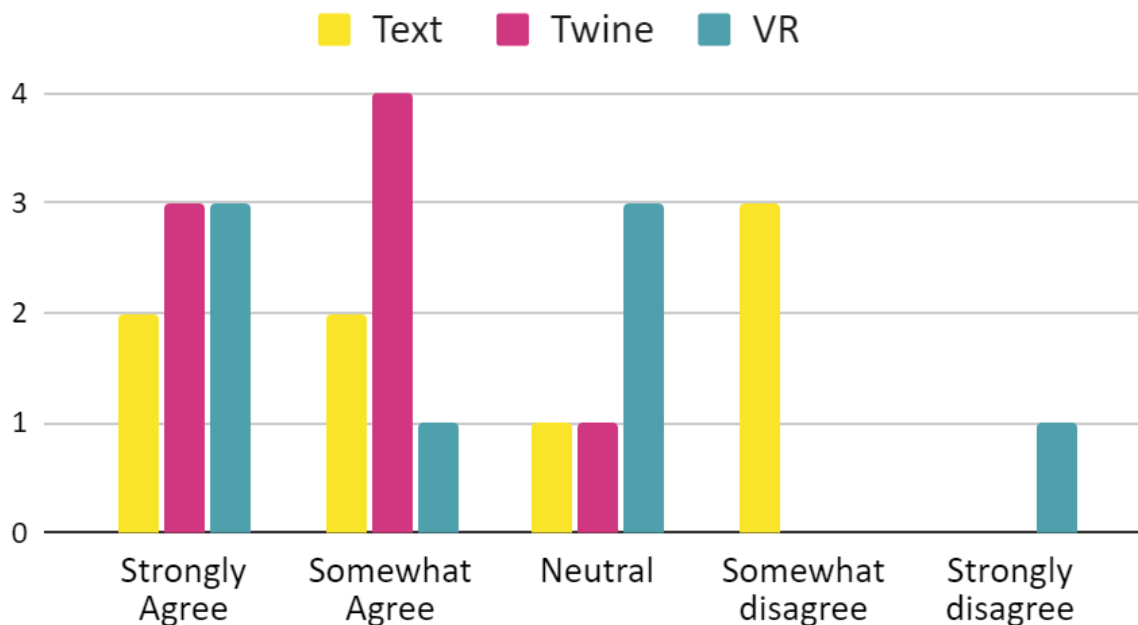
Table 45. Participants' responses to PQ35.

Regarding the emotional connection with MYC_1V, Twine users felt more connected to them especially compared to the Text users since 37.5% (n=8) of them did not feel any emotional connection. The VR seems to have created mixed feelings regarding this matter, since some of the VR users where either neutral (37.5%, n=8), or generally agreed that they indeed felt an emotional connection with the character (combined results: 50%, n=8), or strongly disagreed (12.5%, n=8). However, it is noteworthy that half of them agreed that they felt an emotional connection with the character. The Twine users produced a combined result of 'strongly agree' and 'somewhat agree' of 87.5% (n=8), making Twine the most effective medium for emotional connection with the main character.

The next question (PQ36, Table 46) is designed to capture the emotions around not being able to know MYC_1V's real name. This is also a question that - combined with the qualitative results - can help evaluate not only whether or not the participants understood the message that archaeologists do not always have the answers about the past, but also to observe their feelings about it. It is noteworthy that the VR users mostly felt sad or disappointed that they could not know

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the individual's name (combined results: 87.5% (n=8)). It is also remarkable that one participant (who had begun with Twine as their first medium), when experiencing the VR mentioned that they could see wounds on the bones of MYC_1V and that made them feel sad and upset. Of course, it would have not been possible for them to notice any wounds on the skeleton, since it was a plastic standard laboratory skeleton. However, this is strong supportive evidence for the results of this question indicating that the VR video was a particularly emotive medium regarding feelings towards not being able to know the individual's name.

I felt sad that I could not know the individual's name
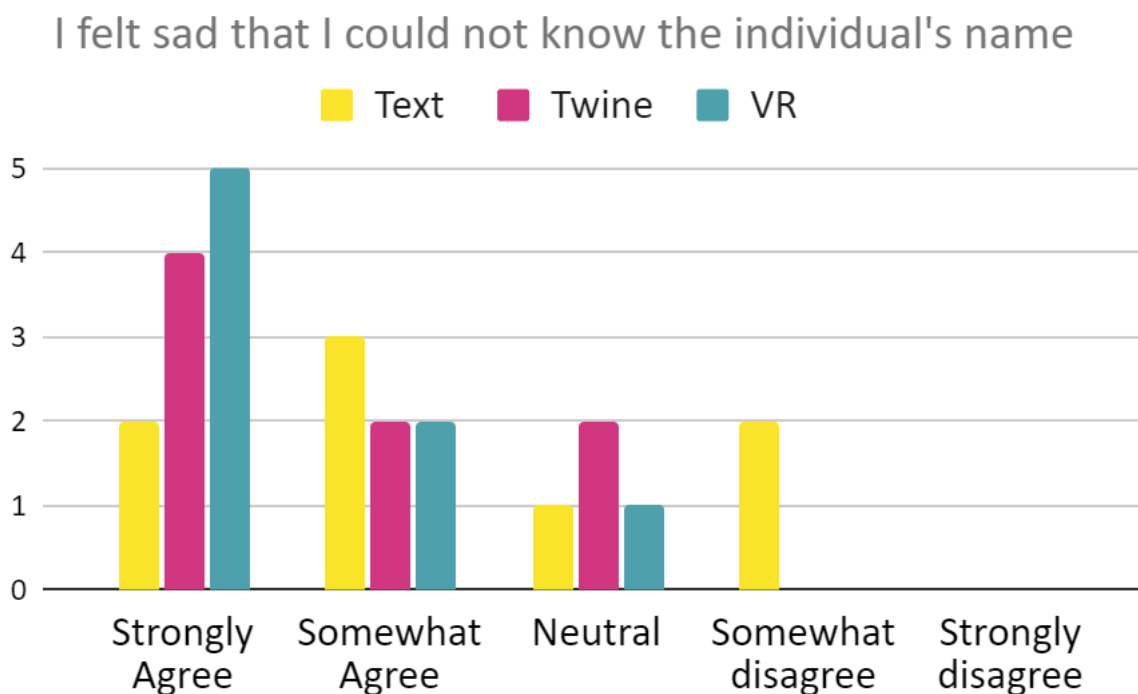
Table 46. Participants' responses to PQ36.

Then the participants were asked (PQ37, Table 47) whether or not they felt sorry about the mistreatment of Stamatakis by Schliemann. This question was designed to clarify whether or not the participants understood Schliemann's behaviour as abusive towards Stamatakis, as well as the feelings towards this mistreatment. Eight out of the 24 participants (33.4%, n=24) did not feel sorry about Stamatakis' mistreatment by Schliemann. The results support the findings of the thematic analysis which follows this section, where it became quite apparent that many of the participants did not focus on the mistreatment of Stamatakis by Schliemann, but they focused

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more on the potential looting or endangerment of the artefacts. It is also interesting that the Twine users had the most 'strongly agree' responses, which comes as a surprise since Stamatakis' character is quite vocal about it, especially in the VR-video where he has an actual voice and describes his perception of Schliemann (these details are also mentioned in both the text and the Twine game as footnotes or clickable links respectively).
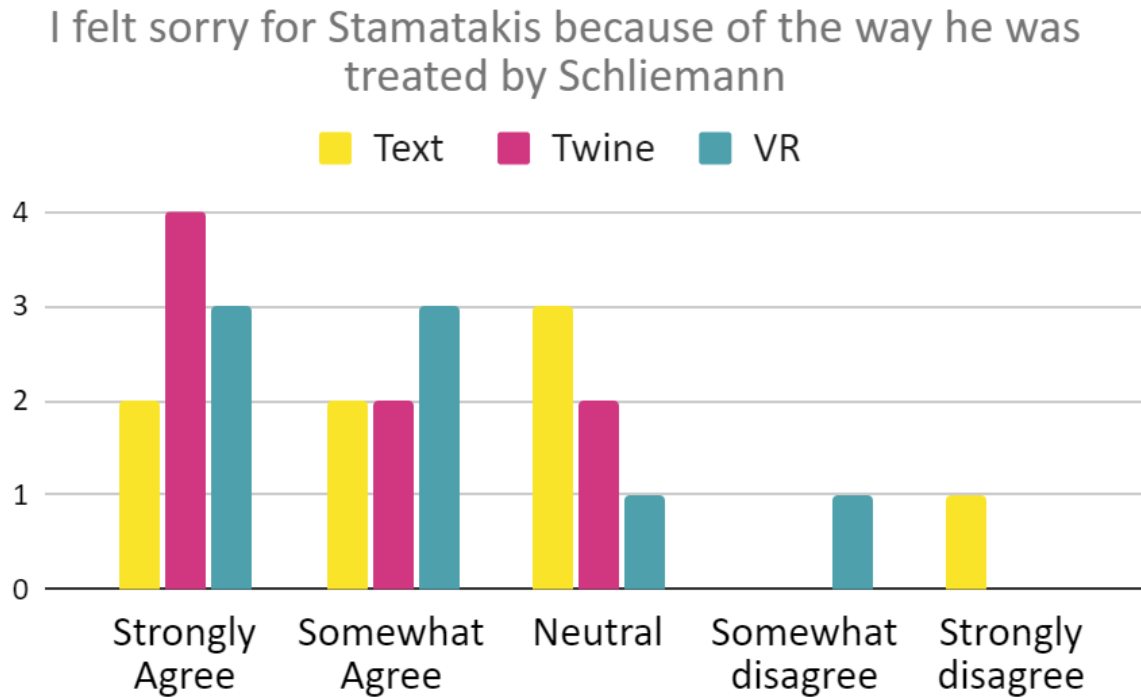
Table 47. Participants' responses to PQ37.

Then the participants were asked (PQ39, Table 48) whether or not they found the story interesting, and as previously, this question was designed to cross-check across similar questions the degree of engagement and enjoyment that the participants experienced. The results indicate that the Twine users seem to have found the story slightly more interesting than the users of the other two media. However, the differences are small (Twine 75%, Text 62.5%, VR 50%, n=8), once more supporting the idea that all three media were interesting and enjoyable.

The story was interesting

Legend: ▢ Text ▢ Twine ▢ VR
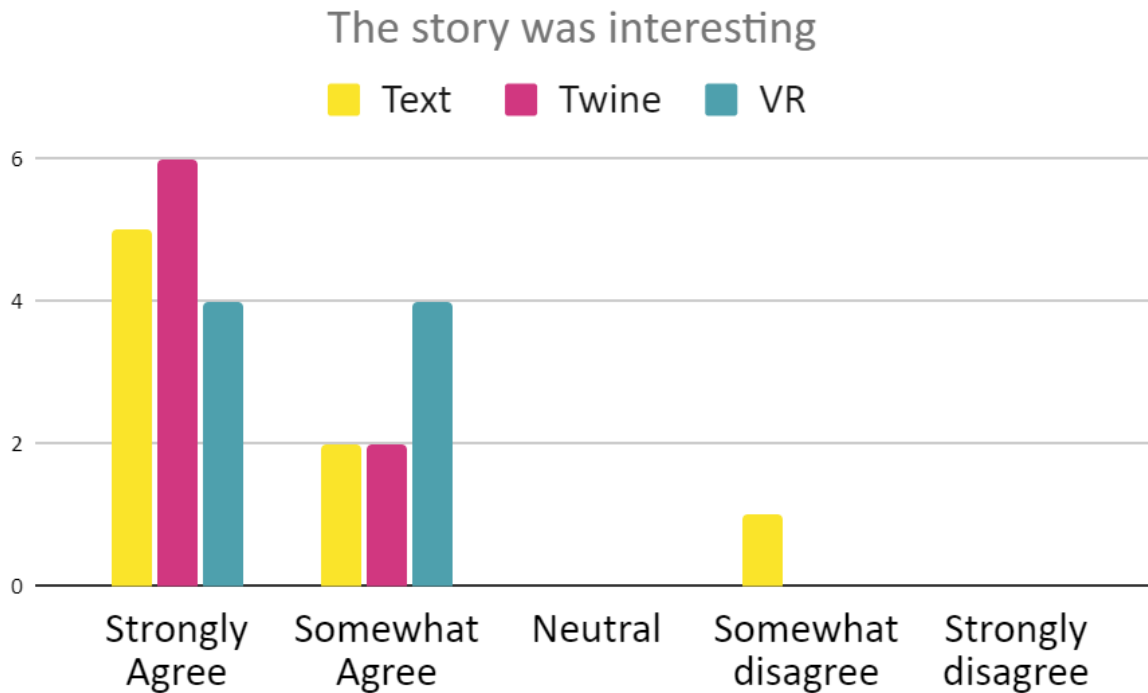
Table 48. Participants' responses to PQ 39.

Similarly, the next question (PQ40, Table 49) asked the participants whether they found the story immersive. This was also asked during the interviews where the participants, after experiencing all three media, were asked to pick the most immersive and the most engaging one. Therefore, this question and the next one (PQ41) are important when combined with the qualitative results from the thematic analysis, and both questions are explored further below in the next section.

The story was immersive
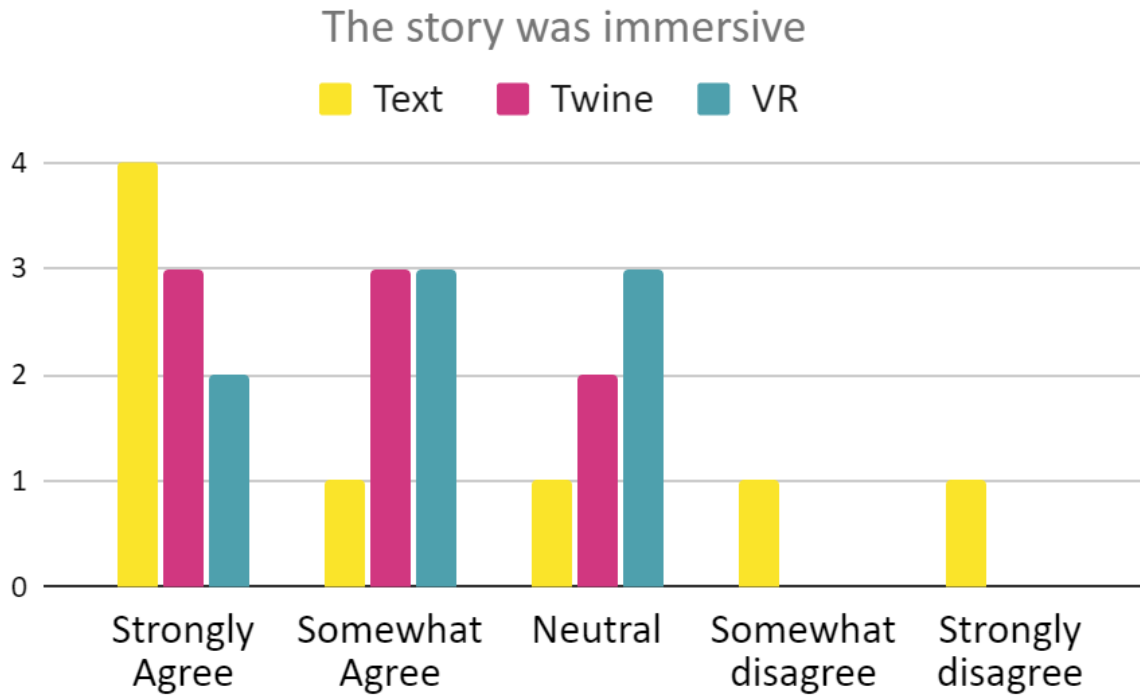
Table 49. Participants' responses to PQ40.

Notably, there were participants who found the Text not to be immersive at all (25%, n=8). Yet, in the interviews, it came up a lot that the Text was quite immersive. However, it is important to note once more that the interview results include all 24 participants and not only the eight participants who began with Text. Moreover, 50% of the Text users found it very immersive, which supports the observations and qualitative results of the interviews that the Text was indeed quite immersive. On the same note, 62.5% (n=8) of the VR users found it to be immersive, a result which was further supported by the qualitative data.

Similarly, the participants then (PQ41, Table 50) were asked whether or not they found the medium to be engaging, which as mentioned above, is something that all 24 participants were asked in the interviews. Here interestingly the Text seems to score lower than the other media on the engagement levels which is something that might correlate with the criticism vocalised during the interviews that long footnotes disrupted the flow of the story. The Twine again seems to be a good medium for engagement since it provides a combined result of 87.5% (n=8) for agreement to the question.

The story was engaging
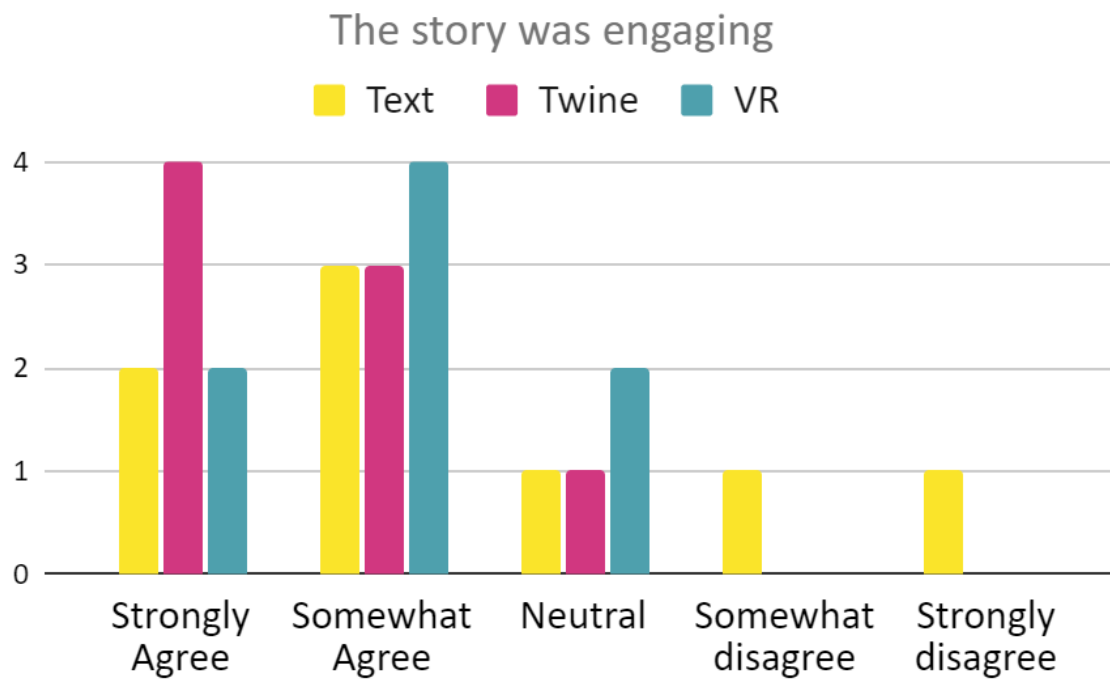
Table 50. Participants' responses to PQ41.

The next section is the presentation of the qualitative data where the Reflective Thematic Analysis (RTA) report is provided along with the description of the themes.

Qualitative Data

In this section, an in-depth exploration of the qualitative research findings is provided. The utilisation of qualitative methodologies has enabled this research to further investigate the intricate layers of meaning and significance that underlie the research question. This presentation seeks to offer a rigorous demonstration of the emergent themes, patterns, and narratives using RTA as described in Chapter 5. A table of respondents' profiles and their code names along with relevant characteristics has been provided at the beginning of this chapter (Table 3) and can be used here as well to assist the reader in better navigating the quotes from the interviews. Here is a visualisation of the main themes and the subthemes:

1	Rehumanisation of the remains of MYC1V and consideration of ethics regarding the handling (study, storage, presentation) of human remains
2	Authenticity matters and adds value to the story
3	Igniting curiosity about the story
4	Archaeology has changed methods and practices which can lead to better results even regarding old excavations
5	Colonialism
6	Perspectives on Twine indicating its suitability and effectiveness
a	A combination of media would have been optimal for the aims of the research
b	The order of experiencing the media matters
c	First encounter bias

Table 51. The themes which were produced after the RTA analysis.

Description of the themes

1. Rehumanisation of the remains of MYC$_1$V and consideration of ethics

Includes the codes: *feelings for the dead*; '*feeling sad for not being able to know more about the dead*'; '*feeling sad for the mistreatment of the skeleton*'; '*being respectful towards the dead*'; '*archaeologists do not always have the answers*'; and '*the story made me think of things I haven't thought before*'.

The concept of the rehumanisation of the skeletal remains of MYC$_1$V was frequently raised by the participants. Of course, it is an integral part of the story, since the storyline was created based on the idea that the main character was upset that people were mishandling their bones and causing them to lose their memory (see more in Chapter 4). Therefore, it is an integral part of the research,

but it is not the main focus. The main focus is to communicate the message that archaeologists do not always have the answers about the past, which has been communicated in the story by the uncertainty behind the individual's name, way of dying, wounds on the remains etc. It seems that this was communicated effectively, and people felt an emotional connection with the dead person, while at the same time, the participants raised the ethics of handling and studying human remains.

Max, when asked if they felt an emotional connection with MYC_1V, said:

Yes, of course as if it was a family member.

(Translation from Greek)

After they experienced the VR-video version of the story, Max mentioned:

I looked at his feet and they looked like they were wounded like people have been mistreating his remains. And I didn't like that.

(Translation from Greek)

This is a very curious remark since the skeleton used was a plastic standard exhibition skeleton and it was very apparent that it was not actual human remains, yet Max thought they saw signs of abuse on the bones of the feet. This is a strong indication of emotional connection.

Charlie mentioned that:

Sure, you get immersed in the story, sympathise with him, and think about his dilemmas and his questions, and the notion of the unknown (they had to face), his whole query. You are immersed.

(Translation from Greek)

Maxwell said:

But I actually sympathised with the main character and understood that it wasn't just an academic article, it felt like it was the real life of a person.

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And when they were asked if they felt an emotional connection with the character, they said:

I think yes. At first not so much as I didn't have all the information, I was trying to understand the story, but then by the end I was like 'Oh, this was an actual person like me'.

Noor described the whole theme in a very vivid way, capturing the nuance of it:

I liked that you've used the perspective of the dead individual telling the story like someone is screaming from the grave 'Stop messing with my bones!'. I get that. And there was a question in the post-questionnaire about how I felt. That was very important to me because I did – I did feel that, I did connect.

Trix also noted:

Yeah, I think so. Well, I did the VR first. So at the beginning of the VR, he's talking about, like the lack of respect and why he keeps being dug up. And all that kind of reinterpreting. He keeps forgetting and stuff like that. It's quite emotive, I thought, which is important because I think it's important not to lose the person behind the archaeology. I thought it was quite effective anyway.

Glenn also mentioned:

And, you know, I really got the feeling we aren't being respectful. Even though you know, we're doing all we can. I kind of felt like we've done all these, like investigations into it, but we're still finding nothing, so I wonder is it our right then to continue? And damage it? Or just, you know, play some back? So, respect the wishes of the dead a little bit.

Billie also made an interesting point on the handling of MYC_1V's remains:

And that they took his arm and like, put that on display because it had an armband. Yeah, I'm just thinking about all the, like, when you like, in what instance, there's just a hand, somebody's

hand in a museum and nobody, like, there's like a whole thing about it now. And it's, you know, everyone's drawn to see that, but it's like, how did that end up there? Like, where's the body?

And Glenn elaborated on Billie's comment:

That is really creepy! I just feel like it kind of showed us like how, what we're more obsessed by and like, you know, we'll just go out of our way, just so we get our own agenda through.

Trix mentioned that they liked the hints about ethics:

I liked the ethics stuff. I thought that was really good. Because you don't hear that often. Like when, particularly when you're a member of the public, and you go to museums, and you just like I started to notice over the last few years, when I go to museums, and I see like, remains laid out, I always think about more about the ethics of it. Now, what would that person have felt like. I really liked the honesty.

And lastly, Oakley mentioned that:

I liked that aspect that it had that like, every time people have kind of bothered him. It's almost like bothering his rest in there waking him up. And he's like this again, like, you know, and it kind of makes him forget. So, it's like, the more we kind of look into him and the more he gets kind of, I guess, disrespected, like his arm taken or whatever, like, he kind of loses more of himself. So, I thought that was quite interesting. I like that.

2. Authenticity matters and adds value to the story

This theme includes the codes: '*interesting or curious*'; '*the story made me think of things I haven't thought of before*'; and '*They liked that the story was based on archaeological research*'.

The theme that authenticity matters is important as it is a concept that was not mentioned in the story or raised during the interviews or the questionnaires. It was, however, an integral part of the creation of the stories, since as mentioned in Chapter 4, the main story was created with the

intention of being explicit regarding which parts are fictional and which are based on either archaeological or osteological data. Therefore, it is not surprising that this theme came up. However, the participants showed genuine interest in knowing what exactly was fictional and what was based on archaeological evidence. For example, Noe asked:

The missing bits of the skeleton, are they accurate?

This is a matter that two more participants, Jamie and Noor, were wondering about. Bailey also asked to confirm:

You don't really encounter that in every day reading, maybe a little bit of footnote but nothing like that. I wasn't sure at the beginning if it was … - I can't actually call it a fictional narrative, yeah it was fictional, wasn't it?

Alex (not an archaeologist) mentioned that the footnotes with the archaeological evidence in the textual story, [g]*ive scientific substance to the text. Otherwise, it could have been just a fairytale.*

(Translation from Greek)

Devin also mentioned that:

If we see it from a personal point of view it's a story, we can't really tell if it's 100% accurate. From the analysis, we can learn what he looked like or what he did and maybe assume how he died and when, and the rest of the story is a bit of imagination and when you read these footnotes, for me it's very important because I can know which parts are based on evidence that were discovered or physical evidence on the skeleton. And then you can interpret these and tell them in everyday language. So, like when you read the story in the first section, I could observe all these fails and then I could understand easily that it was an interpretation of what I read.

And when I asked whether they mean that they actually wanted to know which parts are fiction and which are based on archaeological evidence, Devin replied:

Yes, yes. For me, it's important to know that there is actual evidence to support the story that obviously one can manipulate a bit to make them more appealing or easier to describe.

And when I asked Maxwell if they agreed with Devin, they said:

Well, it's a good thing to have actual substantial evidence and facts to back up the story, although I did enjoy it without worrying about it. It was like 'OK, I'm not experiencing this just for fun, but I'm also learning something from it', which is always better. So, the fact that actually there was a lot of backup research to build the story was good, but it still made it a bit of a challenge to read. But I actually empathised with the main character and understood that it wasn't just an academic article, it felt like it was the real life of a person.

And Bailey added:

To enjoy a story, I don't think it's a requirement (to have archaeological evidence)*, as many good stories, like Star Wars don't have a research background, but having evidence to support it makes it cooler. Cause it's real then. It happened. I mean, if someone showed me a piece of the Death Star, I'd say 'What? That's cool!'. So, reading a story that I'm enjoying and seeing that it's based on actual evidence, it instantly makes the story cooler. I do enjoy reading stories that have truth in it. For example, Outlanders is based on quite a lot of pieces of evidence. Even if it still is a story, it makes it cooler, it's more fun.*

3. Igniting curiosity to learn more

The previous theme links well with the theme of igniting curiosity to learn more about the story. Because it was apparent that the story was based on archaeological evidence, participants wanted to know more about the Aegean Bronze Age, GCA, and the relationship between Stamatakis and Schliemann, rather than what happens in the narrative. This means that they were intrigued by the archaeological evidence and the historical background of the story and wanted to find out more. However, this is still a separate theme because it can be discussed and supported by extracts on its own, and authenticity is not necessarily a prerequisite of curiosity.

The theme includes the codes: '*Interesting or curious*'; '*curiosity and exploration*'; '*the story made me think of things I haven't before*'; and '*Wanted to see an illustration or video*'.

For example, Tristan from the Greek group wanted to clarify how people were actually treated after death in the Bronze Age because they had watched the film 'Troia' and they were under the impression that:

> [...] *they were actually burning them in a funerary pyre.*

(Translation from Greek)

Therefore, I spent some time explaining that it is an anachronistic description of the treatment of the dead as found in the Homeric epics, and in the Iliad in particular, which they found fascinating and wanted to know more about.

Carter said:

> *I think it was very interesting and I think I'm going to become obsessed with these two!*

And later on:

As I'm working on a project that is quite related with archaeology, I'm very fascinated by the personalities of the people and how that had impacted the excavation. I find the archaeologists even more interesting than what they're finding. You know, driven by ego and the sense of entitlement. There is a lot happening in the background which I find interesting and enjoyable, and I'd go and read more about it. I really want to find out what happened between those two (meaning Stamatakis and Schliemann)*. So, I think that came across really well.*

Ben felt that they wanted to know more about MYC_1V:

I wish we knew more about him!

4. Archaeology has changed in methods and practices which can lead to better results even regarding old excavations/Endangerment of artefacts

This theme includes the codes: '*Annoyed*'; '*surprised*'; '*sympathy for Stamatakis*'; '*upset or angry*'; '*archaeology has changed*'; '*endangerment of artefacts*'; and '*looting*'.

This was another important theme that came up several times during the interviews across all the groups but in different ways. It also ties in with an underlying concept that new technological achievements or discoveries such as the re-discovery of the bones, or the discovery of Stamatakis' diary, can shed light on old excavations and change the interpretations of the data. However, it came up during the interviews without prompts and it was not in the interview questions, thus it is a theme purely brought up by the participants. It is also worth mentioning that the phrases 'looting' and 'endangerment of artefacts' were never mentioned in the media or during the interviews.

The concepts of looting and the endangerment of artefacts are both parts of the next theme, that of colonisation. However, these concepts have been included within this theme of 'archaeology has changed' because there is a clear connection and flow, which will be discussed in-depth in the next chapter. Part of the change in archaeology is that archaeological values have changed

and there are now laws against looting or endangerment of artefacts in most ethical codes associated with professional bodies in archaeology.

It is particularly interesting to observe that the participants felt worried or upset about Schliemann's practices as they felt he put the artefacts and the whole excavation in danger and compromised the research. Most of the participants were not affected by the mistreatment of Stamatakis, but rather by the endangerment of the artefacts during the excavation, which is a find that aligns with the quantitative data as presented above. This is the reason this theme was considered to be important, and it needed to be discussed as a separate entity.

Tristan, for example, said:

> *The fact that somebody could actually harm the findings, that's really annoying.*
> *Then he would destroy history and we would learn something from it, but if he destroyed it, it would go in the garbage. It's annoying.*
>
> (Translation from Greek)

Or Drew asked me to confirm:

> *And wasn't the other one* (meaning Schliemann) *careless?*
>
> (Translation from Greek)

And Klein added:

> *Yes, I think this is a very particular story where eventually everything could have been lost and then it gets me thinking about if things have been done differently and with more right if we actually would know more about the person* (meaning MYC_1V).

This was also mentioned by Charlie:

> *I think I was also disturbed by this relationship* (Stamatakis and Schliemann*). I believe things could be different. He* (Schliemann) *should have had more respect in the whole matter and there should be better cooperation between them. If there was better cooperation, the result would have been better.*
>
> (Translation from Greek)

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Some participants were also dazzled by Sophia's - Schliemann's wife who accompanied him in the excavation - photo wearing all the gold jewellery from the graves of GCA. Cameron commented:

One of them was looking to cut corners and do things as quickly as possible, and the other was trying to do things right and stick to the rules, and then it was the other's wife, who was aggravating the situation apparently and I'm not sure if that was implied, but he and his wife were some kinds of grave robbers, as there was this photograph of how wife wearing gold jewellery.

Glenn, with genuine surprise, said:

And the photo of his wife with all the jewellery. I was like, seriously? No, I was like, oh, my God! I think that was infuriating! Didn't she really just do that?!

Alex also talked about looting a couple of times:

Alex: *I despise him* (Schliemann).

Despoina: *Do you mean you despised him before coming here today?*

Alex: *Yes, yes, yes.*

Despoina: *So, you knew some stuff about him.*

Alex: Yes. *He was a very controversial figure. Essentially, they looted, they took…*

Despoina: *Did they steal?*

Alex: *Yes, they stole stuff.*

Later, when they were asked what they thought about Stamatakis, they mentioned that:

I appreciate him more. At least he didn't loot.

(Translation from Greek)

Participants pointed out that archaeology has changed since that time. Drew, for example, mentioned that:

What seemed more interesting to me was the whole concept that with new technologies archaeologists are now learning more things. It is amazing what archaeologists can understand with the technology that is available now, what was going on back then. This impresses me.

(Translation from Greek)

Tristan found it very interesting that with bioarchaeology it is possible to understand *what the cause of death* [...] *of an individual* could have been.

(Translation from Greek)

Billie also touched upon this notion:

And I think what kind of the context I got was that as more science goes on, we learn more. So, each archaeologist in each age could add to that because they have more science to apply.

[...]

It's kind of interesting. Because, like, if you think about it was back in the 1800s. Like, obviously, archaeology wasn't what it is now. Like, maybe people weren't focusing so much on preserving everything. But it'd be interesting to have some comparative, like good examples of archaeologists from that time doing the right thing. Instead of just being like, this is what archaeology was back then. And they just didn't know. They just didn't care about humans or whatever it was. I mean, it was good example that the other guy (Stamatakis) *actually did the right thing.*

Noor also commented on the difference between archaeology back in the 19th century and today:

Yes. Time and place, of course, are important because for example in the initial excavation, they didn't have all the answers but as we go further down the line I know from my experience that we look for things to reexamine.

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5. Colonialism

This theme includes the codes: '*colonialism*'; '*sympathised with Stamataki*s'; '*upset or angry*'; '*looting*'; '*endangerment of artefacts*'; and '*understood Stamatakis' contribution in archaeology*'. This theme will be discussed in the next chapter in detail since it is an important concept that is interesting to explore alongside the discourse of the groups and the researcher's biases (see Appendix II).

One initial observation was that Jamie, a participant from a country that had experienced colonialism in the past and was from a heritage background/archaeologist, constantly focused on the looting aspect of the story, mentioned colonialism and became emotional:

(Talking about Schliemann)
> *So, technically he was just an asshole. A great robbing asshole!*

And later:
> *I was familiar with this story because I've read about it like archaeology, one on one back then. And it's really, it's quite a familiar story of, you know, people who from different countries coming in and doing archaeology and the, basically the local, either been dismissed or having a lower status. So, it's one of those annoying (things). And I just felt the same way. I'm not - I'm not surprised, though, because it's not a new story to me. But it's yes, I guess. It's just how archaeology used to be practised, you know, colonial mindset in archaeology.*

This is an important part of the discussion since during the interview the words or concepts of 'colonialism' or 'cryptocolonialism' (which is not a widely known term) were not mentioned at all. Hence, Jamie identified the 'colonial mindset in archaeology' in the story without any external influence. This supports the argument in this thesis that Schliemann represents the idea of western colonial power. It is also noteworthy that the rest of the participants in Jamie's group were from countries that had not suffered from western colonialism and instead had been colonial powers themselves. Jamie was the only person who mentioned colonialism, and the only participant who was a victim of it in that group. This is additional proof why decolonising the heritage and history of the excavations in Mycenae is important for the people who understand that their heritage was victimised and affected by colonialism.

After Jamie brought the theme up, Glenn used similar vocabulary, but to convey a different point about lack of respect towards the dead:

And I felt that like, you know about that he was like mentioning about, like, the colonial attitude towards like, yeah, you know, past burials. And, you know, I really got the feeling we aren't being respectful. [...] *So respect the wishes of the dead a little bit.*

It is clear that, instead of focusing on the colonial aspect of the story, Glenn focused more on the wider treatment of the dead today and the handling of human remains. While these could be interpreted as colonial issues, in this case it does not seem plausible. That is because the rest of their comment focuses on the constant reexamination of these particular remains which was done by Greek people; hence the focus was not on the colonial attitude, but rather on the general theme of handling human remains, which has been discussed above. Other participants also touched upon the matter of colonialism. Devin for example implied that Schliemann most probably was trying to loot instead of excavating:

And that could mean that he had his own goals. He had many people that were digging. So, he wanted the excavation to be conducted fast, so maybe to sell something. He was ignorant about the actual history, but he wanted to push his personal goals. But the other (Stamatakis) *was trying to educate people.*

Trix also mentioned something along the same lines:

But that's a really common story, isn't it? Like if you think of Tutankhamun, you think of how you think of the George Herbert, 5th Earl of Carnarvon, but you don't think of all the other people involved in it.

Sage also commented:

The fact that Schliemann thought that the whole project was his and he was behaving like 'I'm the leader, and I will do what I want, and I don't take the local government into consideration or anyone else'. This bothered me. He was in some foreign country, not in his own country. If he was operating in his own country, he could be free to do whatever he wanted.

(Translation from Greek)

A particularly striking comment made by Noor touched upon Sage's point above. Noor used the word 'patria', which means motherland in Latin, but it also has a similar pronunciation in Greek: *patrida - πατρίδα*. This is a loaded word which normally is not used in its Latin form and is especially strong when used in a discussion about colonialism. Noor used it in the sense that since it was Stamatakis' motherland, he could do whatever he wanted with the antiquities of his culture, whereas Schliemann was an outsider, a coloniser, who had no right to dig there, which essentially is the same comment as the one above made by Sage (please, note that these interviews were separate). The only common factor that these two participants shared is that they are both victims of colonialism. In Noor's words:

Yes, but even in that case (meaning even if Stamatakis did not follow a proper way of excavation) *he could do that. As it was his Patria. Everything he was digging was Greek. He was Greek. Schliemann was not.*

Noor also continued to explain:

You'll find no people locally here in Malta and in Greece [inaudible] *that you just described rather than those from the UK. The colonisers… it takes learning to form aesthetical and to understand them truly, but it's only countries who had experienced colonisation that can actually understand* [sic].

[...]

And Maltese don't have to be archaeologists or to have a heritage background. We are victims of previous colonisers and in many ways we still are. And we still look down upon ourselves. I mean there is still a stigma for Maltese who speak Maltese and those who speak English. There is a stigma still in this country that if a doctor is a foreigner, he must be brilliant and if he's Maltese he must be bloody stupid!

So, when you hear of someone else who comes into your country and messes up with your heritage or digs up in a place and they are not local, you feel very strongly and passionate about it. You think: 'OK, I'll take your money, but I can take it from here'. So, when you find out that some foreigner had dug up and took things and messed around, you're much angrier than if a Maltese person had done it.

6. Observations on Twine indicating its suitability and effectiveness

Codes included: '*bias of the first encounter*'; '*it was fun/I enjoyed it*'; '*engaging*'; '*combination of media*'; '*curiosity and exploration*'; '*order of experiences*'; '*suggest a completely different medium*'; '*wanting to see an illustration or a video*'; '*main point of experiment*'; '*negative comment on the medium*'; '*positive comment on the medium*'; '*skipping*'; and '*bias of the first encounter*'.

This is a very broad theme, which includes sub themes as presented below. However, all three sub themes are related to each other, and these will be discussed as a whole in the next chapter. This broad theme contributes towards answering the main research question: which medium, that can be created by an archaeologist, is the most suitable for communicating archaeological research to the wider public. Below, a few extracts are provided as examples of this theme, but more will be presented during the analysis and discussion in the next chapter.

Cameron mentioned that:

The Twine was actually very good, because especially at the beginning it helped me ease myself into the lab room and I enjoyed the fact that I could actually go through the diaries which were supposed to be left on the desk both in the Twine story and the VR. But with the Twine I actually felt I was supposed to do something with them, whereas in the VR I felt more like everything was narrated to me.
[...] particularly with the diaries, where for example there were nine clues. Now, for me I enjoyed it 100% to have to go through each one of the clues [...]. *I'm checking this right now again* (meaning the Twine) *and I'd also like to add that it was really nice that you had to engage in a conversation with the character, instead of just being talked through the information.*

Therefore, here the matter of interactivity is prominent, as it was in the comments of other participants. People seemed to enjoy being active while interacting with an interface in order to explore the story, rather than passively engaging with it through either reading or listening.

Sascha also mentioned that:

In the Twine it was that I read everything and understood the story.

Bailey also preferred the Twine again for interactivity reasons:

For sure the game. That was my favourite. The fact that I clicked and chose what would happen was very nice, and the story made me laugh, you know. I enjoyed it. I preferred it compared to the text or the VR.

Jamie also commented:

That (the Twine) *was my favourite because then I was able to go backwards and forwards quite easily and to click. And it also reminded me of something we grew up with, which is the sort of books where you could change the story. Say, what do you want to do? Do you want to do this? Go to page five.*

Glenn agreed with Jamie:

I agree. Like my dad has same vintage games now. So, they are quite trendy. It was fun. I felt like I was doing my dad's old game where you like have to put in directions of options, for example open gate, close gate. I quite enjoyed it for that reason as well. I also liked how we could see some of the artefacts as well. Like I could finally see what you mean with all these swords and jewelry. I was like, Aha! so that's what we're talking about!

Oakley also liked the 'discovering' and 'exploring' aspect of the Twine:

Yeah. I liked that one (the Twine). *I thought it was quite cool. I like you can like follow the little clues. I think that's my favourite part.*

They later also added:

I think the game was my favourite one. I thought that was quite nice. Because it's nice. You can click and then go back. I guess like you said, I feel like I liked the interactivity.

Participants also found the Twine to be immersive. Sascha, for example, said:

I found Twine very interesting. I think of all the media the Twine was the most immersive to me.

People also found it easier to read through the same amount of information in the Twine rather than in the text. As Cameron explains:

I guess you're less inclined to read through the footnotes of the text, whereas in the Twine you just click, and the information text unfolds.

[...]

I believe that with the Twine it just feels more natural to just click and read the information. So, you're less likely to miss it. Because with the text, after I got confused and read the whole first page as one, then I just ignored the footnotes completely and read only the story.

Jamie also made the same point, along with the fact that with the Twine the user is controlling the pace:

Those are the most control in that because you could dwell on a particular detail and your own pace in a story, a told story. It's your trainer, and you're in control of the speed. Whereas this one, we're in control with the speed just like when you're reading, but you don't have to deal with this body of text because you jump back and forwards.

Trix also enjoyed the interactivity of Twine:

I liked about the game as well, it's that you have a hand in it because you get to give your interpretation at the end, which I really liked. Because it's there's a lot left unsaid in the VR and in the transcripts, whereas in the game, it's like you can try and figure it out yourself. And I quite liked that, like there being an answer.

Sascha liked that the user could actually pick a different ending for the story:

I took the most information out of Twine. The text was the least enjoyable for me. But the Twine was very, very interesting, especially since I could pick a different ending of the story.

Subtheme 1: A combination of media would have been optimal for the aims of the research

This subtheme was very prominent and came up numerous times. This will be discussed in the next chapter in detail. It is worth noting that this sub theme arose in discussions after I asked participants which medium they preferred or found immersive or engaging. Charlie, for example, mentioned that:

I liked it a lot. Very nice way of teaching and what you see or what you read becomes easily absorbed. You have many ways to get exposed to the story, and all the ways combined would be particularly useful for teaching.

(Translation from Greek)

Kai also mentioned:

I would still look into a different way to do the footnotes, especially if you're presenting archaeology and particularly if you're doing so to someone that you want to ask for funding, first you need to show them the subject, so first it would be the story of Agamemnon. Who exactly was this person? So, give them a story. It could be a pitch talk, a video, whatever. Then move on to the facts. Because, once you have a context, it's easier to give them the facts. You'd have brought them to Agamemnon, to Greece, to the Bronze Age, and now it's the time for you to come in as an archaeologist and talk about the facts, what you have, what you don't have, and what you want to find out.

And when I asked if they actually meant a combination of media, Kai replied:

Yes, a combination of media. Because it's so complex, that if you go to play full on the medium's strengths, you're going to end up losing something. Respectively, if you're going to talk about everything, you're going to have the problems that we're discussing.

Maxwell also suggested a combination of media because:

I think that they all complement each other.

Jamie had the same idea:

I mean, what I kept thinking when I was going through the VR - because I like that dramatic read - it depends on what you are trying to get out of this. And I thought it'd be fab if we could combine the game with the VR element. So, you could have this kind of narration. And then when you have that pause like you have on the slides, you get to interact and trigger things, because you do a kind of do that. Look around, there's a diary. And then a story starts. I mean, I know it's doable. Even I know, it's a lot more work. But I don't even know if that's what the point is for you.

Billie made a similar suggestion but mainly about the sound:

But I did like the sound like, I think it'd be cool to engage with the audio from that into the game, maybe? Because I was just thinking that what the VR really adds is the audio because really, you can just have a picture of a lab or whatever. And it's pretty much the same as being in that space. But if you have the audio and mixed in with the game, then that adds that extra layer. That's just what I was thinking.

Trix also thought that a combination of media would have been optimal, especially if the experience was taking place in a museum setting:

Reading provided a lot of the context. So, I wonder whether like, if you're using VR in a museum or something, I think, I don't know what you call that - mixed media - like doing a bit of VR, a bit of reading, a bit of this (meaning Twine). *I think the combination works quite well, complementing each other.*
[...]
I really liked the game. But I think there is a way to combine all of the different ones. And that would be even more engaging, I think. Because I think that the VR is what the most emotional resonance, I would say, hear the voice in your head.
[...]
But again, that might be why mixed methods is better. Because people get different things from different methods [...].

Subtheme 2: The order of experiencing the media matters

This concept also came up without me mentioning anything about the sequence of the media and even despite the fact that I explained that if this was an actual experience, they would not have experienced all three media together.

For example, Riley said:

I started with the VR. But if I has started with the text or with the interactive experience I might have understood more.

And later again:

I think the sequence matters. So, if I had started the other way around, maybe reading the text first before going to the VR, I would have understood more. But I think the Twine narration was more engaging. I found myself spending more time reading the parts I was interested into, especially the historical parts.

Similarly, Cameron commented:

I had the VR last so in a way I already knew what was happening so when I was taken in the story with the VR, I didn't lose anything, but if it was the first medium I think I would have been a bit distracted.

Noor also mentioned:

If I only had one piece of advice that would be when you have a sample that you don't have any parameters or criteria for it and because you can have a completely different experience depending on the medium that they're using, it's better to have the participants experience the media in the same order or whichever order you chose.

Jamie also was curious about the same issue:

But I wonder if we did, we would do them in different orders. Was that on purpose? [sic]

Subtheme 3: First encounter bias

From the first interview, it became apparent that people tended to prefer the medium that they experienced first. This will be analysed in the next chapter, as it is an important concept on its own that needs to be further unpacked and discussed.

For example, Billie mentioned that:

I found the reading part most interesting. But I think that's because I started with that. And that's why I was just hearing the story. Yeah, I could like read the notes and get like more detail. So, actually found that the most interesting, but maybe if I started on only the ones, I would have found that, because that was when I was first being introduced historically.

Glenn, when asked which medium they would prefer for engagement and immersion, also said something similar:

I'm stuck between actually the VR and the game. I don't know. I don't know. I feel like I like the narrative of the VR a bit more and engaged me more like what we were trying to figure out together. I don't know if that's just because I went in there first.

Jamie actually identified the phenomenon:

I think your first encounter with the material, it's really come to this first interface. It's the first time you experience the medium. So, you're learning about it. So, it might be the most (engaging). *But that was my first encounter. But then it kind of replicates through.*

Billie then agreed:

Well, yeah, that's kind of what I was trying to say earlier is that I felt the most engaged with what I how I started that, because that's where I learned the story. And then everything else was just repeating what I had already heard. So, as the game allowed interaction, in that way, I felt it was more engaging. The story itself was the most engaging the first time around, I would say.

And Jamie backed it up further:

It's actually what we said before: I felt the Twine was more engaging, you felt the story (Text) *was more engaging, and you felt the VR was more engaging! So, we're actually following a pattern where the first thing we encounter is the most engaging.*

Integration of the Quantitative and Qualitative Datasets

In this section, the quantitative and qualitative datasets presented above are merged to further illustrate points. By intertwining quantitative precision with qualitative nuance, I aim to uncover deeper insights, contextualise findings, and enrich the discussion of the data, seeking to illuminate the transformative potential of this integrative approach in advancing the understanding of the research questions. Below, in Table 52, I provide combined information drawn from the two datasets regarding the sequence in which the participants experienced the media, the medium the began with first, the declared preferred medium, and whether or not they have experienced VR before.

This table is also further broken down and visualised as pie charts (Figures 86-89) for the convenience of observing the percentages for each one of the items. This comparison is essential, as it sheds light in questions regarding the first encounter bias and whether or not the sequence of experiencing the media matters, as well as it allows observations regarding how the fact that it was the first time for some of the participants experiencing VR affected their overall medium preference. It is important to note that participants were asked which medium they considered to be more effective in terms of immersion, engagement and enjoyment both in the surveys and during the interviews and their combined responses can be seen in the third column of table 52 below.

Which medium did you experience first?	Sequence	Preferred medium after experiencing all three	First time VR?
Text	TX-TW-VR	TEXT	NO
Text	TX-TW-VR	TEXT	NO
Text	TX-VR-TW	TEXT	NO
Text	TX-VR-TW	TWINE	NO
Text	TX-TW-VR	TEXT	YES
Text	TX-VR-TW	TEXT	YES
Text	TX-TW-VR	TEXT	NO
Text	TX-VR-TW	TWINE	NO
Twine	TW-TX-VR	TWINE	YES
Twine	TW-VR-TX	TWINE	NO
Twine	TW-TX-VR	TEXT	NO
Twine	TW-TX-VR	TWINE	NO
Twine	TW-VR-TX	VR	YES
Twine	TW-TX-VR	TWINE	YES
Twine	TW-TX-VR	TWINE	YES
Twine	TW-TX-VR	VR	NO
VR	VR-TW-TX	VR	YES
VR	VR-TX-TW	VR	YES
VR	VR-TW-TX	TWINE	NO
VR	VR-TX-TW	TWINE	NO
VR	VR-TX-TW	VR	YES
VR	VR-TW-TX	TWINE	YES
VR	VR-TW-TX	TEXT	YES
VR	VR-TW-TX	TEXT	YES

Table 52. Table with the medium sequence, the declared medium preference, and information on VR experience. TX is the Text, TW is the Twine, and VR is the VR-video.

Declared medium of preference after experiencing all three media

VR
20.8%

TEXT
37.5%

TWINE
41.7%
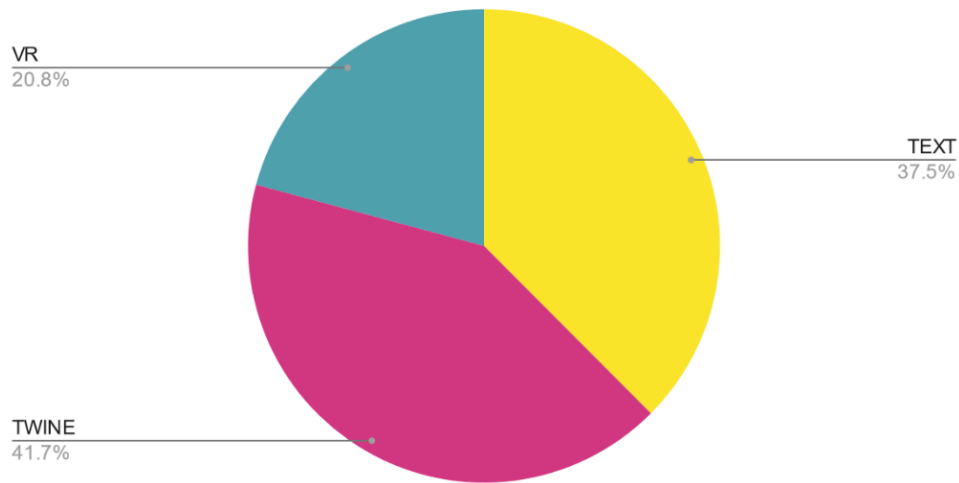
Figure 83. Pie chart with the participants' declared medium of preference.

Experiencing VR

During the interviews all 24 participants were asked whether or not they had experienced VR before. 50% of the 24 participants had experienced VR before whereas the other 50% had not as seen in Figure 90, making it a balanced sample (n=24).

Percentage of participants experiencing VR for the first time out of all participants

- YES
- NO

50.0% 50.0%
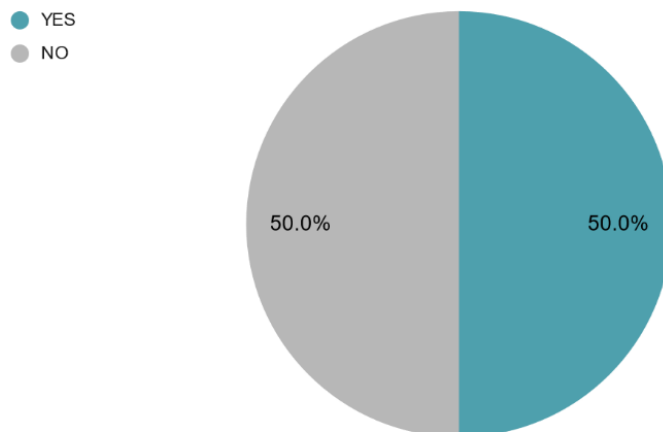
Figure 84. Percentage of participants experiencing VR for the first time.

Moreover, as seen in Figure 88, of the eight participants who began with the VR video as their first medium, six of them were experiencing VR for the first time in their life, which is 75% (n=8) of the participants. This percentage should not be confused with the above (Figure 87), as this one reflects the number of participants who were experiencing VR for the first time in their life out of the eight who began with VR, whereas in Figure 88 is the number of participants experiencing VR for the first time out of the 24 participants.
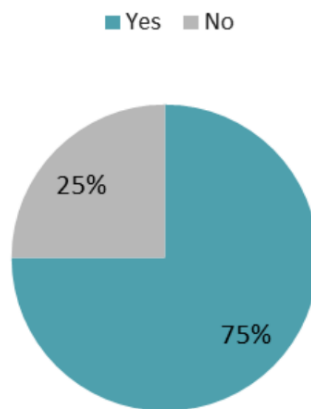
Figure 85. Percentage of the participants who experienced VR as their first medium, and it was the first time that they experienced VR in general.

Furthermore, five participants declared the VR video as their preferred medium after experiencing all three media (20.8%, n=24). These participants were also questioned regarding whether or not they were experiencing VR for the first time as seen in Figure 89. Four out of these five participants who said that the most effective medium in terms of immersion and engagement was the VR video were experiencing VR for the first time (80%, n=5). This is noteworthy because VR can be captivating especially when someone has not experienced it before and thus the results might have been influenced by this. Clearly, the percentage of people who were experiencing VR for the first time in both cases is significantly higher than those who had experienced it before. However, some of the participants who experienced VR first (5 out of 8, or 62.5%) ended up preferring another medium in terms of engagement or immersion even if it was their first-time experiencing VR (3 participants out of the 5 who declared another medium as their preferred one were experiencing VR for the first time). This finding was not affected by the overall sequence in

which they experienced the next two media; 5 out of 8 participants who began with VR followed the sequence VR then Twine then Text, but they ended up selecting different media as their preferred ones.

Percentage of participants who were experiencing VR for the first time and said they preferred VR
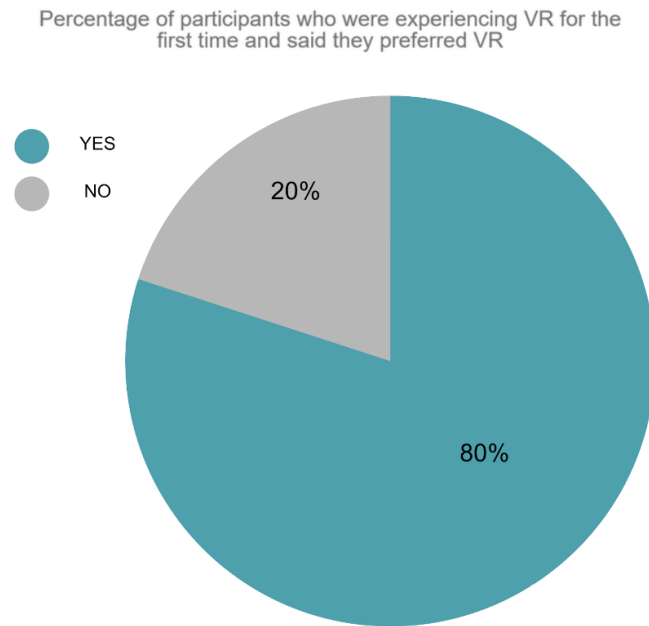
Figure 86. The percentage of participants who experienced VR for the first time during the experiment and concluded that their favourite medium out of the three was VR.

Lastly, two participants out of the eight who began with Twine ended up suggesting that the VR video was the most engaging and immersive medium after experiencing all three. As previously, it is important to explore whether or not both of them were experiencing VR for the first time, and thus they were just captivated by the medium and the results can be seen in Figure 90 below. However, only one of the two had not experienced VR before, and thus the hypothesis that they preferred the VR video because it was their first-time experiencing VR cannot be confirmed in this case.
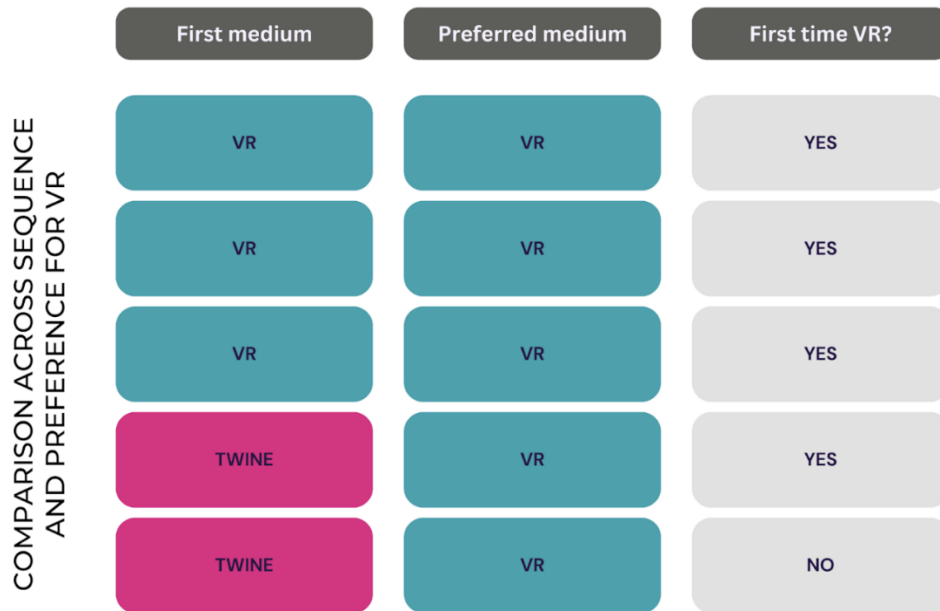
Figure 87. Comparative visualisation between the first medium experienced, the preferred medium, and whether the participant has experienced VR before.

The sequence of experiencing the media

Another important note that is useful for the data analysis is the sequence of the experiences, which also came up as a theme during the qualitative data analysis (see Figure 91 in comparison with Table 53). It might be useful for future analysis to investigate in more depth if and to what extent the sequence that the participants experienced the media affected their opinion regarding which one was more effective.

The sequence of experiencing the media

VR-TX-TW 12.5%
TX-TW-VR 16.7%
VR-TW-TX 20.8%
TX-VR-TW 16.7%
TW-VR-TX 8.3%
TW-TX-VR 25.0%
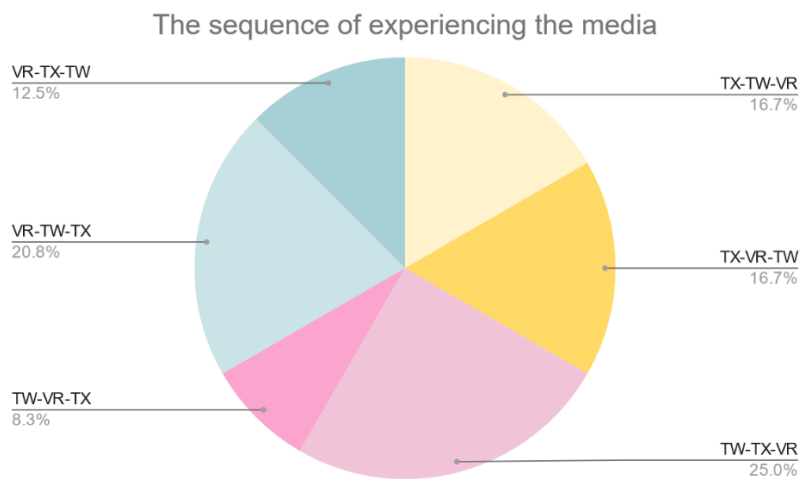
Figure 88. The percentage of the sequence of experiencing the media. TX is for the Text, TW is for the Twine, and VR is for the VR-video.

Which medium are you experiencing?	Sequence	medium preference	First time VR?
Twine	TW-TX-VR	TWINE	YES
Twine	TW-TX-VR	TEXT	NO
Twine	TW-TX-VR	TWINE	NO
Twine	TW-TX-VR	TWINE	YES
Twine	TW-TX-VR	TWINE	YES
Twine	TW-TX-VR	VR	NO
Twine	TW-VR-TX	TWINE	NO
Twine	TW-VR-TX	VR	YES
Text	TX-TW-VR	TEXT	NO
Text	TX-TW-VR	TEXT	NO
Text	TX-TW-VR	TEXT	YES
Text	TX-TW-VR	TEXT	NO
Text	TX-VR-TW	TEXT	NO
Text	TX-VR-TW	TWINE	NO
Text	TX-VR-TW	TEXT	YES
Text	TX-VR-TW	TWINE	NO
VR	VR-TW-TX	VR	YES
VR	VR-TW-TX	TWINE	NO
VR	VR-TW-TX	TWINE	YES
VR	VR-TW-TX	TEXT	YES
VR	VR-TW-TX	TEXT	YES
VR	VR-TX-TW	VR	YES
VR	VR-TX-TW	TWINE	NO
VR	VR-TX-TW	VR	YES

Table 53. The same table as Table 52, but colour coded and arranged accordingly with emphasis on the sequence of experiencing the media and how this potentially affected the declared preferred medium by the participants.

Beginning clockwise on the pie chart above (Figure 91) and in comparison with the declared preferred medium in Table 53, two out of the three participants who experienced the media with the sequence VR-TX-TW (12.5%, n=24) ended up preferring VR as the most engaging and immersive medium and both of them were experiencing VR for the first time. The other one declared Twine as their preferred medium despite experiencing it last. Notably, this participant had experienced VR before (see Table 53).

Next, for the participants who followed the sequence TX-TW-VR (which is 16.7% of the participants, n=24), 100% (n=4) declared Text to be their preferred medium (see Table 53).

Then, for the participants who followed the sequence TX-VR-TW, which is an equal part to the previous percentage of participants (16.7% of the participants, n=24), 50% (n=4) preferred Text and the other 50% preferred Twine despite experiencing it as the last medium (see Table 53).

For the participants who followed the sequence TW-TX-VR (25%, n=24), which is the biggest percentage of sequences, four out of the six people declared Twine as their preferred medium, whereas the other two picked different media (see Table 53).

Then, for the participants who followed the sequence TW-VR-TX (8.3%, n=24), 50% (n=2) picked Twine as their preferred medium and 50% (n=2) preferred VR. Notably, it was the first-time experiencing VR for the participant who declared VR as their preferred medium, which could explain their choice (see discussion below about participants who had not experienced VR before expressing a tendency to prefer it over the other two media) (see Table 53).

Lastly, for the participants who experienced the media in the sequence VR-TW-TX (20.8%, n=24), two out of the five (40%, n=5) declared Twine as their preferred medium, two (40%, n=5) declared Text as their preferred medium, and only one selected VR as their preferred medium (10%, n=5) and it was their first time experiencing VR (see Table 53).

In conclusion, from the sample of this research, it seems that the sequence does not affect the outcome significantly, but a bigger sample with a specific focus on assessing whether and to what extent the sequence of experiencing the media affects the outcome might provide more useful insights.

Comparison of preferred medium between the surveys and the interviews

Another revealing comparison between the datasets (qualitative and quantitative) is the one between the declared preferred medium by the participants and the scale that these participants had liked the medium that they began with as seen in Table 54 below. For example, the participants who experienced VR first and who noted in the surveys they did not find it engaging or immersive ended up selecting another medium as the most engaging and effective.

First medium	SURVEY: The story was immersive	INTERVIEW: medium preference for immersion	SURVEY: The story was engaging	INTERVIEW: medium preference for engagement	If I had to pick one*
TEXT	Somewhat agree	TEXT	Somewhat agree	TEXT	TEXT
TEXT	Strongly agree	TEXT	Strongly agree	TEXT	TEXT
TEXT	Somewhat disagree	TWINE	Somewhat disagree	TWINE	TWINE
TEXT	Strongly disagree	TWINE	Strongly disagree	TWINE	TWINE
TEXT	Strongly agree	TEXT	Somewhat agree	TEXT	TEXT
TEXT	Neither agree nor disagree	TEXT	Neither agree nor disagree	TEXT	TEXT
TEXT	Strongly agree	TEXT	Strongly agree	TWINE	TEXT
TEXT	Strongly agree	TEXT	Somewhat agree	TEXT	TEXT
TWINE	Neither agree nor disagree	VR	Somewhat agree	TEXT	VR
TWINE	Strongly agree	TWINE	Strongly agree	TEXT	TWINE
TWINE	Neither agree nor disagree	TEXT	Neither agree nor disagree	TEXT	TEXT
TWINE	Somewhat agree	VR	Somewhat agree	VR	VR
TWINE	Strongly agree	TWINE	Strongly agree	TWINE	TWINE

TWINE	Somewhat agree	TWINE	Somewhat agree	TWINE	**TWINE**
TWINE	Strongly agree	TWINE	Strongly agree	TWINE	**TWINE**
TWINE	Somewhat agree	TWINE	Strongly agree	TWINE	**TWINE**
VR	Neither agree nor disagree	TEXT	Strongly agree	TEXT	**TEXT**
VR	Neither agree nor disagree	TEXT	Neither agree nor disagree	TEXT	**TEXT**
VR	Somewhat agree	TWINE	Somewhat agree	TWINE	**TWINE**
VR	Somewhat agree	TWINE	Somewhat agree	TWINE	**TWINE**
VR	Strongly agree	VR	Somewhat agree	VR	**VR**
VR	Neither agree nor disagree	TWINE	Neither agree nor disagree	TWINE	**TWINE**
VR	Strongly agree	VR	Strongly agree	VR	**VR**
VR	Somewhat agree	VR	Somewhat agree	VR	**VR**

Table 54. Comparative table between the quantitative and the qualitative data regarding the declared preferred medium.

The table provide a comparative synthesis of what the participants said in the surveys after experiencing the medium that they began with and what they said during the interviews after having experienced all three media in terms of immersion and engagement. Then, after discussing more during the interviews, they were asked to choose only one medium that essentially ticked all the boxes for them and was immersive, interesting, engaging, and helped them learn.

This table is further broken down (Tables 55-57) to present more clearly some observations which will be discussed further in the next chapter. The first column is the medium the participant began with, the second is a combination of their responses in the surveys about that medium, and the

third column is what each participant declared as their preferred medium in terms of both engagement and immersion.

FIRST MEDIUM EXPERIENCED	SURVEY: DO YOU FIND THE TEXTUAL STORY TO BE IMMERSIVE and ENGAGING?	INTERVIEW: WHICH MEDIUM YOU FOUND TO BE MORE IMMERSIVE and ENGAGING?
TEXT	Somewhat agree	TEXT
TEXT	Strongly agree	TEXT
TEXT	Somewhat disagree	TWINE
TEXT	Strongly disagree	TWINE
TEXT	Strongly agree/Somewhat agree	TEXT
TEXT	Neither agree nor disagree	TEXT
TEXT	Strongly agree	TEXT
TEXT	Strongly agree/Somewhat agree	TEXT

Table 55. Text users' declared preferred medium in the surveys compared to that in the interviews.

It is striking that when participants disagreed that the medium they first experienced was engaging or immersive, or were neutral towards that medium (arguably meaning that they were not entirely convinced), most of the time they picked another medium as their preferred one during the interview.

FIRST MEDIUM EXPERIENCED	SURVEY: DO YOU FIND THE TEXTUAL STORY TO BE IMMERSIVE and ENGAGING?	INTERVIEW: WHICH MEDIUM YOU FOUND TO BE MORE IMMERSIVE and ENGAGING?
TWINE	Neither agree nor disagree/Somewhat agree	VR
TWINE	Strongly agree	TWINE
TWINE	Neither agree nor disagree	TEXT
TWINE	Somewhat agree	VR
TWINE	Strongly agree	TWINE
TWINE	Somewhat agree	TWINE
TWINE	Strongly agree	TWINE
TWINE	Somewhat agree/Strongly agree	TWINE

Table 56. Twine users' declared preferred medium in the surveys compared to that in the interviews.

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In contrast, the participants who agreed that the medium they just experienced was engaging and immersive mostly (81.25%, n=16) ended up choosing it as their preferred medium even after experiencing the other two media. This observation has great significance, as it challenges the 'first encounter bias' phenomenon, a theme that came up during the interviews claiming that the participants had the tendency to prefer the medium they experienced first. Indeed, the participants had a tendency to choose the medium they experienced first, but apparently only if they actually found it engaging and immersive. However, if they did not find the medium engaging and immersive, then after experiencing the other two, they chose another medium as their preferred one.

FIRST MEDIUM EXPERIENCED	SURVEY: DO YOU FIND THE TEXTUAL STORY TO BE IMMERSIVE and ENGAGING?	INTERVIEW: WHICH MEDIUM YOU FOUND TO BE MORE IMMERSIVE and ENGAGING?
VR	Neither agree not disagree/Strongly agree	TEXT
VR	Neither agree not disagree	TEXT
VR	Somewhat agree	TWINE
VR	Somewhat agree	TWINE
VR	Strongly agree/Somewhat agree	VR
VR	Neither agree not disagree	TWINE
VR	Strongly agree	VR
VR	Somewhat agree	VR

Table 57. VR users' declared preferred medium in the surveys compared to that in the interviews.

Notably, there are anomalies in this observed pattern that could be investigated further in the future, such as the people in Table 57 who experienced VR first and, despite finding it somewhat engaging and immersive, ended up choosing Twine as their preferred medium. However, this could be explained by the fact that they agreed but not strongly with the statement, and thus when they experienced something more engaging and immersive - in this case Twine - then they changed their minds. This is a further indication that Twine is the most effective medium for communicating archaeological research to the public. Additionally, this anomaly could also be explained by the fact that both participants were extremely familiar with VR and thus they also fell

into the category of participants who expected interaction in the VR video and therefore were quite disappointed that the full potentials of the medium were not used. Similarly, the anomaly in Table 56 of the participant who experienced Twine and found it somewhat engaging and immersive but then chose VR as their favourite can be explained by the fact that it was their first-time experiencing VR. In any case, these results would be interesting to be investigated further with a bigger sample as this observation could potentially counter the 'first encounter bias' assumption.

Summary

In this study, a mixed methods approach was employed to analyse both quantitative and qualitative data, encompassing a sample of 24 participants hailing from three countries: the United Kingdom, Malta, and Greece. The sample was characterised by variables such as professional background (archaeologists or heritage practitioners), familiarity with the case study, nationality (colonised or coloniser), prior experience with interactive and immersive technologies, and previous exposure to virtual reality (VR). Three primary data sets were presented and interpreted in the chapter: a comparative analysis of pre- and post-questionnaires, responses from the post-questionnaires, and a qualitative dataset comprising interview transcripts and field notes.

The findings from the comparison of pre- and post-questionnaires revealed that Twine emerged as the most effective medium for communicating archaeological research to the public, particularly in terms of its impact on knowledge dissemination. The qualitative analysis unveiled several key themes, including considerations of ethical dimensions in archaeological research, the significance of authenticity in storytelling, the ignition of curiosity in engaging with the past, the evolving nature of archaeology which can lead to further discoveries, and some observations regarding Twine being an ideal medium for public outreach.

Chapter 7: Data Discussion and Analysis

Introduction

This chapter explores the quantitative and qualitative data presented in the previous chapter in light of the research questions and reflects on the implications of the results. Through a reflective approach, the chapter seeks to illuminate patterns, trends, and significant findings in the data aiming to contribute to the academic discourse surrounding the research topic, fostering a deeper understanding of the phenomena under study and facilitating evidence-based conclusions.

This research asked: a) which medium is the most effective to communicate archaeological research to the public and audiences given that the medium is to be created by the archaeologist with low or no funding and relatively minimal training, and b) to assess the impact of the analogue and digital media created in the process of this research on the audiences. In the first part, a discussion of my interpretation of the data will take place. The aim of the discussion will be to address the research questions as well as to deliberate on any further remarks and observations derived from the data analysis. Next, the implications of the results will be further discussed within the context of the existing literature, as discussed in the literature review chapter. Similarities and differences will be pointed out along with additional nuances on DIY archaeology, the methodology developed in this research, and all the practical and theoretical aspects of it. Then, the research limitations will be discussed. Lastly, the chapter will draw to a close with recommendations for further research.

Data interpretation and discussion

Twine as the most effective medium for multimedia archaeological communication

The following discussion of the various findings of this research is based on heuristic data analysis and the themes that emerged from the qualitative analysis. The most significant finding of the research is that Twine appears to be the most effective medium for archaeological research dissemination (within the premise that the medium has to be created by an archaeologist). This directly responds to the first research question in this thesis. The participants who experienced Twine as their first medium scored higher on multiple questions (i.e. PQ4, PQ5, PQ6, PQ7, PQ8, PQ11) compared to the participants who experienced the other two media first. This is a clear indication that the Twine users gained more new knowledge or corrected any wrong information they had before playing the Twine game than the Text and the VR users.

The VR users scored higher in the questions related to the reexamination of the bones by Dr Nafplioti, a finding that is in alignment with Petersen and colleagues' (2022, 4) claim that VR is more effective than other non-immersive approaches to learning. However, in this research, this find can be explained, apart from the strong visual engagement of the medium comparing to the other two media, by the fact that the reexamination by Dr Nafplioti was a whole narrative part in the film, which was absent as a standalone narrative from the other two media, which was a necessary adjustment due to the nature of the 360 film as a medium, as discussed in the methodology of creation chapter On top of that, this particular information in the VR video was not skippable, unless the user took of the headset or skipped parts with the controllers, whereas in the Twine the users would have had to click on the links to see this particular information. Lastly, it is also noteworthy that when the Twine users scored lower, the difference was quite low. That is, one out of the eight Twine users (i.e. PQ18, PQ19, PQ23) gave an incorrect response which is not a significantly lower score but could mean that one of the participants skipped parts of the story and thus missed all this information. This is also further confirmed by the observation made in Chapter 6 that after checking the data, there was a specific participant who seems to have skipped all the links and just read the stories, and consequently missed most of the content questions which would require them to click on the hyperlinks to read the additional information. Therefore, based on the overall results, I would argue that Twine seems to be performing better pedagogically based on the comparison between the pre- and the post-questionnaire survey questions despite some minor discrepancies when compared with the VR-video.

Twine also seemed to have been the medium that was the easiest to use. It was the most flexible medium for allowing users to skip parts of the story (25% of the Text and the VR users, and 62.5% of the Twine users skipped some parts of the story, n=8). One could argue that it is equally easy to skip information in the Text since one can only read the footnotes that are of interest to them, but multiple participants mentioned that the footnotes were distracting and specifically contrasted the Text to the Twine, suggesting that the Twine was easier to use by clicking on information. Sascha, for example, mentioned that they found the Text to contain less information than the Twine, which is not true but reflects the idea that Twine is easier to use as it gave the impression to the person that it contained less information. Cameron then elaborated on Sascha's comment: *I guess you're less inclined to read through the footnotes of the text, whereas in the Twine you just click, and the information text unfolds*. However, it would be recommended to use this flexibility of the Twine to allow for skipping only parts of the story that are not important and try to incorporate more visuals in each Twine page instead of them being in hyperlinks to assist the user rather than hinder the knowledge gain.

The Twine users seemed to have particularly enjoyed discovering the clues and making their own interpretations, which links to the aim of the research of opening up archaeological research to audiences by allowing room for other interpretations. Katifori and colleagues (2018, 610) have argued that museum audiences experiencing INDs appear to request more interaction in those digital narratives, pointing out that they look for more control over those narratives. This has been confirmed by the current research, especially by the qualitative data where participants were able to further elaborate on their experiences. Bailey, for example, when asked which was their preferred medium, said: *For sure the (Twine) game. That was my favourite. The fact that I clicked and chose what would happen was very nice, and the story made me laugh, you know. I enjoyed it. I preferred it compared to the Text or the VR*. A few other participants also mentioned that they found the interactive element to be enjoyable, further suggesting that the Twine game was accessible and easy to use. Trix, for example, said: [...] *it was really nice that there was interactivity.* [...] *I liked about the game as well, it's that you have a hand in it because you get to give your interpretation at the end* [...] *it's like you can try and figure it out yourself.* Oakley also liked the discovering and investigating aspect of the Twine game: *I liked that one.* [...] *I like you can like follow the little clues. I think that's my favourite part.* Therefore, the interactive aspect of

Twine seemed to have effectively engaged the participants, and also potentially to have contributed to them learning more compared to the other two media.

Twine also had the highest percentage (100%, n=8) of users who believed that it helped them better understand the Aegean Bronze Age. This is important especially when combined with the result discussed above. That is because it is demonstrated that Twine users not only exhibited improved performance in the post-questionnaire but also reported a heightened feeling that they indeed learned more from the Twine game. Kai, for example, said about Twine: [...] *when it goes to the diaries, more than read, like when I read it, I understood more of the background and stuff.* Consequently, it appears that the participants felt confident and developed a sense of assurance in their acquisition of knowledge pertaining to the Aegean Bronze Age through their interaction with the Twine game.

Similarly, the Twine users found the story easy to follow compared to the other participants (most 'strongly agree' reactions (62.5%, n=8)). Twine users also scored the highest on the questions regarding enjoyment, engagement, and having fun (100% of the participants stated that they enjoyed the story, and similarly 100% stated that they found the story to be interesting, n=8). Tristan for example mentioned that: *I liked the Twine that I played on the laptop. It was nice because there were options that I could click on and select what to do. There was more detail (unfolding)* (translation from Greek). On the same note of user interface and accessibility, 100% (n=8) of the Twine users found the interface of the game to be easy to use. This suggestion, alongside the substantial majority of the users expressing their opinion that the story was coherent and without gaps in the narrative (62.5%, n=8) and that it had a good length (75%, n=8), confirms that Twine is a user-friendly medium.

Regarding the emotional connection with MYC_1V, Twine users felt more connected to them especially compared to the Text users where 37.5% (n=8) did not feel any emotional connection. Alex, who began with the Text, when asked whether or not they felt an emotional connection with the character said: *No. I was entirely dissociated (from the person). It was just an artefact. Nothing more* (translation from Greek). In contrast, Max, who began with Twine, when asked the same question, said: *Yes, yes, like if it was a relative*, which is a strikingly different emotional response to the character. Moreover, in the post-questionnaire, the Twine users produced a combined result of 'strongly agree' and 'somewhat agree' of 87.5% (n=8) when asked if they felt connected

to MYC$_1$V, making Twine the most effective medium for creating an emotional connection with the main character.

To conclude, as evidenced using fact-based questionnaires to determine information retention, Twine was the most effective medium for increasing knowledge, also exhibiting proficiency as a medium in terms of usability, and successfully forges an emotional rapport with the primary character. Subsequent sections will delve into the analytical implications for the remaining two media, accompanied by an exploration of pertinent literature.

Order of experience

Another noteworthy result was that the order of experiencing the data does not seem to impact the participants' preference of medium. The order of experience is a theme that came up in the Reflective Thematic Analysis (RTA) and was then cross checked with the quantitative data to further explore it in Chapter 6. The theme was brought up by the participants quite regularly either by directly asking whether the sequence they experienced in the media was intentional, or to justify their preference of a medium. Riley, for example, mentioned that: *I think the sequence matters.* [...] *I started with the VR. But if I had started with the text or with the interactive experience I might have understood more.* And Noor noted: *If I only had one piece of advice that would be when you have a sample that you don't have any parameters or criteria for it and because you can have a completely different experience depending on the medium that they're using, it's better to have the participants experience the media in the same order or whichever order you chose.*

Nonetheless, conducting an exhaustive investigation into the precise influence that the sequence of the media exposure may have had on participants' preferences for the three media falls beyond the purview of this research. This is due to the fact that, if this project was happening as a standalone in heritage settings, users would engage with only one medium rather than all three, and also the post-questionnaire was administered immediately after participants engaged with the initial medium, thus negating any influence in this regard.

However, I still cross checked the quantitative and the qualitative data to get an initial understanding of the matter, but with the intent to fully explore its implications as explained above.

The results indicated that the order in which participants engaged with the three media did not affect the results to any degree. It is important though to note that the sample size might not have allowed for a clear picture of the impact that the sequence might have had, especially since the experiment material was not designed to capture this information.

Bias of the first encounter

The theme of the so-called 'bias of the first encounter' which came up during the RTA is linked to the order of experience discussed above. The bias of the first encounter claims that participants are more engaged with the medium they experienced first. During the experiment with the first group (UK1), the participants noted that they had the tendency to prefer the medium they experienced first. When answering interview questions about which medium they preferred in terms of engagement, interaction, and immersion, they declared the medium that they first encountered the story with as their preferred one (100%, n=3). This was repeated during the next set of interviews (UK2; all three participants declared the first medium as their favourite). Billie, for example, mentioned that they found the reading part most interesting. And then added: *But I think that's because I started with that*. And Glenn, when asked which medium they preferred, responded: *I'm stuck between actually the VR and the game. I don't know. I don't know. I feel like I like the narrative of the VR a bit more and engaged me more like what we were trying to figure out together. I don't know if that's just because I went in there first*.

Some of the participants tried to explain this behaviour by attributing it to them being 'kinaesthetic', 'auditory' or 'visual' learners. I allowed these conversations between them to continue uninterrupted to further observe their behaviour. Jo, for example, mentioned that *everyone has a different approach depending on how people interact and engage with materials, we're gonna have a different approach to this sort of either visual*. Trix also mentioned that: *If you look at like pedagogical theory about how people take in information, because when I was a kid, they always used to have this thing of like auditory, visual and kinesthetic learners*. At that point, it seemed rather convincing that participants tend to prefer the medium that they first encounter the story with.

However, during the subsequent experiments in Malta the answers from the participants varied widely and people did not always prefer the medium they first came into contact with (50% preferred the medium they first experienced, and the other 50% did not, n=12). After this asymmetry was observed in two consequent groups (ML1 and ML2), I commented about it to the participants of the second group at the end of the interview, and one of them, who works with IDNs, mentioned that I must be talking about the 'first encounter bias', which is also referred to as 'anchor bias' or the 'anchoring effect' (Furnhama and Boo 2011, 35). According to Tversky and Kahneman (1974), the anchoring effect is the disproportionate influence on decision makers to make judgments that are biased towards an initially presented value.

The first encounter bias or anchoring effect is perceived to be one of the most robust cognitive heuristics ('rules of thumb') and has many implications in all decision-making processes. The notion of anchoring in decision making was first introduced by Slovic (1967), who studied descriptions of preference reversals (as cited in Chapman and Johnson, 1999; for a full literature review on the matter see Furnhama and Boo, 2011). The anchoring bias relates to decision making processes, suggesting that humans tend to cling to the 'first impression' of something to create a 'shortcut' or a 'rule of thumb' for the next time they would need to make a decision on the same or a similar matter. To add to this notion further, it has been suggested that the human brain appears to have a tendency to autonomously complete missing information when swiftly presented with an image or piece of information that it has encountered before (Shappell and Wiegmann 2000, 5). Hence, the human brain strives to acquire the maximum information during the initial encounter with novel knowledge. Subsequently, it employs gap-filling mechanisms as a strategy for energy conservation, and thus stops absorbing information when encountering similar stimuli.

Ergo, it could make sense that people get the most out of the story the first time they were exposed to it no matter the medium they used, since that is the way human brains work. However, it is noteworthy that even if this phenomenon occurred in the research, it would have only applied to whether they found the medium interesting and engaging, and not if the medium actually managed to transfer knowledge. That is because in this experiment, the participants undertook a pre-questionnaire to assess any previous knowledge on the subject, then they experienced the story for the first time in one of the three media, and then they completed a post-questionnaire immediately after their experience. In this way, the results from the pre and the post questionnaire

on knowledge acquisition would not have been affected by any other medium since the participants had only experienced one at that point.

However, it was further investigated in the data comparison process in Chapter 6, and it was found that the 'first encounter bias' or 'anchoring effect' did not occur in this research. What this research found is that the participants had a tendency to choose the medium they experienced first, and thus it seemed as an 'anchoring effect', but only if they actually found it engaging and immersive. However, if they did not find the medium they first experienced engaging and immersive, then after experiencing the other two, they chose another medium as their preferred one, which means that participants did not necessarily stuck to the medium they experienced first, thus presenting a 'bias of the first encounter', but they just liked it. Therefore, this result demonstrates that an anchoring effect did not occur, and when it appeared to occur, that was when the participants were satisfied with the medium the experienced first.

This is a significant finding since it has been argued that this bias can potentially hinder the data analysis process and consequently the results, and thus finding out that arguably this is not true will help future researchers to adjust their research design to acknowledge the potential impact but not necessarily shape any results by this bias. However, this phenomenon could ideally be further investigated in future research, as it is important to understand the degree that it could potentially affect decision making when experiencing a medium used to communicate research to the public.

Endangerment of artefacts and the power of new technologies

Two additional salient themes identified through the RTA were the endangerment of artefacts due to potential negligence by the archaeologists, and the acquisition of new insights facilitated by advancements in the field of archaeological science.

Participants appeared to be worried or even upset about Schliemann's behaviour and how this might have resulted in damage to or loss of the artefacts. Kai, for example, said: *I think this is a very particular story where eventually everything could have been lost and then it gets me thinking*

about if things have been done differently and with more right, if we actually would know more about the person (meaning MYC$_1$V).

On the same note, participants did not express significant feelings regarding the harassment and mistreatment of Stamatakis (collectively, ⅓ of the participants (33.4%, n=24) did not feel sorry about Stamatakis' mistreatment by Schliemann), the majority of participants expressed worry during the interviews regarding the potential damage or loss of the artefacts that the difficult relationship between the two archaeologists might have caused. Tristan, for example, said: *The fact that this (situation) could harm the finds, is indeed unsettling. Because then the history would be compromised and that would help us learn something, but if he (Schliemann) messed with it, it would then be rubbish. It is upsetting, yes* (translation from Greek). Clearly, the participant was bothered by the fact that Schliemann's behaviour could potentially harm the antiquities and the knowledge that would derive from the archaeological study, rather than the abusive relationship towards Stamatakis. Charlie mentioned something similar: *I believe I was also bothered by this relationship. I believe things could have been different. (For example) if (Schliemann) had more respect towards the situation and if there was a better collaboration (between them). If there was better collaboration, the results would have been better* (translation from Greek). Hence, again, stress is put on the archaeological work and outcome rather than the mistreatment of Stamatakis as an individual.

Devin also stressed that the story is very important, as it revealed hidden aspects of the history of the excavation: *The archaeologists are the ones who brought us all that we know. If they had disturbed the setting, and lost or damaged something, it would have affected what we know*. He later elaborated: *it is quite important that we know about these things, and we know that maybe there was some kind of compromise during work, some kind of carelessness maybe. That would have added to the question mark overall* (meaning that we already have limited knowledge about that period and poor archaeological research and documentation would have added to that limited knowledge). This could be because they perceived Stamatakis as responsibly 'doing his job', thus they did not focus on the fact that he was harassed by Schliemann. This is also in alignment with Henson's (2019, 96) suggestion regarding archaeological storytelling that it offers the opportunity to describe characters and situations creating a more well-rounded understanding of the past.

In a similar way, participants expressed feelings of gratitude towards Stamatakis and his attempts to deal with Schliemann and keeping a record of everything that was happening in the excavation.

Glenn mentioned that: *I felt like there was also showed like two opposite teams, like the two sides of the debate, sort of like against looting and taking it back in the one hand, and on the other hand a person speaking up for the rights of the burial and for the country as well and for the culture.* And Maxwell commented: *The side story of the archaeologists was interesting too. Because actually I think it puts things in perspective that I might haven't thought much about.* Cameron mentioned that they thought that the abusive behaviour might have been the norm during that period: *Oh, yes, I certainly felt sympathy for the guy, as he was just trying to do his job honestly and I was very confused with Schliemann's wife and the way they both treated him. I thought, OK, maybe the rules were different back then.*

Regarding the theme of the evolution of archaeological research, participants across the groups discussed the progress of archaeology over time, highlighting its current practice characterised by enhanced ethical standards, advanced technologies, and refined recording methodologies. Billie, for example, mentioned that: *I think what kind of the context I got was that as more science goes on, we learn more. So, each archaeologist in each age could add to that because they have more science to apply [...] if you think about it was back in the 1800s. Like, obviously, archaeology wasn't what it is now. Like, maybe people weren't focusing so much on preserving everything.* And Noor also commented that: *Time and place of course are important because for example in the initial excavation they didn't have all the answers but as we go further down the line, I know from my experience that we look for things to reexamine. [...] antiquarianism was the trend at the time, and you also had the collectors, so it was just a matter of interest. There was no respect for the dead as they were long dead, which also points towards the previous theme regarding the handling of human remains.*

Regarding the advancement of technologies in archaeology that help today's research in many instances, Tristan, for example, that they were impressed with the fact that archaeologists today can confirm whether hypotheses made centuries ago are true or not using new technologies. Participants were also surprised by Sofia's - Schliemann's wife - involvement in the excavations and consequently related Schliemann's behaviour to looting. Cameron said: *I'm not sure if that was implied, but he and his wife were some kind of grave robbers.* Tristan found it rather unsettling that Schliemann allowed his wife to participate in the excavation. Glenn also found Sophia's involvement disturbing: *I was like, seriously? No, I was like, oh, my God, I think that was infuriating! Didn't she really just do that?*

Therefore, it is notable that the participants were preoccupied with significant ethical issues, such as the potential harm of artefacts caused by archaeological approaches and methods. This observation suggests that archaeological storytelling serves not only as an effective medium of disseminating archaeological research to diverse audiences, but also as a mechanism for providing insights into the methods employed by archaeologists in their research and as a tool for raising awareness regarding ethical considerations in the discipline, which confirms Van Helden and Witcher's (2019, 20-22) suggestion that archaeological storytelling can help people think more broadly about the past and not only focus on archaeological research as a process with the sole purpose of unearthing antiquities.

Discussion of the digital tools and their implications on audiences

Evaluation of media in terms of cost and time effectiveness

Since the main prerequisite for the creation of the media is for them to be created by the archaeologist themselves with minimal *cost*, *training*, and *time devoted to the process*, it is also important to evaluate the efficiency of the three media comparatively in these three categories. It is important to note that all three media were developed based on the same research content, which was conducted prior to developing the media. I conducted the research, then created the textual story with the footnotes based on the research, and then I adapted the Twine and the VR video accordingly to include the same information. Therefore, all three versions of the story and thus the development of the media would normally require a significant amount of time spent on the background research, which would highly depend on the information the archaeologist is trying to communicate to the public. For this study, the background research took approximately a month.

The Text required the least amount of time to create, since the only important aspects of it were familiarisation with Alexis Boutin's model on how to use footnotes, and the creative writing process. For the first part, I studied Boutin's literature and especially her 2016 article 'Exploring the social construction of disability: An application of the bioarchaeology of personhood model to a pathological skeleton from ancient Bahrain' where she uses footnotes to support the narrative. For the creative writing part, I considered character building, the information that could be included, and the way that the text would reflect these two (i.e., if it would be a monologue or a

dialogue, a first person or a third person narrative etc.). Therefore, the amount of time spent on creating the Text was approximately one week, since I was already familiar with the process of archaeological storytelling. It definitely depends on the person and their background but arguably most archaeologists would be able to write an effective story even if it is not a bestselling novel. However, there are normally free classes and free online material on creative writing if an archaeologist wants to further enhance their writing skills. Internet access would be required in this case.

In the case of creating the textual narrative, a PC or a laptop would be needed, and potentially Internet access to conduct the background research. In terms of cost, no expenses would be expected beyond access to a PC or laptop, which would normally be provided by the organisation where the archaeologist works, but if that is not the case, then the archaeologist could use free equipment at the local library. Therefore, the cost to create a textual narrative would be minimal.

Twine requires some understanding of coding and coding languages. However, in order to create a very simple Twine game, without any elaborate visuals or sound effects, almost no knowledge of coding is required since most of the attributes, such as text colour or font, are automated. And in the case that someone has a little more time to spend, there are ready-made code texts that can be used to beautify the interface fairly quickly. For this research, I spent less than a month training myself through YouTube videos and online material and creating the Twine game at the same time.

To develop the Twine game, internet access and equipment such as a PC or a laptop are required. The Twine platform which is necessary for the creation of the game is free to access. If the archaeologist wants to enhance the game with sound, which was the case in this research, then small costs might be necessary. For my Twine game I used Epidemic Sound and had to pay a £10 monthly subscription. Moreover, I used Canva to create some of the visuals which had an additional £10.99 cost per month. However, both can be avoided or paid only once without using a recurrent subscription. I used wix.com, which is free, to upload digital material for the game, including images, gifs, videos, and sound. This is not necessary, but I did it to ensure that these materials would be available until the end of my research. Lastly, the Twine game needs to be uploaded somewhere in order to provide the users with a shareable link to access it. I uploaded it to itch.io which is free, and I also uploaded it for safety reasons to the University's hosting page. All these activities require internet access and basic equipment such as a PC or a laptop.

Therefore, the cost to create a Twine game could go from zero to £21 given that internet access and access to a PC or a laptop is free.

The VR video required considerable training and had the most obstacles, and thus it was the most time and resource consuming. I shot the 360 film using an Insta360 ONE X2 camera provided by the Department of Archaeology at the University of York. The cost to buy this particular camera is approximately £365. I then edited the film using Adobe Premiere Pro, which was provided through my student's affiliation at the University of York. The annual cost of the general subscription is approximately £195, and the monthly subscription £19. It is possible for the 360 video to be edited within the 14 day free trial period, which would make it free. I also used Steam VR and VivePort to make the 360 film compatible with the VR headset. Both platforms are free to use. Similarly to the Twine game, I used Epidemic Sound to buy the ambient sounds and songs I needed for the film, which in the case of the VR video were very important to be able to create an immersive soundscape. Therefore, there was an additional cost of £10 at least once. Lastly, I used an HTC Vive Pro provided by the University of York and an Oculus Quest 2 provided by Saint Martin's Institute of Higher Education. HTC Vive Pro currently retails at £760, whereas the Oculus Quest 2 is £299. It goes without saying that I managed to create the VR video because this equipment was provided to me for free, and thus an archaeologist could create a similar video only if their organisation could provide them with similar equipment. If the archaeologist had to pay to create a VR video, the total cost would be approximately £1154, which would not fit the cost efficiency required for this research study. Lastly, for the VR video I had to employ the help of volunteers to do the voices of the characters in the film, which should also be considered, as not everyone would have access to or would like to involve volunteers to help them with the DIY project.

In conclusion, in terms of cost and time efficiency and taking into consideration the fact that Twine emerged as the most efficient medium for the purpose of this research, it seems to be the most suitable medium for quickly, cost effectively, and efficiently communicating archaeological research to the public.

Implications of the VR-video

When this study began in 2019, there were not many publications regarding the process of learning with VR, but in recent years there have been several papers discussing the matter (e.g. Makransky and Lilleholt, 2018; Makransky and Petersen, 2019). Notably, Petersen and colleagues (2022) are using the Cognitive Affective Model of Immersive Learning (CAMIL) to explore the way that VR is helping with learning. However, the learning process and results through VR have not yet been fully studied, as pointed out by other researchers in the field of educational VR, especially when it comes to the development of a theoretical or ethical background (e.g. Jensen and Konradsen, 2018; Radianti et al., 2020). Similarly, very little discussion has been done regarding the use of 360 films for pedagogical reasons or for publicn engagement (Ramieri at al. 2022, 1200).

The reactions and insights of the participants to the VR video are significant and have been studied to address the second research question, the impact of the media. As demonstrated in the previous chapter, it seems that participants who had not tried VR before the day of the experiment had the tendency to like the VR video and prefer it to the other two media. For example, 80% (n=5) of the participants who declared the VR video as their preferred medium were experiencing VR for the first time. It might be insightful to further investigate this in a future project.

The relationship between Stamatakis and Schliemann seems to have been slightly better understood by the participants via the VR (i.e. PQ24, PQ25, Q69). This is attributed to the fact that in the 360 film, Stamatakis' character has an actual voice and gives details of this relationship from his own perspective, using Stamatakis' own words from letters he wrote to his superiors during the excavations. However, this information was also available to users of the Text and the Twine. The fact that the VR video users understood this aspect slightly better, along with the fact that the VR users more strongly agreed that they felt sad about being unable to know the individual's name (PQ36), could be an indication of the strong emotive aspect of the VR video, along with confirming scholars' suggestions that archaeological storytelling can trigger an emotional response in the immersive experience, increasing agency and evoking empathy (Tringham 1991; 2019, 8; Yamin 2001; Perry 2019; Praetzellis and Praetzellis 2015, 128; Boutin and Callahan 2019; Van Helden and Witcher 2019, Savani and Thomson 2019). It is possible that the users felt connected because they could listen to actual human voices describing what was

happening. However, in question PQ38 regarding whether Stamatakis received less respect than he deserved, which captures the opinion of the participants based on the facts so far rather than some new knowledge acquired, both Text and Twine users scored higher than the VR users. This is unexpected since in the VR Stamatakis has a voice and speaks up about his mistreatment by Schliemann.

Some participants found the VR to be long and tiring, especially given the lack of interaction. Trix, for example, mentioned that *it's perhaps a little bit too long*. And Drew also said that the VR video was tiring because *it was lengthy*. And Kai noted that: *With the VR I found myself skipping a lot of it (using the controllers) because it was what I had just read*, since they had already experienced the story in the textual form. However, it is also important to note here that this is reflective of the design choice made, and not of VR-videos as media in general. It is also striking since the VR video users scored the highest percentage in terms of not feeling bored during the experience (100%, n=8). Both Kai and Drew began with another medium (Drew had the VR last, and Klein had it second), but Trix began with the VR video. Moreover, both these two participants work with VR on a daily basis whereas Trix is an archaeologist, and it was their first-time experiencing VR. Therefore, this inconsistency between the participants who mentioned that it was lengthy and/or boring during the interviews and the high percentage of participants not feeling bored in the quantitative results could be explained by a) the confirmed observation that participants who have not experience VR before tended to prefer it as a medium, b) the fact that the two participants know and use VR to its full potential and thus they were disappointed by the lack of interaction.

Indeed, most of the criticism against the VR video had to do with the expectation that the environment would be interactive, and participants were disappointed that there was not anything to interact with in the space, despite being told this in advance. Riley, for example, said: *What I would expect with the VR - since you're using such technology - it would be interaction, and not just looking around for minutes at the same thing, as it will get quite boring*. And later they added: *But, if it was more interactive, maybe it would have been better. Like, for example, when they mentioned the battle, it would have been better to also have a visual of the battle in the background, I don't know*. Noe was also expecting interaction: *For me the problem with the VR was that I expected interaction. So, the person who experiences the VR just goes with the expectation that they'll have to interact with something in the room. So, I don't think it's the most appropriate medium for your research. It is like buying a Lamborghini and then drive slowly! But then I was really disappointed to see that there was no interaction*. Cameron mentioned

something similar: *Personally, I found the VR experience a bit odd because there wasn't much interaction with the skeleton, and I felt that the same result could have easily been achieved with the form of an audiobook.* Bailey also noted: *Well, I play with VR every night. I used to watch TV at night to relax, but now I play VR instead. So, when the skeleton said 'Do you see that journal over there? Have a look!', normally from what I'm used to I would walk there and I'd pick up the book and I'd actually be able to read it. When I realised there was no interaction it felt more like an Audible experience. You know? So, I was comfortable listening to the story, and I was enjoying it but the VR element didn't add to it for me because I'm used to interacting with VR. And I thought maybe if I look at it, it will do something. But there wasn't anything that required of me, whereas in the other game (meaning the Twine) I was encouraged to engage, and it made me feel more engaged than the VR, even though naturally I'm very fond of VR. Not what I expected when I went into it. It felt more like a 3D cinema than a VR experience, because I didn't interact as much.*

Some participants also mentioned that they missed information with the VR video which they later understood via the other two media, which could be a flaw in this particular design of the VR-video. Jo, for example, said: *I understood it better from the game and then from the text. So, when there was a question 'did you feel like he was mistreated?' I was like 'No, he wasn't mistreated'. And then I played the game, and I was like 'Hmmm actually he was'. (*laughs*).* Cameron also mentioned that: *There were parts that I was unsure about, for example the name 'Clerk', I wasn't sure about the meaning of it but then with the text I was able to confirm it.* In this comment for example, the person who did MYC_1V's voice pronounced 'Clerk' with an upper-class British accent, and thus people later commented that they were unsure of the name, until they saw it written down. And Glenn mentioned that: *At times that sort of caught on later, because it was just hearing from the skeleton, this 'clerk' guy, and I was like, okay, so we don't like this guy! Or what's the gist with this guy? So that was a little confusing at times, but then I came to the notes, and I was like, oh, OK. Because I think at the same time, I was still trying to look around and see if there was anything I had to interact with. Also, like when he was talking about the diaries or something. I thought I had to click something at one point.* This observation that VR participants missed information which is also confirmed by the quantitative data (compared to Twine users), along with the lack of interaction in the VR confirms to a degree Makransky, Petersen, and Klingenberg's (2020) study where they use immersion and interactivity in VR to predict increased learning outcomes as a result of VR, and their consequent conclusion that both these elements enhance knowledge gain (Makransky, Petersen, and Klingenberg, 2020). Therefore, it is possible that if the VR also had an interactive element, it would have been better than the IDN regarding

knowledge retention, especially considering that the element of interaction was what made Twine to be more effective as a medium.

During the interviews, by which point participants had experienced all three media, they expressed different opinions on how effective they found the VR as a medium. Their reactions and comments have been captured and coded in NVivo under the codes: 'positive comment on VR' and 'negative comment on VR' and can be found in Appendix IV On the positive side, Glenn for example mentioned that: *I thought it was really fun. I really liked it, I thought it was really engaging. I think we were talking about the voice earlier as well. His voice I think was perfect. Be like the narrator and like, sort of like, capture you the second like, press play*. And when they were asked which was their preferred medium in terms of engagement and immersion, they said: *I'm stuck between actually the VR and the game [...] I feel like I like the narrative of the VR a bit more and engaged me more like what we were trying to figure out together*. Later, they said that they felt more emotionally connected to the characters with the VR: *I felt the most emotionally engaged I was with was with the VR. And then the game just answered some of my questions I had and provided me with more information. I do like that you built on the character being cheeky, like Venom* (note: the Marvel character). *Yeah, because that way I felt more connected. Like it was more personal. And I really liked that*. Therefore, the 360 film viewed in VR was immersive enough to allow for emotional connection between the participants and the characters.

The emotional connection via the VR video was also brought up by Trix: [...] *I think that the VR is what has the most emotional resonance, I would say, hear the voice in your head*. [...] I *would say that I found the VR to be most emotionally engaging, but the game was a lot of fun*. Oakley also found the voice to be quite emotive: *I feel like at first the VR was emotionally engaging as he was talking about himself. Because the moment he starts speaking you are quite confused and engaged*. Maxwell found the VR video to be *more immersive, it was still exhaustive with detail, but it was a bit lighter*. The emotive nature of the VR-video was also confirmed by the quantitative data, with participants who experienced the VR-video scoring higher in the questions regarding an emotional connection with the characters (i.e. PQ32, PQ36, PQ37). This arguably furthers Wu, Yu, and Gu's (2020) research that showed VR is more effective to facilitate learning than non-immersive approaches, because it is a more emotive medium helping people to emotionally connect with the past. Additionally, this result is in accordance with Ranieri and colleagues' suggestion (2022, 1200) that 360 film viewed with VR headsets can provide great sense of presence and embodiment, which explains the feeling of emotional connection with the character.

Therefore, I would argue that VR – even if it is a 360 film as in this research - could potentially be emotive and thus suitable for emotional connection with people from the past, assisting the archaeologist in their attempt to rehumanise skeletal remains. Nonetheless, as Petersen and colleagues (2022) argue, more robust research with a focus on cognitive immersive learning should be conducted to reach a better understanding of VR's potential and impact on knowledge dissemination.

Regarding usability, there were a couple of technical issues and in Malta, an Oculus headset was used instead of the Vive which was used to run the experiment in the UK and Greece. The set up had already been undertaken by a technician at Saint Martin's Institute the morning of the experiment. A tall participant from the first group (ML1) used the Oculus and in the interview they mentioned that: [...] *the camera was very low, so I felt like I'm a child. So, the feet of the skeleton were much higher on the table than normal and the video at the end was very high, so I had to look up to see it.* And a second person from the same group with similar height, after asking whether they experienced a similar feeling, they said: *Yes, it felt a bit weird, like I was in a lower level.* After that, I always made sure that I recalibrated the Oculus before each user to avoid any similar technical difficulties. Another participant mentioned that they noticed some jittering, and when asked if they saw black screen, they said *yes, but only a couple of instances.* This was not confirmed to have occurred by any of the rest of the participants, and thus it did not have any significant effect on the experiment.

Regarding the potential of VR in heritage, a participant who works with VR in heritage reconstruction projects on a daily basis and therefore talking from a more informed position, said: *VR hype right now has been worn out, as we stopped talking about what we can do with VR and we actually started doing it and we understood that it's huge work.* This comment reflects and confirms Eve's (2013) notion that after a medium (i.e. VR) reaches a peak state of hype it then gradually reaches a 'plateau of productivity' where people stop talking about what the medium could do, and start working on how to get there. It is also noteworthy that Colleen Morgan had identified a stall in the use of VR in archaeology almost 15 years ago, and she had attributed it to the 'rise in interest in the World Wide Web and the shift in perceptions of virtual reality due to the growth of pseudo-immersive gaming worlds where users can directly interact with the environment and with others to build online social systems' (Morgan 2009, 473). The results of this research confirm these speculations, since people are very accustomed to interacting with a gamified environment and anything less interactive is not engaging to them.

Lastly, it is important to note that some people felt physically ill. Four participants out of the 24 in total (16.6%, n=24) experienced some kind of physical discomfort. Alex for example mentioned that she felt nauseous throughout the VR video and specifically they mentioned that it felt like *torture* (translation from Greek). Noe, after I asked the participants in their group whether or not they felt some kind of physical discomfort, also mentioned that at some point they felt nauseous: *I did, yes. At the beginning because I had to turn to see the skeleton. I was looking the other way and the moment I turned I felt nauseous. But then I was OK.* Carter also said that: [...] *I don't like VR in general as it makes me feel a bit claustrophobic.* Trix also felt uncomfortable during the VR video: *The one thing I would say with the VR headset is when you are standing and watching I find my balance wavering.* It is documented that motion sickness, which sometimes is referred to as VR sickness (Eunhee Changa, Hyun Taek Kimb, and Byounghyun Yoo 2020, 1658) or cybersickness (Rebenitsch and Owen 2016; Palmisano et al. 2017), is a common side effect of using VR headsets, with different studies suggesting that 25% to 40% of people who use VR experience motion sickness (Fluvio et al. 2021, 8), with women being particularly susceptible (Allen et al. 2016; De Leo et al. 2014; Koslucher et al. 2015). However, there can be significant individual differences in symptoms of cybersickness, with some users reporting no symptoms following exposure to a simulation that is highly nauseating for others (Keshavarz et al. 2015; Lawson 2015). Therefore, it is important to take into consideration when experimenting with VR that there is the possibility of a percentage of people feeling uncomfortable or physically distressed.

Reflecting on the creation of the VR-video and these results and observations, I believe it is important to note that the VR-video created for this research was rather primitive since it was created with my limited knowledge and skills on creating virtual environments, and did not carry the element of interactivity. However, as mentioned earlier, interactivity have been considered to be fundamental along with immersion in VR artefacts (Makransky, Petersen, and Klingenberg, 2020), and are considered to be important for the notion of 'presence' (Pujol and Champion 2012, 83, Sanders 2014, 31). This principle, along with the fact that the research confirmed that interactivity was the element that made Twine effective for knowledge dissemination, arguably affected the ability of the VR-video I created to be effective for knowledge dissemination. Therefore, it would be beneficial to further explore the potential of 360 archaeological filmmaking that is designed to be viewed with VR headsets as a medium for triggering emotional connection and empathy with people in the past.

Implications of the Twine Interactive Digital Narrative

As mentioned above, through this research Twine has been identified as the most effective medium for disseminating archaeological research to audiences compared to a textual version of the narrative, and a VR-video version of it. Twine in this research has been used as the interactive version of the textual story, meaning that a textual form of the narrative pre-existed and was used to create the IDN. That was deliberate, as it was the only way to make sure all three media contained exactly the same information in order to compare them more effectively. As a result, the IDN produced was a passive digitally mimetic medium (Copplestone and Dunne 2017). This means that the storyline was straightforward and that the Twine was not made as a standalone digital narrative born digital, but the textual narrative was inserted into the Twine platform. The limitations of this are discussed below, but here it is important to discuss the implications of this choice compared to the current literature.

The linear aspect of the narrative allowed the implementation of hyperlinks to act as digital substitutes for the textual footnotes, which facilitated knowledge dissemination. Therefore, it was much easier to compare the results between the textual narrative and the Twine in the qualitative data. On the same note, it is important to consider that the initial aim of the research was to identify the most effective medium for a DIY project created by an archaeologist with limited funding and time. Therefore, having a linear narrative assisted this aim further, as it allowed for a large amount of information to be included in limited space utilising the hypertext function, while clearly demonstrating to the user that all these are just interpretations of the data (available for them to check via the two notebooks in the Twine game) by also allowing for some flexibility of choices. Therefore, this narrative form was an efficient way to address all the aims of the DIY project, and fitted the purpose of the research. As Copplestone and Dunne (2017) have argued, neither type (active versus passive or digitally born versus digitally mimetic) is necessarily better than the other, and it just depends on the project's aims. The participants who experienced Twine scored higher than the other users in the knowledge questions, which is an indication that a linear digitally mimetic medium is effective in communicating archaeological research to audiences.

In regard to the core element of Twine, which is interactivity, participants enjoyed it immensely as they felt they were in charge of the story, and they could control the pace and felt that they were doing something. This observation aligns with the importance of the participatory process stressed by Koenitz (2023, 71), who identifies it as a significant element of IDNs. This is a strength

of Twine, since, as Copplestone (2016, 16) has pointed out, it allows the user to explore more or less details of the story. In the Twine that was created for this research, the users could explore by clicking on the hyperlinks to learn more of the story. However, as mentioned above, it is important not to include significant aspects of the story as additional hypertexts, because users might skip this. Notably, in this research the use of information in the IDN mimicked the footnotes of the textual version of the story. Indeed, as made clear in the analysis and interpretation of the data above, some text users and some Twine users skipped the footnotes and the hyperlinks respectively which led to significant impairment of their ability to respond correctly to the questions. Consequently, it would be optimal to include less significant information in the hyperlinks rather than the core learning elements that the researcher wants to communicate to audiences.

Lastly, it is important to note that the results confirm the argument by other scholars such as Tringham (1994, 2015) and Copplestone and Dunne (2017) that digital interactive media exploring and presenting narratives of the past are useful tools for studying and disseminating archaeological information. This research also demonstrated that Twine is user-friendly and easy to be created by an archaeologist, which is additional benefits when it comes to DIY archaeological projects in particular.

Implications of research

DIY Digital Archaeology: a methodology for practice and reflection

This thesis argues that do-it-yourself (DIY) digital archaeology, where archaeologists employ digital technologies themselves for the purpose of communicating their research outcomes to the general public, instead of depending on external professionals to disseminate their scholarly work, is of significant value. That is because through exploring new digital tools and incorporating them into their practice, archaeologists can better understand their own research and communicate it to others. Therefore, delving into DIY digital archaeological projects has positive implications for both the archaeologists and their audiences.

In this research, the DIY aspect of creating the three media has helped me as an archaeologist to better understand the difficulties of creating those media but also the significance of archaeological storytelling and interaction in disseminating information about the past. Therefore, I find it of utmost importance for archaeologists to know the fundamental elements of the technologies they are using to disseminate their research, as many scholars have already suggested (i.e. Roussou et al. 2015, James 2015, Perry 2018, Morgan and Wright 2018). Notably, in my attempt to create a VR immersive experience I had to comprehend the literature and research on immersive techniques that normally as an archaeologist I do not have to deal with. Naturally, I did not fully grasp every single aspect of the vast research done on VR technologies inside and outside archaeology and cultural heritage during the length of this project, since I also had to educate myself on other digital media such as IDNs. Competencies in areas such as 360 filmmaking, video editing and problem-solving, crafting immersive soundscapes and appreciating the differences between interactive and non-interactive digital environments have been acquired, enhancing my capabilities for future digital archaeological projects.

Similarly, delving into archaeogaming and interactive digital narratives (IDNs) opened up horizons for my research that I had not thought about before, such as the importance of interactivity and non-linearity in digital storytelling. Through my DIY endeavour and following a practice-based research approach, I identified IDNs as being great pedagogical tools and consequently effective media for archaeological knowledge dissemination and public engagement. This result further supports recent research on the effectiveness of IDNs conducted by practitioners in the field, such as Koenitz (2018) who recently argued that IDNs are potentially effective pedagogical tools and suggested that further research on the matter prioritizing the development of curricula, training

methodologies, and conducting research on pedagogical aspects related to IDNs should be a central focus in the forthcoming years (Koenitz 2018, 41). Similar suggestions for further research of the effectiveness of IDNs as pedagogical tools have been expressed by Daiute, Duncan and Marchenko (2018) talking about Twine in particular, and with the suggestion to further investigate the impact of the medium by expanding the participant pool, extending the duration and frequency of Twine or other IDN authoring tools, documenting gameplay and preliminary design during player reflection sessions, and conducting comparative studies with other media (2018, 141). On the same note, Dubbelman, Roth, and Koenitz (2018, 593) argue that IDNs are promising pedagogical tools but there are still obstacles in their use, such as the lack of tools to assist creators in making non-linear stories, and further research on the IDN pedagogy is needed. Therefore, this doctoral research contributes to the literature around the effectiveness of Twine and consequently IDNs by clearly demonstrating their efficiency and effectiveness when used in DIY archaeological projects.

Consequently, practice-based experimental research has been the most important vehicle to achieve my research goals. This is arguably an indication that more practice-based PhD projects in digital archaeology are needed to fully engage with current discourses and knowledge deficits in the discipline. As Edmonds (2022, 591) points out, in practice-based research the study needs to be able to adapt as the researcher discovers new insights. An integral aspect of practice-based research involves meticulously documenting setbacks or obstacles, along with the subsequent actions undertaken in response to those challenges. I argue that this is a significant element of the methodology and should be implemented in similar DIY archaeological projects or practice-based research projects, as it provides the researcher and the reader with valuable insights on the difficulties and potential solutions. For example, in this thesis I have given detailed paradata notes on the decisions I made (e.g. the rejection of the use of video recording to allow me more freedom to concentrate on observing the participants and note-taking since I had no help during the experiment), as well as practical (e.g. that the internet at the University of Athens was not working) and technical (e.g. that I struggled to implement the 360 film in the VR environment) issues and how I overcame them. This will provide other researchers with information on how to deal with similar issues or come up with different solutions while highlighting the significance of this kind of research.

The experimental element of this practice-based research has been allowed to manifest through the philosophy that underpins it, which is Pragmatism. Pragmatism, apart from being a fertile

ground for employing mixed methods research, allowed me to make adjustments as the experiment proceeded and adapt to the new circumstances much more easily (see Rossman and Wilson 1985). The philosophy that underpins one's research is crucial since it affects the way the evaluation process is designed and implemented, as well as the methods that will be used to collect, analyse, and interpret the data. For mixed-method researchers, Pragmatism opens the door to the use of multiple methods, different philosophical paradigms, and different lenses for interpreting the data, as well as different forms of data collection and analysis (Creswell 2003, 11). Pragmatists do not perceive the world as an absolute entity, and they reject the dichotomy between a truth only inhibiting the mind and a truth independent of it. Therefore, they prefer a mixed methods approach since it allows them to utilise the benefits from both qualitative and quantitative research (Creswell 2003, 11). Indeed, this philosophy has worked well with my DIY experimental project, and I would argue for the use of it in future similar projects as it gives researchers the freedom to adapt as they proceed with the research, which is much more effective than trying to stick to a particular method, such as structuralism, and thus confine the creativity that is a prerequisite of such endeavours.

Pragmatism also aligns with the DIY element of this thesis, which dictated that the media needed to be created by an archaeologist with minimal or no funding and training. The concept of the active experience of the researcher is central in Pragmatism. As illustrated by Price (2014, 4), this perspective posits that experience should emerge from the dynamic interaction between the researcher and the research (i.e. the project design and data processing). The DIY practice-based research element of this thesis serves not only practical purposes, but also underscores the significance of the archaeologist's active involvement in the digital media creation process as many scholars have emphasised (i.e. Morgan and Eve 2012; James 2015), as well as in the development of the evaluation methodology (i.e. Huggett 2015; Perry and Taylor 2018).

Regarding the development of a methodology to evaluate the research project, it is important to stress that it is meant to be specifically for DIY digital archaeological projects, though it can be applied to funded projects as well. One of the research questions that this thesis aimed to answer was the impact of the media created in this research on audiences, since it was established in the literature review chapter that formal evaluation of DIY digital archaeological projects remains relatively unexplored as an area of scholarly inquiry (i.e. Richardson 2014, Galeazzi and Di Giuseppantonio Di Franco 2017, Ellenberger and Richardson 2019). There is currently no established methodology for the evaluation of DIY digital archaeological projects. Nonetheless,

as Huggett (2015) argued, a reflective and critical approach of our creations is essential to understand the impact of them on our intended audiences.

The methodology that I have developed demonstrates robustness while retaining adaptability, rendering it amenable for application in diverse digital archaeological and cultural heritage projects, following Galleazzi and Di Franco's (2017) suggestion. I have followed a concurrent (or convergent) embedded mixed methods research design where both quantitative and qualitative data were collected and then merged in the analysis to be interpreted complementary to each other (Creswell 2009). This thesis demonstrates that a mixed methods approach is an efficient way to assess the impact of the project since the comparison between the data can offer valuable insights that the datasets on their own would not have been able to deliver, as also seen in Bonacci and colleagues' work (2014). For example, the merged examination of the two datasets allowed me to further investigate elements of the impact of the VR on the users, to discover that participants were captivated by it if it was their first time experiencing VR. Similarly, the combined evaluation of the quantitative and qualitative data allowed me to explore whether or not the sequence of experiencing the media affected and to what extent the preference of the users and shed light on the so-called 'bias of the first encounter'.

Aside from these benefits of exploring both data sets in combination, it is important to stress the significance of the qualitative aspect of this research in its own regard. As mentioned in the literature review chapter, the evaluation of digital archaeological projects tends to favour basic quantitative surveys (Richardson 2014) rather than substantial interviews with participants to acquire qualitative data. However, the qualitative data are far more rich and expose discourses that would not otherwise have been identifiable. For example, in this research the qualitative data analysis using Reflective Thematic Analysis (RTA) led to the discovery of substantial themes, shedding light on elements of the impact of the media on the users. For example, the theme of the combination of media along with the preference for interactivity further supports research done by other practitioners claiming that digital interactivity is an important element for pedagogy (i.e. Koenitz 2018, Basaraba 2018, Dubbelman et al. 2018). Similarly, the theme that authenticity matters and adds value to the story further supports the use of osteobiography and bioarchaeology of personhood model as efficient methods for archaeological storytelling (i.e. Boutin 2016, 2019). Therefore, RTA is a highly advantageous tool allowing great reflexivity in DIY digital archaeological projects.

RTA has also allowed for reflexivity on my own biases when generating the themes and interpreting the data. As the creators of the method have argued multiple times, the themes do not simply 'emerge', but the researcher has a significant and central role in actively interpreting them (see discussion in Braun and Clarke 2019). Reflexivity and critical consideration of our projects has already been discussed as an important component of research that we should strive for (i.e. Huggett 2015, Perry 2017, Beale and Reilly 2017b, Perry and Taylor 2018, Williams 2019, Galani and Kidd 2019). Being reflexive and critical, and recognising our own biases and position within the data is a core aspect of the analysis. In this research, I have created a full positionality report (see Appendix II) to address this element, and I would suggest that every DIY digital archaeological project should include one, in order to allow the researcher to further reflect on all stages of the project, from the conception of the idea, all the way to the collection and interpretation of the data.

Significant aspects of the media
Authenticity and curiosity

Authenticity and ignition of curiosity via the narratives are themes that came up during the interviews. Devin, for example, mentioned that *it's important to know that there is actual evidence to support the story* [...], meaning both the osteological and archaeological information. And both Drew and Alex also mentioned that it was important to them that the story was based on archaeological and osteological evidence. Alex specifically mentioned that (the research) *gives a substance. A scientific substance to the text. Otherwise, it could have just been a fairytale* (translation from Greek). And Tristan agreed: *Exactly. The fact that there has been research conducted about the story and somebody has spent time with it with more interest* (translation from Greek). Therefore, building on Praetzellis' (1998a) suggestion that the responsibility for interpreting the data lies with the archaeologist, and that of Deetz (1998), that the archaeologist is responsible for communicating their research to the public, I would like to suggest that it is also the archaeologist's responsibility to allow the public to draw interpretations from the narratives about the past by offering access to the data in a fully accessible format, and by making clear that everything is just an educated interpretation and nothing more. That way, polyvocality in interpretation is encouraged, though the researcher needs to think about how these voices of interpretation are weighted.

Boutin's osteobiographical model of storytelling with footnotes, in the form that it was implemented in this research, was not favoured by the participants. However, it is important to note that in Boutin's (2014, 2016) stories the footnotes are not that extensive. Text users mentioned that the footnotes were informative but rather distracting and many of them skipped parts or all of the footnotes. Noe, for example, mentioned that: *I was reading the story first. And then I was reading all the references, so I was getting lost. So, I had to read the story again to remember what I was reading.* Kai added: *And that kind of like the footnotes I think don't work, because they are quite extended.* And Cameron mentioned: *it sort of interrupts the narrative.* This is also reflected in the quantitative data, wherein participants who experienced the Text first scored lower than the rest of the participants, most likely due to skipping important information from the footnotes.

However, there were a few participants who really enjoyed the footnotes. Carter mentioned: *this for me (showing at the footnotes) made me feel I didn't even need the narrative and I just enjoyed reading through the footnotes. In fact, at one point I stopped reading the story, because I already knew what's happening, and I just read the footnotes.* In their case though, they had already experienced the story once via the Twine game, so they already knew the main story and they were just attracted to the footnotes of the Text. Similarly, Noor who began with the Text, said the same thing: *I'm actually glad I began with the text as I had all the information I needed there. Regarding the text itself when I was reading it, as Carter said, I didn't need to read the narrative itself,* meaning that they could understand everything that was happening in the story from just the footnotes. However, Noor was an archaeologist and therefore one could argue that they are accustomed to reading academic papers with extensive footnotes and technical language, and thus they enjoyed it.

It is also noteworthy that even the participants who found some of the details too complex, specifically the scientific language of the osteological information, still felt that the footnotes added value to the text by making the story more authentic. People found it fascinating that archaeologists can examine bones in such great detail to create an almost full osteobiography of a person who died millennia ago. Tristan, for example, mentioned that they found it interesting that archaeologists today can understand *the damage on the bones and the cause of death of the people* (translation from Greek). This on its own is proof that even heavily scientific results can be presented to the public through archaeological storytelling, giving them the freedom to interpret or consider other versions of the stories themselves.

Treatment of human remains

The importance of rehumanising MYC$_1$V was a very prominent theme in the qualitative data. Regarding the use of digital media for purpose of rehumanising the past, Morgan (2022, 216) has pointed out that digital technologies have played a key role in changing how archaeologists perceive the bodies of past people, how they communicate their interpretations of archaeological evidence, and how these interpretations are disseminated. This also aligns with the objectives of the Bioarchaeology of Personhood model and confirms that the osteobiographical model is effective in knowledge dissemination and public engagement. Boutin (2015, 18) states that this model can provide a more humanising view of the past, as well as offering an effective and accessible way to communicate research to a broad range of audiences. However, since the textual version of the narrative which follows Boutin's model, collected negative comments regarding the lengthy footnotes, I would argue that a digital version of Boutin's model in the form of an IDN would be an even better alternative to the textual osteobiographical narratives, unless the footnotes used are rather limited as in the stories created by Boutin.

Participants seemed to have particularly enjoyed that MYC$_1$V was given a 'voice' to articulate their feelings about the mistreatment of their remains. Noor mentioned: *I liked that you've used the perspective of the dead individual telling the story, like someone is screaming from the grave 'Stop messing with my bones!'. I get that. And there was a question in the post questionnaire about how I felt. That was very important to me, because I did - I did feel that - I did connect.* And Bailey also commented: *I was more interested in the guy on the table than the archaeologists, because he was the main character, [...] And the archaeologists were just messing with his bones!*

Many participants felt closer to the character of MYC$_1$V which suggests they saw them as a human being. One participant mentioned that they suddenly realised that they were not reading an 'academic article' and that the character was an actual person, which shows how it was possible to rehumanise skeletal remains through the media. Maxwell also felt empathy for Tough: *By the end I was like 'Oh, this was an actual person like me'.* Participants were quite vocal about how we as a society treat human remains. Billie, for example, commented: *And that they took his arm and like, put that on display because it had an armband. Yeah, I'm just thinking about all the, like, when you like, in what instance, there's just a hand, somebody's hand in a museum and nobody, like, there's like a whole thing about it now.* This was evident across all the groups, with

participants musing on the problem. This suggests that the story contributed - at least to a degree - towards the rehumanisation of the remains of MYC$_1$V and opened up discussion about the ethics of handling, studying, and presenting human remains. Consequently, the research confirms the benefits of archaeological storytelling and Boutin's osteobiographical model in particular as a means for disseminating archaeological information to audiences. However, based on the results discussed so far, a digital version of the model, i.e. an IDN such as Twine, would be the optimal option for this purpose.

Colonialism

As mentioned earlier in this thesis, Greece represents an odd case where colonialism and nationalism have synergistically operated through the prism of cryptocolonialism. Of course, it is not a unique phenomenon. Hertzfeld (2017) compared Greece and Thailand, claiming that they both exemplify instances of cryptocolonialism, wherein the amalgamation of reverence and resentment toward dominant Western nations gives rise to unique attitudes (2017, 887). Similarly, Hamilakis and Greenberg (2022) have discussed Greece and Israel as comparative case studies to initiate a scholarly discussion and investigate topics encompassing the colonial origins of national archaeologies and the role of archaeology as a transformative tool.

It has long been established that the Greek identity was constructed from by Western powers and the Greeks have adopted this identity and perform accordingly ever since (see discussion in the Chapter 4). Decolonisation of Greek heritage would actually mean the Greeks to step out from this strong narrative of connection with the classical past. I am not aware of any public engagement archaeological or cultural heritage project that has ever attempted to decolonise Greek heritage in that way. On the contrary, wherever archaeology is involved, it is usually used politically to enhance this connection with the classical and prehistoric antiquities to further establish Greek identity and consequent claims (see for example discussions in Plantzos 2008 and 2012 about the opening ceremony of the Olympics 2004, and Plantzos 2017 regarding the archaeological research in Amphipolis).

Accordingly, the discussion about the need to decolonise the cryptocolonised heritage has been kept inside academia, though there have been significant projects to involve local communities

with archaeological excavations and democratise the heritage. For example, Stelios Lekakis has actively involved the Naxian people in dialogue about their heritage through various tools, including interviews and questionnaires, presentations, public dialogue gatherings, publications, educational initiatives targeting both schools and individuals employed in the cultural and tourism sectors, as well as collaborative ventures with local communities, and more (Lekakis 2015, 98). Similarly, Kyriakidis and Anagnostopoulos have developed a community project through the Three Peak Sanctuaries of Central Crete archaeological project in the village of Gonies in Crete, Greece, actively engaging the local community in decision making (Kyriakidis and Anagnostopoulos 2017). However, initiatives like these, despite being extremely welcome and progressive, do not actively decolonise the cryptocolonial archaeology of Greece, since they do not discuss issues such as colonialism, but they are rather focused on engaging the local communities in decision making for the local heritage.

Hamilakis has repeatedly advocated for the decolonisation of archaeological theory and practice (i.e. 2007, 2018, 2022), stressing the importance of politicising archaeology. He also claims that 'an archaeology of resistance should decolonise the self' by historicising diverse conceptions of personhood and work proactively against identity claims and the segregation of discussions surrounding identity (Hamilakis 2018, 520). This work against identity claims has been a central element of the narratives I created. I attempted to explore and alter the cryptocolonial history of the excavations at Mycenae by bringing Stamatakis back into the narrative. I was interested to explore whether there would be a difference in the perception of colonialism by colonised people and people from countries who traditionally are considered colonisers, as well as by the Greek participants.

This aim of the research along with the utilisation of archaeological storytelling to achieve it is in alignment with Lemos' suggestion (2022, 25) that postcolonial theory allows archaeologists to propose bottom-up narratives that could emphasise the role and agency of local people within the community or within the archaeology of that community. In this research, by emphasising the importance of Stamatakis' contribution through his constant battle with Schliemann, his agency as a 19th-century Greek archaeologist is highlighted. There was a striking difference between participants with either a colonial or a cryptocolonial background and participants with a western European background as discussed above. Noor, a person from a former colony, commented: *The colonisers… it takes learning to form aesthetical and to understand them truly, but it's only countries who had experienced colonisation that can actually understand* [sic].

As mentioned in the previous chapter, only one participant from the two groups in the UK brought up the concept of colonialism by identifying Schliemann as a colonial power, but this participant was actually from a former colony. This was particularly intriguing because during the interview I did not mention 'colonialism' or 'cryptocolonialism', and neither of these concepts are widely known or associated with Greece. The participant identified *a colonial mindset in archaeology* in the narrative independently. Of course, as mentioned several times already in the thesis, the narrative is constructed to provoke the users to think about colonialism, and in that regard one could argue that they were successful.

However, on the same note, amongst the four Maltese groups (Malta was a British colony until 1964 and is still part of the British Commonwealth) only two participants out of the 12 - one archaeologist and one heritage practitioner - were significantly vocal and quite upset by the story. These participants found the story to be reflective of their colonial past and the colonial derogatory attitudes towards local archaeologists. Noor, for example, said: *We are victims of previous colonisers and in many ways we still are. And we still look down upon ourselves. [...] So, when you hear of someone else who comes into your country and messes up with your heritage or digs up in a place and they are not local, you feel very strongly and passionate about it. You think: 'OK, I'll take your money, but I can take it from here'*. The remaining Maltese participants were mostly concerned with the potential endangerment of the artefacts or the possibility of looting instead of directly talking about colonialism. For example, Cameron commented: *Yes, one of them was looking to cut corners and do things as quick as possible, and the other was trying to do things right and stick to the rules* […]. However, this could also be perceived as indicative of colonialism, given that they felt fear and anxiety that someone 'from outside the culture' would damage or steal artefacts with irreversible consequences, but it is noteworthy that they did not used the same vocabulary as the two participants related to heritage.

Furthermore, it was striking - but not unexpected - that none of the Greek participants in the experiment had heard of Stamatakis before. None of the Greek participants responded correctly to the question (PQ5) that Stamatakis excavated Mycenae along with Schliemann in the pre-questionnaire. This is an indication that his contribution to archaeology has been erased and continues to be forgotten even today. Sage specifically said that they had never heard anything about him, and they only knew about Schliemann, something that the rest of the participants confirmed. It is also noteworthy that the participants were from different age groups, ranging from mid-twenties to mid-sixties (the age gap between the youngest and the oldest participant in the

Greek groups was 34 years), meaning that there were almost three school generations in the group, given that a school generation is approximately 12 years in Greece. In 2023 history books for Primary (ages 4-11), Secondary (ages 12-15), and High School (ages 16-18), Stamatakis' name is not mentioned, while Schliemann's is. He is described as a wealthy German trader and researcher, who conducted the excavations at Mycenae and managed 'to add historical substance to the Homeric epics' (Mastrapas 2015, chapter II, translation from Greek). This is entirely incorrect since the Homeric epics are not a historical text recording true historical event. This confirms the cryptocolonialism that underpins Greek education today and justifies the use of bottom-up narratives by archaeologists underpinned by postcolonial theory as Lemos (2022, 25) had suggested to emphasise the role and agency of local people within archaeological research and consequently dissemination of knowledge about the past. In this research, by emphasising the importance of Stamatakis' contribution through his constant battle with Schliemann, his agency as a 19th-century Greek archaeologist is highlighted. Additionally, as Flexner (2021, 16) had pointed out, engaging with knowledge produced by indigenous scholars - in this case Stamatakis - is a possible route towards decolonisation. As Lemos (2022, 29) claims, 'Postcolonial theory allows us to rewrite history books.' Of course, this does not imply that archaeologists should dominate these new postcolonial and decolonial scenarios, but rather to use 'relatively privileged positions' to challenge the colonial narratives (Flexner 2021, 17), which is what I have tried to do in this research (regarding my biases and my privileged position, please refer to the positionality statement, Appendix II).

The pervasiveness of this kind of false information was confirmed through the pre-questionnaires; for example, five out of six participants in the Greek groups responded that Agamemnon was a real king in the pre-questionnaire, and four out of six thought that the Trojan war was an actual historical event. During the discussion afterwards some of the Greek participants were upset that Greek schools do not teach about Stamatakis while Schliemann is portrayed as a hero and the father of Mycenaean archaeology, which is reflective of the embedded colonialism in the educational system. Max, for example, mentioned that: *We had the opposite knowledge, that he (Schliemann) was good, and amazing, and the top. And suddenly today we realised that the reality has been different and that there has been a lot of background in the situation* (translation from Greek).

In the Greek groups, almost every participant discussed notions of colonialism in the story. None of the Greek participants were familiar with the concept of 'cryptocolonialism' nor knew that

Greece is considered to be a cryptocolony. Yet, they immediately identified colonialism and colonial attitudes towards Stamatakis in the story. Sage, for example, said that they were bothered and upset by Schliemann's arrogance and colonial behaviour: *The fact that Schliemann considered the whole project (the excavation) to be his own like 'I'm the boss and I'll do whatever I want, and I don't care about the government or anybody'. This bothered me. He was in a foreign country, not his own. If he was in his own country, he could do whatever he wanted.* This comment is particularly interesting since it highlights the understanding that an external factor (Schliemann) was acting 'out of line' and without respect for the local culture. As mentioned in Chapter 6, this also came up from a Maltese archaeologist - also a victim of colonialism - who specifically mentioned the word 'patria' to describe Schliemann as a foreigner who had no right to behave in the way he behaved, further supporting the perception of this behaviour as a colonial attitude. Charlie, another Greek participant, also mentioned that they were bothered by the relationship between Stamatakis and Schliemann and the latter's behaviour. Similarly, Drew, a Greek, mentioned that they found Schliemann's behaviour ethically bothersome along with the fact that Stamatakis' contribution remains unknown and thus uncredited. Alex, also Greek, visibly upset, said that they knew that Schliemann and people like him stole antiquities from Greece. Moreover, it is significant that the difficult relationship between Stamatakis and Schliemann was perceived by the Greek participants despite the barrier of the language. For example, in response to question Q69 regarding Schliemann causing trouble and mistreating Stamatakis, all participants responded correctly (100%, n=6) and on question PQ24 regarding whether or not Schliemann was cooperating, four out of the six participants responded correctly (66.7%, n=6).

To summarise, the colonial elements of the story seem to have been better understood by two categories of participants: people from former colonies but from a background either in archaeology or cultural heritage, and from the Greek participants. Also, it is noteworthy that the concept of cryptocolonialism clearly was not known by the Greek participants. Consequently, the media were a good starting point to decolonise Greek cryptocolonised heritage as the narratives initiated discussions and raised questions from the Greek groups. This makes a strong case that decolonisation of Greek cryptocolonised heritage is imperative, and Greek archaeology should focus on this aim.

Archaeological storytelling as a tool for disseminating archaeological research

Boutin has suggested that alternative media, including digital media and fictive narratives, should be employed widely to communicate research to the public, as they promote multivocality and encourage reflection on the trends and methods used by the discipline's practitioners (Boutin 2016, 18). And as Perry (2018) argues, we need to make our narratives more compelling to avoid being obsolete and 'soulless'.

It is clear from all three versions of the story that archaeological storytelling is an exceptional tool to communicate archaeological research to the wider public. This has been suggested by multiple scholars since the 1990s (Tringham 1991; Deetz 1996, 1998; Praetzellis and Praetzellis 1998; Edmonds 1999; Gibb 2000; Majewski 2000; Wilkie 2003, 2010; Yamin 2012; Tringham and Stevanovic 2012; Boutin 2014, 2016). All participants enjoyed the story immensely and wanted to know more about it afterwards, regardless of the medium. Some participants even found the osteological details enjoyable because they were interested to learn about how the person lived their life and how they died. Maxwell, for example, mentioned that *the side story of the archaeologists was interesting too. Because actually I think it puts things in perspective that I might haven't thought much about. Because usually when writing a story, the author has a particular perspective that they want to talk about, so actually going to the other side, that of the archaeologists, made me also sympathise with them and not only the main character. I sympathised with their struggles, as it's not easy, discovering, and going to the sites, it's actually a job. You have to deal with the people that you're working with, so it's not easy*.

Moreover, archaeological storytelling allowed me to engage deeply with the archaeological material, the osteological information, and the historical data and better understand both the period of the shaft graves at Grave Circle A (GCA), and the history of the excavations, as it has been suggested by many scholars (i.e. Gear and O'Neal Gear 2003). It also allowed me to present Stamatakis' story and effectively engage audiences with him confirming Hodder's (1999, 143) suggestion regarding archaeological storytelling being a useful tool to stress the importance of people rather than processes (Hodder 1999, 143). Similarly, it allowed me to rehumanise the remains of MYC_1V following the bioarchaeology of personhood model which also furthers Boutin and Callahan (2018, 2) and Praetzellis' (2014, 5153) suggestion among other scholars that archaeological storytelling and fictive narratives encourage audiences to empathise with the characters in the story and to acknowledge their humanity. Similarly, the narratives created

empathy with the characters, verifying similar claims by scholars (Tringham 1991; 2019, 8; Yamin 2001, Perry 2019, Praetzellis and Praetzellis 2015, 128; Boutin and Callahan 2019; Van Helden and Witcher 2019, Savani and Thomson 2019).

On a similar note, archaeological storytelling allowed me to give visibility to Stamatakis and the issue of colonialism in Greek archaeology and heritage, which supports claims by scholars that fictive narratives can give visibility to particular groups of marginalised silenced people (i.e Tringham 1991, 94; Joyce and Tringham 2007, 333). Lastly, archaeological storytelling in this research allowed me to disseminate archaeological research to audiences and engage the participants with my case study, which supports Majewski (2000, 17) claim that fictive narratives can engage, educate and convince the public regarding archaeological knowledge.

Limitations of the study

As with every research project, there are limitations to this study. These can be summarised - though not restricted to – as in regard to the experiment design and implementation, the sample size and diversity, the media design, and the analysis methods.

Limitations about the experiment design and implementation

Methodology of Evaluation Limitations

Two limitations of using the RTA method to study and analyse the data should be considered. First of all, NVivo might not have been the best software for this kind of coding since my material could have been easily handled with less complicated software such as Quirkos or even Google Docs with the option of commenting, or with analogue ways of coding, such as post-it notes and different coloured pens to avoid the additional inherent biases of the software. These biases include but are not limited to algorithm bias (i.e. Sun, Nasraoui, and Shafto 2020), training data bias (i.e. Hutchinson et al. 2021), contextual bias (i.e. Johansen, Pedersen, and Johansen 2023), and feedback loop bias (i.e. Mansoury et al. 2020). An in-depth discussion of software biases is out of the scope of this research, but it is important to acknowledge their existence.

The other limitation in that regard is that I alone coded the data rather than using another person to create codes and themes and cross-check my interpretations. This could potentially have created a richer discussion as it would offer different perspectives of analysis. As Braun and Clarke (2013) suggest, multiple coders may enrich the data interpretations because qualitative analysis as a whole does not provide a single or 'correct' answer. However, it is important to note that RTA is grounded in the subjectivity of the researcher and Braun and Clarke (2012, 2013, 2019, 2020) have noted that themes are the result of the subjective interpretation of an actively engaged researcher. In fact, Braun and Clarke (2019, 594) suggest 'the researcher's reflective and thoughtful engagement with their data and their reflexive and thoughtful engagement with the analytic process' is key. Moreover, it is widely accepted that the researcher is one of the main instruments for generating and analysing data (Leibing and McLean, 2007; McLean, 2007). Therefore, it is not clear whether having more people to code the data would have actually benefited this particular research study especially given potential restrictions by the GDPR

(General Data Protection Regulation) regarding data handling by other people than the main researcher.

Another limitation regarding the way I used RTA is that I designed the experiment and then proceeded to analyse the data in a deductive manner rather than an inductive way, which could potentially have led to a richer discussion. As suggested by Braun and Clarke (2020), data analysed and coded deductively could potentially lead to a less rich description of the overall dataset, as researchers focus on providing a detailed analysis of a particular aspect of the dataset interpreted through a particular theoretical lens. In my case, I had already decided the questions that I would ask participants during the interviews, but maybe a more open discussion without any predetermined questions with a focus on the emotions and perceptions of the participants towards the story of MYC_1V and Stamatakis, as well as on their reactions and thoughts on the three media, would have offered a deeper understanding of the situation and could have potentially led to more interesting findings and discussion.

However, it is important to also note that the interviews were not only based on predetermined questions, but I also allowed room for discussion and idea development by the participants, as discussed in Chapter 5. According to Byrne (2021, 1397), 'it is arguably not possible to conduct an exclusively deductive analysis, as an appreciation for the relationship between different items of information in the data set is necessary in order to identify recurring commonalities with regard to a pre-specified theory or conceptual framework. Equally, it is arguably not possible to conduct an exclusively inductive analysis, as the researcher would require some form of criteria to identify whether or not a piece of information may be conducive to addressing the research question(s), and therefore worth coding.' Braun and Clark (2012) explain that normally it is not a clear-cut choice between a deductive or inductive approach, but rather an acknowledgement that one approach does tend to predominate over the other and accordingly, the dominant approach is indicative of an overall orientation towards prioritising either researcher/theory-based meaning or respondent/data-based meaning, respectively. Therefore, in my analysis, though I opted for a deductive approach with predetermined interview questions, I accommodated further discussion, which is clearly demonstrated by the fact that I ended up with themes I was not expecting at all (i.e., that the sequence of the experience matters, the first encounter bias, or the suggestion of a combination of media or even the suggestion of entirely different media).

Pre- and Post-questionnaires

One limitation of the research could be that because some of the questions between the pre and the post questionnaires were the same, the participants might have been looking for clues when experiencing the media, as they would arguably expect those questions in the post-questionnaire. Noe, for example, mentioned: *I was reading the story first. And then I was reading all the references, so I was getting lost. So, I had to read the story again to remember what I was reading. Because I was trying to memorise them as I knew I was going to be asked about them*. Therefore, it is possible that they were consciously or unconsciously looking for the answers to these questions in the stories. However, even in this case, this would have been true for all three media and since the data analysis was undertaken in a comparative manner, the finding that Twine is the most effective of the three media still stands. This is something that could potentially have had an impact on the results since the participants were not behaving in a 'natural' manner, such as if they were experiencing the media in a non-experimental environment.

Sample size and WEIRD data

An additional limitation is the sample size as well as the sample diversity. First, the size of the sample was rather limited (24 participants) due to the impact of the COVID-19 pandemic and the consequent lockdown which significantly limited access to people and places for conducting the experiment. However, two things need to be considered regarding this potential limitation: first, the sample might have been small, but it was cross sectional, since the experiment was conducted in three different countries, with different populations, who had varying levels of knowledge about archaeology and heritage, technology, colonialism and the history of Mycenae and the excavations. Therefore, the sample was broad and rich especially in regard to knowledge of archaeological practice and colonialism.

Secondly, as mentioned in Chapter 5 (see specifically the sample size section), the sample size in qualitative research should never be a problem as even one person could provide the researcher with valuable information, and disregarding research with a limited sample size is a remnant of positivism in our discipline. Braun and Clarke (2019) argue against the usual notion of data saturation, meaning that at some point in qualitative research some data begin to become repetitive and that should be the point that the sample has reached its potential (Morse 2015). Since this research has followed Braun and Clarke's RTA model, I would argue that the sample

of this research was enough for the scale of this study to give me some significantly valuable insights.

I would argue, though, that a more diverse sample would potentially have offered better insights. Arguably, the sample was not widely diverse, since the participants were mostly western, well educated, from industrialised countries, rich, and from democratic societies. This is what is called WEIRD data (Western, Educated, Industrialised, Rich, Democracies), which consequently potentially leads to WEIRD results (Clancy et al. 2019), a term introduced in 2010 by Henrich and colleagues (for a discussion of the matter see Clancy et al 2019; Brady et al 2018). Moreover, as stated in the researcher's positionality statement (see Appendix II), I am an (almost) WEIRD researcher myself as I am western, white (even if that is not included in the WEIRD description), educated (though a first generation person), from an industrialised country living in another industrialised country, rich (in the sense of not being impoverished and having at least a part time job, food to eat, and being able to pay my bills), and living in a democratic country.

According to Clancy and colleagues (2019, 170), 'the overuse and oversampling of WEIRD populations by WEIRD scientists may have led us to a gross mischaracterisation of what it means to be human'. Clancy and colleagues also add that 'the oversampling of the WEIRD exposes the ways in which essentialism around human nature does more harm than a recognition of context and inter- and intrapopulational variation' (Clancy et al. 2019, 170). This WEIRD data leading to WEIRD results, along with my positionality in the research, arguably has an impact on the results. It is important to be mindful about the sampling of data, and actively try to ground the analysis in those theories as well. That way, we will be able to achieve a more diverse and inclusive research design and implementation. However, it should be noted though that attempts to access a diverse sample were made for this research, yet the COVID-19 pandemic made the sampling extremely difficult. Moreover, during the pilot study which was conducted with a group of three participants, a broader and non-WEIRD sample was used, with one participant being a female international student from India, the other being a male international student from the United States who identified as of Asian heritage, and only one being white, male, from a western country.

Furthermore, the experiment did not include any children, though of course in real conditions if an archaeologist was trying to communicate their research to the wider public this would likely include children. This was a matter of ethical approval processes that would have complicated the obtaining of permission to conduct this research. Future research should seek to build on the

results of this thesis by avoiding over-sampling WEIRD participants and also including children in the sample to cultivate a more diverse range of perspectives. This would also require an in-depth understanding and description of what WEIRD is (see Clancy et al. 2019, 170) as it is not always very clear. Clancy and colleagues have suggested that this is not an easy task, and that the main difficulty with WEIRD data is in how whiteness is made invisible in its invocation and erases the varying lived experiences of racial and ethnic minorities and other participants (Clancy et al. 2019, 171). Efforts were made to include participants from different backgrounds, especially victims of colonialism and cryptocolonialism since decolonisation is an objective of this research. However, of course it could and should have been better.

Methodology of creation limitations

Language

One limitation regarding the design of the media is that the story was in English, yet only a few of the participants had English as their native language, thus this could have affected the results and one could also argue that as a choice it might be perceived that it furthers the cryptocolonialism of the archaeological research and dissemination. The main objective was for an archaeologist to quickly and effectively communicate their research to the public, for example the local community or stakeholders. However, limiting the sample to only native English speakers would have meant the sample lacked diversity and could potentially have led to even more WEIRD and colonised data. Therefore, I could have either broadened the sample to include non-WEIRD participants or translated the story into Greek and Maltese, and consequently conducted the experiment in Greek and Maltese respectively. I did conduct the interviews with the Greek groups in Greek, but I do not speak Maltese hence an attempt to translate and conduct the interviews in Maltese would have been problematic. Future research could address this issue by creating stories in the native language and providing translation for other languages.

Lack of interaction in the VR video

One significant limitation of the research is that the VR was not an interactive experience, but rather a VR video created with a 360 camera which was then made compatible with the HTC Vive Pro and worked as an immersive 3D environment (see Chapter 4 regarding the specifics of the creation). However, one should keep in mind that a prerequisite for this research is for the media to be created by the archaeologist. In that regard, a VR video could potentially have worked fine, and is still a valid medium to study immersion. In fact, it has been suggested that interaction could lead to BiPs (Break in Presence, Eve 2014) and not having any interaction could potentially enhance the immersion experience. However, participants repeatedly mentioned that they were expecting interaction in the virtual world, especially participants who had a more technical background and/or significant experience with VR. They stated that I had not used the medium to its full potential, which is true, since it was not a VR experience but rather a VR video.

Digitally mimetic passive IDN

Another limitation in regard to the media is that the Twine game I created is a digitally mimetic passive IDN. In the game, the user's agency in shaping the progression of the narrative is constrained, since there are not any significant decisions that the user can make which would consequently affect the storyline. An exception exists in the initial phase of the game, wherein the user has the option to exit through a virtual door, effectively discontinuing their engagement with the game altogether. Another important choice that the user has is at the end of the game, that they get to choose between two options regarding how Tough might have died. However, I have allowed the option for the user to go back and explore the other option as well to convey the same information as with the other two media. The Twine being passive a IDN could be perceived as somewhat disempowering, as it has the potential to reinforce the overarching authority of the archaeologist within the narrative framework.

However, as discussed in Chapter 4, linearity of the narrative nodes which leads to the narrative considered as passive is not necessarily an a priori limitation, as certain media forms of narratives excel in conveying a single storyline to communicate specific information that needs to be done in a more authoritative manner (Copplestone and Dunne 2017). Similarly, neither digitally passive media are necessarily a bad choice, considering Taylor and Dell'Unto (2021) who argue that the incorporation of skeuomorphic emulation into the utilisation of emerging digital technologies holds the potential to constitute a fundamental and potentially transformative component of current digital practice in archaeology.

Lastly, arguably, as Twine keeps evolving and being updated with new options, features, and coding methods there is always the possibility that the IDN that I created using Twine will become obsolete or inaccessible, which is something that the creator/archaeologist should consider when creating DIY projects with the aim for them to last for a specific period.

In conclusion, this research is not complete nor perfect. It has significant value as it allowed me to think about how I could make my research more accessible to others and how I could give the raw data to people to allow them to make their own interpretations while being creative and experimenting with different media. At the same time, it allowed me to give voice to Stamatakis, who had been unfairly treated by history, and to talk about significant matters within Digital archaeology, such as how to decolonise cryptocolonial heritage, or how to rehumanise human remains. There exist numerous aspects that I would have preferred to delve into further or engage

in more extensive discussions about. Nonetheless, it is important to acknowledge that these undertakings can be further explored in forthcoming research on DIY archaeology and knowledge dissemination practices.

Suggestions for further research

Despite the limitations, it is refreshing to think about the different trajectories that have derived from this thesis and would be interesting to explore in the future.

Combination of media

One of the main suggestions by the participants during this research was that they would have liked a combination of the three media, while being aware that in a non-research scenario they would have experienced only one form of the media and not all three of them. Kai, for example, said: [...] *first you need to show them the subject, so first it would be the story of Agamemnon. Who exactly was this person? So, give them a story. It could be a pitch talk, a video, whatever. Then move on to the facts. Because, once you have a context, it's easier to give them the facts. You'd have brought them to Agamemnon, to Greece, to the Bronze Age, and now it's the time for you to come in as an archaeologist and talk about the facts, what you have, what you don't have, and what you want to find out*. Trix mentioned: *So, I wonder whether like, if you're using VR in a museum or something, I think, I don't know what you call that mixed media, like doing a bit of VR, a bit of reading, a bit of this* (meaning Twine). Trix later added: *If you had like a museum exhibition where like you're introduced to people from the very beginning, then journey and then the VR comes later on* […].

A combination of the three media essentially means a combination of the different elements of these media, i.e. the strong narrative aspect of the textual narrative, the interactive aspect of the Twine, and the immersive and emotive aspect of the VR-video. It would therefore be interesting to further explore whether a combination of media would be more beneficial to knowledge gain and at the same time cost and time effective for an archaeologist to communicate their research findings. This could be done via further expanding on the archaeogaming discipline, or by delving more into Virtual Reality, or to explore entirely different digital media such as Mixed Reality, websites, audiobooks and so on.

Moreover, it would be beneficial to further explore 360 films as media for disseminating archaeological knowledge to audiences via DIY projects. As argued elsewhere in this thesis, it has been suggested that 360 films can be inferior to 3D constructed environments regarding believability of the virtual environment, and thus evoke better sense of presence to the users as they are actual videos of the environment (Ranieri et al. 2022, 1200). Since this thesis demonstrated that the VR-video was emotive and allowed the participants to feel an emotional connection with the character, it would be advantageous for furthering our understanding on the matter, to explore the use of 360 films as VR-videos in DIY archaeological projects.

Evaluation process

Another area that could be further explored would be a different way of evaluating the impact of the media on the participants. Mixed Methods was a useful tool for analysis and interpretation, yet it would have been optimal if the two datasets (qualitative and quantitative) were analysed by different people or groups of people. This would offer the expertise of multiple researchers which would lead to richer analysis of the results. On a similar note, regarding the RTA, it was important and beneficial that I conducted all the steps of the analysis myself, as it allowed me to deeply familiarise myself with the data. However, in a future study of this kind it would be recommended to have multiple people analyse the data following all six steps and then compare their themes to create a much richer analysis.

It could also be beneficial to see more research on active digitally native IDNs for communicating archaeological research to audiences. As has already been suggested above, research on the pedagogical aspects of IDNs is much needed, and on top of that research on IDNs for pedagogy, archaeological knowledge dissemination, and public engagement is limited. It would be useful to see more technical tools implemented for a more in-depth understanding of users' experience, such as software that maps the clicks in digital media or eye tracking software for VR. Additionally, a bigger and more diverse sample would be welcome as it would allow for deeper analysis and thus further results and observations.

Similarly, more practice-based research on DIY archaeological projects with a focus on developing methodologies for assessing the impact of those projects has been established as a much-needed area of research. This thesis underscores the value inherent in DIY archaeological projects, benefiting not only archaeologists but also engaging and informing the broader audience. Further practice-based research should be encouraged to explore the full spectrum of potential and limitations inherent in DIY projects. Moreover, the research highlights the considerable potential of DIY approaches in terms of budget-friendliness, time efficiency, and user-friendliness, thus positioning them as potent tools for the effective dissemination of archaeological knowledge.

Summary

In conclusion, Twine emerged as the most effective medium to communicate archaeological research to the public. Twine users exhibited higher scores in knowledge-related questions, and it was deemed superior in terms of cost-efficiency, ease of training, and narrative delivery. It was also demonstrated that the sequence in which users experienced the media did not significantly influence their preferences, and the 'bias of the first encounter' did not manifest in this research. However, further research is warranted in both cases.

With regard to evaluating the impact of the media, archaeological storytelling was analysed within the framework of Boutin's osteobiographical model. While the model proved effective, the textual version did not perform as well when compared to its digital counterparts. In the case of Twine, its interactivity played a pivotal role in its effectiveness. Moreover, the VR-video, while offering unique immersive qualities, proved to be less efficient in terms of cost, training time, and medium creation, particularly in the context of a DIY archaeological project. The VR-video also presented challenges such as negative effects on users and technical difficulties, rendering it problematic. However, it appeared to be emotive, and thus it could prove a useful tool to archaeological projects that want to emotionally engage the audiences with the past.

In relation to the broader academic literature, this research contributes by developing a flexible and adaptable methodology for evaluating DIY digital archaeological projects. It affirms the efficacy of archaeological storytelling as a means of disseminating archaeological knowledge to diverse audiences and underscores IDNs as a favourable medium for DIY archaeological

storytelling. Furthermore, the research highlights the capacity of such narratives to raise awareness regarding complex facets of archaeology, including the handling of human remains, addressing archaeological uncertainties, and confronting issues of colonialism.

Lastly, avenues for future research can be divided into two primary domains. Firstly, there is a need to investigate the impact resulting from the combination of different media forms, notably Interactive Digital Narratives (IDNs), 360 filmmaking, and VR within DIY archaeological projects. Secondly, further development of new and innovative methodologies for evaluating such DIY digital projects is needed, wherein practice-based research and experimental approaches can be further explored. This entails the integration of advanced technical tools designed for precise measurement of user experiences, thus facilitating more nuanced and comprehensive findings in this domain.

Chapter 8: Conclusions

In this concluding chapter, I will review the course of this thesis, as well as the implications of the research conducted. I begin by revisiting the initial project objectives set out in Chapter 1 to ascertain the extent to which these objectives have been accomplished. Subsequently, I explore the broader implications of this research, focusing on its contribution to the overarching body of digital archaeological literature and practice-based research.

Reassessing the aims and outcomes

In this thesis, I have considered the impact of analogue and digital media for communicating archaeological research to the wider public in DIY projects. The thesis takes an interdisciplinary perspective, grounded in Digital archaeology, Osteobiography, and Bioarchaeology of Personhood approaches, to consider how we might better understand the impact of those DIY projects and media on the users. In this process, I discovered significant nuances regarding archaeological storytelling and the use of digital media for archaeological knowledge dissemination, such as that IDNs are significant tools for communicating archaeological research to audiences, arguably due to the element of interactivity, and that 360 films can be immersive enough to evoke emotions to the users regarding people in the past among others.

The research questions focused on the evaluation the impact of different media of archaeological storytelling on audiences, and developing an understand which one of the three created in this research is the more effective for DIY archaeological projects regarding knowledge dissemination. These include three aims: first, to communicate the message that archaeologists do not always have the answers about the past; second, to rehumanise the skeletal remains of MYC_1V; and third, to decolonise the history of excavations at Mycenae. To achieve these aims, I created the three media, and then I developed a methodology to evaluate their impact, to allow me to conclude which one was more effective.

Therefore, it was important to understand what each one of these components were in order to be able to synthesise a basis for the development of the media, and the consequent evaluation of them. Accordingly, in Chapter 2, I presented the case study of the research to create a foundation for information that are included in the stories, which are in three periods: first, the Late

Bronze Age when MYC_1V lived and died, and thus the information about them is the basis of the narratives. Then, the 19th century history of the excavations at Mycenae, to present the relationship between Stamatakis and Schliemann, and lastly, the 21st century rediscovery and consequent reexamination of the skeletal remains.

Then, in Chapter 3, I critically appraised the existing literature on all the disciplines involved in this interdisciplinary study. I began with the main element, which is archaeological storytelling, and which remained a golden thread throughout the chapter, closely examining its nature, the different media forms including interactive digital narratives, filmmaking, 3D Reality, and archaeogaming, the kind of stories that archaeologists tell, the criticism against the use of archaeological storytelling, and lastly the methods that archaeologists have used to overcome this criticism. Apart from that, in Chapter 3 I also explored all the disciplines that underpin the creation of the media, beginning with DIY archaeology, and expanding to Digital archaeology and Public archaeology. Lastly, since an important element of the narratives is the ethics regarding handling of human remains, I also explored Public archaeology of death, Osteobiography, and Archaeology of Personhood, along with Boutin's model which was used to create the textual narrative, and then adapted for the digital versions of it. Having explored all these different aspects of disciplines in archaeology, I was able to develop a basic understanding of the current state of these disciplines and tie them all together to support the creation of the media.

Consequently, in Chapter 4, I presented the methodology that I followed to create the three media, introducing the research design and the research strategy which underpin this endeavour. In that chapter, I explained the reasons for conducting a practice-based research, and why Pragmatism was an important philosophical framework for the aims of this research. Since the narratives have the element of decolonisation of archaeology, I also explored current decolonisation practices in the field, along with Postcolonial theory, Decolonial theory, and the notion of cryptocolonialism.

Accordingly, in Chapter 5, I presented the methodology that I developed to evaluate the impact of the three media on the audiences, and consequently directly address the research questions. I explained in detail how I designed and conducted the experiment, and I also discussed the significance and the benefits of using mixed methods research in evaluating DIY archaeological projects, why Reflective Thematic Analysis is an efficient tool to analyse qualitative data, as well as how I implemented these in this research.

Lastly, in Chapter 6, I presented the quantitative and qualitative data, along with the merging of the two datasets, and these were discussed in the following chapter, Chapter 7, drawing on the existing literature. In doing so, I concluded that Twine was the best medium for knowledge dissemination in DIY archaeological projects with low funds and restricted time, which can potentially be extended further to include all Interactive Digital Narratives, since the element that made Twine effective was the interaction. Similarly, it became apparent that DIY VR-videos based on 360 films can be significantly emotive, and thus this technology could be equipped to emotionally engage audiences with the past, which is a finding that would be beneficial to explore further. Lastly, it also became apparent that ethics regarding handling of human remains and decolonisation of heritage are important to be presented and discussed with public audiences, apart from our interpretations of the past as they are thought provoking and interesting subjects for people.

Original Contribution to Knowledge

The original contribution to knowledge in the field of archaeology is that as an archaeologist I created both analogue and digital media for a DIY archaeological project for knowledge dissemination to audiences, and then I developed a methodology to compare them and evaluate their impact on audiences. This has led to the conclusion that interactive digital narratives, firmly rooted in the framework of archaeological storytelling, emerge as the most effective method for conveying complex archaeological theories and practices to the public. Furthermore, this approach not only serves the purpose of educating and engaging individuals with the research but also potentially refrains from imposing the researcher's interpretations. Instead, it acknowledges and disclaims the traditional monopoly of knowledge in archaeological discourse.

Significance of the study to the discipline

This research holds significant ramifications for the realm of digital archaeology. To understand the impact of digital media on the public in an archaeological setting, it is imperative that archaeologists engage in experimentation and creative endeavours. Researchers need to develop skills in utilising digital media for this purpose. Additionally, there is a pressing need to explore innovative theoretical methodologies that can more effectively align with our objectives.

Importantly, researchers should not shy away from the prospect of encountering setbacks or failures during the course of these explorations.

The primary contribution of this thesis to the discipline resides in its methodology. The thesis follows an experimental practice-based framework characterised by a pronounced emphasis on creativity, in alignment with DIY practices within the field of archaeology. The research philosophy underpinning this thesis is Pragmatism. Furthermore, the thesis adopts a mixed methods convergent (concurrent) approach, which enables the simultaneous collection and analysis of both qualitative and quantitative data. Qualitative data has been subjected to scrutiny through Reflective Thematic Analysis, while quantitative data has been used in a heuristic manner to support the RTA and shed light to patterns in the data. Subsequently, these two distinct datasets have been integrated to facilitate comprehensive analysis and discussion.

Pragmatism has been linked to the mixed methods used for collecting and analysing the data, as it is the main philosophy that normally underpins this particular kind of research. That is because - as explained in Chapter 4 - the nature of Pragmatism allows for adaptation and reevaluation of the data as the research progresses, and then allows for the merging of the two datasets to address the research questions. Pragmatism creates space for the design and implementation of experimental practice-based research. That is because it does not pose any limitations on the methodology like other philosophical views do, thereby allowing it to evolve, adapt, and change. That was particularly important as it created the opportunity for the development of insightful discussions with the participants, which consequently led to rich qualitative data and themes.

The mixed methods convergent (concurrent) design followed in this research is also considered to be effective and insightful. The qualitative data was rich and provided valuable insights that helped give direct answers to the research questions. Additionally, the quantitative data also made a significant contribution towards the understanding and interpretation of the data. These results are significant as they can help future researchers to better shape their research questions and assist them in high quality research design in interdisciplinary research in the humanities.

To conclude, given that a mixed methods convergent experimental practice-based research approach, informed by Pragmatism, has yielded solutions to the research questions, it can be contended that this methodological model holds significance in forthcoming research endeavours within the same domain, particularly those adopting an experimental approach. This may involve

comparative evaluations of diverse media or the examination of the effects of media generated by the archaeologist on broader audiences.

Impact of the study

The impact of this thesis is twofold: First, it is a significant attempt to decolonise a part of history that has up till now been dominated by a colonial narrative. The history of the excavations in Mycenae is not only a reflection of the colonial attitude towards the Greek archaeologists and population in general, but it is also reflective of the cryptocolonialism that still overshadows Greece and the Greek educational system. As demonstrated through this research, the Greeks did not even know Stamatakis' name let alone his contribution to archaeology and heritage, which as discussed is an indication of cryptocolonialism. However, cryptocolonialism is rarely discussed outside Greek academia and thus attempts to decolonise Greek history and heritage are not being widely made. However, for countries that are cryptocolonies like Greece, decolonising their heritage is not straightforward. The ethnic groups which have been cryptocolonised do not understand that they are a crytpocolony, but instead they believe they are free and they need to defend the narrative that western powers have created for them. Stamatakis was a resisting power to colonisation. Yet his story remains widely untold; there is only the publication by Vasilikou Stamatakis' correspondence regarding the excavation and a recent article by Konstantinidi-Syvridi and Paschalidis discussing Stamatakis' contribution, but nothing that the public could easily access. This piece of work demonstrates how easy and effective a digital medium like a Twine game could be to begin decolonising archaeology and heritage with no cost at all and in a timely manner.

Second, the thesis acts as a springboard for opening up archaeology through digital media and to think about ways think more about the agency that the users of the stories can have on the interpretations and the role of the archaeologist as the interpreter of the stories. This is important as it could lead to a democratisation of archaeological praxis and could potentially help local communities to engage more deeply and meaningfully with their heritage. As became apparent through the interviews, people seem to value authenticity and consider it an important element. At the same time, participants did not feel that storytelling (in the form of the narrative) made the story less authentic, quite the opposite; everyone enjoyed the story and especially the part that was based on archaeological evidence, which further disproves the theories and claims that

narratives are not useful tools in communicating archaeological research to the wider public as they can be misleading or even deceiving. Therefore, it is necessary to think about ways to further engage the public with the raw data and the uncertainty behind archaeological research.

Summary

Digital media are important and useful tools to promote our research and engage the public. They can be as simple as a web page or a TikTok video or immensely elaborate such as Virtual Reality immersive experiences and full 3D reconstructions of artefacts and places. The ability to create those media ourselves is something that is important and, apart from effectively sharing knowledge and engaging the public, it also allows us to develop a deeper understanding of the material we are studying. However, it is also important to understand which of these media might be more effective when we have to do that in limited time and with minimal funding. In investigating this, I found that Twine and thus IDNs are effective digital media for communicating archaeological research to the wider public since they combine interaction with storytelling. Interaction allows the users to feel that they are actively doing something and exploring the data, whereas the storytelling allows the archaeologist to be upfront about what we know and what we do not, and thus satisfy the need for authenticity that this research found is valued by the people.

Through digital media such as IDNs and archaeological storytelling we can tell complex or difficult stories to people, such as that their country is a cryptocolony and their heritage and the people who contributed to it are not widely discussed. We can allow them to see how we do archaeology and judge if we are rightfully doing our research and if we are doing it in a correct and respectful way. We can allow ourselves to be vulnerable and powerless (though there is a certain power when being powerless and being the one who tells or re-tells the stories), admitting that we do not have all the answers and despite decades of research we are still unable in many cases to know the names of the people we are digging up and examining on cold examination tables.

Appendix I – The media

Link to the Twine game

https://archaeobruja.itch.io/trowels-bones

Link to the VR-video

https://youtu.be/cn0BKimpyeM

Note: The YouTube video can be easily viewed with a Google Cardboard and a smartphone if a VR headset is not available. Below is a link to a Google drive where the mp4 360 film can be downloaded. Guidance on how to implement the mp4 video into an HTC Vive Pro follow.

Guidance on how to implement the mp4 360 film into a VR headset

For HTC Vive Pro:
- Save the mp4 file on the C: drive.
- Open Viveport from desktop (no need to create and account or log in but that would work as well).
- Wearing the headset and with the right controller, open the Viveport Video from the computer desktop.
- Select local, and then search the computer's drives to find C: and consequently, to find the mp4 video.
- Click on the mp4 video and select the eye icon underneath the loading bar under the video.
- Select the option '360'.
- Click play.

Guidance regarding the Vive flow headset can be found here:
https://www.youtube.com/watch?v=lYAeLvRgBZg&t=2s

Guidance regarding the Oculus headset can be found here:
https://www.youtube.com/watch?v=sAySBt5Mx1Q

The textual story

I'm lying here on the cold examination table to be reexamined for the third time[1]! For Potnia's[2] sake!

Oh, these people! They won't let me rest in peace!

First this Schliemann mumbling some crazy stories about a guy called Agamemnon that he thought was my brother[3]. He also thought that my brothers[4] and all my relatives buried in the cemetery were murdered simultaneously and burned at the same time[5]! Weird man.

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[1] The bones were examined when excavated by Schliemann and Stamatakis for the first time (1876), then by Angel in 1937 (Angel's report remained unpublished until 1973) and again later in 2007 by a small team led by Dr. Nafplioti, who used isotope analysis in order to identify the geographical origins of the individuals (Papazoglou-Manioudaki et al. 2009, 234). The reason behind these recent reexaminations of the bones is the rediscovery in 2003 of two skeletons in the National Archaeological Museum of Athens excavated by Stamatakis in Shaft Grave VI at Mycenae. This triggered a whole new series of reexaminations of the bones of all the skeletons in order to get more detailed osteological reports. The project is called 'Mycenae Revisited' and has four parts: the first is a reexamination of the skeletons of two individuals of Shaft Grave VI that led to their facial reconstruction ('Mycenae Revisited Part 1': Papazoglou-Manioudaki et al. 2009); the second is a study of the remains of the majority of the individuals from Grave Circle A by strontium isotope analysis ('Mycenae Revisited Part 2': Nafplioti 2009); the third is a catalogue and full reappraisal of the skeletal remains from the other graves in Grave Circle A ('Mycenae Revisited Part 3': Papazoglou-Manioudaki et al. 2010); and the last one is a final discussion of what the graves contribute to the study of the development of Mycenae and the rest of the Greek mainland (Dickinson *et al*. 2012).

[2] Middle Bronze Age religion is not very well documented as there is not any written evidence about that. Potnia is a word well recorded on Linear B tablets and was referred to goddesses. Dickinson (personal conversation), notes: 'The famous fresco from the 'Cult Centre' shows a goddess with a down-pointing sword, either facing a priestess or another goddess with a staff. Tough is just as likely to have sworn by "Potnia", who at Mycenae might be conceived as a warrior goddess and guardian of the city and has a good claim to have been at the head of any Mycenaean hierarchy (she is as big at Pylos as Poseidon).'

[3] This individual was buried with the famous so-called Agamemnon's mask (burial mask NM 624, fig. 1, 3) one of the most widely recognised icons of the Mycenaean period. However, Dickinson (2005) and some other scholars argue that Schliemann thought that this body (MYC$_1$ V), wearing the NM 624 golden mask, was Agamemnon; instead, they believe that Schliemann meant the northern one to be Agamemnon with the NM 623 golden mask (fig. 2) (see Dickinson 2005). In fact, even Schliemann seems to have been confused about which one was actually the mighty king, and he never made an attempt in the publication of his excavations to identify Agamemnon with any particular burial. Dickinson (2005) suggests that Schliemann deliberately left obscure the question of which one was Agamemnon's burial because he was uncertain (Dickinson 2005, 306). Vasilikou (2011, 128) also mentions that Schliemann gave the name 'Agamemnon' to the burial at the north side of the grave, not the south.

[4] MYC$_1$ V retained until adulthood a patent metopic suture (Papazoglou-Manioudaki et al. 2010, 203). Also, there is shoveling in the palatal surface of the maxillary left second (lateral) incisor, Carabelli's cusp on the maxillary left first molar, and parastyles on the maxillary left and right second molars (Papazoglou-Manioudaki et al. 2010, 204). MYC$_4$ V has a metopic suture present on a fragment of his frontal bone same as on MYC$_1$ (Papazoglou-Manioudaki et al. 2010, 210). MYC$_2$ V has shoveling of the crown in the maxillary right second (lateral) incisor (Papazoglou-Manioudaki et al. 2010, 208). Patent metopic sutures and shoveling of upper second incisors only occurred in individuals from Grave V. Moreover, a septal aperture was only recorded on the humeri of MYC$_1$, V and MYC$_2$, V (and MYC$_1$, VI). This suggests, according to Papazoglou-Manioudaki and colleagues (2010), that the individuals of Grave V may have been closely related and could have belonged to the same family. However, we have to keep in mind that there is no hard evidence like DNA to prove that they were siblings.

[5] Schliemann's exact words are: '[…] - all these facts are so many proofs that all the twelve men, three women, and perhaps two or three children, had been murdered simultaneously and burned at the same time.' (1878, 337). Dickinson (personal conversation), notes: 'cremation is mentioned in the Iliad, but it was a well-known funerary custom in the Early Iron Age [but not universal]. What Schliemann took for the remains of ashes and burnt material must have been naturally decayed items of materials like cloth, leather, wood …'.

He even said that one of them looked like a mummy[6]! He couldn't stop talking about this other man, Homer, and his great masterpiece, the Iliad, a long poem which described a war between the Achaeans, who seem to be our people, and some people called Trojans[7]. The only rational person seemed to be this poor Greek guy that Schliemann used to call 'Clerk'[8].

These two had some beef with each other, you could tell.[9] You see, they were arguing all the time.[10] Schliemann insisted that it wasn't Clerk's job to get involved in the excavations and that he only needed to collect and store the finds.[11] And Clerk would then get furious and argue that not only was it his job to get involved in the excavation, but on top of that, he was responsible to stop all actions that could break the law or could potentially harm the antiquities.[12] And then Schliemann's married wife usually got involved, siding with her husband, and everything instantly would get worse.[13]

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[6] Schliemann was particularly attracted to the third body in the grave at the north end, who had a gold mask on his face. According to his description (Schliemann, 1878, 296-298), it was well preserved: 'but of the third body, the round face, with all its flesh, had been wonderfully preserved. […] The colour of the body resembled very much that of an Egyptian mummy. […] The now nearly mummified body […]'. For that reason, this particular individual is usually referred as a 'mummy' (Schliemann, 1878, 296). Schliemann had a painting made of it (see fig. 4). However, until today, there are no remains of the so-called mummy (Dickinson 2005, 303).

[7] Schliemann is thought to have been inspired by the Homeric epics when he started excavating in Peloponnese and Asia Minor trying to find Mycenae and Troy. Schliemann applied for permission to dig at Mycenae, but he couldn't wait and in February 1874 he began his excavations illegally (Dickinson 1976, 161-162; Meyer 1962, 92). Despite the fact that he was stigmatised as little better than a robber, he obtained a permit for Mycenae two months later, but he was prevented from starting the excavations by a lawsuit brought by the Turkish government for the recovery of the 'Treasure' that he had found in 1873 during his excavations at Hisarlik and removed from Turkey, clearly breaking the terms of his permit (Dickinson 1976, 161-162).

[8] Panayiotis Stamatakis was a senior member of the Greek Archaeological Service who was appointed by the Archaeological Society to act as a representative at Schliemann's excavations (Dickinson et al. 2012, 163) and basically to supervise him, so Schliemann was not very happy about this. This is probably the reason why Schliemann mentioned Stamatakis only once and in a rather contemptuous way in his book *Mycenae* (1880), referring to him as 'a government clerk of the name of Stamatakis' (Schliemann 1880, 352, Prag et al. 2009, 235; Dickinson et al. 2012, 168; Dickinson 2005, 307). As Dickinson notes (Dickinson et al. 2012 167-168), Schliemann made absolutely no reference of Stamatakis' involvement in the excavation of Grave V), clearly demonstrating his determination to 'write Stamatakis out of the story […]' (Dickinson et al. 2012 168).

[9] Schliemann's and Stamatakis' relationship can be assessed by both Stamatakis' letters and notes (see Vasilikou 2011, 195, 199), as well as by Schliemann's letters to Max Müller (see Vasilikou 2011, 131). At some point it seems that the two men did not even speak to each other directly (see Vasilikou 2011, 203).

[10] Stamatakis made several complaints in his letters about Schliemann verbally abusing him (see e.g., Vasilikou 2011, 190-223).

[11] Stamatakis exact words, as stated in a letter to the General Ephorate of Antiquities on the 15 of August 1876 (Vasilikou 2011, 194): 'Αὐτὸς ἀπήντησεν, ὅτι ἔχει ἄδειαν νὰ ἐνεργήσῃ ἀνασκαφάς, ὅσας καὶ ὅπως βούλεται, καὶ ὅτι ἐγὼ οὐδὲν ἔτερον ἔργον ἔχω ἐν ταῖς ἀνασκαφαῖς, εἰμὴ μόνον νὰ παραλαμβάνω τὰ ἀνακαλυπτόμενα ἀρχαῖα. Ἐγὼ τῷ παρετήρησα, ὅτι ἡ ἀποστολή μου δὲν ἔχει σκοπὸν νὰ παραλαμβάνω τὰ ἀρχαῖα μόνον, ἀλλὰ νὰ ἐπιτηρῶ ἐν μέρει ἁπάσας τὰς ἐν Μυκήναις ἐργασίας καὶ πᾶν ὅ,τι δὲν γίνεται κατὰ τὸν νόμον καὶ τὴν διαταγὴν τοῦ Ὑπουργείου νὰ ἐμποδίζω.'

[12] As stated by Stamatakis' letter to the General Ephorate of Antiquities on the 15 of August 1876 (Vasilikou 2011, 194).

[13] An example could be read in Stamatakis' letter to the General Ephorate of Antiquities on the 5th of September 1876 (Vasilikou 2011, 199-200), another one in his letter to Koumanoudi on the 14th of September 1876 (Vasilikou 2011, 201).

Anyway, then Schliemann left Mycenae[14] and Clerk took my bones to a cold and dark storage room[15] without any ceremony, or libations or anything at all. Not only this, but he took off my arm and he put it into a place with a glass cover, so that everyone could see it[16]! Unacceptable…

Years later another guy called Angel – not sure why – opened my box and started messing around again with my bones[17]. He even lost one of my teeth[18]!

And now this lady[19]! I'm wondering what else I'm going to suffer or lose…

All the people, claiming they have been looking for answers, but they have failed to provide me with answers…

And the weirdest thing: every time one of them wakes me, I remember less and less. It's like a curse!

Last time I couldn't remember my name, utterly disgraceful… But I'm fine now.

My name is…, I mean people call me…, oh I cannot believe it! I do not remember my name again!

Think! Think! … Yes!

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[14] Schliemann departed Mycenae (4/12/1876) (Dickinson 2005, 306). Also, he seems to have been rather frustrated by the supervision of Stamatakis (see his comments in a letter to Max Müller written on December 31, 1876, Meyer 1962, 95).

[15] The finds from the Shaft Graves were transferred to the National Museum of Athens (NAM) in 1892 and exhibited in the grand central hall, now known as the Mycenaean Gallery (Koumanoudis 1892, 1-62, Demakopoulou 1990, 93; Prag et al. 2009, 239).

[16] This individual's left humerus was exhibited in the NAM with a gold armband, according to Stamatakis' report (Papazoglou-Manioudaki et al. 2010, 200).

[17] J. L. Angel studied the bones in 1937 and left a copy of his reports and photographs in the archive of the Prehistoric Collection of the NAM (Prag et al. 2009, 239).

[18] According to the osteological report (Papazoglou-Manioudaki et al. 2010, 200) the right first molar, which was present in its socket when Angel (1937) examined the mandible, is missing. It's not of course sure that it is Angel's fault, but he also made another mistake when he misidentified the left maxillary and mandibular canines and glued them onto the incorrect alveoli (Prag et al. 2009, 253), so I added this detail.

[19] Dr Argyro Nafplioti studied the skeletal remains of the rest of the Shaft Graves of GCA in order to determine the number, the biological sex, and the age of death of the individuals, as well as to provide a description and interpretation of pathological skeletal modifications (Papazoglou-Manioudaki et al. 2010, 158).

I think I remember now. I am Tough[20]! Or at least that's what Clerk said. He said I'm Tough. It is a bit confusing, though, as the lady keeps calling me MYC$_1$ V[21] and this Angel guy called me 26Myc[22]. Maybe they did not know I am Tough. It does not feel right, though; I do not think that it suits me as a name, it feels a bit inappropriate. Anyway, maybe it is due to the curse that makes me forget things; who knows?[23]

The only thing I can remember is that I had the luck to be grow up in mighty Mycenae[24] in a really powerful family[25]. My father was one of the greatest chiefs[26]. He had land and people to cultivate it and important friends overseas. I always wanted to be like him when I grew up. He was really brave; he enjoyed very much hunting and training with his friends[27].

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[20] Stamatakis, as mentioned above, numbered the graves and the burials with Greek capital letters. MYC$_1$ V was assigned the letter 'T', pronounced *Tafh*, hence sounds like the word tough.

[21] Dr. Nafplioti assigned the code name MYC$_1$ V to this particular individual.

[22] Angel assigned the code name 26Myc to this particular individual.

[23] The individual's name remains, sadly, unknown.

[24] Dr Argyro Nafplioti published in 2009 a study of strontium isotope ratio (^{87}Sr/^{86}Sr) analysis that was applied to samples of dental enamel from individuals buried in the Shaft Graves of Grave Circle A at Mycenae in order to explore their local versus non-local geographical origin. MYC$_1$ V seems to have results that fall slightly above the confidence limit; This result may also reflect the consumption of food resources cultivated or raised non-locally (Nafplioti 2009, 283-289). I believe this suggestion could strengthen the assumption that the individual belonged to an elite family that had access to imported food. Regarding this point, Dickinson (personal conversation) notes that Schliemann reported lots of oyster shells and some intact oysters from Grave V. For more on Mycenae see fig. 5.

[25] According to Dickinson (1976), the individuals buried in the Shaft Graves were among the earliest, if not the first, of the new ruling groups who managed their business well enough to find an enduring prosperity and power (Dickinson 1976, 167). Also, this individual was buried with rich grave goods such as a golden mask (NM 624) and a breastplate (NM 625), jewellery, armband (NM 649), swords, and more (Mylonas 1966, 92; Papazoglou-Manioudaki et al. 2010, 163-165). Moreover, the dental records of this individual reflect a really healthy person, as only one of the nineteen teeth examined had a very small lesion (Papazoglou-Manioudaki et al. 2010, 204).

[26] During Middle Helladic III (MH III) and Late Helladic I (LH I), the settlements began to be consolidated, a phenomenon clearly demonstrated in the appearance of new burial practices and new tomb types, like the shaft graves. This progression is assumed to reflect a social structure evolving towards a lineage-based society (Wright 2008, 238, Cavanagh 2008, 334). Grave goods also demonstrate an increasing social differentiation as elites included precious and prestige items in their burials. Beginning in MH II and increasingly during MH III – LH I the burials became wealthier, a clear indication of the emergence of leaders within the local communities. Wright has referred to them as 'Big Men' (2008, 239-245). There is also evidence of land-owning in Linear B. The Pylos distribution of *τεμένη* (the Greek word for privately held estates) (tablet 152=Er01) ranks next to the kings in the allocation of *lawagetas*. This name means in Greek a 'leader' or a 'prince', without the technical sense it must bear in Mycenaean (Ventris and Chadwick 1973, 120). Ventris and Chadwick (1973) suggest that they were also in charge of warfare.

[27] These leaders were presumably beginning to gain political power, perhaps by capitalising on their reputations as hunters, warriors and providers (Wright 2008, 241). According to Wright (2008), a man's reputation as a hunter was a primary attribute, as shown by the MH III and LH I-II rich burials that contained caches of boars' tusks, helmets plated with boars' tusk. Also, in Grave IV there was a dagger that featured on its blade a depiction of lion hunting inlaid in gold, silver, and niello, a clear indication that the LH I populations went out to hunt or at least considered it a really brave pursuit (fig. 6). Dickinson (personal conversation) notes that this is the only representation of a hunt on a weapon, which makes it quite significant.

Father made sure that we always had everything we needed. Sometimes I felt tired, in a bad mood and I was always quite pale[28], but I grew up to be a really tall and robust young man[29]. When I became of the appropriate age, Father had the perfect sword and shield made specifically for me.

They were beautiful pieces of true artistry. Solid and powerful. Beautiful pieces.

The shield in particular was so heavy that it took me quite some time to get used to handling it during the training. And if the training with the sword and the shield was for long hours, which was not at all unusual, I would get pain on the shoulders and the sternum[30]. Nothing I could not handle though. I quite enjoyed training, as much as I enjoyed attending important meetings with Father regarding matters of trade and administration of our territory, or as much as I enjoyed going hunting with Father and his comrades.

Then, one day, when I was almost 25 years old and felt better than ever, unfortunately, I died[31].

Or at least that was this nice lady who had been looking into my bones said.

But I cannot remember how this happened. The lady said she does not know either, which is annoying, given the amount people been examining what is left of me.

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[28] This individual suffered from thalassemia or iron deficiency anaemia (Papazoglou-Manioudaki et al. 2010, 204, 219). When an individual suffers from iron-deficiency anaemia, they experience tiredness, lack of energy, shortness of breath, noticeable heartbeats and pale skin (Shersten 2007, 671-677). Also, iron-deficiency anaemia is linked to depression (Lozoff et al. 1988, 33).

[29] According to Papazoglou-Manioudaki and colleagues (2010), this is the most robust skeleton in Grave Circle A, measuring 1,81m (Papazoglou-Manioudaki et al. 2010, 204, 218). The same observation was made by Schliemann (1878, 295-296): 'The bones of the legs, which were almost uninjured, are unusually large'.

[30] This particular individual has considerable entesophytosis recorded on the costal impression on the medial end of the right clavicle, located on the inferior surface of the medial end of the clavicle and in the enthesis of the costoclavicular ligament. Papazoglou-Manioudaki and colleagues (2010) associate this hypertrophic development with high mechanical loading of the sternoclavicular joint in the performance of physical activities (see also White and Folkens 2000, 167 cited by Papazoglou-Manioudaki et al. 2010). Moreover, excessive mechanical stress of the pectoralis major is indicated by the squaring of the anterior portion of the medial half of the shaft of each clavicle (Papazoglou-Manioudaki et al. 2010, 204). Also, a moderate hypertrophy of the enthesis of the conoid tubercle on the postero-interior portion of the lateral end of the clavicle is recorded and could also be activity related (Papazoglou-Manioudaki et al. 2010, 204). The same applies to the slight roughening of the site of attachment of the deltoid on the antero-superior surface of the lateral end of each clavicle. According to Papazoglou-Manioudaki (2010), all these modifications probably reflect generalised stress on the pectoral girdle.

[31] Based on the degree of closure of portions of the lambdoid and sagittal sutures on the cranial fragments presented, this individual was 25-35 years old at death. On the degree of dental wear, he could have been around 25 years old (Papazoglou-Manioudaki et al. 2010, 203). The cause of death is unknown. There is no sign of a deadly wound to support any other assumption. However, we could not exclude the possibility of a death related to a wound that could have not been observed on the bones.

Indeed, Death would have had lots of opportunities to reap my glorious life. It could have been during that battle with these scoundrels that troubled our land.[32] Father trusted his best men to me. I woke up that morning with an awkward feeling, that something was not quite right. But I quickly got rid of the negative thoughts. Fear is not a warrior's trait as Death is always welcome.

I took my beautiful shield and got a good grasp of my sword. It felt heavy for a moment. Without any delay, I rushed out of the house, and checked that everybody was ready to dash off. My best friend was there, among the men. He smiled at me and did his usual reassuring gesture. I smiled back, put my helmet on and raised my fist to give the signal to advance.

I cannot remember anything else. Apart from that at some point I recall myself being in the middle of a wild battle. I did not expect so many enemies to be there. We were clearly trapped. I had failed everyone, Father included. I found myself back-to-back with my best friend, fighting for our lives. He screamed something, but I did not manage to hear what he was trying to say, the clanging of the swords and shields was so loud, I could not hear anything.

And then I saw him. Their leader. With his spear directly pointing towards my chest. He is fast. Warm blood is running down my chest and on the ground. I can hear everyone mumbling in a distance, but my ears are blocked. Their voices were covered by a loud rushing high-pitched sound. Is this the end, I wondered? It might be. And then everything went black.

Or it might have been during that hunting trip.

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[32] As stated above, the cause of death is not known (see Dickinson et al. 2012, 181). These are some plausible causes of death. Warfare most probably would have been significant for the elites (Dickinson 2014, 70) despite the fact that the typical Mycenaean warrior's persona had been challenged (see Dickinson 2006, 35-36; for more on the discussion, see Dickinson 2014, 67-68). Dickinson made some interesting comments regarding this particular matter (personal conversation): 'What I have challenged is the notion that 'the Mycenaeans' were especially warlike; they have been called Vikings of the Aegean, and of course the heroes of the myths, especially the Iliad, have been thought to represent their elite. Of course, war was a not unknown occurrence in the LBA, and the Hittites in particular seem to have been rather empire-building types, though the New Kingdom Egyptians and especially Tuthmosis III could be argued to have started it. But I feel that, even if a 'warrior ethos' did develop in the period when the social developments that led to the formation of the Mycenaean principalities were taking place, it was not retained – at least, that the elite of the palace period were no more 'warlike' than those of the Near Eastern kingdoms could be described as being. In the Aegean, they might honour their male dead with weapons and armour, but there is little glorification of warfare in the art of the 14th-13th centuries (and as I pointed out in Dickinson 2014 many of the best-known early LB scenes are on artefacts thought to be 'Minoan'), and even in the Postpalatial period weapon burial is quite rare, and practised much more in some communities than others. There was warfare in the Palace Period, no doubt, but it was not a constant feature of life, often taking the form of raiding and the like. Even when the major centres were becoming established, although warfare may well have been involved, much might have been accomplished by negotiation and agreement to submit by communities who felt themselves obviously weaker, and the same may have happened when the greater centres like Mycenae, Pylos and Thebes extended their power. Membership of groups like 'clans' or 'tribes', or shared cults, might also have been the basis on which certain groups and communities claimed to lead others.'

It was spring already. Everything was blooming and the air was slightly warm.

I was resting under a tree, eyes closed, taking a break after hours of walking under the sun. I could feel the light breeze and the warm sunlight on my face. It was beautiful. I wished for this moment to last forever. Then, suddenly, I heard a deafening roar, followed by screams. I jumped to my feet. Something terrible was happening. The screams grew louder and louder, and I started running towards my men as fast as I could.

Then I saw it. The Wild Beast. I'd encountered him before. I almost lost my life last time. The enormous animal was now attacking my people.

I grabbed a spear and walked towards him. He was outraged. I could see his eyes shining and his nostrils wide open, breathing the air heavily. He was ready to attack again.

I began approaching the Beast carefully from behind, step by step. I'm very close now. Quietly, step by step, almost ready to attack. My next step was on a dry batch of wood sticks. The sound of them crackling was loud. The Beast turned and started charging towards me.

A moment later I found myself thrown in the air and then back in the ground. Then, everything went black.

Well, I need to accept that I am not sure I remember my name, nor how I died, and that no one is able to help me.

However, I know that my family gave me a very honourable funeral, as was expected. I know as Clerk made notes of everything that my family put into my grave. Everyone speaks about his diary these days.[33]

First, my relatives prepared the grave to accept my body.[34] They adorned my body with all kinds of beautiful objects, suitable for a person like me: a beautiful necklace, a golden armband, a

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[33] Schliemann, who had never excavated graves before (Dickinson et al. 2012, 164) published all the material of the Shaft Graves, but these publications had been fragmentary and incomplete (Konstantinidi-Syvridi and Paschalidis 2018, 112). Stamatakis, the appointed supervisor of the excavations on behalf of the Greek Archaeological Service by the Ephor of Antiquities, did all he could to record each one of the graves and made some rough plans of them along with the findings (see figs. 7-8) (Dickinson et al. 2012, 164; Konstantinidi-Syvridi and Paschalidis 2018, 112). He even produced a rough plan of the whole GCA and the surrounding area (Dickinson et al. 2012, 164). Stamatakis' diary, lost for more than a century, was recently found at the National Archaeological Museum in Athens and had been an extremely valuable source to identify the GCA finds (Dickinson et al. 2012, 163; Konstantinidi-Syvridi and Paschalidis 2018, 113; for more details, see Dickinson et al. 2012 164-166).

[34] The grave contained, apart from the three main individuals, fragments of bones of three adults, a sub-adult, and an infant aged less than two. It has been suggested that some of these remains were from earlier burials that were cleared in order for burial T (MYC$_1$V) to take place (Dickinson et al. 2012, 179). However, Dickinson (personal conversation)

massive golden breastplate ornamented with spirals in repoussé work sewn to leather backing, and they put ten beautiful long swords at my feet. Then, they covered me with an extraordinary cloth embellished with all kinds of beautiful golden beads and leaves.[35] And, lastly, a spectacular golden mask was placed on my face.[36] They also put some other beautiful objects with me; two silver vases and an alabaster jug, a large spearhead, and a pair of silver tweezers. You can see all these at Clerk's diary, he made notes and sketches of all these.

Alas! Glorious times. And now people do not know how to show some proper respect.

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suggests that only in grave VI were the bones of a previous burial pushed aside for a new burial to take place, and it cannot be confirmed that any previous burials were swept aside for MYC_1 V to be buried.

[35] Dickinson 1977, 49.

[36] See comment 3 above.

CATALOGUE OF FIGURES

Fig. 1. Gold mask, Grave V (624). Papazoglou-Manioudaki et al. 2010, fig. 11.

Fig. 2. Gold mask, Grave V (623). Papazoglou-Manioudaki et al/ 2010, fig. 12.

Fig. 3. A coloured photo of the mask. (https://en.wikipedia.org/wiki/File:MaskOfAgamemnon.jpg)

Fig. 4. An oil painting of the so-called 'mummy'. (https://www.namuseum.gr/en/monthly_artefact/pages-from-the-mycenae-excavation-diary-of-panayotis-stamatakis/)

Map of Europe; Greece is marked
with red colour.

(https://commons.wikimedia.org/wiki/
File:Greece_in_Europe.svg)

Map of Greece with the position of Mycenae

(https://www.khanacademy.org/humanities/an
cient-art-civilizations/greek-art/beginners-
guide-greece/a/ancient-greece-an-
introduction)
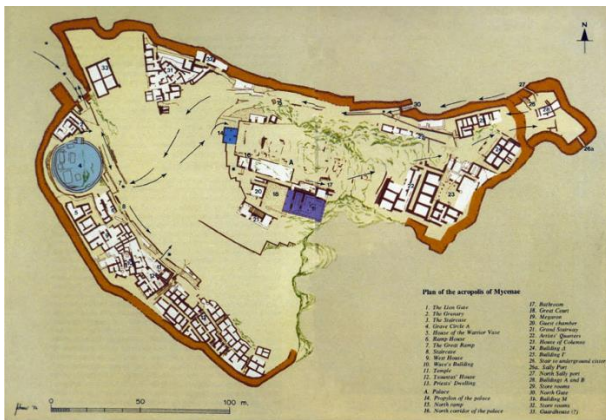
Plan of the Mycenaean acropolis;
the blue circle is the cemetery,
Grave Circle A.
(https://www.pinterest.co.uk/pin/517
421444668839033/)
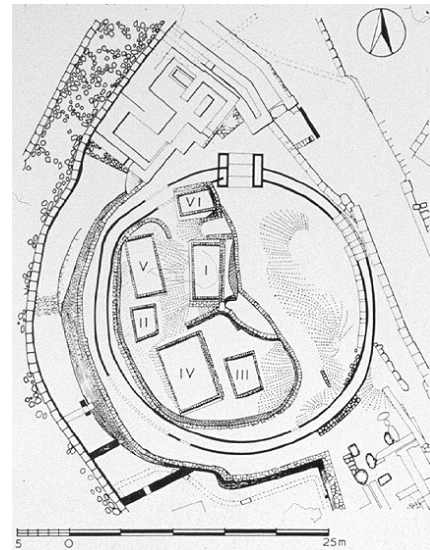
Plan of Grave Circle A.
(Iakovidis 1983, plan 6)

Fig. 6. Mycenae. Grave Circle A: Inlaid dagger blade from Grave IV.

Mylonas 1966, fig. 140.

Fig. 7: Stamatakis' introductory notes on Tomb V (Konstantinidi-Syvridi and Paschalidis 2018, 115)
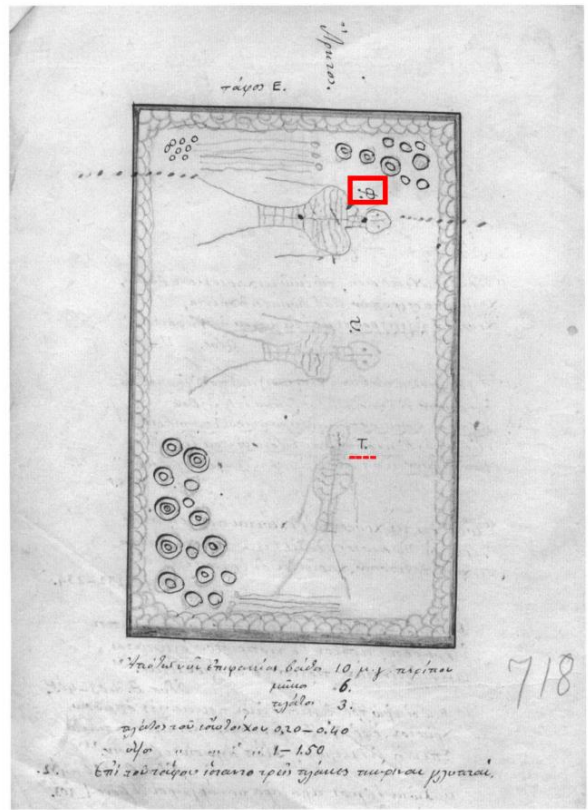
Fig. 8: Drawing of Grave V from Stamatakis' report (Papazoglou-Manioudaki et al. 2010, 164)

Scenario for the film

[Complete darkness - just an ambience of a working space]

Hey, you! Over there!

[The lights go on suddenly. The eyes need a moment to adjust]

Yes, you. You've been looking at me - or what is left of me - a while now. You are the only person in the room, the lady is on her lunch break.

Stop staring, for Potnia's shake, you creep me out.

I'm lying here on the cold examination table to be reexamined for the third time!

Oh, these people! They won't let me rest in peace!

First, this Schliemann mumbling some crazy stories about a guy called Agamemnon that he thought was my brother. He also thought that my brothers and all my relatives buried in the cemetery were murdered simultaneously and burned at the same time. Weird man.

He even said that one of them looked like a mummy! He couldn't stop talking about this other man, Homer, and his great masterpiece, the Iliad, a long poem which described a war between the Achaeans, who seem to be our people, and some people called Trojans. The only rational person seemed to be this poor Greek guy that Schliemann used to call 'Clerk'.

These two had some beef with each other, you could tell. They were arguing all the time. Schliemann insisted that it wasn't the Clerk's job to get involved in the excavations and that he only needed to collect and store the finds. And the Clerk would then get furious and argue that not only was it his job to get involved in the excavation, but on top of that, he was responsible to stop all actions that could break the law or could potentially harm the antiquities. And then Schliemann's married wife usually got involved, siding with her husband, and everything instantly would get worse.

Anyway, then Schliemann left Mycenae and Clerk took my bones to a cold and dark storage room without any ceremony, or libations or anything at all. Not only this, but he took off my arm and put it into a place with a glass cover so that everyone could see it! Unacceptable…

Years later another guy called Angel – not sure why – opened my box and started messing around again with my bones. He even lost one of my teeth!

And now this lady! I'm wondering what else I'm going to suffer or lose…

All the people, claiming they have been looking for answers, but they have failed to provide me with answers…

And the weirdest thing: every time one of them wakes me, I remember less and less. It's like a curse!

Last time I couldn't remember my name, utterly disgraceful… But I'm fine now.

My name is…, I mean people call me…, oh I cannot believe it! I do not remember my name again!

Think! Think! … Yes!

I think I remember now. I am Tough! Or at least that's what Clerk said. He said I'm Tough. It is a bit confusing, though, as the lady keeps calling me MYC1 V and this Angel guy called me 26Myc. Maybe they did not know I am Tough. It does not feel right, though; I do not think that Tough suits me as a name, it feels a bit inappropriate. Anyway, maybe it is due to the curse that makes me forget things; who knows?

The only thing I can remember is that I had the luck to grow up in mighty Mycenae in a really powerful family. My father was one of the greatest chiefs. He had land and people to cultivate it and important friends overseas. I always wanted to be like him when I grew up. He was really brave; he enjoyed hunting very much and training with his friends.

Father made sure that we always had everything we needed. Sometimes I felt tired, in a bad mood and I was always quite pale, but I grew up to be a really tall and robust young man. When I became of the appropriate age, Father had the perfect sword and shield made specifically for me.

They were beautiful pieces of true artistry. Solid and powerful. Beautiful pieces.

The shield in particular was so heavy that it took me quite some time to get used to handling it during the training. And if the training with the sword and the shield was for long hours, which was not at all unusual, I would get pain in the shoulders and the sternum. Nothing I could not handle though. I quite enjoyed training, as much as I enjoyed attending important meetings with Father regarding matters of trade and administration of our territory, or as much as I enjoyed going hunting with Father and his comrades.

Then, one day, when I was almost 25 years old and felt better than ever, unfortunately, I died.

Or at least that was what this nice lady who had been looking into my bones said.

Yes, that diary over there, that is her diary. Have a look if you like, she had been trying hard to understand how I lived and how I died for days now. The other one is Clerk's. That is quite detailed as well.

[Dr Nafplioti's diary narration]

This is individual 'T' in Stamatakis' report. In his report, Stamatakis mentions that this individual's left humerus was exhibited in the museum with gold jewellery that was found with it. The morphology of certain features of the cranium and the robusticity of the post-cranial skeleton indicate a definite male individual. Based on dental ware and the degree of cranial suture closure, he was probably around 25 years old when he died. On his right tibia on the posterior medial surface of the distal shaft of the bone, there is a new bone formation. New bone is remodelled and may be interpreted either as an ossified haematoma - a blood clot - resulting from a wound inflicted onto the bone or as a callus formed on the side of a healed stress fracture. I think a stress fracture is more likely the cause of this lesion but to be 100% confident, I need to have this bone x-rayed. Osteophytes on the misal surface of this bone possibly reflect stresses of the interosseus membrane and the tendons and support a diagnosis of stress fractures at this site. Further support comes for the absence of such from the left tibia. Also, a slight lipping on the articular surface of the distal right tibia at the corresponding articular surface of the posterior-medial portion of the trochlea of the right talus may be the result of trauma.

A lumbar vertebra, found with the material of Grave V probably belongs to this individual. Its body is wedged antero-laterally, and a fracture line is present. The morphology of the vertebra suggests a compression fracture. Such fractures commonly result from sudden excessive impaction, probably a fall from a height? New bone formation from the site of the fracture indicates that the individual survived long enough afterwards for healing to begin. His living stature was calculated from the left femur as 1.81 m which is a rather impressive structure in his time. This is the most robust skeleton in the entire collection of Grave Circle A at Mycenae. Slight to considerable enthesophytosis on muscle attachment sites on both the upper and lower limbs.

These skeletal changes point to engaging in strenuous physical activity and excessive mechanical loading on the respective muscles and skeletal elements. Based on the size and skeletal robusticity of the majority of males from graves four and five as well as the skeletal evidence from involvement in strenuous physical activities shown by all the males from GCA may indicate that these people were perfectly capable of engaging in fighting and warfare. Having said that though, being capable of fighting does not mean that they actually did fight.

[Back to Tough's narration]

But I cannot remember how this happened. The lady said she does not know either, which is annoying, given the amount people been examining what is left of me.

Indeed, Death would have had lots of opportunities to reap my glorious life. It could have been during that battle with these scoundrels that troubled our land. Father trusted his best men to me. I woke up that morning with an awkward feeling, that something was not quite right. But I quickly got rid of the negative thoughts. Fear is not a warrior's trait as Death is always welcome.

I took my beautiful shield and got a good grasp of my sword. It felt heavy for a moment. Without any delay, I rushed out of the house and checked that everybody was ready to dash off. My best friend was there, among the men. He smiled at me and did his usual reassuring gesture. I smiled back, put my helmet on and raised my fist to give the signal to advance.

I cannot remember anything else. Apart from that at some point, I recall myself being in the middle of a wild battle. I did not expect so many enemies to be there. We were clearly trapped. I had failed everyone, Father included. I found myself back-to-back with my best friend, fighting for our

lives. He screamed something, but I did not manage to hear what he was trying to say, the clanging of the swords and shields was so loud, I could not hear anything.

And then I saw him. Their leader. With his spear directly pointing towards my chest. He is fast. Warm blood is running down my chest and on the ground. I can hear everyone mumbling in the distance, but my ears are blocked. Their voices were covered by a loud rushing high-pitched sound. Is this the end, I wondered? It might be. And then everything went black.

Or it might have been during that hunting trip.

It was spring already. Everything was blooming and the air was slightly warm. I was resting under a tree, eyes closed, taking a break after hours of walking under the sun. I could feel the light breeze and the warm sunlight on my face. It was beautiful. I wished for this moment to last forever. Then, suddenly, I heard a deafening roar, followed by screams. I jumped to my feet. Something terrible was happening. The screams grew louder and louder, and I started running towards my men as fast as I could.

Then I saw it. The Wild Beast. I'd encountered him before. I almost lost my life the last time. The enormous animal was now attacking my people.

I grabbed a spear and walked towards him. He was outraged. I could see his eyes shining and his nostrils wide open, breathing the air heavily. He was ready to attack again.

I began approaching the Beast carefully from behind, step by step. I'm very close now. Quietly, step by step, almost ready to attack. My next step was on a dry batch of wood sticks. The sound of them crackling was loud. The Beast turned and started charging towards me.

A moment later I found myself thrown in the air and then back in the ground. Then, everything went black.

Well, I need to accept that I am not sure I remember my name, nor how I died, and that no one is able to help me.

However, I do know that my family gave me a very honourable funeral, as was expected. I know as Clerk made notes of everything that my family put into my grave. Everyone speaks about his diary these days. Yes, that one over there, next to the lady's diary. Have a look.

[Stamatakis' diary narration]

The excavation began two weeks ago with 55 workers, who started digging at the entrance of the great gate of the Acropolis of Mycenae. The work has been conducted in a very disorderly manner so far, as the workers refuse to follow instructions and Mr. Schliemann is not very supportive.

The heat today is unbearable; if only we had a tent to get some protection from the sun. Mr. Schliemann doesn't want to get us one, so both the workers and I are suffering from the heat. We could get one from the army; it shouldn't be that difficult. I need to write a letter to the Minister to take care of it. Also, it is crucial for the finds, particularly the relief sculpture over the gate, to be properly curated after the end of the excavation.

I'm afraid the excavations are conducted with unusual speed, and Mr. Schliemann doesn't want to hear anything about this. He just began excavating again, in new areas, with so many workers, I can't supervise them all. I told him that the permit is for a single area of excavation with 50-60 workers, not for many areas with more than 90! But he said that he has a permit to do as many excavations as he wants and the way he wants them, and to mind my business, which is not to excavate but just to collect uncovered antiquities. I told him that he is wrong and that my assignment is to oversee the excavations, and if anything breaks the law, to stop it immediately.

What can I say? I have tried my best to assist Mr. Schliemann and accommodate all his requests. We're at the site from 6am to 6pm, whereas Mr Schliemann just visits the site twice, morning and evening. We have never presented any obstacles to his work, except in cases where his activities break the law. And even then, when I object, I hear all kinds of quite inappropriate language from him. Mr. Schliemann treats me as If I am nothing more than a simple clerk. Mr. Schliemann does whatever he wants, without thinking about the law, or the Department's instructions, or my objections; he only cares about his own concerns.

Enough of Mr. Schliemann now.

Tuesday, 20 of November 1876.

Grave 5, number of dead - three.

Today, we're examining the last of the five graves. It's the grave that we found first, but, who knows why, Mr Schliemann decided to leave this grave for last. The grave is approximately 6 meters long and 3 meters wide. The width of the walls is 0,20-0,40 m. and their height 1-1,5 m.

The grave contained three men; I will number them with the letters T, Y, and Φ. In the south part lies the skeleton of individual 'T', who is wearing the most beautiful mask ever found, which depicts a bearded man. The man also wears a golden chest plate, a gold arm-band, and an impressive necklace of gold eagle-beads. The orientation of the burial is different from that of the other two deceased; he is buried with his head to the north and his feet to the south. A large number of weapons is associated with this burial, with 10 of them particularly placed at his feet. One of them had a dine fine gold hilt-cover. The vessels associated with this particular burial included two silver vases and an alabaster jug. Some more finds include a spear, a large chisel, a pair of silver tweezers, and a large number of amber beads, which would have formed a necklace. Lastly, a silver cup with a gold-plated rim accompanies this burial.

The wealth of the grave goods in this tomb brings to mind Homer and his Odyssey:

- Look round this echoing hall, son of Nestor, friend of my heart. The whole place gleams with bronze and gold, amber and silver and ivory.

- For it took me seven years and great hardship to amass this fortune and bring it home in my ships. My travels took me to Cyprus, to Phoenicia, and to Egypt. Ethiopians, Sidonians, Erembians, I visited them all; and I saw Libya too, where the lambs are horned from their birth.

- Just as a craftsman trained by Hephaestus and Pallas Athene in the secrets of his art puts a graceful finish to his work by overlaying silverware with gold.

- I will give him this sword of bronze, with its silver hilt and encircling sheath of freshly sawn ivory; he will find it a treasure of great price.

- And I will give him this beautiful goblet of mine, wrought of gold, that he may remember me all his days as he pours libations in his halls to Zeus and to the other gods.

- and he gave me a mixing bowl all of silver.

[Back to Tough's narration]

So, apparently, first, my relatives prepared the grave to accept my body. They adorned my body with all kinds of beautiful objects, suitable for a person like me: a beautiful necklace, a golden armband, a massive golden breastplate ornamented with spirals in repoussé work sewn to a

leather backing, and they put ten beautiful long swords at my feet. Then, they covered me with an extraordinary cloth embellished with all kinds of beautiful golden beads and leaves. And, lastly, a spectacular golden mask was placed on my face. You must have seen all these in Clerk's diary, he made notes and sketches of everything.

Alas! Glorious times. And now people do not know how to show proper respect.

Appendix II – Data handling and ethics

Researcher's Positionality

Before delving into my own biases and positionality in the research, it is necessary to define the term and consider why it is useful to write a positionality research statement. Positionality is used most frequently with qualitative research. Positionality at its most basic level is a recognition that the social and political context of the researcher has an impact on the research (Day 2012; Gastaldo 2015; Waterston and Rylko-Bauer 2007). The way that a researcher perceives the social world largely depends on their position within it, therefore the way they approach, interact and interpret the research is affected by that (Campbell and Wasco, 2000; Smith, 2005; Rowe 2014; Holmes 2020). The first step towards creating a researcher's positionality statement is to consider whether and to what degree race, class, citizenship, ability, age, gender, sexuality, cis/trans status, religion, and similar characteristics affect the position of the researcher including when they analyse the data (Collins 2015; Dhamoon and Hankivsky 2011). I believe it is more important to also consider and discuss how these identity characteristics influence the researcher's view of the world and thus, my relationship with the data. This is normally what the literature refers to as 'bias' or 'lens'. Law (2004) described the 'method assemblage' that emerges when scholars dive into themselves and think about how researchers, methodologies, objects and subjects start to cluster, noting that methods do not just describe social realities but also help to create them.

The concept of positionality has been used since the 1920s to describe how things exist in space in relation to other things, including one's position in relation to another position. In the 1960s, scholars began to use the term to describe the position from which they viewed, understood and interpreted phenomena - this is how we understand the concept today. Positionality prompts the researcher to reflect on who they are in relation to their peers and their readers, and present how their identity shapes the research interpretation that they are offering (Holmes 2020, 1).

Through the 2010s, positionality began to be used more broadly in methodological and epistemological conversations, with a core principle that the position adopted by the researcher impacts the research process (i.e. Foote and Bartell 2011, Savin-Baden and Major 2013; Rowe 2014). For example, asking questions about how the research question was derived; how a research question is named or organised; how methods are selected; how people are asked to participate; how the results are interpreted; how the research is disseminated. Therefore, it is clear that positionality is not simply about identity (i.e., being a white European cis female), but rather thinking about the researcher's relationship with information, objects, artefacts,

communities, and so on. A binary way of stating researcher's positionality suggested by some methodologies (i.e., Cochran-Smith and Lytle 1993, 2009; Bartunek and Louis 1996) is the concept of the insider vs outsider. The insider is a researcher or a participant who works in and for the participants' community as an insider is researching their own people. The outsider is an academic researcher who is perceived as a non-member of that community or that research area (Cochran-Smith & Lytle, 1993).

Herr and Anderson (2012) more recently move beyond the dichotomy of the insider-outsider positionality approach, creating an insider-outsider continuum and six stages along that continuum (see Figure 92). They claim that sometimes it is difficult to fully understand and explain the positionality of the researcher as the relationship with the participants or the community might change during the research, or some researchers might seem to be outsiders, yet have a connection with the field they research even if they do not have one with the particular community or participant group (Herr and Andersen 2012).

Insider (1) _____ (2) _____ (3) _____ (4) _____ (5) _____ (6) Outsider

Positionality of Researcher	Validity Criteria	Contributes to:	Traditions
1. Insider[a] (researcher studies own self/ practice)	Anderson & Herr (1999), Bullough & Pinnegar (2001), Connelly & Clandinin (1990)	Knowledge base, Improved/critiqued practice, Self/ professional transformation	Practitioner research, Autobiography, Narrative research, Self-study
2. Insider in collaboration with other insiders	Heron (1996), Saavedra (1996)	Knowledge base, Improved/critiqued practice, Professional/ organizational transformation	Feminist consciousness raising groups, Inquiry/Study groups, Teams
3. Insider(s) in collaboration with outsider(s)	Anderson & Herr (1999), Heron (1996), Saavedra (1996)	Knowledge base, Improved/critiqued practice, Professional/ organizational transformation	Inquiry/Study groups
4. Reciprocal collaboration (insider-outsider teams)	Anderson & Herr (1999), Bartunek & Louis (1996)	Knowledge base, Improved/critiqued practice, Professional/ organizational transformation	Collaborative forms of participatory action research that achieve equitable power relations
5. Outsider(s) in collaboration with insider(s)	Anderson & Herr (1999), Bradbury & Reason (2001a), Heron (1996)	Knowledge base, Improved/critiqued practice, Organizational development/ transformation	Mainstream change agency: consultancies, industrial democracy, organizational learning; Radical change: community empowerment (Paulo Freire)
6. Outsider(s) studies insider(s)	Campbell & Stanley (1963), Lincoln & Guba (1985)	Knowledge base	University-based, academic research on action research methods or action research projects

a. A flawed and deceptive version of this is when an insider studies his or her own site but fails to position himself or herself as an insider to the setting (*outsider within*).

Figure 89. The continuum between an outsider and an insider as presented in Herr and Anderson (2012). Source: Herr and Anderson (2012, table 3.1).

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In this continuum (see Figure 92 above), the first stage is the insider, where a researcher simply investigates their own community and their own practices. The second stage is when the insider collaborates with other insiders. Stage three is when the insider(s) collaborates with an outsider(s). Stage four is also called reciprocal collaboration and describes the relationship between an insider and an outsider collaborating with equal status. Stage five is when the insiders are collaborating with the outsiders but in a non-equal relationship. Lastly, stage six is when the outsider(s) studies the insider(s), thus investigating people completely outside of their life and experience (Herr and Anderson 2012).

In this research three groups of participants have been interviewed:

UK groups: vast majority were British people with links to archaeology and heritage; Maltese groups: all participants were Maltese with the vast majority not having any relation to archaeology or heritage but with great competence in digital technologies, IDNs and VR; Greek groups: all participants were Greeks and none of them had a relationship to archaeology or heritage.

It is therefore apparent that my position as an insider/outsider is not straightforward in this research. For the UK groups I am an insider as I study at the same university as most of the participants and we also share the same area of studies - archaeology or heritage studies - despite being at different career stages. I am however an outsider since I am an international student, English is not my mother tongue, and my culture is not British. For the Maltese groups I am an outsider due to both culture and occupation, and for the Greek groups I am an insider due to ethnicity and culture, but an outsider due to occupation.

However, it is important to state that none of the participants had a prior relationship with me based on power or hierarchy (There were two undergraduate students among the participants, but I had no relationship with them, and I am not teaching them). Almost all of the participants in the UK group (apart from 1), and all of the participants from the Greek groups, know me personally but these relationships are based on equality and not hierarchy, therefore they would not be afraid to share their true thoughts with me due to hierarchy issues. Regarding the Maltese participants, none of them knew me in advance, so again there was no prior hierarchical relationship. The Maltese participants were as straightforward with me as the rest of the participants.

I am an insider in relation to the Greek and Maltese groups due to the concept of colonialism. I was talking about a Greek case study of colonialism which made me an insider in the Greek

group, but also with the Maltese group as Malta is a former colony, and the story was discussing issues of colonialism. On these grounds, I am an outsider in the UK group.

Jacobson and Mustafa (2019) have created a reflexive tool to identify the researcher's positionality in critical qualitative research, which they call the 'Social Identity Map' (see Figure 98). This map has three tiers: firstly, an identification of social identities; secondly, questioning how these positions impact on our lives; and thirdly, regarding the particularities of each social identity, questioning what makes it meaningful, what are the oddities, and what's the history around these variables. These three tiers create an intricate strategy to identify social positions and understand how they will impact the research. As the authors note (2019, 1), 'being explicit about our social identities, allows us (as researchers) to produce reflexive research and give our readers the tools to recognise how we produce data'.
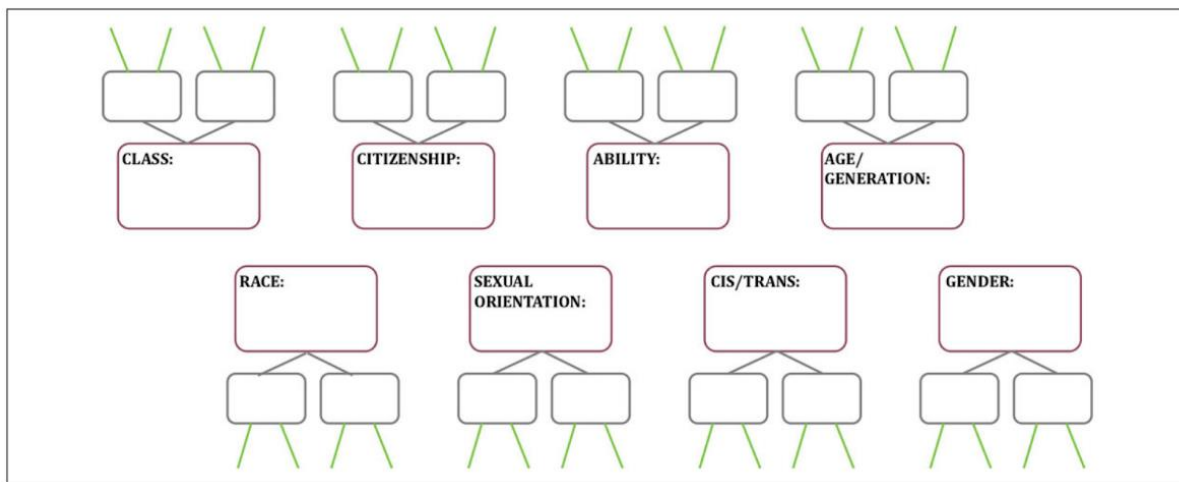
Figure 90. A blank positionality map. Source: Jacobson and Mustafa (2019, figure I).
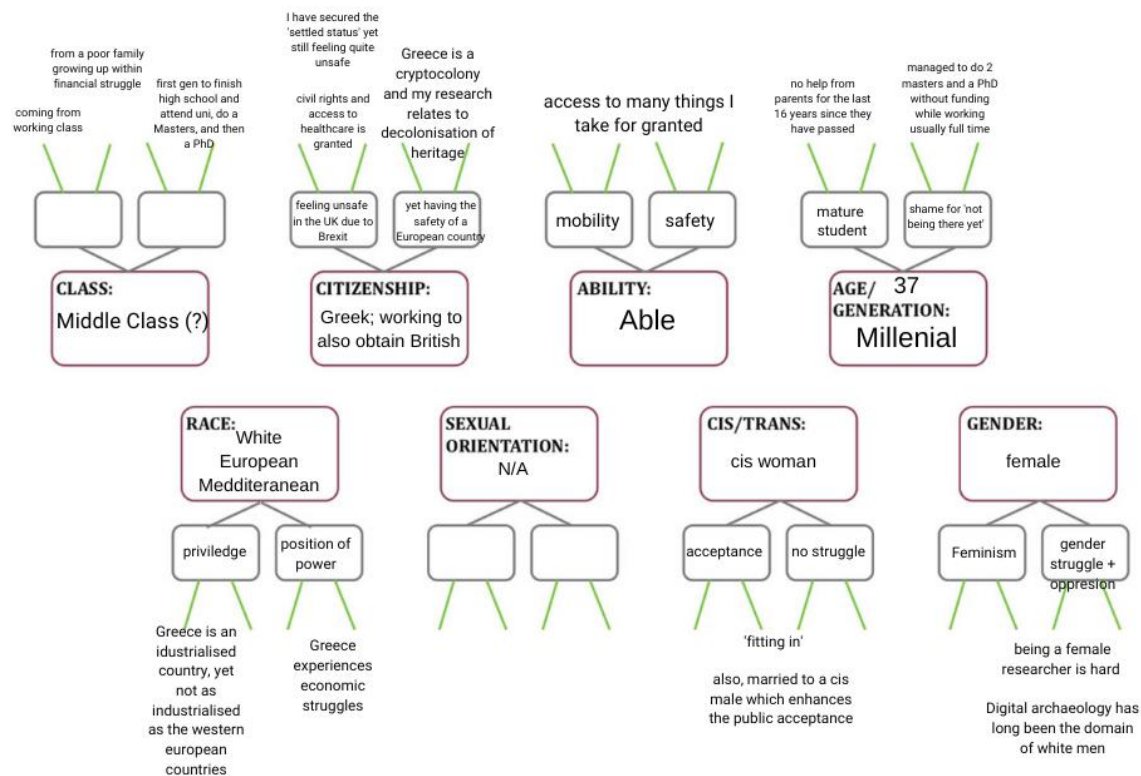
Figure 91. My personal positionality map based on the suggested one by Jacobson and Mustafa (2019).

I have used Jacobson and Mustafa's (2019) blank map (Figure 93) as well as their guidelines on how to fill it in; it is important though to note that this is only an exercise for me and not an actual reflection of my positionality in this research.

Below I set out my positionality based on reflection of the above table (see Figure 94). However, this is not only to make the reader aware of any potential biases I have, but rather to explain where I come from and what I am bringing with me to this study. This also needs to be considered through the lens of subjectivity, meaning that this research has been the result of a particular methodology that I personally chose, as well as the result of an analysis which highlighted some data whilst backgrounding others. I described the methodology I followed along with how I gathered the data in Chapter 5, and then how I interpreted the data in Chapter 6. Lastly, I explained how the analysis was performed and discussed the data in Chapter 7. All this detail, along with the experiment and interview materials in the Appendices provide an audit trail of how the study was conducted. This is about replicability but also about being explicit regarding what exactly I have done and the rationale behind the decisions I have made.

I am a white middle class cis female. The middle-class status is due to education and not due to income (I am not impoverished though I am still a student and do not have a regular job). I come from a working-class family growing up with constant financial struggle, and I am the first in my family to finish high school, let alone attend university, do two master's degrees and then a PhD. In fact, I am the first person on both sides of my family (paternal and maternal) to do a PhD. The fact that I am white has affected this research in the sense that my access to other white people is much easier than other ethnicities. This, along with the fact that the University of York has an overrepresentation of white students and staff, has contributed to my sample being WEIRD (see Chapter 8).

I am Greek, thus coming from a Mediterranean/southern European country and not a western one, and I left Greece due to the economic crisis. I have been living in the UK for 6 years now, I have secured a settled status and I will be applying for British citizenship, as I do feel unsafe regarding my position in the UK community due to Brexit. However, both countries are industrialised and relatively wealthy with access to free healthcare, which provides me with security that other people do not have. Also, both countries are considered to be democracies, hence basic human rights and freedom of speech are granted. Malta is also a European free (democratic) country. These layers of security (settled status, having access to affordable food, having access to healthcare, not being afraid for my life) allow me to conduct my research experiment freely and without any constraints as to what I want to ask the participants and how I would like to conduct my experiment.

In the same regard, being part of a UK university allowed me access to the university's facilities and technology, as well as easy access to people willing to participate in my experiment during the COVID-19 pandemic. My ties to the university, however, did not affect the outcome of this research, since nobody was expecting particular results from it.

Additionally, being part of INDCOR (Interactive Narrative Design for Complexity Representations – COST Action CA18230) allowed me to secure funding to travel to Malta and conduct the second phase of my experiment at St. Martin's Institute of Higher Education, a place I had previously visited for a workshop in 2020. They offered me their facilities as well as technology to use, since the Institute focuses a lot on digital media and especially VR. However, they did not have any involvement in the execution of the experiment nor were they expecting any results from it.

Lastly, the third part of my experiment took place at the National and Kapodistrian University of Athens. I emailed the person in charge and asked for a room to hold the experiment in. They were

very kind and offered me a room where I set up the equipment I brought with me from the UK, as well as a personal assistant to help me with anything I might need. I ended up not needing the additional help, but it was a comfort to know that if something went wrong, I could ask someone for help. Again, nobody from the University of Athens had any involvement in the experiment.

Returning to the subject of ethnicity, I need to note that I felt comfortable talking about colonialism with all three groups, despite the fact that some participants were from western countries that have been colonial powers in the past. I felt comfortable mostly because I knew that these people would understand and because the colonial power that I was talking about was not British, but German. This characteristic - being Greek thus being from a cryptocolony - has definitely affected the way I conducted the research, including the way I created the story, designed the experiment by including questions about how participants felt about Stamatakis, sampled people as I opted to recruit participants from countries which had been colonial powers and participants who had been colonised, and the way I interpreted the data. I believe that this, along with the fact that I am an archaeologist and obviously the whole story raises issues about handling of heritage and human remains, are my two major biases in this research, and the reader needs to be fully aware of that.

Moreover, I am able bodied and healthy, which again helped me to conduct this experiment without any physical constraints. Again, this is something that at first glance feels unrelated to my research, however a closer look could reveal that none of the three media I created were widely accessible for people with disabilities. However, this is not a characteristic that affects my position in the interpretation of the data, or at least not in a major way.

I am a mature PhD student who carries a bit of a stigma and a sense of shame for 'not being there yet', though I cannot see how it could have affected my research. The same goes for my sexuality. However, being a cis woman married to a cis male lead to public acceptance and I am sure it has contributed towards not facing any obstacles when making arrangements for the research or conducting the experiment. However, I am quite unsure if this characteristic plays any role in the way I view and interpret the data.

Lastly, being a female might have impacted the way people (both participants and people who were involved in the process) treated me, which could have been positive or negative. Digital archaeology as a field has, in general, long been dominated by white men, though this is gradually changing (Morgan 2022, 221). However, technologies such as VR or gaming are dominated by

male creators and players. I do not feel that my gender has affected the way I collected or interpreted the data.

To conclude, my major biases in this research are first, that I come from a cryptocolony and I feel sorry about the treatment of Stamatakis by Schliemann as well as about the fact that his name is never mentioned and few people know about his contribution in archaeology. My second bias is the fact that I am an archaeologist with a special interest in mortuary archaeology, hence handling human remains is important to me. In that regard, I would like to note that I have not used depictions of human remains of MYC_1V in this research, only the skeletal reports. My last major bias is that having a more open approach to archaeology and not treating it as a closed secret field is important to me. These factors affected the way I decided to do this research to greater or lesser degrees, including the design and data collection and interpretation. However, it is also important to remember that no research is conducted in a vacuum and the collection, presentation, and discussion of data is always subjective, and too me is also important to make the reader aware of the position that I come from.

Data Anonymisation

The participants were given code names at the beginning of the process to avoid the risk of any data leaks. Their unique code was given to them during the experiment on a post-it stuck on the desk where they would read and sign the consent form. These were shortly after collected by me and destroyed in situ. The only place where the participants' names are kept is on the consent forms for legal purposes which will be destroyed after I finish my PhD. These forms are securely placed in a privately accessed locker which opens with a key, and it is only myself who has access to it. Apart from there, all the notes and the data materials use the given code names to refer to participants.

The codes follow a specific logic, so if anything happens with any part of the materials, I would be able to retrieve data without compromising the anonymity of the participants: UK2001DS-VR which signifies the place where the experiment took place (i.e., the UK), the date of the experiment (i.e., 20/01/2022), the initials of the participant (i.e., DS), then a dash and then the medium the participant began with (i.e., VR). Throughout this thesis I chose to use fake names for the participants, rather than these codes, to avoid dehumanising them. For example, for the above-given code, I would select the name 'Damien for the initial 'D'. Moreover, all the names are deliberately gender-neutral to avoid any potential connection between names and preferred genders, which could compromise the security of the participants' personal data.

Consent Form

UNIVERSITY of York

PhD in Digital Archaeology
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YO1 7EP
Tel: 01904 323901
archaeology@york.ac.uk

Storytelling, VR life histories and interpretation: breathing life to the dead

of Grave Circle A at Mycenae

Participant Consent Form

I have read the participant information sheet for the project and I agree to participate by:

- Taking part in the research experience
- Being observed and recorded during the research   YES   NO
- Completing a questionnaire afterwards   ☐   ☐
- Taking part in the follow up interview

I understand that I am free to withdraw from the interview at any time.   YES   NO
                                                                          ☐   ☐

I give consent for the survey data, video, audio, and interview transcriptions to be used in research and publications arising from the project by the named researcher: Despoina Vasiliki Sampatakou, under the following conditions (tick ONE option as appropriate):

☐   I am happy for material from the research, survey, or interview to be quoted or published, under condition of anonymity.

☐   I wish to be consulted further before material is quoted or published.

FULL NAME:
SIGNED:
DATE:

RESEARCHER: Despoina Vasiliki Sampatakou   (ds1510@york.ac.uk)
SUPERVISORS: Dr Colleen Morgan   (colleen.morgan@york.ac.uk)
                 Dr Michelle Alexander   (michelle.alexander@york.ac.uk)
AHEC Chair: Professor Jonathan Finch   (jonathan.finch@york.ac.uk)

Ethics Approval

Name of Applicant: DESPOINA VASILIKI SAMPATAKOU
Email Address: ds1510@york.ac.uk

Is this a collaboration with another researcher? No
Name of Additional Applicant:
Department Centre or Unit:

Are There Additional Researchers?
Name of Additional Applicant:
Staff/Student Status: PhD Student
Department Centre or Unit:

Are There Additional Researchers?
Please give the names, email addresses, and affiliations of any other researchers that need ethics approval for this project:

Staff/Student Status: PhD Student
Name of 1st Supervisor: Dr Colleen Morgan
Email address: colleen.morgan@york.ac.uk

Name of 2nd Supervisor: Dr Michelle Alexander
Email address: michelle.alexander@york.ac.uk

Title of Project: 'Storytelling, VR life histories and interpretation: breathing life to the dead of Grave Circle A at Mycenae'
Project Start Date: 2021-09-01
Duration: 1.5 years (up to the end of my PhD)

Is this research under the jurisdiction of any other external ethics board? (e.g. the European commission; Human Subjects Review in the USA): No

Funded: No
Funding Source:

Please briefly outline the questions or hypotheses that will be examined in the research. This can normally be copied from your research proposal.:
The aim of my research is to identify how to create more impactful interpretive experiences of the past as well as how to convey life histories through embodied interpretations of archaeological remains. The leading hypothesis of the research is that storytelling is a useful tool for archaeological interpretation, public education and outreach. This research addresses two main

questions: how can different forms of storytelling help archaeologists answer questions about the past and what are the implications of immersion on archaeological storytelling?

The research will consist of two main parts. Firstly, three bioarchaeology life histories based on individuals buried at Grave Circle A at Mycenae will be analysed and described in detail. The second part of the research presents these life histories through three different types of storytelling. The first life story will be a straightforward textual narrative. The second will be an interactive story created using Twine, which will give the user the freedom to explore different storylines and outcomes. The last one will be created and presented to the users though a in a 3D environment. In short, the research will explore the implications of these three different forms of storytelling on how both archaeologists and the wider public understand the past.

Methods of data collection:
Face to face interviews, Online surveys, Telephone/skype surveys, Ethnographic Observation, Web Analytics

How many participants will take part in the research?:
There will be 3 participant groups, each one of them will experience a different type of the same story: Group 1 will experience the written story Group 2 will experience the interactive story (Twine) Group 3 will experience the VR game (VRChat). All participants will be a) aged 18 or older and b) not be classed as a vulnerable individual. Each group will have between 10 and 20 participants. The participants will not be required to have any prior knowledge of Aegean Bronze Age, Mycenae, or burial practices, or any kind of particular interest in archaeology and heritage. The point of the research is to examine the degree of acquired knowledge of the same set of information by using three different media telling the same story. Thus, the conclusions extracted will clarify which media of these three (written story, interactive story, full immersive interactive story) is more effective and in what degree to learn about the past.

How will they be invited to take part in the study?:
So, the participants will be invited to take part in the survey/research project. Initial contact with the groups will be made directly (i.e. a 'Purposeful' sampling strategy).
Academic/Practitioners - Direct contact via telephone or email.

Confirm that you will obtain confirmed consent before subjects participate in the study: I will provide consent sheets for subjects to sign before participating in the study, I will retain these forms for the duration of the research.

Please upload your project information sheet to be given to all participants.: AHEC information sheet_SAMPATAKOU DESPOINA - Despoina Vasiliki Sampatakou.docx
Please upload your informed consent form.: AHEC Consent form_DESPOINA SAMPATAKOU - Despoina Vasiliki Sampatakou.docx
Please upload any additional files.:

Are the results to be disseminated to the participants? : Yes

How will you be disseminating your results to your participants?:
The results of the research could be made available to the participants upon request via the Department of Archaeology in physical form. I will use the contact details provided in Project Information Sheets to get in touch with them.

Are you ensuring anonymity for your participants?:
Yes

Please explain how you plan to anonymise data or pseudonymise data during the project to minimise data protection risk. Anonymity can be guaranteed for all participants as no information will be captured which could be used to identify individuals. This includes their IP address. The only data that will be collected are the participants' names (stored only once), age group, gender, educational level and familiarity to archaeology and to digital technology as these could affect the outcome of the results hence need to be taken into account when studying the data. None of the data could lead to the identification of each of the participants.

If anonymity is not being offered please explain why this is the case.:
N/A

Please explain the measures in place to ensure that you are capturing the minimum amount of personal data/special category data necessary for your research project. I will ensure that the personal data I will be collecting, and processing is adequate to properly fulfil my research's purpose; relevant with a rational link to that purpose; and limited to what is necessary.

I will not capture information or data that could lead to the identification of any of the participants (e.g. ethnicity, gender, sexual orientation etc.)

I will only collect personal data I actually need for my specified purposes.

I will have sufficient personal data to properly fulfil those purposes.

I will periodically review the data I hold, and delete anything I don't need.

Please detail the types of data you will be collecting.: Interviews, Questionnaires, Audio recordings, Video recordings, Notes/ethnographic observations

Where will the data be stored electronically?: Password protected laptop, Password protected PC, GOOGLE drive with no sharing enabled, Encrypted folder on hard drive

Where is the data to be stored in paper form?: Locked filing cabinet

At what point are you proposing to destroy the data, in relation to the duration of this project?: Ten years after the research is completed

How will you destroy this data?: Secure delete it electronically, Shred the paper forms

If you are sharing your data with others outside your department, what steps are you taking to ensure that it is protected?: I am not sharing the data with others

If you are sharing personal or special category personal data with others outside your department, what steps are you taking to ensure that it is protected? If you are working collaboratively with third parties or sharing data with non-University personnel, please ensure that you have consulted the Information Governance Office and/or IP and Legal to ensure appropriate contracts and/or data sharing arrangements are in place.:
N/A

Are you exporting this data outside the EU?: I am not exporting it outside the EU

If the data is to be exported outside the European Union, what steps are you taking to ensure that it is protected? Note: you must identify how you will comply with General Data Protection Regulation requirements. https://www.york.ac.uk/records-management/dp/:

Risks to participants (e.g. emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information). All research involving human participants can have adverse effects. The answer of "none" will not be accepted.

1. Participants Physical Safety/Comfort:
Risk: Participant hurt themselves while participating in the research

2. Participants Physical Safety/Comfort:
Risk: Participant not feeling safe/willing to use the VR headset.

3. Participants Wellbeing:
Risk: Participant uncomfortable with the research project's location and/or environment.

4. Participants Wellbeing:
Risk: Participant uncomfortable with the research and/or other participants.

5. Participants Wellbeing:
Risk: Participant uncomfortable undertaking planned research activities (e.g. use the VR equipment, access the Twine webpage).

6. Participants Wellbeing:
Risk: Participant uncomfortable with publishing/sharing research output i.e. researcher's observations while experiencing the VR.

Please state how you will mitigate these risks to participants.: 1. Mitigation:
a) Ensure the room is safe, the chairs, tables and all the equipment safe for use.
b) Carry a fully charged mobile phone.
c) Keep emergency contact information in hand/somewhere easily accessible by everyone.

2. Mitigation:
a) Ensure the headset is comfortable and appropriate for use for each one of the participants and recalibrate the googles every time before use.
b) Participants will be reminded that they can withdraw from the study at any time and all data collected/research outputs will be deleted. Care will be taken to ensure a project environment in which they feel confident and able to do this.

3. Mitigation:
a) All three research project parts (story, interactive story, VR story) will be run in private rooms within the University and which have refreshment and bathroom facilities.
b) Participants will be reminded that they can withdraw from the study at any time and all data collected/research outputs will be deleted. Care will be taken to ensure a project environment in which they feel confident and able to do this.

4. Mitigation:
a) Ensure that the participants feel safe and comfortable before, during and after the process of data collection (experiences, questionnaires, interviews).
b) Ensure that nobody is left alone or unsupervised at all times
c) Ensure that security is available at the time of the data collection (experiences, questionnaires, interviews) and that the emergency call number is available to all participants before the beginning of the process.
d) Participants will be reminded that they can withdraw from the study at any time and all data collected/research outputs will be deleted. Care will be taken to ensure a project environment in which they feel confident and able to do this.

5. Mitigation: Participants will be reminded that they can withdraw from the study at any time and all data collected/research outputs will be deleted. Care will be taken to ensure a project environment in which they feel confident and able to do this.

6. Mitigation:
a) No research outputs will be published/shared without the final approval of the participant. If the situation can be remedied through additional editing this will be offered/undertaken.
b) Participants will be reminded that they can withdraw from the study at any time and all data collected/research outputs will be deleted. Care will be taken to ensure a project environment in which they feel confident and able to do this.

Risks to researchers (e.g. personal safety, physical harm, emotional distress, risk to accusation of harm/impropriety, conflict of interest....) The answer of "none" will not be accepted.:
1. Researcher/Partner Physical Safety/Comfort:
Risk: Researcher hurts themselves while conducting the research/using the room/equipment.

2. Researcher/Partner Physical Safety/Comfort
Risk: Researcher hurt, harassed, or abused by participant(s).

Please state how you will mitigate these risks to the researcher.:
1. Mitigation:
a) Ensure the room is safe, the chairs, tables and all the equipment safe for use.
b) Carry a fully charged mobile phone.
c) Keep emergency contact information in hand/somewhere easily accessible by everyone.

2. Mitigation:
Ensure that security is available at the time of the data collection (experiences, questionnaires, interviews) and that the emergency call number is available to all participants before the beginning of the process.

University/institutional risks (e.g. adverse publicity, financial loss, data protection....) The answer of "none" will not be accepted.:
1. Institutional Physical Assets: Laptop(s), Video/voice recording equipment, data projector (if required), VR headset, room equipment (i.e. table, chairs)
Risk: Damage, loss or theft of University property.

2. Institutional Reputation:
Risk: Actions of Researcher damage the reputation of the University of York wither Participants and/or Partners.

Please state you will mitigate these risks to the university. 1. Mitigation:
When equipment is borrowed from the University of York, then this will only be used within University premises and never left unattended.

2. Mitigation:
Be conscious of impact and consequences of actions and act with a professional manner at all times towards the participants and/or university stuff.

Financial conflicts of interest (perceived or actual with respect to direct payments, research funding, indirect sponsorship, board or organisational memberships, past associations, future potential benefits, other....):
N/A
Please draw our attention to any other specific ethical issues this study raises.:
1. Intellectual Property
Intellectual property and copyright of the three stories (written story, Twine interactive story, VRChat immersive experience) will be retained by the author/creator/researcher.

2. Data Storage (additional information)
Field Notes, containing general impressions, research experience, environment etc. will be hand written in a dedicated notebook kept securely in the Researcher's work/home office with no access from other people. Participant names will not be specified in the Field Notes. The Field Notes will only be used during the data analysis process. A code will be used instead at all times.

Please tick if true, otherwise leave blank:
Informed consent will be sought from all research participants, All data will be treated as anonymously as possible and stored in a secure place, All relevant issues relating to General Data Protection Regulation have been considered (see https://www.york.ac.uk/records-management/generaldataprotectionregulation/) &, if necessary, the Data Protection office contacted (Dr Charles Fonge, Borthwick Institute, charles.fonge@york.ac.uk), All quotes and other material obtained from participants will be anonymised in all reports/publications arising from the study where appropriate, All reasonable steps have been taken to minimise risk of physical/psychological harm to project participants, All reasonable steps have been taken to minimise risk of physical/mental harm to researchers, Participants have been made aware of and consent to all potential future uses of the research and data, Any relevant issues relating to intellectual property have been considered (see https://www.york.ac.uk/staff/research/external-funding/ip/policy/), There are no known conflicts of interest with respect to finance/funding, The research is approved by the Supervisor, Head of Department or Head of Research

Please explain in the space below, why if any of the above items have not yet been confirmed:
N/A

Are there any issues that you wish to draw to the Committee's attention? It is your responsibility to highlight any ethical issues that may be of perceived or actual interest. :
N/A

Type your name to sign the document: DESPOINA VASILIKI SAMPATAKOU

AHEC Information Sheet

PhD in Digital Archaeology
Department of Archaeology
University of York
King's Manor
York
YO1 7EP
Tel: 01904 323901
archaeology@york.ac.uk

Storytelling, VR life histories and interpretation: breathing life to the dead of Grave Circle A at Mycenae

Participant Information Sheet

We would like to invite you to take part in the research project - **Storytelling, VR life histories and interpretation: breathing life to the dead of Grave Circle A at Mycenae**.

What is the research about?
The research is being undertaken as part of a PhD research project by Despoina Vasiliki Sampatakou (ds1510@york.ac.uk) under the supervision of Dr Colleen Morgan (colleen.morgan@york.ac.uk) and Dr Michelle Alexander (michelle.alexander@york.ac.uk).

Despoina is investigating the impact of different storytelling techniques and practices (written, interactive using Twine, and immersive with VRChat) regarding acquired knowledge of the Mycenaean (Late Bronze Age in the Aegean) era. Despoina has a particular interest in ways to create more impactful interpretive experiences of the past as well as convey life histories through embodied interpretations of archaeological remains.

This project forms a part of Despoina's research work and investigates how various forms of storytelling help archaeologists answer questions about the past and what are the implications of immersion on archaeological storytelling.

This research has been reviewed and approved by the University of York's, Department of Archaeology Ethics Committee.

Departmental Ethics Representative to AHEC: Dr James Taylor - james.s.taylor@york.ac.uk

What is involved?

Answering questionnaires based on your storytelling experience (Group 1: written story; Group 2: Twine interactive story; Group 3: VRChat immersive experience). Each experience will take approximately 30 minutes and the questionnaires will not need more than 15 minutes to be completed. Despoina will make notes during these experiences.

Taking part in an interview with Despoina regarding your experience. In the interviews Despoina will ask you to talk about your experience with the stories, particularly how you find them and any other comments or further notes you might want to add. The interview will last approximately 20 mins.

All the above (experiences, answering questionnaires, interviews) will take place at King's Manor, and the interviews may need to be held also via zoom if access to King's Manor is restricted.

What are the possible benefits and risks?

The benefits are considered to be of immense importance to the researcher as this research will help to better understand the implications of different immersive storytelling techniques on the wider public regarding the past.

The risks are mostly physical (e.g. hurting yourself while using the equipment i.e. chairs, tables, VR headset etc.), and regarding your wellbeing (e.g. being uncomfortable with the environment, the researcher, the other participants, or feeling uncomfortable with the researcher collecting and handling your data).

All possible risks have been assessed and actions towards minimizing them have already been taken. If you wish to know more about the actions and measures taken to ensure your own safety, please contact the researcher directly (ds1510@york.ac.uk). Moreover, please do remember that you can withdraw from participating in this research anytime you want.

Do I have to take part?

You do not have to take part and if you do decide to take part you can change your mind at any time without giving any reason. If you do decide to leave the study any data already collected will be destroyed and all reference to it removed from the PhD Thesis.

How will my privacy be protected?

Your identity will be fully protected as the data collected will only include apart from your name, only your age, and educational level, with the last couple of data being in groups (e.g. if you are 19 years old there will be an option saying '18-25'). Hence, it will not be possible to be identified.

Apart from that, your name will be only known to the researcher and you will be assigned with a code instead, which will be used during the questionnaires and interviews for the protection of your anonymity. Moreover, your name will NOT be mentioned to others or published in the final written PhD Thesis document, although an anonymous digital copy of your interview transcripts will be submitted to the examiners.

Your interview transcripts will be securely stored at the University of York during the project and kept by the University for up to ten years after the PhD has been awarded.

How will the information I provide be used?

An analysis of the data collected will be used in delivering the aims and objectives of this research project. Once completed a digital copy of the final PhD Thesis will be deposited with the University of York Library.

This document will then be accessible for research purposes by all authorised library users, for example staff and students of the University who may refer to and publish content included in the PhD Thesis in their own documents.

This document may also be provided, on request, by external organisations such as the library service of another UK or EU University but only for research purposes.

As a participant, you may request a digital copy of this documentation at any time by contacting the Department of Archaeology. Contact details are provided above.

Thank you for your interest in this research

License by ERT to use the video to create the 360 film for the purpose of the research

ΕΡΤ ΑΡΧΕΙΟ

ΕΛΛΗΝΙΚΗ ΡΑΔΙΟΦΩΝΙΑ ΤΗΛΕΟΡΑΣΗ Α.Ε
Δ/ΝΣΗ ΑΡΧΕΙΟΥ

Αγία Παρασκευή, 16-08-2021
Αρ. Πρ: 794

ΠΡΩΤΟΚΟΛΛΟ ΠΑΡΑΔΟΣΗΣ ΚΑΙ ΠΑΡΑΛΑΒΗΣ

Σε συνέχεια του αιτήματος της κας Δέσποινα Σαμπατάκου, υποψήφιας Διδάκτωρ του Πανεπιστημίου του Γιορκ, στο Ηνωμένο Βασίλειο, με Αριθ. Πρωτ. 792/11-8-2021 που αφορά στην παραχώρηση αντιγράφου αποσπασμάτων από τις εκπομπές με τίτλο ΕΛΛΑΔΟΣ ΠΕΡΙΗΓΗΣΙΣ... ΜΥΚΗΝΕΣ & ΑΡΧΑΙΟΛΟΓΙΚΕΣ ΞΕΝΑΓΗΣΕΙΣ - Επεισόδιο:002 Η ΑΚΡΟΠΟΛΗ ΤΩΝ ΜΥΚΗΝΩΝ σας αποστέλλουμε αντίγραφο σε ψηφιακή μορφή με λογότυπο για να χρησιμοποιηθούν στη διδακτορική σας διατριβή.

Το ανωτέρω υλικό παραδίδεται με τους παρακάτω όρους χρήσης :

1. Το υλικό παραχωρείται από την ΕΡΤ αποκλειστικά για τη συγκεκριμένη χρήση.
2. Η ΕΡΤ διατηρεί τα πνευματικά δικαιώματα του υλικού.
3. Δεν επιτρέπεται η οποιαδήποτε περαιτέρω χρήση του υλικού ήτοι παραχώρηση ή δανεισμός σε τρίτους, η δημιουργία και έκδοση αντιγράφων, το μοντάζ, η τροφοδότηση βάσης δεδομένων, η δημιουργία οποιουδήποτε οπτικοακουστικού προϊόντος πέραν του συμφωνηθέντος και η οποιαδήποτε περαιτέρω χρήση και εκμετάλλευση του υλικού ή αποσπασμάτων αυτού πλέον της συμφωνηθείσας, χωρίς την έγκριση και έγγραφη άδεια του Αρχείου.
4. Είναι υποχρέωση της κας Δέσποινα Σαμπατάκου να αναφέρει στη Διδακτορική της Διατριβή την πηγή προέλευσης του αρχειακού φωτογραφικού υλικού, ήτοι «ΑΡΧΕΙΟ ΕΡΤ Α.Ε.»

Ο παραδούς   Η παραλαβούσα

Βασίλης Αλεξόπουλος   Δέσποινα Σαμπατάκου
Διευθυντής Αρχείου

Δέσποινα Ζερβού
Υπ. Τμ. Αποκατάστσης, Ψηφιοποίησης
& Τεκμηρίωσης

Information sent to the participants via email before the day of the pilot study

Hi,

Thank you very much for participating in my experiment for my pilot study, it is much appreciated. Here are the details of the day:

Date: Friday 14/1/2022
Time: 10:00 am
Venue: K/G60 Digital Lab at King's Manor (see below map attached)
Duration: approx. 2 hours

Please, complete and return the attached consent form regarding the study.
If you have any questions, please let me know, I'm happy to help with anything you might need.

COVID-19: According to the newest rules and updated face coverings policy, everyone is expected to wear a face covering, unless exempt, when moving about indoors.

Also, if you have any COVID symptoms, please let me know and do not attend the event. Lastly, may I kindly ask you to feel free to do a self-test before attending the event for everyone's safety.

What to expect on the day:
1. I'll take some time to explain how the experiment will happen
2. you'll complete a pre-questionnaire
3. you'll experience one type of the story (written, interactive, immersive) (video recording will be taken)
4. you'll complete a post-questionnaire
5. we'll gather all together for a short discussion afterwards on your experience (notes will be made and video/voice recording will be taken)

Of course, we'll have time afterwards if you want to hang around and discuss more on the experience, as any feedback on the experiment is more than welcome and in fact very useful to me.

Please, feel free to get in touch if you have any questions. Again, thank you very much for your help, it is very important for my research.

All the best,
Despoina

Participants' profiles

Participants' profiles - UK

The participants came from an archaeological and/or academic background related to archaeology or heritage (see Figure 95). However, not all of them knew about the case study or had a vast knowledge of the Bronze Age in general. The majority of them were current students at the University of York, either undergraduates or postgraduates, and they were all white. Of the six participants, four identified as females, one as male, and one as a non-binary person. As mentioned previously, this phase of the experiment was conducted amidst the COVID-19 pandemic, and thus there were restrictions in place which did not allow for the experiment to be open to the public. I advertised the experiment through my own personal social media and an email which was sent out by the Department of Archaeology to attract potential participants. Then, the volunteers emailed me to express their interest in participating in the experiment and I made the arrangements and the room bookings accordingly.

FEMALE
UNIVERSITY STUDENT
18-24
WHITE
HIGH SCHOOL DEGREE
HAVE STUDIED ARCHAEOLOGY
NOT GOOD KNOWLEDGE OF THE BRONZE AGE

FEMALE
UNIVERSITY STUDENT
18-24
WHITE
HIGH SCHOOL DEGREE
HAVE STUDIED ARCHAEOLOGY
NOT GOOD KNOWLEDGE OF THE BRONZE AGE

NON-BINARY
UNIVERSITY STUDENT
25-34
WHITE
MASTER'S DEGREE
PROFESSIONAL ARCHAEOLOGIST/ACADEMIC
NO KNOWLEDGE OF THE BRONZE AGE

FEMALE
WORKING FULL-TIME
35-44
WHITE
MASTER'S DEGREE
PROFESSIONAL ARCHAEOLOGIST/ACADEMIC
NOT GOOD KNOWLEDGE OF THE BRONZE AGE

MALE
UNIVERSITY STUDENT
45-54
WHITE
MASTER'S DEGREE
HAVE STUDIED ARCHAEOLOGY
NO KNOWLEDGE OF THE BRONZE AGE

FEMALE
UNIVERSITY STUDENT
25-34
WHITE
MASTER'S DEGREE
PROFESSIONAL ARCHAEOLOGIST/ACADEMIC
NO KNOWLEDGE OF THE BRONZE AGE

Figure 92. UK groups participants' profiles.

Participants' profiles - Malta

The Maltese groups (see Figure 96) were much more diverse than the UK groups and they included people from different educational and occupational backgrounds, and from a wide range of ages. However, they were all white, and all Maltese nationals. Five out of the twelve identified as females and seven as males. One of them was an archaeologist, one was working in heritage, and the rest did not have any archaeological or heritage background. Most of them were either studying or working in computing science and some of them were experienced in VR and IDNs. Apart from the archaeologist, the rest did not have much knowledge of the Bronze Age or the case study.

MALE
WORKING FULL-TIME
18-24
WHITE
HIGH SCHOOL DEGREE
ENJOYS VISITING MUSEUMS
NO KNOWLEDGE OF THE BRONZE AGE

MALE
UNEMPLOYED
18-24
WHITE
DIPLOMA
ENJOYS VISITING MUSEUMS
SOME KNOWLEDGE OF THE BRONZE AGE

FEMALE
WORKING FULL-TIME
25-34
WHITE
DIPLOMA
JUST CURIOUS ABOUT THE PAST
NOT GOOD KNOWLEDGE OF THE BRONZE
AGE

MALE
UNIVERSITY STUDENT
18-24
WHITE
DIPLOMA
ENJOY VISITING MUSEUMS
NOT SURE ABOUT THE BRONZE AGE

MALE
WORKING FULL-TIME
25-34
WHITE
DIPLOMA
ENJOYS VISITING MUSEUMS
NOT SURE ABOUT THE BRONZE AGE

MALE
WORKING FULL-TIME
18-24
WHITE
BACHELOR'S DEGREE
ENJOYS VISITING MUSEUMS
NOT GOOD KNOWLEDGE OF THE BRONZE
AGE

FEMALE
WORKING FULL-TIME
25-34
WHITE
BACHELOR'S DEGREE
JUST CURIOUS ABOUT THE PAST
NO KNOWLEDGE OF THE BRONZE AGE

FEMALE
WORKING FULL-TIME
35-44
WHITE
MASTER'S DEGREE
ENJOYS VISITING MUSEUMS
NOT GOOD KNOWLEDGE OF THE BRONZE
AGE

MALE
WORKING FULL-TIME
35-44
WHITE
HIGH SCHOOL DEGREE
ENJOYS VISITING MUSEUMS
NOT SURE ABOUT THE BRONZE AGE

FEMALE
UNIVERSITY STUDENT
35-44
WHITE
BACHELOR'S DEGREE
PROFESSIONAL ARCHAEOLOGIST/ACADEMIC
GOOD KNOWLEDGE OF THE BRONZE AGE

FEMALE
UNIVERSITY STUDENT
25-34
WHITE
BACHELOR'S DEGREE
ENJOYS VISITING MUSEUMS
NOT GOOD KNOWLEDGE OF THE BRONZE
AGE

MALE
UNIVERSITY STUDENT
25-34
WHITE
BACHELOR'S DEGREE
ENJOYS VISITING MUSEUMS
NOT GOOD KNOWLEDGE ABOUT THE BRONZE
AGE

Figure 93. Maltese groups participants' profiles.

Participants' profiles - Greece

The participants in this phase of the experiment (see Figure 97) were more diverse regarding occupation and age, but they were still all white and educated people. Half of them identified as females and half as males. None of them were archaeologists or heritage practitioners, and they had limited knowledge of the Bronze Age. However, all of them knew about the case study since it was included in the school curriculum, and some of them had also visited the site at Mycenae. This also created an interesting discourse, since it allowed me to observe what they already knew about Grave Circle A at Mycenae compared to the actual archaeological and historical evidence, as well as their reactions when they experienced the story in the three forms.

MALE
UNIVERSITY STUDENT
18-24
WHITE
HIGH SCHOOL DEGREE
ENJOYS VISITING MUSEUMS
NOT GOOD KNOWLEDGE OF THE BRONZE AGE

FEMALE
RETIRED
55-64
WHITE
HIGH SCHOOL DEGREE
ENJOYS VISITING MUSEUMS
NOT SURE ABOUT THE BRONZE AGE

FEMALE
RETIRED
55-64
WHITE
BACHELOR'S DEGREE
ENJOYS VISITING MUSEUMS
SOME KNOWLEDGE OF THE BRONZE AGE

MALE
SELF-EMPLOYED
45-54
WHITE
HIGH SCHOOL DEGREE
ENJOYS VISITING MUSEUMS
SOME KNOWLEDGE OF THE BRONZE AGE

FEMALE
RETIRED
55-64
WHITE
BACHELOR'S DEGREE
JUST CURIOUS ABOUT THE PAST
NOT SURE ABOUT THE BRONZE AGE

MALE
WORKING FULL-TIME
25-34
WHITE
BACHELOR'S DEGREE
ENJOYS VISITING MUSEUMS
NO KNOWLEDGE OF THE BRONZE AGE

Figure 94. Greek group participants' profiles.

Appendix III - Surveys and Interview Questions

The data from the surveys can be found following this link:

https://drive.google.com/drive/folders/1gF9qg66VDRzbKZmfE2-lHbv8DkOYyp6h?usp=sharing

Pre-Questionnaire

E1 What is your given code ID?

_____

E2 Which medium are you experiencing?

○ Text (1)

○ Twine (2)

○ VR (3)

E3 Please pick a code name that will help us identify your responses in case your given code ID gets lost. Fill in the 3 first letters of the place you were born followed by the 3 first letters of your grandmother's first name. For example, if you were born in Athens and your grandmother's name is Maria, your code would be: ATHMAR.

_____

CF1

I have read the participant information sheet for the project and I agree to participate by:

1. Taking part in the research experience

2. Being observed and recorded during the research

3. Completing a questionnaire afterwards

4. Taking part in the follow up interview

   ○ Yes (1)

   ○ No (2)

CF2 I understand that I am free to withdraw from the interview at any time

   ○ Yes (1)

   ○ No (2)

CF3 I give consent for the survey data, video, audio, and interview transcriptions to be used in research and publications arising from the project by the named researcher: Despoina Vasiliki Sampatakou, under the following conditions (tick ONE option as appropriate):

   ○ I am happy for material from the research, survey, or interview to be quoted or published, under condition of anonymity (1)

   ○ I wish to be consulted further before material is quoted or published (2)

D1 How old are you?

○ Under 18 (1)

○ 18-24 years old (2)

○ 25-34 years old (3)

○ 35-44 years old (4)

○ 45-54 years old (5)

○ 55-64 years old (6)

○ 65+ years old (7)

D2 What is your ethinicity?

○ White (1)

○ Asian / Asian-British (2)

○ Black / Black British / African / Caribbean (3)

○ Mixed / Multiple ethnic groups (4)

○ Other (5) _____

○ Prefer not to say (6)

D3 How do you describe yourself?

○ Male (1)

○ Female (2)

○ Non-binary / third gender (3)

○ Prefer to self-describe (4) _____

○ Prefer not to say (5)

D4 What best describes your employment status over the last three months?

○ Working full-time (1)

○ Working part-time (2)

○ Unemployed and looking for work (3)

○ A homemaker or stay-at-home parent (4)

○ Student (5)

○ Retired (6)

○ Other (7)

D5 What is the highest degree or level of education you have completed?

○ Secondary (1)

○ High School (2)

○ Bachelor's Degree (3)

○ Master's Degree (4)

○ Ph.D. or higher (5)

○ Trade School (6)

○ Prefer not to say (7)

○ None of the above (8)

○ Click to write Choice 9 (9)

D6 What is your relationship with archaeology?

○ None, I'm just curious about the past (1)

○ Some, I enjoy visiting museums and watch documentaries (2)

○ I've studied archaeology at some point (3)

○ I'm a professional archaeologist or/and an academic (4)

D7 How you would describe your knowledge on the Bronze Age?

I have a vast knowledge on the Bronze Age (1)	◯ Strongly disagree (1)	◯ Somewhat disagree (2)	◯ Neither agree nor disagree (3)	◯ Somewhat agree (4)	◯ Strongly agree (5)

End of Block: Demographics

Start of Block: Pre-questionnaire

PQ1

Where is Greece?

○ A (1)

○ B (2)

○ C (3)

○ D (4)

○ E (5)

○ F (6)

○ G (7)

○ I (8)

PQ2 Where is Mycenae?

○ A (1)

○ B (2)

○ C (3)

○ D (4)

○ E (5)

○ F (6)

PQ3 Who was Agamemnon?

○ Mythological king of Mycenae in the homeric epics (1)

○ A real king, the king of Mycenae (2)

○ I don't know (3)

PQ4 Do you recognise this?

○ Yes (1)

○ No (2)

PQ5 Do you know who excavated Mycenae?

○ I don't know (1)

○ Stamatakis (2)

○ Schliemann (4)

○ Stamatakis and Schliemann (5)

○ Arthur Evans (6)

○ Arthur Evans and Stamatakis (7)

PQ6 The excavations took place during the:

○ 18th century (6)

○ 19th century (7)

○ 20th century (8)

○ I don't know (9)

PQ7 Do you know what important finds were unearthed during the excavations at Mycenae?

○ No, I don't know (1)

○ Yes, pyramids (2)

○ Yes, tombs with a few pounds of gold objects and weapons (3)

○ Yes, horse burials (4)

PQ8 So, are these finds in Mycenae now?

○ Yes (1)

○ No (2)

○ Not sure (3)

PQ9 The Trojan war was an event that happened during the Bronze Age

○ Yes (3)

○ Not sure (4)

○ No (5)

PQ10 The Trojan war is a mythological conflict narrated by Homer in his poem, the Iliad

○ Yes (3)

○ Not sure (4)

○ No (5)

PQ11 How Bronze Age people in Greece treated their dead?

○ They buried them in graves (1)

○ They cremated them (2)

○ They mummified them and then put them in coffins (3)

○ I don't know (4)

End of Block: Pre-questionnaire

Post-Questionnaire

E1 What is your given code ID?

_____

E2 Which medium are you experiencing?

○ Text (1)

○ Twine (2)

○ VR (3)

E3 Please pick a code name that will help us identify your answers without identifying you: put the 3 first letters of the place you were born followed by the 3 first letters of your grandmother's first name. For example, if you were born in Denver and your grandmother's name is Muriel, your code would be: DENMUR.

_____

PQ1 Where is Greece?

   ○ A (1)

   ○ B (2)

   ○ C (3)

   ○ D (4)

   ○ E (5)

   ○ F (6)

   ○ G (7)

   ○ I (8)

PQ2 Where is Mycenae?

   ○ A (1)

   ○ B (2)

   ○ C (3)

   ○ D (4)

   ○ E (5)

   ○ F (6)

PQ3 Who was Agamemnon?

○ Mythological king of Mycenae in the homeric epics (1)

○ A real king, the king of Mycenae (2)

○ I don't know (3)

PQ4 Do you recognise this?

○ Yes (1)

○ No (2)

PQ5 Do you know who excavated Mycenae?

○ I don't know (1)

○ Stamatakis (2)

○ Schliemann (4)

○ Stamatakis and Schliemann (5)

○ Arthur Evans (6)

○ Arthur Evans and Stamatakis (7)

PQ6 The excavations took place during the:

○ 18th century (6)

○ 19th century (7)

○ 20th century (8)

○ I don't know (9)

PQ7 Do you know what important finds were unearthed during the excavations at Mycenae?

○ No, I don't know (1)

○ Yes, pyramids (2)

○ Yes, tombs with a few pounds of gold objects and weapons (3)

○ Yes, horse burials (4)

PQ8 So, are these finds in Mycenae now?

○ Yes (1)

○ No (2)

○ Not sure (3)

PQ9 The Trojan war was an event that happened during the Bronze Age

○ Yes (3)

○ Not sure (4)

○ No (5)

PQ10 The Trojan war is a mythological conflict narrated by Homer in his poem, the Iliad

○ Yes (3)

○ Not sure (4)

○ No (5)

PQ11 How did Bronze Age people in Greece treat their dead?

○ They buried them in graves (1)

○ They cremated them (2)

○ They mummified them and then put them in coffins (3)

○ I don't know (4)

End of Block: Post-Questionnaire

Start of Block: Pedagogy

PQ12 What was the dead person's real name?

○ Tau (1)

○ MYC1 V (2)

○ 26Myc (3)

○ Agamemnon (4)

○ We don't actually know (5)

○ Tough (6)

PQ13 Where they were born?

○ Athens (1)

○ Mycenae (2)

○ Crete (3)

○ I don't know (4)

PQ14 Were they wealthy?

○ Yes (1)

○ No (2)

○ Not sure (3)

PQ15 Were they of tall stature?

○ Yes (1)

○ No (2)

○ I don't know (3)

PQ16 Was this individual a warrior?

○ Yes (1)

○ No (2)

○ We can't know for sure (3)

PQ17 How did the individual die?

  ○ In a battle (1)

  ○ While hunting (2)

  ○ Of an unknown illness (3)

  ○ We can't know for sure (4)

PQ18 The individual was buried with precious gifts

  ○ Yes (1)

  ○ No (2)

  ○ Not sure (3)

PQ19 The individual wore a golden mask

  ○ Yes (1)

  ○ No (2)

  ○ Not sure (3)

PQ20 The individual was identified as Agamemnon by Schliemann

○ Yes (1)

○ No (2)

○ Not sure (3)

PQ21 Stamatakis was appointed by the Greek government to oversee Schliemann

○ Yes (1)

○ No (2)

○ Not sure (3)

PQ22 Dr Nafplioti reexamined the bones using new techniques that weren't available during the excavations

○ Yes (1)

○ No (2)

○ Not sure (3)

PQ23 Dr Angel also examined the bones of this individual

○ Yes (1)

○ No (2)

○ Not sure (3)

PQ24 Schliemann was cooperating with the Greek archaeological authorities

1 (1)	○ Strongly disagree (1)	○ Somewhat disagree (2)	○ Neither agree nor disagree (3)	○ Somewhat agree (4)	○ Strongly agree (5)

PQ25 Stamatakis did not assist Schliemann during the excavations

1 (1)	○ Strongly disagree (1)	○ Somewhat disagree (2)	○ Neither agree nor disagree (3)	○ Somewhat agree (4)	○ Strongly agree (5)

PQ26 Stamatakis was hostile towards Schliemann

| 1 (1) | ○ Strongly disagree (1) | ○ Somewhat disagree (2) | ○ Neither agree nor disagree (3) | ○ Somewhat agree (4) | ○ Strongly agree (5) |

Q69 Schliemann caused problems and mistreated Stamatakis

| 1 (1) | ○ Strongly disagree (1) | ○ Somewhat disagree (2) | ○ Neither agree nor disagree (3) | ○ Somewhat agree (4) | ○ Strongly agree (5) |

PQ27 The story helped me to better understand the Aegean Bronze Age

| 1 (1) | ○ Strongly disagree (1) | ○ Somewhat disagree (2) | ○ Neither agree nor disagree (3) | ○ Somewhat agree (4) | ○ Strongly agree (5) |

PQ28 The story was easy to follow

1 (1)   ○ Strongly   ○ Somewhat   ○ Neither   ○ Somewhat   ○ Strongly
          disagree (1)   disagree (2)   agree nor   agree (4)   agree (5)
                                               disagree (3)

PQ29 I skipped some parts of the story

1 (1)   ○ Strongly   ○ Somewhat   ○ Neither   ○ Somewhat   ○ Strongly
          disagree (1)   disagree (2)   agree nor   agree (4)   agree (5)
                                               disagree (3)

PQ30 The interface of the story was easy to use

1 (1)   ○ Strongly   ○ Somewhat   ○ Neither   ○ Somewhat   ○ Strongly
          disagree (1)   disagree (2)   agree nor   agree (4)   agree (5)
                                               disagree (3)

PQ31 The story had some gaps in the narrative

| 1 (1) | ○ Strongly disagree (1) | ○ Somewhat disagree (2) | ○ Neither agree nor disagree (3) | ○ Somewhat agree (4) | ○ Strongly agree (5) |

PQ32 I enjoyed the story

| 1 (1) | ○ Strongly disagree (1) | ○ Somewhat disagree (2) | ○ Neither agree nor disagree (3) | ○ Somewhat agree (4) | ○ Strongly agree (5) |

PQ33 I felt bored at some points during the story

| 1 (1) | ○ Strongly disagree (1) | ○ Somewhat disagree (2) | ○ Neither agree nor disagree (3) | ○ Somewhat agree (4) | ○ Strongly agree (5) |

PQ34 The story had a good length that I could follow

| 1 (1) | ○ Strongly disagree (1) | ○ Somewhat disagree (2) | ○ Neither agree nor disagree (3) | ○ Somewhat agree (4) | ○ Strongly agree (5) |

PQ35 I felt an emotional connection with the main character

| 1 (1) | ○ Strongly disagree (1) | ○ Somewhat disagree (2) | ○ Neither agree nor disagree (3) | ○ Somewhat agree (4) | ○ Strongly agree (5) |

PQ36 I feel sad that I can't know the main character's name

| 1 (1) | ○ Strongly disagree (1) | ○ Somewhat disagree (2) | ○ Neither agree nor disagree (3) | ○ Somewhat agree (4) | ○ Strongly agree (5) |

PQ37 I felt sorry for Stamatakis because of how Schliemann treated him

1 (1)	○ Strongly disagree (1)	○ Somewhat disagree (2)	○ Neither agree nor disagree (3)	○ Somewhat agree (4)	○ Strongly agree (5)

PQ38 Stamatakis received less respect than he deserved for his work

1 (1)	○ Strongly disagree (1)	○ Somewhat disagree (2)	○ Neither agree nor disagree (3)	○ Somewhat agree (4)	○ Strongly agree (5)

PQ39 The story was interesting

1 (1)	○ Strongly disagree (1)	○ Somewhat disagree (2)	○ Neither agree nor disagree (3)	○ Somewhat agree (4)	○ Strongly agree (5)

PQ40 The story was immersive

1 (1)	○ Strongly disagree (1)	○ Somewhat disagree (2)	○ Neither agree nor disagree (3)	○ Somewhat agree (4)	○ Strongly agree (5)

PQ41 The story was engaging

1 (1)	○ Strongly disagree (1)	○ Somewhat disagree (2)	○ Neither agree nor disagree (3)	○ Somewhat agree (4)	○ Strongly agree (5)

Interview Questions

PART 1:

Based on point A of the research aims/questions - (KNOWLEDGE)

Did you find the story interesting?

Would you change anything?

Did you find it engaging?

Do you think that some of your views or opinions changed after the story? How and to what degree?

Which one of the 3 media do you think was more engaging?

So, what do we know about this individual?

What was his name?

Could he have been a warrior? Why?

Do we know the cause of death of the individual?

How do you feel about archaeologists interpreting archaeological data and narrating people's life stories?

Was the individual wealthy? How do we know that?

Who was Agamemnon? Could this individual be Agamemnon? Why did Schliemann identify this person as Agamemnon?

Why do you think this individual was buried with a gold mask?

How many times was this individual examined? Why? Under what circumstances do you think it is possible for new answers to come up - regarding old excavations?

PART 2:

Based on point B of the research aims/questions (ETHICS)

What was his name? Why can't we be sure about his name? Do you think that's the norm for prehistoric studies?

Do you think at some point we'll be able to find out his name?

Do you think archaeology has changed since the 19th century? How?

Do you think there would be any other way to learn more about this individual life and death?

Do you think that archaeologists always have the answers to everything?

Why? Why not?

What is the problem with prehistory in particular?

So, tombs seem to be a good place to look for answers. Why is that?

But, do you see any problems with looking for a person's identity from their grave goods? Who is placing the grave goods in the tomb? So, if a person is buried with swords, can we be sure that they were a male and/or a warrior? Why is that problematic?

PART 3:

Based on point C of the research aims/questions (DECOLONISATION)

The story mentions a person called 'Clerk'. Who was this guy?

How do you feel about him? Why is that so?

Do you think Schliemann had the right to excavate in Mycenae?

What exactly was Stamatakis job if an excavator was already in charge?

Why do you think it was important for the Greek government to have someone overlooking the excavation? (19th c excavation - newly fund state/nation)

What do you think was Schliemann's problem with Stamatakis?

What was Stamatakis contribution in Aegean Bronze Age archaeology? (keeping diaries, not throwing away bones, being careful with excavation techniques)

Appendix IV – Quantitative and Qualitative Data

Quantitative Data

NVivo Codebook

Name	Description	Files	References
Bias of the first encounter	Code capturing mentions and hints of the so-called 'bias of the first encounter', meaning the engagement that a participant feels the first time that they encounter the story	2	8
Emotional Feeling	Collection of codes capturing different expressions related to feelings expressed by the participants during the experiment	2	3
Annoyed		2	2
Confused		2	2
Feelings for the dead	Code capturing general remarks of feelings towards the dead person in the story (in contrast to the code below about not having any feelings towards the dead person)	7	14
Happy or exciting		1	1
Interesting or Curious		8	24
Enjoyment	Including remarks on 'finding it fun' and 'I enjoyed it'	5	6
Not having a feeling or an emotional connection	Code capturing the lack of emotions towards either Stamatakis or MYC_1V	3	5
Sad		1	1

Name	Description	Files	References
Felt sad for mistreating of the skeleton		2	3
Felt sad for not being able to know		3	3
Surprised		2	2
Sympathised with Stamatakis		5	8
Upset or angry		4	8
Interesting addition or comment by participant	Collection of codes capturing individual comments by the participants that were not expected or asked about during the interviews	0	0
Archaeology has changed	Code capturing ideas and impressions regarding the change of archaeology through the years	4	8
Being respectful towards the dead		5	11
Combination of media		6	26
Curiosity and exploration		3	3
Difference from cinema, films, or books		1	1
Endangerment of artefacts		5	11

Name	Description	Files	References
Looting		3	4
Order of experiencing the media		6	13
Suggestion of a completely different medium		3	3
Target audience		3	4
The story made think about things I've never thought about before		4	4
They liked that the story was based on archaeological research		2	3
They would like to know more about non-wealthy people		1	1
Wanted to see an illustration or video of the main character doing something		3	5
Trying to understand everything because of the post-Q		1	1

Name	Description	Files	References
MAIN POINT OF EXPERIMENT	Collection of codes which help to clarify which medium made the main points of the experiment clearer to the participants	0	0
1. Archaeologists do not have the answers about the past		0	0
Understood but unknown medium	The participant did not mention the medium in the interviews	4	7
Understood via text		2	2
Understood via Twine		3	5
Understood via VR		1	1
2a. Relationship between Stamatakis and Schliemann		0	0
Understood but unknown medium		8	14
Understood via text		2	2
Understood via Twine		3	3

Name	Description	Files	References
Understood via VR		2	2
2b. Highlight Stamatakis contribution in archaeology		0	0
Understood but unknown medium		8	11
Understood via Text		2	3
Understood via Twine		3	3
Understood via VR		2	2
NEGATIVE COMMENT		0	0
Negative comment ton text		0	0
Footnotes breaking down the storyline		4	6
I didn't like it		1	2
Osteology too technical and hard to follow		1	1

Name	Description	Files	References
Overwhelming amount of information		2	3
Negative comment on Twine		0	0
I didn't like it		1	1
Not sure how to use it		1	1
Osteology too technical and hard to follow		0	0
Overwhelming amount of information		3	3
Tiring or boring		1	1
Negative comment on VR		0	0
Boring		2	2
Confused by accent or vocabulary		3	5
Expected interaction and disappointed		7	17

Name	Description	Files	References
Getting distracted from the story		2	2
I didn't like it		2	2
Long length and tiring		2	2
Miscellaneous negative comment		3	4
Not sure what to look for - missed the skeleton or the video		5	8
Not very engaging		1	1
Osteology too technical and hard to follow		3	5
Overwhelming amount of information		2	2
Physical distress		0	0
Technical issue		4	8
Voice or accent wasn't fitting		2	5

Name	Description	Files	References
Physical feeling	Code capturing sensations and feelings by the participants, such as nausea	4	6
POSITIVE COMMENT		0	0
Positive comment on text		0	0
Easy and accessible for the wider public		6	8
Engaging		5	6
I liked it		4	5
Immersive		4	6
Kept me focused		2	2
Liked the footnotes		6	9
Rich in information		5	7
Positive comment on Twine		0	0
Engaging or encouraged to engage		6	14
I liked it		4	5
Immersive		3	3

Name	Description	Files	References
Liked or read through the extra information (i.e., the footnotes)		4	8
Nice interaction		7	16
Positive comment on VR		0	0
Could be used in a museum or for education		2	2
Engaging		3	7
Enjoyed the story		2	4
Helped to understand parts of the story		3	3
I liked it		5	6
Immersive		4	5
No need for interaction - it worked fine		1	1
Skipping		0	0
Skipping things in text		4	4
Skipping things in Twine		3	4

Name	Description	Files	References
Skipping things in VR		2	3

Transcripts

Interview 1, UK, Group 1

Despoina

Okay, so first of all, what did you think? What do you think about VR? Mostly?

Glenn

I thought it was really fun. I really liked it, I thought was really engaging. I think we were talking about the voice earlier as well. His voice I think was perfect. Be like the narrator and like, sort of like, capture you the second like, press play.

Despoina

You mean the main character? You mean the archaeologist? field archaeologist?

Jamie

Yes.

Despoina

That's Dickinson. The main character is Dan. Dan was a colleague of mine at the school where I was working.

Glenn

Ah, all right.

Despoina

But he loves theater and plays. Like, okay, good.

Glenn

Good. I thought he was fun. I liked how it was like, sort of like a conversation between you and the guy. Like trying to figure out who he is, how he died. I thought it was really good. At times, I thought it was a bit hard to take in all the information at once, I think, especially when it came to the biological reports of his bones and everything. Try to take in the information for that, especially

like if people don't know, the scientific words for them. They're a bit lost. So. But apart from that, I liked the video as well of the site. So, you can sort of get an idea of what the burial looks like.

Despoina

Yeah, but it was a problem. I would ideally have the people transferred to Mycenae instead. So, I wanted to shoot the video at Mycenae. But you know how Greeks are. I'm not sure if Maltese people are the same.

Jamie

You needed permission?

Despoina

Yeah, but they don't give you a permission.

Jamie

You just need to know the right people. That's how it works in Malta.

Despoina

Yeah, that's exactly right. That's how it works in Greece as well, but unfortunately, I don't know the right people! So, yes, I could shoot, but then I wouldn't be able to publish anything, which doesn't make much sense, you know. So, I got the footage from the National Television of Greece.

Jamie

So that's where the footage was from.

Despoina

Yes. So, they have like a huge archive of archaeological sites and museums and stuff. So, they said, yes, of course, if you want footage, we'll give you the footage. That was the next best thing. But again, it's the 2D video inside a 360 film, meaning a 3D video, which is not optimal.

Jamie

I don't know. I think it wasn't really distracting from the 3D. It was almost like something was popping up for you to watch. But I wonder if we did, we will do them in different orders. Was that on purpose?

Despoina

Yes.

Jamie

Because if you've read this first (meaning the text) I think it affects the outcome as you already know the story.

Despoina

Yes.

Jamie

So, I wasn't too worried about the details because I've already seen them. I guess everyone has a different approach depending on how people interact and engage with materials, we're gonna have a different approach to this sort of either visual. I really liked the game.

Despoina

Did you?

Jamie

That was my favourite, because then I was able to go backwards and forwards quite easily and to click. And it also reminded me of something we grew up with, which is the sort of books where you could change the story. Say, what do you want to do? Do you want to do this? Go to page five?

Despoina

Yeah!

Jamie

I love both computer games used to play where you have to make decisions.

Glenn

I agree. Like my dad has same vintage games now. So, they are quite trendy. It was fun. I felt like I was doing my dad's old game where you like have to put in directions of options, for example open gate, close gate. I quite enjoyed it for that reason as well. I also liked how we could see

some of the artefacts as well. Like I could finally see what you mean with all these swords and jewellery. I was like, Aha! so that's what we're talking about!

Jamie

Yeap. It was a lot like that. Those are the most control in that because you could dwell on a particular detail and your own pace in a story, a told story. It's your trainer, and you're in control of the speed. Whereas this one, we're in control with the speed just like when you're reading, but you don't have to deal with this body of text cause you jump back and forwards.

Billie

I found the reading part most interesting. But I think that's because I started with that. And that's why I was just hearing the story. Yeah, I could like read the notes and get like more detail. So, actually found that the most interesting, but maybe if I started on only the ones, I would have found that, because that was when I was first being introduced historically.

Despoina

That's why I had all of you to do the post-questionnaire afterwards, because essentially with the post-questionnaire I need to check if my story made any difference. So, if it offered the details and knowledge I wanted it to offer (explains a little bit more about the pilot study and the general aim of the research). So, the three main points that I wanted to communicate were the difficult relationship between Schliemann and Stamatakis.

Jamie

I got the best from that (pointing towards the VR headset).

Despoina

You've got it better from the VR?

Jamie

I'll tell you why. And you know, we're telling you why, because I thought about this. Because I ended up going back through this, because I was unsure. You know, you have highlighted sections, which, you know, give you additional information. When that first happened, when that

first type of interaction showed up, I wasn't sure whether that's going to take me to the next slide. And I didn't want to jump to the next slide before I'd finished reading. So, you have 'clerk' highlighted as an option. I didn't click on it because I was worried I'd jump to the next slide. So, I kind of figured out that there was a sort of disparaging attitude of Schliemann. I kind of picked it up from the rest of the text. But then when I got to this (meaning the VR video), then I was able to verify what I had suspected.

Despoina
That's what I wanted to add. So just to say that these all of these footnotes (from the text) essentially are included in the Twine version of the story. But you can't see them all at once, as you need to click for the text to expand.

Jamie
Yep.

Glenn
I don't know. I prefer to click one. For me it was like, I don't know, they're the one word that stuck with me was 'clerk' described it that because like he put a lot of emphasis on it, but to understand, the tension between the two people, I actually found the game to be more helpful for that.

Jamie
I prefer the click one as well.

Despoina
The game?

Glenn
Yeah.

Billie
I think the footnotes (from the text) is where I got it better.

Despoina

Yeah, good. Okay. So, yes that was one thing I was trying to communicate, meaning the weird situation between Stamatakis and Schliemman. In fact, Schliemman even took him (Stamatakis) off of the photographs (meaning he erased him). So, we don't know actually how Stamatakis looked like because we don't have any photographs or drawings. We just assume that he must have been a person on one photograph from the excavation, just because in the actual publication of the photograph this person was actually erased.

Jamie

So, technically he was just an asshole. A great robbing asshole!

Despoina

Yeah! (laughs)

Glenn

Such a petty move! Already photoshopping! (More laughs).

Jamie

I've met his grandson in the US.

Despoina

Oh really?

Glenn

Oh, wow.

Jamie

The guy told me: 'Are you studying archaeology?' And I said 'Yes'. And he said, 'Schliemann was my great great grandfather'. And I said, 'What? Really?'

Despoina

Okay.

Jamie

To be honest, he knew who he was, and the guy was quite young. So very possible.

Despoina

Yeah.

Glenn

I'm not sure why you would want to brag about that though after what we saw today!

Jamie

I don't know! I think he was trying to make a connection with the family.

Despoina

Well, Schliemann was married to a Greek, Sophia. So, you find - you find the study interesting. Would you change anything to the first format you encounter, or to anything really? So, I get from your comments that a potential problem with the VR is that you cannot control anything. You just sit there, and you can't skip parts etc.

Jamie

I mean, what I kept thinking when I was going through the VR - because I like that dramatic read - it depends on what - what you are trying to get out of this. And I thought it'd be fab if we could combine the game with the VR element. So, you could have this kind of narration. And then when you have that pause, like you have on the slides, you get to interact and trigger things, because you do a kind of do that. Look around, there's a diary. And then a story starts. I mean, I know it's doable. Even I know, it's a lot more work. But I don't even know if that's what the point is for you. So yeah, I didn't want to suggest that, and seems like you've missed the point of why I'm actually doing these different things. But that, I think, would be a really fun way of doing.

Despoina

Yeah, that's what we were talking before. So, in order to include an interactive element to the VR I would have need to build the whole room from scratch. Maybe using a laser scanner or...

Jamie

Or you could have built it in a 3D game engine.

Despoina

Yes. I tried that, first Unity, and then Blender. For my skillset it was very difficult to use this software and design the room. However, I could have bought ready make models of a lab. So, initially I thought to try to get a fund and invest some money to buy some lab models, or the skeleton, which would have been fine, but to make the whole thing interactive it would have required a lot more time and expertise that I don't have.

Jamie

Yes, especially if you have to teach yourself the software, as it's not exactly like you're working in paint. It's quite complex.

Despoina

Yes, it's super different. So, my point essentially, is quick tools that an archaeologist can quickly get their heads around to communicate their research. So that wouldn't have been a quick and easy solution to be implemented by an archaeologist. So, I need something like Twine or just a textual story or a 360 video.

Glenn

I think maybe the game then might be your best option to be fair, because then you can make things more interactive there, like you could include artefacts like the 3D visual effects that you can even just download from apps and put them in, and I think that would be enough for interactive wise.

Despoina

Yeah, the Twine essentially have the same result. Yeah, and then I thought, Okay, so one is just reading, the other is interactive, and the other is immersive, because we have also the sound. So, I would essentially discuss these three things are separate. So, one is a is a usual typical form. The other is interaction with something and the other is purely immersive. You don't interact with anything. So, then I figured that it's better to keep interaction and immersion separate for my discussion. So, which one was more engaging? What do you think?

Jamie

Yeah, the game again.

Billie

Yeah, the game.

Glenn

I'm stuck between actually the VR and the game. I don't know. I don't know. I feel like I like the narrative of the VR a bit more and engage me more like what we were trying to figure out together. I don't know if that's just because I went in there first.

Jamie

I think your first your first encounter with the material, it's really come to this first interface. It's the first time you it's that first experience of it. So, you're learning about it. So, it might be the most (engaging). But that was my first encounter. But then it kind of replicates through.

Despoina

Yes. That's interesting, because I haven't thought about that, that it would affect people's perception. So, do you find it more engaging the printed story or the Twine?

Billie

Well, yeah, that's kind of what I was trying to say earlier is that I felt the most engaged with what I how I started that, because that's where I learned the story. And then everything else was just repeating what I had already heard. So, although the game aloud interaction, so in that way I felt it was more engaging. The story itself was the most engaging the first time around, I would say.

Despoina

OK.

Jamie

It's actually what we said before: I felt the Twine was more engaging, you felt the story (text) was more engaging, and you felt the VR was more engaging! So, we're actually following a pattern where the first thing we encounter is the most engaging.

Despoina

Yeah.

Glenn

Yeah, and then we base everything off of that. Yeah, that's what we're doing!

Jamie

Yeah, it becomes a key point, like your reference point to which you compare everything else with.

Glenn

That's true. To be honest, if I didn't catch anything there it would be like a point of reference. So, when I read it in here, it was just like additional detail here. Yeah.

Despoina

That's why they couldn't do the post-questionnaire after everything, because you would have essentially seen the whole story trice. But yeah, that's not very helpful! (laughs) No it's fine, thanks, it's fine. That's the point of the experiment! So, let's see. So, did you get what his name is, by the way?

Jamie

Whose name?

Despoina

The individual's name.

Glenn

It's Tau. Not sure how it's pronounced.

Billie

Well, we don't know what it was, but people gave them different names.

Despoina

Yeah. Okay, that's good.

Jamie

Two catalogue names and the Greek letter T.

Despoina

Yeah. Which is pronounced 'taf'. So, he was confused that he's tough. Well, yeah. And the other point that that was trying to get across is that archaeologists do not always have the answers about Prehistory.

Jamie

That is very well done with this (meaning Twine) because it allowed you to go through.

Glenn

Yeah. Yeah, that was confusing in the VR that like I one point, I was being told the story of him going into battle, and then all of a sudden, bombarded with all these enemies. Another version was that he was he either died by a wild Beast. But I'm not sure if the wild beast story at one point was just a part of how he was injured, or if he actually died during that part of the story.

Despoina

Yeah. And what about the written story?

Billie

Yeah, I think it was easy to understand from the written-out story. Yeah. I'm trying to remember your original question.

Despoina

Sure, if I managed to communicate the message that the archaeologists do not always have the answers through the textual story.

Billie

Right. Yeah. And I think what kind of the context I got was that as more science goes on, we learn more. So, each archaeologist in each age could add to that because they have more science to apply.

Despoina

But that was another point that they wanted to get. Because you have the two diaries, one from the 19th century and the recent one. And I think that's not very clear in the VR.

Glenn

No, it wasn't, I was a bit confused. At times, I felt a bit lost with interpretations and liked what was going on. I mean, it was clear when he was saying, like, I'm dead and they still don't know why I'm dead. Then I was like, okay, I can get it. We don't know. We've done we've done a lot of work, but we still don't know.

Despoina

Yeah, he's quite frustrated about that! (Explains a bit about the voiceover of the characters).

Jamie

It's that's really good, though.

Despoina

Okay, did you get from the VR who Clerk was, that he was the Greek archaeologist?

Glenn

At times that sort of caught on later, because it was just hearing from the skeleton, this 'clerk' guy, and I was like, okay, so we don't like this guy! Or what's the gist with this guy? So that was little confusing at times, but then I came to the notes, and I was like, oh, OK. Because I think at the same time, I was still I was trying to look around and see if there was anything I had to interact with. Also, like when he was like, Oh, the diaries or something. I had to click something at one point. But yeah, but the clerk guy eventually got!

Despoina

So, it was more clear on the footnotes and everything.

Jamie

Yes.

Despoina

So, do you have feelings about this guy now?

Glenn

The skeleton guy? Yeah!

Despoina

Not the skeleton. The Greek archaeologist.

Jamie

I was familiar with this story, because I've read about it like archaeology, one on one back then. And it's really it's quite a familiar story of, you know, people who from different countries coming in and doing archaeology and the basically the local, either been dismissed or having a lower status. So, it's one of those annoying (things). And I just felt the same way. I'm not I'm not surprised, though, because it's not a new story to me. But it's yes, I guess. It's just how archaeology used to be practised, you know, colonial mindset in archaeology.

Despoina

Yeah, it was kind of infuriating still, but reading that, once I figured it out, like what he was doing to the site and everything. It was a bit difficult to understand that I think at times also, because really listening to the old music as well. I don't know it reminds me of like, you know, the old movies from like, the Iliad or something. Like in the 1960s 70s there was like similar music.

Jamie

On the video on the on the footage.

Despoina

Oh, yeah. The footage. Yes. Yes.

Jamie

American accents in the background. Could you hear the digging? That's where the soundtrack is. I want to know why the soundtrack coming from.

Despoina

Do you really want to know?

Jamie

Yes.

Despoina

Prison!

Jamie

Prison?!

Despoina

I was trying to find workers, but I couldn't find any recordings of workers.

Jamie

They were so famous Greek American workers.

Despoina

I was trying to I couldn't, so I went for the prison. You know, with the sound is very interesting.

(Explains a bit about the sound implementation and ambience of the lab)

Jamie

I thought it was a lab too! I thought it was maybe the heater on or something in the background.

Despoina

(Explains more about the sound and the 360 shooting in the lab).

Jamie

I noticed that the skeleton was not complete.

Despoina

Yes, that was in purpose. I had to put the skeleton exactly as it should have been when Dr Nafplioti examined it.

Jamie

Yes. I was trying to see if a tooth was missing. But I couldn't see that.

Glenn

I thought it was just my bad eyesight.

Jamie

I just couldn't see that.

Despoina

I couldn't do that as I couldn't dismantle the cranium!

Jamie

There's no light changes or anything like that. So, I thought it was a still image to be honest.

Despoina

No, it's not. it's a three-minute footage in loop. But you might have noticed from the clock that it doesn't move.

Billie

I was actually watching people like walked outside but I didn't notice that.

Glenn

I saw someone opening the door! I was like what's going on?!

Despoina

Okay, so did you feel bad because you don't know the person's name?

Billie

Yeah, I mean, I wish we knew more about him.

Glenn

Yeah, I don't I think that was one of the most upsetting things. And I felt that like, you know about that he was like mentioning about, like, the colonial attitude towards like, yeah, you know, past burials. And, you know, I really got the feeling we aren't being respectful. Even though you know, we're doing all we can. I kind of felt like we've done all these, like investigations into it, but we're still finding nothing, so I wonder is it our right then to continue? And damage it? Or just, you know, play some back? So, respect the wishes of the dead a little bit. So...

Despoina

Yeah, that's interesting, the fact that you never bury someone in order to put them somewhere for people to see. It's an ancestor of someone. So that's always weird. And Dr Nafplioti also mentioned that she was very anxious as she had to study the bones.

Glenn

I can't imagine yet the worrying.

Despoina

Of course! It's the Grave Circle A, the most famous archaeological burial site in Greece! But yeah, what's the boundaries? Because Angel, if you got it, he lost one of his teeth.

Billie

That said that they took just took his arm and like, put that on display because it had an armband. Yeah, I'm just thinking about all the, like, when you like, in what instance, there's just a hand, somebody's hand in a museum and nobody, like, there's like a whole thing about it now. And it's, you know, everyone's drawn to see that, but it's like, how did that end up there? Like, where's the body?

Glenn

That is really creepy! I just feel like it kind of showed us like how, what we're more obsessed by and like, you know, we'll just go out of our way, just so we get our own agenda through. And our aims are clear to.

Despoina

And most of the bones could have actually been entirely discarded, as people back then didn't care for the skeletons. They only cared about the gold.

Glenn

Yeah. And the - the photo of his wife with all the jewellery. I was like, seriously? No, I was like, oh, my God, I think that was infuriating! Didn't she really just do that? Yeah, I kind of I think I understand his motivations, as well.

Despoina

Yeah, he was very upset (meaning Schliemann) that he couldn't take anything. He was super upset. But yeah, people were very cautious, because some years before he had excavated in Troy, and he had tried to take some stuff. Troy was Turkish ground. So, people back then considered him more like a looter.

Billie

Yeah, yeah. It's kind of interesting. Because, like, if you think about it, it was back in the 1800s. Like, obviously, archaeology wasn't what it is now. Like, maybe people weren't focusing so much on preserving everything. But it'd be interesting to have some comparative, like good examples of archaeologists from that time doing the right thing. Instead of just being like, this is what archaeology was back then. And they just didn't know. They just didn't care about humans or whatever it was. I mean, it was good example that the other guy (Stamatakis) actually did the right thing.

Glenn

Yeah, I was gonna say I felt like there was also showed like two opposite teams, like the two sides of the debate, sort of like against looting and taking it back in the one hand, and on the other hand a person speaking up for the rights of the burial and for the country as well and for the culture. So, I kind of got that as well, from this, meaning the disagreement between the two archaeologists.

Despoina

No, that's good. Yeah, it goes. That's exactly what happened. Stamatakis wanted to record everything. But Schliemann just dug up things. And then would go back let's say three weeks later and tried to remember what he found and where (meaning he didn't keep up with a journal in situ during the excavation). So, he got mixed up things regarding i.e., the orientation of the burial. Because how could you possibly remember things without a diary? But Stamatakis was keeping a diary, but it has been lost for years. And when it was found, researchers managed to double check Schliemann's original publication of the finds and correct any mistakes in the records.

Glenn

Thank God he did. I feel like - like he fancies himself smarter than he actually was. Yeah, but no, thank God for that diary. Otherwise, I feel like we'd be completely lost with the story of like, of

Schliemann, or of what was found with the people in the graves themselves and what was there instead of just gold.

Despoina

Did you go to the mummy story by the way?

Billie

What was that?

Despoina

The mummy.

Glenn

Ah, the mummy. I remember the photo the thing and thought, oh, that was a bit creepy.

Billie

I remember that in the notes, but it didn't kind of reading faster at that point.

Despoina

(Explains a bit the mummy story and its implications)

Billie

Yeah, like drawing something without ever seeing it or something like that.

Despoina

Yeah, like clay figurines of animals that look like a combination of species i.e., something between a horse and a donkey (showing the group an image found on the internet).

Glenn

Oh yeah, I get it. Oh my god. Yeah. It looks like someone combined like a dog or horse in a draft! (laughs)

Despoina

Okay, let's see what else. I think we covered everything.

Glenn

Cool.

Despoina

Now that that's great. That's great.

Glenn

I'm glad and hopefully we gave you helpful comments.

Despoina

Yeah. So mostly interested into also emotionally engagement. So, I think that's what I'm trying to get from the interviews, if you emotionally engaged like with the character.

Glenn

I felt the most emotionally engaged I was with was with the VR. And then the game just answered some of my questions I had and provided me with more information. I do like that you built on the character being cheeky, like Venom. Yeah, because that that way I felt more connected. Like it was more personal. And I really liked that.

Despoina

I had made him even cheekier before, but I changed him to more serious and mainly annoyed.

Glenn

I don't know maybe for older generation serious, but like for I don't know, as younger ones we love all the memes and the sarcasm. We're here for it!

Despoina

(Explains more about the character built) Yeah. So, did you find the story (meaning the textual) emotionally engaging?

Billie

Yeah, I'm trying to think. I think probably in the game, I got more of the kind of character voice. You know what I mean? Because like, I think with this written story, I was just kind of like, jumping in between the notes and the stuff. But when I went through the game, I didn't read the notes

anymore, because I knew the backstory. So that's when I had more of the connection with the character. Yeah, I think just because I had done the story so many times during the VR that I was just kind of like, it was so repetitive at that point that it wasn't as engaging to me at that point (as they already had experienced the story twice before).

Despoina

Yeah, you already had an idea about the person and the story.

Billie

But I did like the sound like, I think it'd be cool to engage with the audio from that into the game, maybe? Because I was just thinking that what the VR really adds is the audio because really, you can just have a picture of a lab or whatever. And it's pretty much the same as being in that space. But if you have the audio and mixed in with the game, then that adds that extra layer. That's just what I was thinking.

Despoina

Sound. Yeah, Song essentially makes everything more motivated. And I was aiming to do that in 360 room in the TFTI department. Do you know the place?

Glenn

The one over there?

Despoina

No, it's in. What is it? I think it's in the Campus. The three it's called 3Sixty. Have you been to the Van Gogh Museum experience?

Billie

Yes.

Glenn

I haven't been to that one I've been to there was another 360 experience that I had visited before. It was a long time ago.

Despoina

But you get the idea. It's not with googles, but it is essentially projectors projecting video on walls. So, I was planning to use that room, but then it was it was booked. So, I couldn't use it. So, then I went for the VR headset instead.

Glenn

Yeah, I don't know, maybe that could work better. Because it's like, I feel like you do have to have this balance between visual representation and sound, so you can hear the person.

Billie

Yes, and with the VR you can't really engage much with the story as you do with the game.

Glenn

Maybe with the projection then you could also make that engaging, for example put the game up on there. I don't know.

Despoina

No, that's a good idea. Yeah, it's like with the 360 it would have been more immersive with the sound (explains a bit how the sound works in the 3Sixty room and the creation of soundscape).

Billie

So, you could hear were the skeleton was in the room? Because with the VR you couldn't really tell where the sound came from.

Despoina

Yes, exactly.

Glenn

The way you describe it is like in the cinema, like full surround sound. But I think it also depends on who are you focusing your audience towards? Because I feel like the game one, I would love to do that in class actually, or like in one of our seminars or like at home to maybe understand something we're discussing. And then maybe if I was in a bigger audience the VR could work, or the projection could work as well.

Despoina

Yeah, no, definitely. I mean, I haven't figured out the target audience, because essentially, the concept is, as I said, like three media that the geologist can easily create, let's say you have an excavation, and you want the stakeholders to know what you're doing, or the local school to know what you are doing. You know, it's not like for museology studies, because that would be much, much more elaborate. And there are people are they actually getting paid to do that. So that's like a quick solution for archaeologists to communicate their work, mostly. For example, the written story is just a text, very easy to print and distribute. The Twine game is just a link, again very easy to share anywhere with internet access. And even the 360 film is easily distributed. Personally I have already uploaded to YouTube, so someone with a VR headset can just put on the headset and watch it. But of course, there are access limitations, for example for older people with no access on a headset.

Glenn

Yeah. But you could use a 360 room in that case.

Despoina

Yeah, yeah, absolutely. But in that case a technician would have been needed to set up and channel the sound.

Glenn

I see. So that wouldn't be easy for an archaeologist. In that case, I think the best one would be the game because if you send the link then I can just access it anytime I want. And I would love that, in my spare time to go and just play with this and get the information I need or remind myself what I've learnt.

Despoina

Oh, by the way I can show you how the Twine looks like, meaning the coding behind it. It's not difficult to create a Twine game but there is definitely a learning curve.

Glenn

Alright, so is it like do you play like Horizon Zero Dawn and stuff and like you learn steps along the way sort of thing?

Despoina

(Explains how Twine works)

Glenn

How much coding would it require to do this then?

Despoina

Well, not crazy and it's just CSS and Java, so it's not that bad. (Shows Twine interface to the group)

Glenn

Oh my god. Well! Wow!

Despoina

(Explains again how coding in Twine works)

Glenn

And yeah, it's like a spider man web!

Despoina

Yeah, it is. And you need to be very careful because if you don't link it back to the previous tab you can easily get lost. So, the end product is like three times what you see here.

Billie

So, did you use this software to create the story?

Despoina

Yeah, exactly (demonstrates more how Twine works).

Interview 2, UK, Group 2

Despoina

If you could tell me, what do you think of the VR experience?

Trix

The one thing that I got confused by was the name 'Clerk' and what actually his name was.

Despoina

Stamatakis you mean?

Trix

Yes. So, when I did the survey afterwards, it was asking about Stamatakis. I had no idea who was on about. And I was like, is it the same as a Clerk guy? So, at first, I was answering as if it wasn't, this wasn't I started to realize that that was the Clerk guy. But I heard it as Clerk is in C.L.A.R.K. is in like the 'clock'. So, I didn't realize that they weren't the same person. So I was, that's just me getting confused.

Despoina

no, I think it's a problem on the story. So essentially, Dan, who did the voiceover of the character, and he's, he's a friend of mine. He's an English teacher. The school that I was working, he's really good, like, acting and stuff. But he told me that he tried to go for more posh pronunciation.

Trix

I think, it is Clerk (sound 'clark'), which is why it's confusing.

Kyle

I heard it was the name as well, but I'd already read the thing. So, when I heard it I already knew the story means 'clerk' and not 'clark'.

Despoina

You are right, it is quite confusing, because he the character believes that that's his name. So, it is quite confusing. I should have had something there, like a word or something to explain that these two are the same guy.

Trix

Yeah. Like maybe the, the voiceover, the skeleton could have said something or like when you get to the bit where explains all of the diaries, could maybe have something. He called him 'clerk' all the time. I liked the ethics stuff. I thought that was really good. Because you don't hear that often. Like when, particularly when you're a member of the public, and you go to museums, and you just like I started to notice over the last few years, when I go to museums, and I see like, remains laid out, I always think about more about the ethics of it. Now, what would that person have felt like. I really liked the honesty.

Kyle

The -I understood the - when it goes to the diaries, more than read, like when I read it, I understood more of the background and stuff (comparing to the VR that the person experienced).

Trix

I did the VR first. Reading provided a lot of the context. So, I wonder whether like, if you're using VR in a museum or something, I think, I don't know what you call that mixed media, like doing a bit of VR, a bit of reading, a bit of this (meaning Twine). I think the combination works quite well, complementing each other.

Kyle

They went together quite well.

Despoina

Yeah, that's so very interesting. What you just mentioned came up in the discussion yesterday as well, meaning that a combination of the three media might have worked even better than experiencing a single one.

Trix

I can see it like because, I mean, it depends on museums. If you had like a museum exhibition where like you're introduced to people from the very beginning, then journey and then the VR comes later on. Like at York castle they used to have an exhibition on the wall, where you followed for people, you could pick which person you followed through the exhibition, and you could maybe do that you could start off or here with the main players. We've got Schliemann, we've got Clerk etc.

Kyle

Yeah, they had something like this at the Yorkshire Museum. I don't know if they've still got it. But they did that with them where they had an actor doing and they filmed the actor telling your story. And I thought that was good. I think I had a different experience because I'd already read it. Because I don't tend to take information very well auditory. So, if you asked me the questions having just listened to it would have been difficult for me to remember.

Trix

One thing I would say is it I would have liked you know if we would have done the Twine inside the VR environment. If you use the controllers to select and click on different bits of evidence, or you could have like an image. You could have stuff laid out. And that could be like over there. There's a diary over there. There's like a circle around one. Click it and things like that. Because if you feel like you're physically investigating, it's much more interesting.

Despoina

That's interaction and immersion. I have to say that it would have been feasible to do that, meaning to incorporatie interaction apart from immersion in the VR, but it would have been a lot of work and it is a completely different technique.

Trix

 Yeah, you'd need a team for it.

Despoina

Exactly, that's the point of it, that I made something that an archaeologist can really do with what they have in hands and with minimum training or funding.

Trix

The one thing I would say with the VR headset is when you are standing and watching I find my balance wavering. So, it might be worth having as chair to help a bit.

Despoina

That would be again very complicated to combine the real world and virtual world in VR, because it might be a hazard for the person using the VR.

Trix

Yeah, because they could actually trip and fall over.

Oakley

It's really fun. Oh, I never used to be on before, so I was like what is happening!

Despoina

So you began with the Twine, right?

Oakley

Yeah. I liked that one. I thought it was quite cool. I like you can like follow the little clues. I think that's my favorite part. It would have been cool if you could do the clues in the VR as well, because I wasn't sure if I were like, supposed to, like walk around the room or like move. And I don't know how to use VR.

Despoina

yeah, that's impressed me that everyone like everyone literally, they didn't do a single step. Why?

Trix

It's I think it's one of those things where like, kind of led by the VR and if it's not suggesting that you move, so I thought to stay where I am because I'm always worried about tripping over.

Kyle

I could feel the wire around me, and I was quite reluctant to move.

Trix

My partner's really into like video games video game design. He was talking to me recently about how video games will often nudge you in the direction they will like nudge towards what they'd like when you're doing a tutorial. It'll only give you one route out. So, you have to. So, when I was doing that, I was thinking, Okay, where is it nudging me? Where is it telling me to go? And it's not telling me to go anywhere right now?

Kyle

Yeah, I think that was a critique. I'd have a bit of a, it's really hard to know where it wants me to focus. I think it needs a nudge.

Trix

I felt like I took a comically long time when the voice started. I was like, wait, what?!

Oakley

Me too! I was like what is happening?!

Despoina

Yeah, that was the purpose of it. I think he lost this bit because you didn't have the headphones on at the very beginning.

Oakley

They just kept falling. Like, weird.

Trix

Yeah, that's what I was trying to do these like to be in a very dark room as the story begins in the Twine and hear the voice inside the darkness.

Oakley

I think I liked that. Because I was saying, wait, wait, where is this voice coming from?

Despoina

Did you begin with the VR? OK. So, how did you find the length of it?

Trix

Yes. I would say it's perhaps a little bit too long. And I think if you did mixed media, we were talking about how it would be nice to combine all of that. Yeah. I think if you had kind of signposted some of that information beforehand, you wouldn't need to have the VR of that length because some of that information would already be there. But I think it was all interesting. It wasn't like I was getting bored or anything.

Despoina

I would have been bored to watch a 20-minute VR video!

Trix

Was it 20 minutes?!

Despoina

Yeah, it's 22 minutes. It's long. That's why I don't give you want to skip it, skip it, but you stick it to the end, which was interesting.

Kyle

I had no idea how to skip it.

Despoina

You couldn't skip it actually, but you have taken the headset off.

Kyle

Okay. I was like, I'll just see what happens.

Despoina

But, uh, you took them off?

Oakley

Yeah, I did.

Despoina

Was it the third time that you were experiencing the story?

Oakley

Yes. Just because I do it the third time. It's like, oh, OK I already know what is happening.

Despoina

Which did you find more engaging?

Trix

I really liked the game. But I think there is a way to combine all of the different ones. And that would be even more engaging, I think. Because I think that the VR is what the most emotional resonance, I would say, hear the voice in your head.

Kyle

I didn't find that to be true. I though reading to be the most emotional.

Despoina

Did you begin with the reading?

Kyle

Yes.

Trix

But again, that might be why mixed methods is better. Because people get different things from different methods, like you're getting off on a reading, but I'm getting more from the VR.

Kyle

I find it super hard to understand things auditory. I've got really bad concentration. So, when I'm reading something, I like make the effort to read it properly, I understand better.

Trix

Whereas I skim when I read.

Kyle

I zoned out when something's audio sometimes. And also with the game, I'm really tempted to just be like, click - next - click. Like, I'm just going to skim that and click. If there's a button for me to skip something, I will!

Despoina

Did you read the footnotes?

Kyle

Yeah.

Despoina

All of the footnotes?

Kyle

I mean, I read the osteological ones, but I didn't read the ones that they were like citations. I read the information. And skimmed the citations.

Despoina

So, you read them. Yeah. That's crazy. I wouldn't have read them for example. Because they were like long, super long.

Trix

I read them as well. Because I came out of the VR and realised that the text, I was reading was exactly the transcript and I wanted to know more about it, so I read them.

Despoina

What about you with the Twine?

Oakley

I did not read the footnotes I would say. I think the game was my favorite one. I thought that was quite nice. Because it's nice. You can click and then go back. I guess like you said, I feel like I liked the interactivity.

Trix

Yeah, it was really nice that there was interactivity.

Kyle

Yeah. Like it reminded me like being 15 years old and like playing games like that.

Trix

I liked about the game as well, it's that you have a hand in it because you get to give your interpretation at the end, which I really liked. Because it's there's a lot left unsaid in the VR and in the transcripts, whereas in the game, it's like you can try and figure it out yourself. And I quite liked that, like there being an answer.

Despoina

Yeah, essentially, it's the same story but I had to adapted to different storytelling styles. So, I had to make it more than a simple narrative. And with soundscape essentially to play a lot with sound for the VR, then to make it more like a dialogue for the game to be more engaging. And then straightforward narration from the linear story. So yeah, that was interesting when I created the three media.

Trix

But I can easily see you doing something in a museum, for example, doing something simple, where the VR takes you in a narrative view through some of the evidence, and then you take the VR off, and you have to go and pick, like sometimes you see in museums, that simple thing of like two glass tubes, and you take a token, we put it in which one? And then over time, it builds up an idea of what people think this person was. Because I think that's one of the things that the public struggle with archaeology is that we don't tell people enough that it's an interpretation and not 100%. the answer. Like with that we don't know how that guy died. We don't know what his name was. There's a lot of unanswered questions. And I think the game does a good job of that.

Despoina

That's good. Because that's the purpose of what I wanted to communicate with the stories. I couldn't tell you that before. But then one I have I essentially have three main things that I'm trying to do with the holiday said, one is to essentially tell the public that archaeologists do not have all the answers, particularly with prehistory. So, if it managed any of the media to come to to get this message across, I would consider it successful. Do you think that the Twine did that better?

Trix

I think that the Twine did the best job particularly because you have to interpret it yourself. But you do get a feeling from that in the staff as well.

Kyle

I thought the writing did the best job with that. The written story. I think it was because it was like really explicit in the footnotes.

Trix

I think that's interesting that we've had the same experience and come up with different viewpoints, which just goes to show when you run public outreach, you have to run different things. Because people taking information in different ways people have different preferences. Like when I was a kid, I was quite happy to just go and read all the information boards in the museum. My sister has no interest in that never has, she just wants to look at gruesome stuff. Or push buttons and things like that.

Kyle

I read all the stuff in the games.

Trix

Yeah, exactly.

Kyle

But, again, I didn't like the interactive bit of the Twine. I was like skip, skip, skip.

Oakley

I'm like the opposite. If someone gives me like a massive chunk of text, I'm like, 'oh my'! But if it's broken down, I'm like, okay, I can handle that.

Trix

Yeah, exactly.

Kyle

I don't know if it's because it was if it's text, I can like it. It's on like a board; I can see the whole thing. And I know how much I've got to read. I could do this where it's something I'm going to click through. I'm like this could go on forever.

Trix

If you look at like pedagogical theory about how people take in information, because when I was a kid, they always used to have this thing of like auditory, visual and kinesthetic learners. That has been thoroughly debunked now, because they realise that people don't learn one way, they learn no Institute of ways. And I think that's important for museums as well, or for anything outreach, or when you're trying to demonstrate something to someone is to give them a bunch of ways to take the information in whether it's bit of visual, a bit, like auditory and a bit of clicking things, doing things. I think the mixture is quite nice.

Despoina

I'm more of an auditory person. For example, if I'm in the class, and they listened to the lecture or whatever, I would remember every single word that the other person had said, but at the same time, when someone reads me something, I can't understand a single word.

Trix

I think the older I get the more I realize I need a mixture of everything. Yes. I feel like my attention span is getting worse.

Oakley

My attention span is always bad!

Trix

I do want to post pandemic as well, I think it's affected a lot of people's attention spans, which means that we need like, what do you think tick tock so popular because there's only like, the short videos are short, snappy videos.

Kyle

Yeah. But you know, when I read stuff, I got the computer to read it to me so that I'm reading it and the computer is reading it to me, so I get double input!

Despoina

Recently, I got very interested into neurology of the brain and stuff like that. I found out about a lecturer who is amazing. And I bought his book on Kindle and I also got it on Audible! So, you talked about emotional engagement. So, did you felt emotionally engaged to the character?

Trix

Yeah, I think so. Well, I did the VR first. So, at the beginning of the VR, he's talking about, like the lack of respect and why he keeps being dug up. And all that kind of reinterpreting. He keeps forgetting and stuff like that. It's quite emotive, I thought, which is important, because I think it's important not to lose the person behind the archaeology. I thought it was quite effective anyway.

Despoina

With the reading? Was it emotionally engaging?

Kyle

I thought that that was the one that I found most emotionally engaging. The reading.

Despoina

The reading?

Kyle

Yeah, the one I found the least emotionally engaging was the Twine game. And then the VR was a bit...

Trix

I would say that I found the VR to be most emotionally engaging, but the game was a lot of fun. And if you could combine them...

Oakley

I feel like at first the VR was emotionally engaging as he was talking about himself. Because the moment he starts speaking you are quite confused and engaged. But then I guess maybe for the journals I'd prefer to have checked them out through the Twine game.

Trix

Oh yeah! and then come back to the VR at the end. And have questions like 'Tell me what you found'. Or 'what did you find that kind of?'.

Oakley

Yeah, and that'll make me like see a scene of i.e., what he looks like in his armor or what he looks like hunting kind of thing.

Kyle

That's what I was gonna say. Because I'm pretty visual. Yeah, I wanted to see in the VR was I wanted to see like an illustration of what he looked like in the grave. Like with the breastplate on and the mask.

Despoina

Yeah. Did you get that from the Twine though? It is in the Twine. I should have put that in the story. That's interesting, because I could have put the visual in the story. With the breastplate that you saw the breastplate on the Twine?

Oakley

Was there an illustration of him in the grave you mean?

Despoina

No, it wasn't an actual illustration of him in the grave, but there were photos of the finds from the National Archaeological Museum, including the breastplate. And you definitely saw that in the VR.

Trix

Yeah, yeah.

Kyle

I don't remember seen it. But would have liked to have seen an illustration with everything that the person was buried with, because he had the sword and the gold and the textile kind of stuff. But I like that in museums as well. You know, when they do, this is an artist representation of what the dead person would have looked like in their grave.

Trix

They had than in York Museum actually, where they had a skeleton, and then you pressed a button. And there was like a thing that came over and it showed you like that. One thing I think

would maybe get around the issue of the could you say that VR is so difficult to program? If you have a bit of the beginning of the emotive bit where he says, I don't know who I can't remember my name. And then he then you take the VR off, do the exploring the evidence, and then come back to the VR and then it gave you a choice, how do you think he died and click take you to a different video? And then then it will be more of an interactive, like different depending on the person, but it's still not requiring you to do lots of work as an archaeologist.

Despoina

Yeah. I was telling the people that essentially, that's the point of it. So just essentially what an intelligence can quickly do, like in two or three weeks. Let's say you have an excavation, and you want to engage the public or the local school or the stakeholders to get the fund. To quickly do something with little training and communicate yourself to the public. So, I thought to go for interaction only with the Twine, immersion only with the VR, and typical linearity with the text.

Trix

I'm actually thinking that you maybe could do that combination without needing to make the VR entirely interactive or even that interactive? A way to combine it.

Despoina

Absolutely. You know, it would be nice to create a combination of the three media and then run the research experiment again. But maybe during a postdoc as right now there is no much time left to redo the media from scratch. But it's very interesting that a combination of media keeps coming up in the discussions.

Trix

If you had the time that'd be good. But the thing about a PhD is that you can always say the conclusion that there's this other stuff I'd like to do. That's what I've done with mine. Have you interviewed other museums and things or academics who have used VR and ask them how they found it?

Despoina

It's on my plans to get in touch with the lady who did the Van Gogh immersive experience.

Trix

Oh, yes, the art installation in the church I went to that was I went because they sent me off in Yorkshire Museum. There was a dinosaur's thing a few years ago. It was right at the beginning of my PhD. So that would be 2018. They had you could put a little VR headset on you could like walk around with a dinosaur. So, if you asked Yorkshire museum, they might they probably have some results or whatever from that to share with you.

Despoina

Yes, yes. (Talks a bit about the 'Other Eyes' project). So, okay, how do you feel about Stamatakis, the Greek archaeologist and did you understand his relationship with Schliemann?

Trix

So, I probably got that wrong when I did the survey because I was getting 'clark' and 'clerk' confused. And yeah, but I felt so sorry for him. Like he was so fed up with the situation.

Kyle

I think that did come across more in the VR. But I didn't fully realise the story.

Despoina

(Talks a bit about Stamatakis and Dickinson's voice over and Stamatakis' relationship with Schliemann) (explains the main objectives of the PhD research)

Trix

But that's a really common story, isn't it? (The colonial aspect of the story) Like if you think of Tutankhamun, you think of how you think of the George Herbert, 5th Earl of Carnarvon, but you don't think of all the other people involved in it?

Despoina

Yeah, absolutely. So, how do you feel about him not knowing his name?

Oakley

I quite liked it, because it shows that you're not going to find the answer a lot of the time. I think in archaeology, like, you're not going to know, everyone's name like. And I liked that aspect that it had that like, every time people have kind of bothered him. It's almost like bothering his rest in

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there waking him up. And he's like this again, like, you know, and it kind of makes him forget. So, it's like, the more we kind of look into him and the more he gets kind of, I guess, disrespected, like his arm taken or whatever, like, he kind of loses more of himself. So, I thought that was quite interesting. I like that.

Despoina

Oh, that's good. Yeah, I think that's all. So, we covered everything. That's great. Thank you all very much!

Interview 3, Malta, Group 1

Despoina

Now you can go ahead and tell me everything. What did you want to say before?

Riley

I started with the VR. But if I has started with the text or with the interactive experience I might have understood more. What I would expect with the VR - since you're using such technology - it would be interaction, and not just looking around for minutes at the same thing, as it will get quite boring. And I like history. So, for someone who doesn't like history, maybe it would get too boring. And the other issue I had was that the camera was very low, so I felt like I'm a child. So, the feet of the skeleton were much higher on the table than normal and the video at the end was very high, so I had to look up to see it.

Despoina

So, how did you notice the video?

Riley

Almost by mistake, because I looked around.

Despoina

So, it just caught your eye you mean?

Riley

Yes.

Despoina

So, just to clarify (asking Arbor), did you feel like everything was higher than normal as well?

Arbor

No, I didn't feel that way. The video, yes, it was higher than the surface, but I didn't feel I was lower than the floor level or anything weird.

Despoina

It's your height, folks. As neither Arbor nor I who are similar height had any issues like you mentioned. But you're tall so it must have been some kind of malfunction with the VR. That's a problem then, most probably I should adjust the headset every time - something that I didn't experience with the Vive. So, I might need to bring the Vive tomorrow with me.

Riley

I'm not sure if it would make any difference if I'd sat down on the floor.

Despoina

Yes, you'd feel even lower, at a lower level, because the headset is set to be at a specific height. Did you also feel like a child, Noe?

Noe

Yes, it felt a bit weird, like I was in a lower level.

Despoina

OK, I'll sort this out for the next group. I might bring the Vive.

Riley

Another thing is that when the person was talking about the bones, I felt lost to be honest, I'm sorry.

Despoina

No, no it's fine, there is no problem. Just let me know what you think.

Riley

Because the terms were very technical, and I had no idea what the person was talking about. But, if it was more interactive, maybe it would have been better. Like, for example, when they mentioned the battle, it would have been better to also have a visual of the battle in the background, I don't know. But of course, you need to be careful, as VR is not for everyone, for example it can cause nausea.

Despoina

Did you feel nauseous at all?

Riley

No.

Noe

I did, yes. At the beginning because I had to turn to see the skeleton. I was looking the other way and the moment I turned I felt nauseous. But then I was OK.

Despoina

Did you feel nauseous? (Asking Arbor)

Arbor

No

Despoina

You are right though. I did have a participant who felt nauseous.

Riley

But I have VR at home.

Despoina

Which one do you have? Oculus?

Riley

Yes, but the newer one. So, I play some games and some of them might make people dizzy.

Despoina

Sure. I have seen people feeling comfortable with a game I have felt dizzy.

Riley

Yes, it is not for everyone. So maybe you could have settings for fully and not fully immersive.

Noe

I think the sudden turn at the beginning was only a problem.

Despoina

Was it your first time with VR?

Noe

No, I have played before.

Despoina

Arbor?

Arbor

No, it wasn't the first time.

Despoina

So, what was the problem with the sound?

Noe

I think the sudden turn to find the skeleton. Because at first, you're looking at the selves. And you have to turn around to find the skeleton. And it's a sudden thing.

Despoina

Unfortunately, I can't control that, as you're in a 3D environment so you can just look around as you'd normally do if you were in a room. Maybe there is a difference between the Oculus and the Vive regarding where the person is looking initially. I'll check it out.

Riley

I didn't notice the skeleton behind me, but I didn't notice.

Despoina

Yeah, I had to turn you around!

Riley

Yes, I was looking for the skeleton but couldn't see him. I thought it was something fictional. So, I just stopped looking and just stared at the selves.

Despoina

Yes, I noticed, so that was the point I decided to turn you around.

Despoina

So, you mentioned before we begin that you'd like to see some action during the narration of the battle scene. What was that about?

Riley

Oh yes, yes, when he was talking about the battle he might have died in, it would have been much more interesting if there was actually something interactive. I felt more like I was imagining the things he was talking about in my head when I was reading rather than when I was listening. Maybe I had the expectation because I watch a lot of documentaries and stuff, I want to see something happening.

Despoina

(Explains the purpose of research). So, now that you know all these, which one of the three media do you think was more effective to communicate my research and which one was more engaging?

Riley

I think the sequence matters. So, if I had started the other way around, maybe reading the text first before going to the VR, I would have understood more. But I think the Twine narration was more engaging. I found myself spending more time reading the parts I was interested into, especially the historical parts.

Despoina

Was it also the last medium you experienced?

Riley

Yes, yes, it was the last.

Despoina

What about you, Noe? Which one of the three you found more engaging?

Noe

In my opinion, the Twine was the best.

Despoina

Did you do Twine last?

Noe

Yes.

Despoina

Even if it would be the only one, no matter the order?

Noe

Yes, I enjoyed Twine.

Despoina

Arbor, what about you?

Arbor

I think I would say the Twine. But then, when I think about it, I enjoyed the text as I could read more, then the VR, but I got confused at some points.

Despoina

So, in an order of preference it would be…

Arbor

The text, the VR, and last the Twine.

Riley

With the text the nice thing was that I could actually read all the information. The nice thing with the Twine was that it was more interactive.

Despoina

But what was more interesting?

Riley

More interesting was the Twine. With the text I read all the footnotes.

Despoina

Why?

Riley

To get all the data.

Arbor

I did that as well.

Riley

So, then with the VR I knew what the person would say because I remembered everything.

Arbor

That's what I felt as well. The only thing is that I selected in the Twine to 'exit' the game and then I couldn't get back to it.

Despoina

There is a back button though.

Arbor

I didn't notice. And then when I started again, I wanted to go through everything just to be sure I'm not missing something. I feel like something like that wouldn't have happened with the text, as you have all the footnotes already there.

Despoina

But did you enjoy it? or you just read through everything to be sure?

Arbor

Actually, I did enjoy it. There were a lot of things that were of interest to me.

Despoina

Did you feel an emotional connection with the character? I mean the dead person.

Noe

The narration helped. The reading had all the information, but then I felt a connection.

Despoina

By the way, as you had the text first and then the VR, could you say if they matched each other?

Arbor

I loved the choice of the different voices, it was really nice. The voice was amazing, I loved it.

Noe

It was very light; the story was light, but I don't particularly like the voice. I was reading the story first. And then I was reading all the references, so I was getting lost. So, I had to read again the story to remember what I was reading. Because I was trying to memorise them as I knew I was going to be asked about them.

Despoina

(Laughs) Well, it doesn't work like that! But that's something to note for sure. It is important for the data analysis, as it's different than if it actually was an experience let's say in a museum.

Noe

In that case, if I knew I won't get asked about the information afterwards, then I might have just read the story only without the footnotes.

Riley

I had the same experience; I was trying to listen to everything that was happening in the VR because I knew I'll get questions afterwards.

Noe

Yes, and especially as I was sure I got some questions wrong in the prequestionnaire, I was thinking I should pay close attention to get them right this time!

Despoina

And what do you think about the emotional engagement with the character?

Riley

I liked the story, because it was a narration and as I mentioned before, I could imagine the story and since I had the VR first, I could match the voice with the story, so there was a connection there. But I don't think I felt something for the character.

Despoina

So, what's his name?

Riley

The name is unknown but it's Tau.

Noe

It's the letter. That sounds like Tau, but it's a Greek letter. But then he was confused and thought that's his name.

Despoina

(Talks a bit about the excavation and the relationship between Schliemann and Stamatakis)

Did you feel anything about him (meaning Stamatakis)? Maybe sorry for his mistreatment by Schliemann?

Riley

Yes, I hated Schliemann. I had no idea who Schliemann was before I started, but yes, by the end I totally hated him.

Despoina

Did you saw the photo of his wife?

Arbor

I don't remember.

Noe

With all the gold and stuff.

Arbor

Oh yes, yes, I remember now.

Despoina

(Explains the excavation in Troy and the backstory of the photograph).

Riley

The part with the bones was hard to follow, especially with the accent.

Despoina

To be fair, I wanted that, I mean the confusion with the bones especially in the VR, as it is a heavily osteological part, exactly as it would have been in an osteological report.

Riley

Yes, with the bones I had no idea what the person was talking about. It was interesting though to see that they were figuring his entire life from his bones. And the story with the missing tooth was very interesting. I really liked this part with the bones.

Despoina

(Explains a bit about osteology and bioarchaeology research).

Despoina

So, how do you feel about the fact that we don't know how he died?

Riley

Something lost in history, I guess, no? You can't know, you just suppose things based on his bones, but he just died, I guess!

Despoina

What do you think, Noe?

Noe

For me it was interesting, and I thought that he might have died from an illness. As there was a mention that he was sick when he was young. But I can't remember how it was mentioned. So, I thought that he might died later on from an illness.

Despoina

(Explains a bit about the wounds found on the skeleton).

Noe

The missing bits of the skeleton, are they accurate?

Despoina

Yes, as far as I could do, yes. I have also double checked with Dr Nafplioti to be sure the table with the skeleton was looking as it would have looked like when she was examining the bones. OK. Anything else that you'd like to mention? or to add?

Arbor

I was curious about his feet. They looked different.

Despoina

I think it's because of the perspective. As it's not a 3D reconstruction of the room but rather a 360 film, there is some kind of distortion at the feet. Also, it's a video on loop, as I couldn't shoot 20 minutes straight video, as someone accidentally got into the room. So, I had to cut it and play it on a loop.

Noe

Oh yes, there is a black screen at some points.

Despoina

Is there?

Noe

Yes. There was a jittering that I found quite annoying at some points. It confused me a little bit.

Despoina

Did you actually saw a black screen?

Noe

Yes.

Despoina

And did you repeatedly saw the black screen?

Noe

No, only two times.

Despoina

Do you usually get a rainbow effect? For example, with presentations when you blink, do you see colours?

Noe

No, I don't.

Riley

I usually do, what is that?

Despoina

It's called 'rainbow effect', not everyone gets it, but some people - myself included - do and it's annoying (explains a bit more about the effect as the participant is interested to understand what is this as he gets it - also checking if the participants are synaesthetes).

Riley

But in the VR I didn't got the rainbow effect.

Despoina

I think that's all I need. (Explains more about what other groups had mentioned and what the next steps would be).

Noe

So, as a group I think we stuck with the second medium we experienced.

Noe

For me the problem with the VR was that I expected interaction. So, the person who experiences the VR just goes with the expectation that they'll have to interact with something in the room. So,

I don't think it's the most appropriate medium for your research. It is like buying a Lamborghini and then drive slowly! If I had the option, I would say the VR. But then I was really disappointed to see that there was no interaction.

Despoina
Did you begin with the VR?

Noe
No, it was second. So, I knew the story.

Despoina
Sure, it must have been very boring.

Riley
Yes, I wanted to say about interaction. Since I have VR headset at home, I was expecting a bit of interaction, but there is something happening, for example the video and when it happened, it was interesting. So, if there was more of it, like more videos, it would have been more interesting.

Despoina
This is an interesting observation, as everyone so fa had mentioned that a video would have made the whole experience more interesting. And they've all have said that particularly for the battle scene!

Riley
Yes, that would be the most interesting.

Noe
Yes, it would have more to show.

Despoina
So, to wrap up, which one of the three media did you enjoyed the most?

Riley
The Twine.

Noe
Same.

Arbor
The text, sorry!

Despoina
No, it's fine! Also, it's interesting that you as a group have a connection with computing and technology. Whereas the UK groups were archaeologists but not much experience with VR. And in Greece, they are not archaeologists, and they won't have much experience with VR. So, it's very interesting to see the data afterwards. Biases are inevitable, as we're all subjects, so we just have subjective opinions and that's fine.
By the way, do you know anything about Twine?

Riley
No.

Despoina
(Explains a bit how Twine works and talks a bit about archaeogaming).
So, that's all, thank you very much for your time!

Interview 4, Malta, Group 2

Despoina

So, first impressions, tell me what you think.

Cameron

Personally, I found the VR experience a bit odd because there wasn't much interaction with the skeleton, and I felt that the same result could have easily been achieved with the form of an audiobook. I was expecting to have more to look at apart from the skeleton. The reading was good, it helped me a lot to get a good grasp of the story, especially the parts that had a little more action in them. There were parts that I was unsure about, for example the name 'Clerk', I wasn't sure about the meaning of it but then with the text I was able to confirm it.

Despoina

Did you manage to confirm it before the questionnaire or after?

Cameron

After.

Despoina

And the Twine?

Cameron

The Twine was actually very good, because especially at the beginning it helped me ease myself into the lab room and I enjoyed the fact that I could actually go through the diaries which were supposed to be left on the desk both in the Twine story and the VR. But with the Twine I actually felt I was supposed to do something with them, whereas in the VR I felt more like everything was narrated to me.

Despoina

And what do you think, Kai?

Kai

Very interesting concept but overall, I think the same story is put across the different media. I don't think the media were appropriate for this particular kind of story and the type of research. Overall, for this particular kind of research I think text suits the purpose better. I had text first. With the VR I found myself skipping a lot of it (using the controllers) because it was what I had just read. So, I think from the VR what I needed the most was the explanation and the video. And then with the Twine, the interaction wouldn't be necessary to understand the story. So, for me, for someone to grasp the whole picture the text would be the more suitable medium to understand the whole story. Video from the VR, which by the way didn't use the medium in its full potential and the interaction with the journals from the Twine with some additional information.

Despoina

So, you mean that the whole story would have been sorted just with text.

Kai

Yes, it would have been sorted just with text.

Despoina

OK. And what do you think, Sascha?

Sascha

I found Twine very interesting. I think of all the media the Twine was the most immersive to me.

Despoina

Would you agree, Cameron?

Cameron

For sure the IDN was the most engaging one. With the VR I found myself lost mid story as I was trying to test if I should be interacting with anything. So, the fact that nothing was happening except from the video which I did not notice immediately as I was looking for the skeleton, made the VR less engaging than the Twine.

Despoina

Which one did you find more engaging and immersive, Kai?

Kai

I think text. I began with text.

Sascha

I took the most information out of Twine. The text was the least enjoyable for me. But the Twine was very, very interesting, especially since I could pick a different ending of the story.

Despoina

So, why did you end up watching the whole VR video? I was impressed!

Sascha

Because I think there were a few things that weren't mentioned in the Twine.

Despoina

Theoretically, all three forms have the same amount of information, so maybe you skipped something in the Twine so then you saw it in the VR. You mix up everything! (Laughs).

Cameron

How?! I have the assumption that you mean the first impression bias. That happened to my experiment as well, I had to check for the first medium encounter.

Despoina

Did you? And what did you find?

Cameron

I found that text – because in the context that I was competing obviously with a [inaudible] production and the film was very high quality – bit the text was never preferred to the IDN or the film, because…

Despoina

Really?!

Cameron

I only had fifty participants, and twenty of them participated with text, forty of them with text and film, some of them did the text first and the film second, no no, sorry there were twenty participants who did the text, some did IDN first and then text second, but the comparison was always with the IDN. And the IDN was always preferred to the text. The IDN was a broken-down version of the text, and I think they found it more engaging because it was a 'game setting' if you will. So, it could also be because the story was more effective for providing the immersion. And then the film was more dividing for those who had the film first because they were more bias inclined to like it. There were a few who go for the IDN first, and vice versa.

Despoina

OK, then we need to talk more about that, as I'm very interested into that, as I've noticed that people tended to stick to whatever medium they have encountered first, which is very interesting. Ut my research is different (goes on to explain the purpose of the PhD research).

Kai

You can actually skip parts in the VR as well. Because it's a video and not an actual VR experience. So, essentially in all three media you can actually skip parts.

Despoina

That's true indeed.

Cameron

It's funny that I used the controller not to skip anything, but as my special awareness to coordinate in the room because I could actually see it on the table!

Kai

I think that where your results may end up obscure is because with your limited knowledge - as you basically come from an archaeological background - you did not use the media to the best of their ability - meaning you didn't use them at their full capacity. I had done my dissertation on interactive digital narratives (IDNs) and I was trying to understand what makes these experiences fun for people. If your goal is to interpret archaeology through some sort of entertaining medium, being text, being IDN or VR it's going to be difficult. Because, in my opinion, something as complex

as archaeology has to be done through transmedia. I don't know if that's something you've already explored.

Despoina
What do you mean?

Kai
So, transmedia is basically having a world. In your case, archaeology is the world. But you have to play the best parts of the story and of the medium. So, for example, the problem with the Twine was that there was an overload of information.

Cameron
Yes, I'd agree with that, particularly with the diaries, where for example there were nine clues. Now, for me I enjoyed it 100% to have to go through each one of the clues, but I know that might not apply to everyone since it is indeed an overload of information. So, maybe if it was cut to half the size of it, the diaries might have been better. I'm checking this right now again (meaning the Twine) and I'd also like to add that it was really nice that you had to engage in a conversation with the character, instead of just being talked through the information (the rest of the room agrees).

Kai
What he mentions (meaning Cameron), that's exactly Twine's strength. For IDNs that's their strength: that the user ideally has choices. But that's going to weaken your credibility in terms of archaeology. Because Twine is more tailored to imagination and storytelling and options. Now, with VR you cannot have a static experience. VR has to be immersive. So, if you were to build the story as a transmedium you could have the diaries as a text, because that's where the overall (archaeological) information is coming from. You might then have the historical aspects, like the scientists and the archaeologists in a Twine story in order to give the user the choice to play the game from the perspective of each one of them (i.e., as Stamatakis or as Naflpioti etc.). But again, the story should have been small. And then, if you wanted to talk about Agamemnon's story it would have been beautiful in VR in a first-person experience, where the user would have the option to play as Agamemnon or as someone close to Agamemnon.

Despoina

Now I understand what you mean, but that of course would be out of the scope of my PhD and my skills.

Kai

Exactly.

Cameron

Yes, of course plus the time constraints apart from the skills or training required.

Despoina

Because essentially what I'd like is to quickly and effectively engage the local community or the stakeholders of an excavation for example, to get some funding to continue the work, or inform the public about what we have been finding as archaeologists. To be fair, personally I felt that Twine would serve this purpose nicely.

Cameron

I do agree that Twine can leave unnecessary holes like the runaway part (meaning if you click on the Twine to run away instead of have a closer look, you cannot get back to the story), but there are workarounds to that and you can create the illusion of choice so for example, if you click the wrong option, you'll then have to take a roundabout to get back where you were. There is always a way around to create a specific path and at the same time make the user feel that they do have a choice even if they don't actually.

Despoina

Yes, I agree. With the Twine, the strength that I build on - at least to my understanding - is to use the option element to communicate the message that the archaeologists do not always have the answers about the past.

(Participants - agree by nodding or saying yes.)

Kai

That came out very well.

Cameron

I believe that that was done nicely, especially regarding his name.

Despoina

So, essentially, I was trying to make the user feel like the archaeologist who is looking through the same record that the actual archaeologists have looked through to find the answers. And then make their own interpretations. And I found Twine very convenient for this aim, especially as it allowed me to let the user choose how the individual died, which again serves the purpose of communicating the message that archaeologists don't always have the answers.

(Participants agree by nodding).

Cameron

Yes, I like that we can't know how he died and that's fine, because you were giving the user three options to choose from regarding the individual's death based on speculations, which was really nice.

Despoina

(Explains a bit more about the rationale behind Twine).

Sascha

What I found interesting was that in the Twine I chose one option about how the person died, which is that he died as a warrior, and then in the story (meaning the text) I read that he could have died during a hunting trip, which was actually very interesting to also see a different option of how the person might have actually died.

Kai

It is interesting, but I think maybe text is what you'd have to work on for the purpose of your research to section it. Have to document with the story on its own. And then kind of like the footnotes I think don't work, because they are quite extended.

Cameron

The footnotes indeed were a huge portion of the paper. But I understand that that's not your fault, it's just the reality of citation of an academic paper.

Kai

But she's explaining the story, she's citing the story of how she got the story, so she makes references to the pictures to make sense of the story.

Cameron

Oh my god, I just realised now that I read through the footnotes instead of just the story!

Kai

So, in my opinion, you need to section differently the footnotes, because narrative is very important, and it should be very straightforward. So, let them read the story first, and then have something separate which connotes the story and explains the things you mentioned in the narrative. Because like that you'll lose the user's attention.

Despoina

But isn't it actually more convenient to just look down the line and read a footnote that you're actually interested in instead of having to grab another paper to read the footnotes?

Kai

Yes, but you come from an academic background and that's how you're used to reading papers, but a paper is not the most interesting thing one can read.

Cameron

Yes, because it sort of interrupts the narrative.

Kai

A paper is just a collection of academic research.

Despoina

Yes, I have thought about it, to try to keep the footnotes minimal. But what you see is actually an exaggeration of how it could have looked in order to show to the user what is fiction and what is actually archaeological or historical knowledge. As that's not a technique that I've come up with. Alexis Boutin has been doing that for years, so I based my narrative technique on that but in a much more elaborated form.

Kai

I would still look into a different way to do the footnotes, especially if you're presenting archaeology and particularly if you're doing so to someone that you want to ask for funding, first you need to show them the subject, so first it would be the story of Agamemnon. Who exactly was this person? So, give them a story. It could be a pitch talk, a video, whatever. Then move on to the facts. Because, once you have a context, it's easier to give them the facts. You'd have brought them to Agamemnon, to Greece, to the Bronze Age, and now it's the time for you to come in as an archaeologist and talk about the facts, what you have, what you don\t have, and what you want to find out. And that's how you ask for funding.

Despoina

So, do you mean like a combination of media?

Kai

Yes, a combination of media. Because it's so complex, that if you go to play full on the medium's strengths, you're going to end up losing something (meaning something from the context). Respectively, if you're going to talk about everything, you're going to have the problems that we're discussing.

Sascha

I found that the text had less information than Twine especially since I didn't read through the footnotes.

Despoina

You find the text to have less information than the Twine you mean?

Sascha

Yes.

Cameron

I guess you're less inclined to read through the footnotes of the text, whereas in the Twine you just click, and the information text unfolds.

Despoina

That's very interesting, because both the text and the Twine contain exactly the same amount of information, just in a different form.

Cameron

Yes, I believe that with the Twine it just feels more natural to just click and read the information. So, you're less likely to miss it. Because with the text, after I got confused and read the whole first page as one, then I just ignored the footnotes completely and read only the story.

Despoina

Yeah, that's an option anyway for someone though.

Cameron

Yes, which is completely fine, I could have done the same with the Twine. But I was more interested to read the extra content in the Twine compared to the footnotes of the text, because I felt I was putting the whole story together. I did VR then the text and then Twine, but I still enjoyed the Twine the most.

Sascha

In the Twine it was that I read everything and understood the story.

Kai

Yes, for him it would be the worst, because he had all the information at the beginning and the video (meaning the VR) at the end.

Despoina

That's why I was impressed that he sat through the whole video. I'd expect him to just take the headset off at some point as it was his third time going through the same story.
(laughs)

Despoina

So, do we know the person's actual name?

Everyone

No, we don't.

Despoina

Did you get the side story about Schliemann and Stamatakis?

Everyone

Yes.

Kai

Is like the real-life issue that was happening during the excavations to find Agamemnon. When the two people were not agreeing with each other.

Cameron

Yes, one of them was looking to cut corners and do things as quick as possible, and the other was trying to do things right and stick to the rules, and then it was the other's wife, who was aggravating the situation apparently and I'm not sure if that was implied, but he and his wife were some kind of grave robbers, as there was this photograph of how wife wearing gold jewelry.

Despoina

(Explains a bit about Schliemann, Troy, and Mycenae)

(laughs)

So, did the narrative help you feel sympathy or anything?

Cameron

Oh, yes, I certainly felt sympathy for the guy, as he was just trying to do his job honestly and I was very confused with Schliemann's wife and the way they both treated him. I thought, OK, maybe the rules (meaning of the excavations) were different back then.

Despoina

Yes, they were indeed, but still.

Cameron

Yes, and I was very surprised because he started working without a permit and I was frustrated about how he actually was getting away with everything.

Despoina

Did you feel anything, Kai?

Kai

Yes, I think this is a very particular story where eventually everything could have been lost and then it gets me thinking about if things have been done differently and with more right, if we actually would know more about the person (meaning MYC_1V).

Cameron

Yes, same with the limited technology at the time.

Despoina

Sure, that's a fair point, but in the case of Stamatakis it is not even the technology that is the problem.

Cameron

Exactly, is the whole situation. Yes, let's say if we actually had all the evidence that hadn't been destroyed during the excavation stored, we could maybe now examine them with new technology and get the answers that we've been looking for. But god only knows where these are now.

Despoina

Well, some of them were destroyed in order for the lower structures to be unearthed.

Cameron

So, he destroyed them?

Despoina

Yes. When you excavate things, the upper layers are closer to the current time and the more you dig, the earlier the finds. So, you could for example have mediaeval structures and roman underneath, and prehistoric structures below. So, in order to find the Mycenaean layers, he took

away the covering structures, which was a practice that Stamatakis didn't agree with. He was trying to stop him.

Cameron

So, that's the story about. I remember everything he said that he was frustrated with Schliemann as he was ignoring him. And I thought, the poor guy, he religiously tried to do things right, but they didn't allow him!

Despoina

So, Sven, did you feel anything regarding the characters?

Sascha

Well, it was an interesting substory and it was nice to know what was happening during the actual excavation. I mean, I was a bit confused in the Twine about the story, but then the VR helped me to better understand what exactly it was about.

Despoina

I understand, maybe because in the Twine and the text this story is mainly interwoven inside the main story, whereas in the VR it's completely separate. Maybe that's why Kai suggests a mixed media approach after all! Maybe I could have created a simple video and also provide the users with a link to a shorter Twine to cover everything that the video maybe couldn't have covered, and entirely skip the text, as it would have been covered by the Twine. Or just have some material for the user to take it with them. Maybe a website as well.

Kai

A website would have been really good. Especially if it was interactive.

Despoina

(Talks a bit about the Heritage Game Jam and the website).

Kai

Yes, a website is a good idea. And you can have multiple media as well. You can have videos, you can have text, you can have Twine.

Despoina

(Explain a bit the creation of the three media).

Kai

Yes, VR is a headache to be done properly and you actually need a whole team to do it. Imagine just doing it to communicate your research. VR hype right now has been worn out, as we stopped talking about what we can do with VR, and we actually started doing it and we understood that it's huge work. So, right now VR is not very popular. Especially in your case it definitely is not the appropriate medium to use. We have a kind of archaeological site in VR (meaning the Hypogeum project in Malta), but the project is not an archaeological explanation of the archaeological site, but it's a visualisation based on facts, not speculation or interpretation; it's essentially based on what we know or have been like back then. But you're not looking how Agamemnon's grave would have looked back then, which in that case VR would have been appropriate. So, in your case I think VR is a waste of time.

Despoina

I agree, I see your point. (Talks a bit about 'The Other Eyes' project).
Any other comments that you may have?

Everyone

No. Thank you.

Despoina

So, you're good to go, and thank you very much for your time today! It was such a helpful discussion.

Interview 5, Malta, Group 3

Despoina

So, let's begin. Just tell me what you think about the whole experience first, and then we'll see how it goes.

Devin

It was quite nice. I learnt about the traditions of the people and how the data analysis (meaning the archaeological data) is done.

Despoina

Which one of the three did you find the most engaging?

Devin

Sorry, can you repeat that?

Despoina

Yes, which one of the three media that you experienced did you find to be the more engaging one?

Devin

The audio visual.

Despoina

So, you mean the VR?

Devin

Yes.

Despoina

And do you remember with which one you started?

Devin

The game.

Despoina

That's interesting, let me make a note of that.

Despoina

What about you, Bailey?

Bailey

For sure the game. That was my favourite. The fact that I clicked and chose what would happen was very nice, and the story made me laugh, you know. I enjoyed it. I preferred it compared to the text or the VR. And I started with the text, but I wasn't sure what I was reading. Because there was no context, no visuals, and seeing the first huge chunk of footnotes I was like 'what is this?!'. It's not normal to read text like that. You don't really encounter that in everyday reading, maybe a little bit of footnote but nothing like that. I wasn't sure at the beginning if it was … - I can't actually call it a fictional narrative, yeah it was fictional, wasn't it?

Despoina

Yeah.

Bailey

So, I wasn't sure if it was fictional with so many footnotes. So, I think I liked the game better.

Despoina

I will explain in a bit about the narrative, but I'd like to ask you if you understood whether you should read the footnotes or not?

Bailey

I started with reading all the footnotes and then when it got very technical or full with words that I don't understand anyway, I was more inclined to skip the footnotes to read stuff that I actually understand. And then after reading a whole bunch of footnotes I began to read only what was of interest to me. So, I didn't read all the footnotes, but I definitely read all of the main narrative, the story.

Despoina

What about you, Maxwell?

Maxwell

I think that they all complement each other. But I prefer the VR because it was more immersive, it was still exhaustive with detail, but it was a bit lighter. Because I think in order to engage with the text it takes more mental effort. So, I preferred the VR but to actually grasp the whole concept better, I think I prefer Twine. The text was also good, but not to be used alone. It was so comprehensive. The Twine was easier to understand but not as light as the VR. So, if I was for example studying for an exam, I would prefer to have Twine ideally - actually all of them together - but Twine I feel was the best one, as it was a bit easier than the text. However, if it was for something fun, then I'd prefer the VR.

Despoina

So, what do you think about the VR, Bailey?

Bailey

Well, I play with VR every night. I used to watch TV at night to relax, but now I play VR instead. So, when the skeleton said 'Do you see that journal over there? Have a look!', normally from what I'm used to I would walk there and I'd pick up the book and I'd actually be able to read it. When I realised there was no interaction it felt more like an Audible experience. You know? So, I was comfortable listening to the story, and I was enjoying it but the VR element didn't add to it for me because I'm used to interacting with VR. And I thought maybe if I look at it, it will do something. But there wasn't anything that required of me, whereas in the other game (meaning the Twine) I was encouraged to engage, and it made me feel more engaged than the VR, even though naturally I'm very fond of VR. Not what I expected when I went into it. It felt more like a 3D cinema than a VR experience, because I didn't interact as much.

Despoina

It is a 360 film indeed. So, now I think it's a good time to tell you a bit more about the aim of my project (explains about the PhD research).

Maxwell

Actually, I think I could easily see the VR you created taking place in a museum or something like that.

Despoina

I'm glad that you liked it!

Bailey

Yes, it was nice. And it was interesting for the sake of it. I enjoy audiobooks and I enjoyed that as well. It's just not what I expected when I put the headset on.

Despoina

That's fine, there is no problem with that, because all this feedback is actually very good for my research, and I will address all these matters in the discussion chapter. So maybe VR doesn't entirely satisfy the purpose of my research questions.

Bailey

I wouldn't say it's not satisfying. If you've just told me 'I'm going to show you a video now' and then put this on I would have known what to expect. But I was ready to do stuff, you know? But if I was told that I'd just watch a video, I'd have thought 'oh cool, a video'. It's just my expectation based on what I do every night. So, when it said 'look at the diaries', I wanted to actually be able to read them.

Despoina

Well, I'd love that, in fact that's how I have imagined it, but it's very difficult for non-specialists to do it, as you need to design the whole room and make things interactive, which for me is impossible and out of the scope of my research (explains a bit about the research again).

Despoina

So, what do you think about the main character? Do we know his name? How do you feel about it?

Devin

If we see it from a personal point of view it's a story, we can't really tell if it's 100% accurate. From the analysis we can learn what he looked like or what he did and maybe assume how he died and when, and the rest of the story is a bit of imagination and when you read these footnotes, for me it's very important, because I can know which parts are based on evidence that were discovered or physical evidence on the skeleton. And then you can interpret these and tell them in everyday language. So, like when you read the story in the first section, I could observe all these fails and then I could understand easily that it was an interpretation of what I read.

Despoina

That's very interesting. So, you mean that you actually want to know which parts are fiction and which are based on archaeological evidence.

Devin

Yes, yes. For me it's important to know that there is actual evidence to support the story that obviously one can manipulate a bit to make them more appealing or easier to describe. The order I experienced the story was good (meaning Twine -> VR -> Text), because I got to read the details at my own pace as you learn the facts easier when you read them. And the VR was easy to understand since I already knew all the small details.

Despoina

Do you agree that it's important to know that the story is based on facts?

Maxwell

Well, it's a good thing to have actual substantial evidence and facts to back up the story, although I did enjoy it without worrying about it. It was like 'OK, I'm not experiencing this just for fun, but I'm also learning something from it', which is always better. So, the fact that actually there was a lot of back up research to build the story was good, but it still made it a bit of a challenge to read. But I actually empathised with the main character and understood that it wasn't just an academic article, it felt like it was the real life of a person.

Despoina

Good, we'll come back to that last point. But before that, what do you think about it, Bailey? Is it important to have the archaeological research behind the story?

Bailey

To enjoy a story, I don't think it's a requirement, as many good stories, like Star Wars don't have a research background, but having evidence to support it makes it cooler. Cause it's real then. It happened. I mean, if someone showed me a piece of the Death Star, I'd say 'What? That's cool!'. So, reading a story that I'm enjoying and seeing that it's based on actual evidence, it instantly makes the story cooler. I do enjoy reading stories that have truth in it. For example, Outlanders is based on quite a lot of pieces of evidence. Even if it still is a story, it makes it cooler, it's more fun; it's still a fictional story, but yes, I do enjoy historical romances, because I like a good romance, but the evidence makes it cooler.

Despoina

Well, I have another story that is a romance story. I haven't used it for my PhD, but I can forward it to you. It's about a cenotaph, so I had created a story about this tomb.
So, one of the points that I'm trying to communicate is that archaeologists do not always have the answers, especially for prehistory, meaning before actual written record of the historical events. So, my question is if that was evident, if you actually got my message.

All

Yes.

Despoina

Also, Maxwell, you mentioned before that you sympathised with the main character and now you say that it's a pity, so do you feel an emotional connection with the character?

Maxwell

I think yes. At first not so much as I didn't have all the information, I was trying to understand the story, but then by the end I was like 'Oh, this was an actual person like me'. So, yes, it's a pity that there are so many important things that actually happened, but we don't know about them and all we can do is just assume, so that's why I said it's a pity.

Despoina

Yeah, that's important. I always feel like that, like in 200 years from now I will just be a bunch of bones, and no one will really care about me being a person (laughs). So, yes, it's sad!

Maxwell

Unless these things you're making (meaning for the PhD) are discovered!

Despoina

Then I should be buried with them! (laughs) That's a very good idea actually!

Despoina

So, what do you think Devin, did you feel an emotional connection with the character at all? You don't have to, just checking.

Devin

Well, I wasn't sad that he died, as I understand that I was reading a story about a person who died more than 2000 years ago. Death is something that is happening for every living person in the world. So, maybe the pity is how he died. And I also have in mind that it's a story, so it's written to evoke emotion, I'm mindful of that. Also, everyone has a story behind him. So, maybe for this person we know more things, that for others we don't. Maybe they were not important or not as important.

Despoina

So, did the story make the character appear more like a person to you?

Devin

It definitely makes me more curious. I want to know what happened exactly, what was the time period, what happened, where did he come from, generally I want to know more about the person and the story.

Despoina

(Explains a bit about the skeleton and the research behind it and osteology)

Devin

(Asks a lot about the bioarchaeology and the osteology research done on the skeleton)

I'm very interested in history and especially the prehistoric people from Gozo Island (elaborates a bit about what they know from the DNA analysis of the people from Gozo).

Despoina

(Discusses a bit about the osteological finds regarding this particular skeleton)

Despoina

What about you, Bailey, did you feel any sympathy towards the individual?

Bailey

(hesitating) Yes, I mean I did, but we only know about this guy because he was rich, right? I think I'd also be interested in someone who wasn't rich from that time. You know what I mean? I think a person like that probably would have an even more interesting life story, because I know he probably wore heavy armour and he fought, or ordered other people to fight, since he was rich. But from my personal point of view, I'd like to hear about the underdog. But that doesn't mean I'm not interested in this man - I am - it just makes me curious to see why he is rich, you know? Did he plunder or something or his daddy was rich, because he says that he comes from a wealthy family? But yeah, I'm curious to see about other people as well, because not everyone would have been buried like that. I imagine he was the exception.

Despoina

That's the thing, we don't know for sure why he was rich or why these people were treated as special (explains a bit about Grave Circle A and Mycenae).

Despoina

So, another question now: What do you think about the other story about Schliemann and Stamatakis, the archaeologists?

Bailey

Do you mean, how they weren't happy with each other, the permits and everything? Sure, but I was more interested in the guy on the table than the archaeologists, because he was the main character, and that's what I read first in the paper and I put myself into the story, so I got the story from his perspective, you know? And the archaeologists were just messing with his bones! Had the story been written from the archaeologists' point of view, maybe my answer would have been different.

Despoina

What do you think, Maxwell?

Maxwell

The side story of the archaeologists was interesting too. Because actually I think it puts things in perspective that I might haven't thought much about. Because usually when writing a story, the author has a particular perspective that they want to talk about, so actually going to the other side, that of the archaeologists, made me also sympathise with them and not only the main character. I sympathised with their struggles, as it's not easy, discovering, and going to the sites, it's actually a job. You have to deal with the people that you're working with, so it's not easy.

Despoina

What do you think, Devin? Do you remember this side story at all?

Devin

Yes. At first when I was reading at the Twine, I didn't pay much attention, because I didn't click on all of the links, and I also was more focused on the main character. But the story is very important, as the archaeologists are the ones who brought us all that we know. If they had distirbed the setting, and lost or damaged something, it would have affected what we know. So, it's very important to operate in a meticulous way.

Despoina

Did both of them operate in a meticulous way?

Devin

I don't know what the interaction was really, whether there were two archaeologists or whatever, and one was leading the other, but it could be like there was a one who had complaints and in general they had different agendas and different goals or attitudes that they weren't compatible with each other. But it is quite important that we know about these things, and we know that maybe there was some kind of compromise during work, some kind of carelessness maybe. That would have added to the question mark overall. And actually, we could learn from this kind of situation and not allow politics to be involved in the next archaeological project or to have things done at a slower pace, you know?

Obviously, we saw only one view of the story (meaning the conflict between Schliemann and Stamatakis, so that might mean that our knowledge is limited since we didn't see the perspective of the other person (meaning Schliemann).

Despoina

Do you mean the other archaeologist?

Devin

Exactly. Because there was one who was British and was complaining about …

Despoina

(interrupts) That was the Greek archaeologist actually, Stamatakis.

Devin

Oh alright, sorry. So, they were both Greeks?

Despoina

No. Actually that's the last point I'm trying to make with my research. This excavation was done during the 19th century by Schliemann and Stamatakis. Schliemann was German and Stamatakis was Greek (explains about the excavation and the role of Stamatakis in the excavation).

Devin

So, Schliemann didn't actually care about the outcome of the excavation.

Maxwell

It was the other archaeologist that actually documented the excavation.

Despoina

Yes. He essentially was the supervisor of the excavation.

Devin

To supervise him. But he didn't not actually listen to him, right?

Despoina

Yes.

Devin

And that could mean that he had his own goals. He had many people that were digging. So he wanted the excavation to be conducted fast, so maybe to sell something. He was ignorant about the actual history, but he wanted to push his personal goals. But the other was trying to educate people.

Despoina

(Explains a bit about decolonisation of research)

Devin

But why was Schliemann hired to do the excavation?

Despoina

Because he had the money to actually fund the whole excavation.

Devin

But was Greece a colony?

Despoina

A crytpocolonoly, yes. Not an official colony, but still totally dependent on the other big European countries. (Addressing Bailey) Remember that you said that you'd like to know the story of the poor people and not the rich? Well, in our case we don't even know what Stamatakis looked like as there is not a single photograph of him, whereas there are tons of Schliemann excavating Mycenae. And we have in mind how Stamatakis might have looked because there is a photograph of the excavation which includes a man sitting on a rock and making notes, who actually is missing from the published version of this photograph by Schliemann. So, most probably he actually erased him from the photo essentially erasing him from history. So, that's what I'm trying to also do with my PhD, to also talk about Stamatakis and decolonise the story of the excavation of Mycenae. So, it's very good that the Maltese groups here actually don't know much about my case study, as I'm getting to see what their thoughts on the matter are.

Bailey

All these are completely new to me.

Despoina

That's brilliant. It's very helpful for my research.

Despoina

So, is there anything else you'd like to add?

All

No.

Despoina

Thank you very much for your help.

Interview 6, Malta, Group 4

Despoina

So, tell me everything or anything that you'd like to comment on.

Noor

Can I actually ask a question?

Despoina

Yes, of course.

Noor

Who is this (project) aimed for? Who do you think the target audience is?

Despoina

I'm happy to talk about the project in a bit, but I think it's actually better to ask you my questions first, and then we can chat about it.

Noor

OK, sure.

Noor

I imagine the guy was going to have a different voice. In fact, when I started reading the text, I pictured him as a child even though I read that he died when he was 25, but the way the story was written sounded childlike. And when eventually I heard his voice, I was like 'Oh OK, he's a man'.

Despoina

That's very interesting. That hasn't come up yet in the other interviews. Particularly because I had a good thought about the style and the voice, especially as I had to adapt the story for the film and pick a style.

Despoina

So, what do you think, Carter?

Carter

I think there isn't a matter of preference as every medium is different, but I don't like VR in general as it makes me feel a bit claustrophobic, so personally I wouldn't choose it, but I liked the fact that there was an oral component and a visual component. I had the VR last so in a way I already knew what was happening so when I was taken in the story with the VR, I didn't lose anything, but if it was the first medium I think I would have been a bit distracted.

I'm sure there are people who are using it all the time and they are used to it.

Despoina

That's actually a very useful observation.

Carter

I liked the game aspect but there were moments that it was a bit overwhelming in terms of the way the text has been put forward. It could have been done in a more [...]. The flow sometimes took me a bit too much (meaning to read), but I don't know what the answer (i.e., a solution) would be, but I really followed it and I really enjoyed that. This for me (showing at the footnotes) made me feel I didn't even need the narrative and I just enjoyed reading through the footnotes. In fact, at one point I stopped reading the story, because I already knew what's happening, and I just read the footnotes.

Noor

I'll agree 100%.

Despoina

(To Noor) But you're an archaeologist, Carter is a filmmaker. These are really interesting observations that again haven't come up during the interviews.

Despoina

(To Jo) So, what do you think?

Jo

So, I started with the VR experience.

Despoina

Have you had VR experience before?

Jo

Yes. So, what I noticed is that when I did the Twine, I realised I've misunderstood a lot of things.

Despoina

Interesting. Like what things?

Jo

For example, the relationship between the archaeologist and the Greek representative.

Despoina

So, where did you better understand this from?

Jo

I understood it better from the game and then from the text. So, when there was a question 'did you feel like he was mistreated?' I was like 'No, he wasn't mistreated'. And then I played the game, and I was like 'Hmmm actually he was'. (laughs) And then there was a point that I felt stupid when sort of the VR started, I was just looking at the chair in front of me. And it was shortly after the first narration part by the archaeologist that I realised there was a skeleton on the table.

Carter

I guess it's because I had the game first and the first thing it asks is if you want to exit or have a look around, so when I put the headset on, I instantly thought that there might be something behind me. If I haven't done the game first, I might have done the same thing as you.

Noor

I'm actually glad I began with the text as I had all the information I needed there. Regarding the text itself when I was reading it, as Carter said, I didn't need to read the narrative itself. And that's

maybe why I didn't expect a man's voice. Because the text felt so childlike, you know? And it was a little kid just telling a story about his daddy and where he lived. When I played the game, it sorts of reinforced the narrative that it's a child talking to me. So, when I eventually got to the VR and heard this booming warrior talking back at me, I was like 'Oh OK, you're a man!'. In my mind it was a child speaking even though I knew he was going to a fight! But somehow it felt a bit strange.

Carter

Maybe it was because in a sense there is a bit of disconnect between [...]

Noor

Yes. And there are grammatical errors, there are words out of place, for example there was a particular instance where he said, 'married wife'. It's an oxymoron. So, there are certain linguistic characteristics in the text that indicate someone who is younger.

Despoina

In my mind it's someone who is not very used to our language and ethics.

Noor

But then that's not reflected in the VR.

Carter

Yes.

Noor

Because the person who you choose to act that out is an English speaker. It would have made a difference if his accent was different, or his age was different. And I think what he says and what is written in the story is different, like he's correcting the ENglish sometimes.

Despoina

No.

Noor

No? Is he reading exactly the same text?

Despoina

Yes. It's word by word the same text.

Noor

OK, but maybe it's because the accent is different.

Carter

Yes, he says everything that's in the text, but he pauses.

Despoina

He even said, 'married wife'.

Carter

Yes, he does say 'married wife'. He even pauses like doesn't want to say it. He maybe thinks that it's not correct to say, but he says everything verbatim as it is in the text.

Despoina

So, in my mind when I was writing the text, I had a warrior who is very, very annoyed with people messing around with his bones and he can't understand why people keep bothering him.

Noor

And there are missing bones, right?

Despoina

Yes, there are missing bones and teeth.

Noor

But in the VR, there's no tibia, but they are talking about the tibia. I also couldn't see the teeth, and I was also looking at the damage in the calcaneus but that's obviously due to my profession.

Despoina

Well, everything that was actually missing from the skeleton is also missing from the plastic skeleton apart from the damage on the cranium, as I couldn't obviously dismantle the lab's plastic skeleton to reflect the damage. There is a tibia, but it's only one of the two, not both as he's

missing one of them. I've put everything myself there and I'm doing osteology and also had a colleague from the lab to double check that the layout of the skeleton as well as the bones were correct.

Noor

Oh, I see!

Despoina

And in fact, since you're interested in the osteology part, Dr Nafplioti actually portrays herself.

Noor

Oh really?? Oh wow!

Carter

Oh wow, that's amazing!

Despoina

She's lovely and it was a big favour that she did to me actually. These people are not actors; Dan, who plays the warrior, is an old colleague of mine and Stamatakis is played by Dr Dickinson.

Carter

Of course, obviously what you're doing is not a high production, but if you were to go on and remake it, these would be some things to take into consideration. The type of voice you use matters, or the narrative has to change slightly.

Noor

I knew before I came that it was you who had created these, but then when I was reading them I didn't have that in my mind. I mean, when I was reading it I wasn't picturing you writing this. I was trying to figure out who the character was. And that's when the child came about. So, at no point did I think 'Oh that's a foreigner speaking English'.

Despoina

So, do you think it could have been a story in a book?

Noor

I liked that you've used the perspective of the dead individual telling the story, like someone is screaming from the grave 'Stop messing with my bones!'. I get that. And there was a question in the post questionnaire about how I felt. That was very important to me, because I did - I did feel that - I did connect.

Jo

(agreeing)

Despoina

Which one of the three media did help you to feel that?

Noor

The text. But I love reading.

Despoina

And did you begin with the Twine?

Noor

No, I began with the reading. But the media feel like they are for different ages. So, if I had to guess an appropriate age group for the game, I'd say 10. If I had to guess about the VR, I'd say an interested teenager. But it has to be someone interested in it.

Carter

Although with the game I'm not sure if I'd say 10, because a lot of things are explained, as you can click on things and expand, but there are also things that they are taken for granted that maybe only an archaeologist would know.

Despoina

Like what?

Carter

Well, like things that I know just because I work with archaeologists and there are things that I've heard before in conversations, but I wouldn't have known otherwise. But then again it depends on the age group that these are for. But that is where I feel there is a disconnection for me.

Carter

Between the text and the footnotes. Which was brilliant because I got answers to questions I needed to refresh! (laughs)

Despoina

It's so interesting that the archaeologist actually finds the footnotes interesting!
(Explains a bit about the groups)

Despoina

So, what do you think? Which one of the three media felt more engaging and immersive?

Jo

I think I felt more immersed in the game (meaning the Twine). Obviously, I didn't have the same experience regarding the voice, as I heard the voice immediately, so I read the text with that voice in mind. When one of the archaeologists was explaining the different fractures on the bones, I felt lost and for the VR I believe that was a lot of audio information without anything happening on the skeleton.

Noor

Can I actually add on that? As I've created a game before and it was clickable and interactive for the user to access the evidence etc., when I got in the VR I was like 'Where is the book?'. I was waiting for the book.

Carter

Yes! Because it was on the table, and I was thinking 'Am I meant to do something with it? Should I click to open it?'. And then it went grey, and the voice changed. Maybe, I don't know, if you could make it do something it would be good.

Noor

Yes, because it's virtual reality and I'm supposed to move or touch or click something to open the book.

Carter

But then maybe if we hadn't done that first (pointing at the Twine), this wouldn't have occurred to us.

Noor

No, it wouldn't have occurred to us, no.

Despoina

Did that occur to you, Jo?

Jo

I felt I'd like to see the explanation of the bones on the skeleton, maybe by highlighting which parts of the body they were talking about.

Carter

If you're going to use a 3D experience that is immersive there might be other things that can be used to create the experience more interactive.

Noor

If I only had one piece of advice that would be when you have a sample that you don't have any parameters or criteria for it and because you can have a completely different experience depending on the medium that they're using, it's better to have the participants experience the media in the same order or whichever order you chose.

Despoina

Sure, yes, I do make notes of the order the participants are being exposed to each one of the media as you're very right, it makes a difference. However, I'm not following one particular order every time as that's not quite possible, so I'm having people do a mix of different orders of exposure and keep note of that to compare them when I analyse the data. But I'll explain more about the resonance behind my experiment in a moment.

Despoina

So, which one did you find more engaging and immersive, Carter?

Carter

I think the game or the footnotes of the text (laughs).

Despoina

That's very interesting that you were attracted to the footnotes specifically. What about you, Noor, which one?

Noor

The text. Though I have to say I loved the clickable aspect of the Twine. I loved the interaction with it, I loved that I could get photos as I was going through it rather than at the end of the text in a separate sheet. But I didn't get anything out of the VR.

Carter

I think I'm quite happy that I had this experience (meaning the Twine) first as it really gave me a lot more. But maybe you, Noor, are more familiar with the format of the text.

Noor

My order of preference would be text, game, VR. But kudos and brava for everything.

Despoina

Aw thank you. Don't worry though, I don't get offended by a negative comment, as all the feedback is extremely valuable for my research.

Noor

No, no, I'm not saying that. It's just that immediately I forgot it was you and I immersed myself 100% into it. I forgot it was your project! When I'm reading something, I tend to put the voice of the creator in the story but I didn't do it in this case.

Despoina

That's brilliant! (Explains about the aim of the project: *archaeologist to create something to engage the local community or stakeholders, so created the 3 usual media to engage the public*

- explains more about the creation of the three media and how they were created and how I didn't do interaction on VR but tried to do immersion with a 360 film).

Despoina

So, one of the things I'm trying to communicate with my stories is that archaeologists do not always have the answers. Do you think I managed to do that?

Carter

Yes.

Noor

Yes. Time and place of course are important because for example in the initial excavation they didn't have all the answers but as we go further down the line I know from my experience that we look for things to reexamine.

Despoina

That's the other point that I'm trying to communicate, that in the old excavation a lot of things were destroyed or not recorded properly and Stamatakis, the Greek archaeologist, was trying to protect and record as much as he could to pass them to the future generations of archaeologists. Which is unusual as during the 19th century archaeologists rarely cared about the bones, as they were more interested in the artefacts.

Noor

Of course, because antiquarianism was the trend at the time, and you also had the collectors so it was just a matter of interest. There was no respect for the dead as they were long dead.

Carter

As I'm working on a project that is quite related with archaeology, I'm very fascinated by the personalities of the people and how that had impacted the excavation. I find the archaeologists even more interesting than what they're finding. You know, driven by ego and the sense of entitlement. There is a lot happening in the background which I find interesting and enjoyable, and I'd go and read more about it. I really want to find out what happened between those two (meaning Stamatakis and Schliemann). So, I think that came across really well.

Despoina

That's very interesting. The decolonisation of heritage is a huge trend in archaeology and in humanities studies in general. So, my research has a decolonisation aspect in it, as maybe Greece is not a colony, but it is a cryptocolony.

Noor

Well, Malta as well! So, let's not have this conversation!

Despoina

(laughs) (explains a bit about Schliemann and obtaining a license to dig in Greece and his relationship with Stamatakis) The Greeks don't even know about Stamatakis' existence.

Noor

Oh wow!

Despoina

And it's weird that Stamatakis was trying to keep the upper layers intact as that wasn't the usual practice back then. Even Greek archaeologists would have discarded the upper layers to uncover the older layers underneath.

Noor

Yes, but even in that case he could do that. As it was his patria (homeland). Everything he was digging was Greek. He was Greek. Schliemann was not.

Despoina

Yes, but my point is that even later archaeologists i.e., 20th century would have discarded the upper layers to find the prehistoric layers underneath.

Noor

Yes, of course, but how could it be different? He's only Greek. How could he possibly be an expert? He didn't have any money. It's a Mediterranean mentality. You can see it from an anthropological point of view happening here in Malta as well. They'd say 'Oh, he's a Maltese archaeologist, just ignore him'. But if he comes from the UK people think that he must be really on top of his game. So, the same thing applies to Greece.

Despoina

Yes, that's true.

Noor

I'm telling you, that's Mediterranean culture.

Despoina

So, I'd like to bring this up in the discussion. And of course, imagine how upset Schliemann was that he had to be supervised by a Greek archaeologist.

Carter

So much so that he called him clerk! Like a peasant!

Despoina

That's why I never mentioned the actual name, to try to create this sense. Anyway, imagine that we don't have a single picture of Stamatakis, so we don't know what he actually looked like (goes on and explains the story behind the photo).

Noor

You'll find no people locally here in Malta and in Greece [inaudible] that you just described rather than those from the UK (others agree). The colonisers… it takes learning to form aesthetical and to understand them truly, but it's only countries who had experienced colonisation that can actually understand [sic].

Despoina

I have to say that the British participants got a bit upset with the story, but that could be because they are archaeologists. So, my plan was to form three main groups: foreign or mainly British archaeologists and heritage practitioners that they don't know my case study (meaning Mycenae or Grave Circle A), Maltese people that they have gaming or programming or digital sciences background, so they are not archaeologists neither they know my case study, and then Greek people who are not archaeologists necessarily, but they obviously know my case study. However, now I have you two (Noor and Carter both have heritage background) which will create an interesting dataset (laughs).

Noor

And Maltese don't have to be archaeologists or to have a heritage background. We are victims of previous colonisers and in many ways we still are. And we still look down upon ourselves. I mean there is still a stigma for Maltese who speak Maltese and those who speak English. There is a stigma still in this country that if a doctor is a foreigner, he must be brilliant and if he's Maltese he must be bloody stupid!

Despoina
It's the same in Greek unfortunately.

Noor
So, when you hear of someone else who comes into your country and messes up with your heritage or digs up in a place and they are not local, you feel very strongly and passionate about it. You think: 'OK, I'll take your money, but I can take it from here'. So, when you find out that some foreigner had dug up and took things and messed around, you're much angrier than if a Maltese person had done it.

Jo
Exactly.

Noor
So, if a Maltese person screwed up, it's fine, it's his heritage after all. But the foreigner, no. The foreigner has no right or no business to be there taking and stealing our stuff. I mean, very recently - and you can even use us as an example - David Attenborough gifted Prince George the fossilised tooth of the megalodon. And Malta made a massive fuss about this calling him a thief. They called David Attenborough a thief! (laughing) But you can't do that on a diplomatic level. But they were right. He should never have taken it. So, my point is that we can critique ourselves and be fine with it, but we make a big loud fuss if a non-Maltese does something to us.

Despoina
Greece is very similar in that regard.

Despoina
Any other additions?

Carter

No, but well done! I think it was very interesting and I think I'm going to become obsessed with these two.

Noor

That is an excellent story. You can find many of these online.

Carter

I'm looking for some local stories and there are indeed.

Noor

Yeah, fascinating, very interesting experience! I truly love it! I don't like VR just because of how it makes me physically feel. Because obviously visuals can give much more information than reading in any given age group. There are people who skip lines, or people who jump from one topic to another, or some people get bored, so reading is not for everybody in the technological world that we live in. So, there are pluses and bonuses for everything. And opinions are always personal, you know.

Despoina

Of course. And personally, I'd read every single detail in the story because I'm interested in it. I even enjoyed writing it! The footnotes might be massive, but it was important to me to be very upfront as an archaeologist about what was fiction and what was based on evidence and what kind of evidence. So, yes, the information was overwhelming and of course if I actually had to create something for a museum or a school, I'd make sure to keep the footnotes simpler.

Noor

But at the end of the day Prehistory is what the term means: pre the written word. So, anything we say about it it's an assumption and an interpretation unless you can actually prove it! And even then…

Despoina

Of course. So, thank you very much for all your help, it is greatly appreciated!

Interview 7, Greece, Group 1

Despoina

Ωραία, ξεκινάτε και μου λέτε πώς σας φάνηκε. Όποιος θέλει.

Alex

Το όλο κόνσεπτ ήταν πολύ ενδιαφέρον. Και προφανώς μέσα από αυτό ήθελες να δεις ποια από τις τρεις μεθόδους βοηθάει περισσότερο στο να βάλει κάποιος σε μια τάξη όλα αυτά που έχει μπερδεμένα στο μυαλό του ή να μάθει πράγματα που ακούει για πρώτη φορά.

Despoina

Αυτός;

Alex

Όχι αυτός, ο άνθρωπος.

Despoina

Αυτός που έρχεται σε επαφή με την ιστορία.

Alex

Ναι, ναι, ναι, ναι.

Despoina

Ναι, αυτό θέλω. Θέλω να δω ποια είναι η πιο κατάλληλη. Αλλά, γενικώς, πώς σας φάνηκε σαν εμπειρία;

Max

Εγώ ενθουσιάστηκα! Ενθουσιάστηκα γιατί είχε μια ωραία ροή. Σε πήγαινε σιγά-σιγά να σου δείξει πράγματα που τα περνάς απαρατήρητα.

Despoina

Όπως, τι;

Max

Καταρχήν, πώς νιώθει ένας νεκρός. Από αυτό ξεκινάει η ιστορία.

Despoina

Σας άρεσε;

Max

Ναι. Μου άρεσε η προσωποποίηση αυτή και αυτή η ανίχνευση του σώματος, και οι λεπτομέρειες που βγάζει είτε για την υγεία του, είτε για την οικονομική του κατάσταση, είτε για τον πολιτισμό του. Είναι θεαματικό. Είδα πράγματα που στην ιστορία που κάναμε στο σχολείο τα περνάγαμε απαρατήρητα. Άλλο είναι να στο λέει το βιβλίο κι άλλο να το ζεις σαν να είναι πραγματικότητα.

Despoina

Max, νιώσατε συναισθηματική σύνδεση με τον νεκρό;

Max

Ναι, ναι, σαν να ήταν δικός μας άνθρωπος.

Despoina

Tristan;

Tristan

Όχι. Εμένα πιο ενδιαφέρον μου φάνηκε όλο το concept του ότι με νέες τεχνολογίες οι αρχαιολόγοι μαθαίνουν πλέον περισσότερα πράγματα. Είναι ακραίο ότι οι αρχαιολόγοι καταλαβαίνουν με τα μηχανήματα που έχουν βγει τώρα, τι γινόταν τότε. Αυτό με εντυπωσιάζει εμένα.

Despoina

Άρα, εννοείς, η διαφορά ανάμεσα σε παλαιότερες αρχαιολογικές έρευνες και τωρινές;

Tristan

Ναι. Γενικά, ότι τότε τα έβλεπαν και έκαναν εικασίες του τι γίνεται και τώρα ξέρουμε πιο accurate τι γινόταν.

Despoina

(Explains a little about bioarchaeology.)

Tristan

Πώς έκαναν και τα κόκαλα και βρίσκανε αν είναι τραυματισμένα, από τι έχει πεθάνει ο νεκρός.

Despoina

(Explains the concept of archaeological storytelling.)

Despoina

Alex, στεναχωρήθηκες που δεν ξέρεις το όνομα του νεκρού ή γενικώς ένιωσες κάποια σύνδεση με τον νεκρό;

Alex

Όχι. Ήμουν τελείως αποστασιοποιημέν@ από αυτό. Ήταν ένα έκθεμα. Τίποτα περισσότερο. Ένα θέμα το οποίο μας έδινε πληροφορίες για την εποχή του και για τον τρόπο που μετά έγινε η ανακάλυψη.

Despoina

Οπότε δεν ήταν ότι τον ένιωσες πιο ανθρώπινο; Ότι είναι ένα πρόσωπο και όχι ένα μάτσο κόκαλα;

Alex

Τον ένιωσα ότι είναι κάποιος άνθρωπος, απλά δεν είχα κάποιο συναίσθημα, συναισθηματική αντανάκλαση.

Despoina

Άρα, σου φάνηκε δηλαδή σαν άνθρωπος; Όχι σαν ένα έκθεμα σε μουσείο;

Alex

Ναι, ναι, ναι. Βλέπουμε ένα έκθεμα στο μουσείο και ταυτόχρονα όμως ξεκινάμε και κάνουμε σκέψεις ανάλογα με τα ευρήματα: ότι ήταν 25 χρόνων, ότι είχε πεθάνει από αυτό κ.λπ. Κάνεις δηλαδή μια εικόνα, αλλά δεν συνδέεσαι συναισθηματικά.

Despoina

Tristan, το ίδιο;

Tristan

Ναι, π.χ. με τη σκηνή του κυνηγιού αναφορικά με το πώς πέθανε, το έκανα εικόνα που έλεγε ότι: «ήμουν πλάτη-πλάτη με τον φίλο μου», όχι όμως ότι συνδέθηκα μαζί του, αλλά απλώς μια μάχη, σαν να τη βλέπω σε ταινία στο κεφάλι μου.

Despoina

Πολύ μου αρέσει που η ιστορία που έφτιαξα σας δημιουργεί εικόνες σαν ταινία!

Alex

Το φαντάστηκα ότι την έγραψες εσύ. Στείλ'τη μου κάποια στιγμή να διαβάσω τις παραπομπές!

Despoina

Ναι, αμέ. Άρα είχαν ενδιαφέρον οι παραπομπές;

Alex

Α, ναι, ναι.

Max

Ναι, είχαν πολύ ενδιαφέρον.

Despoina

Εσείς, Max, κάνατε το Twine πρώτα, σωστά;

Max

Ναι.

Despoina

Και τις διαβάσατε όλες τις λεπτομέρειες;

Max

Ναι, σχεδόν όλες.

Despoina

Άρα, σου άρεσε Alex που είχε παραπομπές;

Alex

Ναι, ναι, ναι. Αν και για να είμαι απόλυτα ειλικρινής, δεν τις διάβασα όλες εκατό τα εκατό. Δηλαδή κάποια που μου εξήψαν την περιέργεια τα διάβασα.

Despoina

Αυτό είναι το θέμα. Ότι ο αναγνώστης μπορεί επιλεκτικά να διαβάσει τις παραπομπές, που τον ενδιαφέρουν. Οπότε δεν είναι απαραίτητο να διαβάσει τα πάντα.

Alex

Ναι, αλλά οι παραπομπές ήταν πάρα πολύ βοηθητικές.

Despoina

Είχε σημασία που η ιστορία είχε βασιστεί σε αρχαιολογική έρευνα;

Alex

Ναι, ναι. Για μένα, ναι, πολύ.

Despoina

Δηλαδή και αντίστοιχα οι παραπομπές είχε σημασία ότι βασίζονταν σε αρχαιολογικά δεδομένα;

Alex

Ναι, φυσικά δίνουν υπόσταση. Δίνουν επιστημονική υπόσταση στο κείμενο. Αλλιώς θα μπορούσε να είναι ένα παραμύθι.

Tristan

(Συμφωνεί.) Ε, το ότι έχει γίνει κάποια έρευνα και ότι έχουν κάτσει άνθρωποι και έχουν ασχοληθεί (να φτιάξουν την ιστορία) (σε κάνει και) το διαβάζεις σίγουρα με πιο πολύ ενδιαφέρον. Αυτό να σου έχει πει κάποιος, αυτό, αυτό και αυτό, τέλος.

Alex

(Συμφωνεί.) Ναι, αυτό είναι πολύ βαρετό.

Despoina

Max, το ίδιο; Σας άρεσε που είχε επιστημονική υπόσταση;

Max

Ναι, ναι.

Despoina

Ποιο από τα τρία μέσα θεωρείτε ότι σας έφερε σε καλύτερη επαφή με την ιστορία; Νιώσατε πιο βυθισμένοι ή σας συνεπήρε;

Alex

Δεν μπορώ να είμαι αντικειμενικ@ γιατί το γραπτό είναι αυτό που ξέρουμε.

Despoina

Το σύνηθες;

Alex

Ναι, το σύνηθες. Η εικονική μου ήταν κάτι καινούργιο και με ενοχλούσε, ζαλιζόμουν.

Despoina

Εσύ δεν είχες και καλή αντίδραση στην εικονική.

Alex

Τι εννοείς;

Despoina

Εννοώ ότι ζαλίστηκες, μου έχει τύχει μόνο άλλη μια φορά. Δυστυχώς, κάτι σε πειράζει.

Alex

Άντε, άκου τώρα.

Despoina

Ένιωσα ότι βασανίστηκες.

Alex

Βασανίστηκα, ναι. Δηλαδή κάποια στιγμή μου ερχόταν τάση για εμετό. Και έλεγα «έλα Παναγία μου, τελειώνει...» και μόλις έλεγα «τελειώνει» ερχόταν άλλο. Οπότε, περισσότερο το γραπτό κείμενο για μένα.

Despoina

Max;

Max

Το γραπτό ήταν η εισαγωγή, η εικονική πραγματικότητα ήταν η συνειδητοποίηση. Γιατί κοίταξα τα πόδια του και φάνηκαν ότι ήταν σαν τραυματισμένα. Και τα πόδια, δηλαδή τον σκελετό τον είχαν κακομεταχειριστεί και δεν μου άρεσε αυτό.

Despoina

Οπότε νιώσατε να σας συνεπαίρνει ποια από τις τρεις μορφές;

Max

Αν ήταν στα ελληνικά, θα προτιμούσα την εικονική πραγματικότητα.

Despoina

Στα αγγλικά;

Max

Στα αγγλικά με βοήθησε το γραπτό κείμενο.

Despoina

Ναι, αλλά δεν ρωτάω για κατανόηση τώρα. Ρωτάω για το ποιο σας συνεπήρε, να βυθιστήκατε στην ιστορία και να θέλατε να δείτε κι άλλο.

Max

Αυτό που ήθελα να συνεχιστεί κι άλλο και δεν μου άρεσε που τελείωσε ήταν το Twine.

Despoina
Tristan;

Tristan

Με την εικονική πραγματικότητα χανόμουν που και που, γιατί κοίταζα από δω, από κει κι έχανα λίγο την ιστορία. Αλλά ήταν ωραίο, είχε πάρα πολύ ενδιαφέρον. Μου άρεσε και το βιντεάκι που έπαιζε κάποια στιγμή. Μετά, το άλλο μου άρεσε, το Twine που έκανα στο laptop. Αυτό ήταν ωραίο

γιατί έχει τις επιλογές που πάταγες και πήγαινες όπου ήθελες. Είχε μικρές πληροφορίες. Για το γραπτό ήμουνα πιο πολύ συγκεντρωμέν@.

Despoina
Ήταν και το τρίτο μέσο που βίωσες, σωστά;

Tristan
Ναι, ήταν και η τρίτη φορά (που ερχόμουν σε επαφή με την ιστορία) οπότε την είχα ήδη ακούσει δύο φορές και τη διάβασα και μια τρίτη φορά, οπότε την είχα μάθει.

Despoina
Οπότε ποιο θεωρείς ότι σε βύθισε περισσότερο στην ιστορία;

Tristan
Νομίζω το γραπτό.

Despoina
Το γραπτό, παρόλο που ήταν το τρίτο μέσο; Μου κάνει ιδιαίτερη εντύπωση.

Max
Μια καθηγήτρια μου έλεγε στη σχολή ότι οι λέξεις έχουν δύναμη.

Despoina
Έχει ενδιαφέρον και μου χαλάει το πείραμα (γέλια).

Tristan
Τι δηλαδή; Γιατί δεν είχε πάρα πολλή απήχηση η εικονική πραγματικότητα;

Despoina
Όχι, απλά αυτό που είχα παρατηρήσει στην Αγγλία –που δεν το επιβεβαίωσα στη Μάλτα– είναι ότι όλοι έλεγαν το πρόγραμμα που ήρθαν πρώτα σε επαφή.

Max
Ε, με ποιο ήρθαμε πρώτα σε επαφή;

Despoina

Εσείς με το Twine. Μου το επιβεβαιώσατε. Ο Tristan προτιμά το κείμενο. Κι εσείς κάποια στιγμή ήσασταν ανάμεσα στο Twine και στο κείμενο.

Max

Ναι, λόγω γλώσσας. Αν ήταν στη γλώσσα μου, ίσως προτιμούσα το μέσο με το οποίο ήρθα πρώτα σε επαφή.

Despoina

Ναι, αλλά πριν είπατε ότι αν ήταν στη γλώσσα σας θα προτιμούσατε την εικονική πραγματικότητα.

Max

Η εικονική πραγματικότητα ουσιαστικά επιβεβαίωνε τα λόγια του σκελετού. Αλλά με έκανε να συνειδητοποιήσω πόσο άσχημα του συμπεριφέρθηκαν.

Despoina

Οπότε σας πείραξε το γεγονός ότι συμπεριφέρθηκαν άσχημα;

Max

Ναι (αποφασιστικά).

Despoina

Ωραία. Τι πιστεύετε για τον Σλήμαν;

Alex

Τα χειρότερα, είναι γνωστό.

Max

Είχαμε αντίθετη γνώση ότι ήτανε καλός και εξαιρετικός και ο πρώτος. Και, ξαφνικά, σήμερα συνειδητοποιήσαμε ότι δεν είναι έτσι ακριβώς τα πράγματα και ότι έχουν παιχτεί διάφορα παιχνίδια.

Despoina

Τι νομίζετε για τον Σταματάκη, τον Έλληνα αρχαιολόγο;

Alex

Έχω μια μεγαλύτερη εκτίμηση στον Έλληνα αρχαιολόγο. Αν μη τι άλλο, τουλάχιστον, δεν πλιατσικολόγησε.

Max

Προσπάθησε ο άνθρωπος, αγωνίστηκε.

Alex

Προσπάθησε, κρατούσε ένα ημερολόγιο –ενώ ο άλλος ήταν...

Tristan

Πήγαινε με τους κανόνες τουλάχιστον. Δεν ήξερα κανέναν από αυτούς.

Despoina

Άρα τον Σλήμαν δεν τον είχες ξανακούσει;

Tristan

Τον είχα ξανακούσει τον Σλήμαν, σαν όνομα. Την πρώτη φορά που έκανα το ερωτηματολόγιο έβαλαν έναν άλλον.

Despoina

Τον Έβανς;

Tristan

Ναι, τον Έβανς.

Alex

Ναι, κι εγώ αυτόν έβαλα.

Despoina

Ο Έβανς έχει ασχοληθεί με την Κρήτη.

Alex

(Συμφωνεί.) Ναι, και μετά το σκέφτηκα.

Despoina

Καλά, δεν πειράζει καθόλου.

Tristan

Και καλά, προφανώς, δεν ήταν σωστό αυτό που έκανε ο Σλήμαν. Και έβαζε και τη γυναίκα του να συμμετέχει, δηλαδή ήταν όλο λάθος. Όλη η φάση ήταν λάθος με αυτόν. Ο άλλος (ο Σταματάκης) προσπαθούσε να έχει μια τάξη. Οπότε δεν συμφωνώ με τον Σλήμαν.

Despoina

Αλλά, γενικά, δεν στεναχωρήθηκες με την όλη κατάσταση;

Tristan

Καλά, γενικά, δεν στεναχωριέμαι και εύκολα με αυτά, αλλά ναι.

Alex

Ποια κατάσταση;

Max

Όχι, εμένα με ενόχλησε. (Διακοπή εδώ γιατί μιλάνε όλοι μαζί και υπάρχει ένταση).

Max

(Ξανά) Εμένα με ενόχλησε.

Tristan

Το γεγονός ότι μπορεί ουσιαστικά να κάνει κακό στα ευρήματα, αυτό είναι όντως ενοχλητικό. Τότε θα χαλάσει την ιστορία και θα μαθαίναμε κάτι από αυτό, αλλά άμα το χάλαγε θα πήγαινε στα σκουπίδια. Είναι ενοχλητικό, ναι.

Alex

Εγώ τον απεχθάνομαι φοβερά.

Despoina

Τον απεχθανόσουν από πριν;

Alex

Ναι, ναι, ναι.

Despoina

Οπότε ήξερες πάνω κάτω.

Alex

Ναι. Ο ρόλος του γενικά ήταν πολύ αμφιλεγόμενος. Στην ουσία πλιατσικολόγησαν, πήραν…

Despoina

Κλέβανε;

Alex

Κλέβανε, ναι.

Despoina

Όμως αυτό που λέει @ Max ισχύει, ότι δηλαδή αυτό που μαθαίναμε εμείς στο σχολείο είναι ότι ο Σλήμαν ήταν ο πατέρας της μυκηναϊκής αρχαιολογίας.

Alex

Πέρασαν πολλά χρόνια από τότε που ήμουν στο σχολείο, και μετά κάτι διάβασα κι εγώ…

Despoina

Τώρα μπορώ να σας πω, γιατί δεν μπορούσα να συζητήσω τίποτα πριν το πείραμα. (Εξηγεί τον σκοπό του διδακτορικού και κατ' επέκταση του πειράματος).

Tristan

Αν ήθελα να μάθω την ιστορία αναλυτικά, θα πήγαινα στο κείμενο, να δω όλες τις λεπτομέρειες. Ενώ, αν ήθελα να χαζέψω έτσι λίγο στο κομπιούτερ... (δεν είπε τελικά).

Despoina

Και κάτι άλλο που ανέφερες πριν ξεκινήσουμε, Tristan, ήταν πολύ ενδιαφέρον.

Tristan

Α, ναι, το ότι τους έκαιγαν.

Despoina

Ναι, ναι. (Σε όλους) Έχετε καταλάβει τι τους έκαναν τους νεκρούς οι Μυκηναίοι;

Alex

Κανονική ταφή νομίζω με κτερίσματα.

Tristan

Είχα απορία, γιατί στην ταινία «Τροία» δείχνει ότι τους καίνε, οπότε στο πρώτο ερωτηματολόγιο έβαλα καύση εγώ, γιατί θυμόμουν την ταινία, αλλά όταν είδα την ιστορία εδώ (έλεγε άλλα).

Despoina

Αυτό είναι πολύ καλή παρατήρηση για το διδακτορικό μου, γιατί μια ταινία είναι ένα άλλο μέσο, που, εν προκειμένω, έδωσε λάθος πληροφορίες στο κοινό.

Tristan

Γι' αυτό ρώτησα και για τον μπρούτζο, γιατί εδώ [σημ. στις ιστορίες του πειράματος] είδαμε μπρούτζινα σπαθιά, αλλά στην ταινία ήταν άλλα τελείως τα όπλα.

Alex

Ναι, όμως είναι βασικά λάθη αυτά και θα πρέπει να σημειώνονται.

Despoina

Μα, γι'αυτό δεν βλέπω αυτές τις ταινίες.

Max

Ούτε κι εγώ.

Alex

Μπα, ούτε κι εγώ τα βλέπω αυτά.

Despoina (Μιλάει για τους 300 του Λεωνίδα.)

Tristan

Ναι; Κι είχα δει ένα βιντεάκι αναφορικά με το πόσο accurate είναι η ταινία.

Despoina

(Εξηγεί την ιστορία με τον Λεωνίδα.)

Alex

Να το ξέρουμε (ότι είναι ιστορικά ακριβής) γιατί δεν υπήρχε περίπτωση να τη δω μετά από τόσο ντόρο που είχε γίνει.

Despoina

Είναι τέλεια.

Tristan

Και οι μάχες λέει είναι ιστορικά ακριβείς. Είχαν προσλάβει ιστορικούς, κυρίως για τους ελέφαντες.

Despoina

Τέλος πάντων, έχουμε ξεφύγει –(εξηγεί τη διαφορά μεταξύ ομηρικών επών και μυκηναϊκής εποχής και επίσης το concept του αναχρονισμού)– συνεχίζει να εξηγεί το θέμα του διδακτορικού (ποιο μέσο τους έμαθε κάτι, ποιο μέσο τους συνεπήρε, και ποιο είναι πιο εύκολο να το φτιάξει ο αρχαιολόγος).

Alex

Με το κείμενο το εύρημά σου γίνεται πιο επικοινωνήσιμο, πώς να το πω, δηλαδή ο καθένας μπορούσε να καταλάβει τι ακριβώς συνέβαινε, ενώ εάν του έλεγες «ήταν το 1800 τόσο κ.λπ», δεν θα καταλάβαινε. Ήταν τόσο-όσο, ο μέσος νους μπορεί εύκολα να καταλάβει τι θέλεις να πεις.

Tristan

Αν όμως κάποιος θέλει να δείξει αυτά που λες (να επικοινωνήσει την έρευνά του στο κοινό) –ας πούμε σε ένα power point γρήγορο– θα το καταλάβαινε πιο πολύς κόσμος ευκολότερα, πιστεύω.

Despoina

Ναι, απλώς να μην είναι και τόσο στατικό και «δασκαλίστικο», σε καθίζω κάτω σε μια αίθουσα και σου λέω.

Tristan

Ναι, αλλά ο άλλος που βαριέται το κείμενο κι εσύ θέλεις να του κινήσεις λίγο το ενδιαφέρον, μπορείς με την παρουσίαση να του το κινήσεις, και μετά να διαβάσει αυτό (το κείμενο).

Despoina

Πολύ καλή παρατήρηση. Σε άλλο γκρουπ αναφέρθηκαν σε ιστοσελίδα.

Tristan

Ναι, και είναι κι εύκολο.

Despoina

Ναι, ισχύει. Είναι πολύ εύκολο να τα βάλεις όλα τα μέσα μαζί.

Tristan

Ναι, ναι, αυτό, να έχει ένα βίντεο κι από κάτω το κείμενο.

Alex

Έτσι τα έχεις όλα. Είναι ολοκληρωμένο έτσι, είναι το απόλυτο.

Despoina

Max, συμφωνείτε;

Max

Ναι.

Despoina

(Εξηγεί λίγο τη δυναμική των γκρουπ στις διάφορες χώρες και επισημαίνει ότι αυτό το γκρουπ δεν ασχολήθηκε καθόλου με το γεγονός πως η εικονική πραγματικότητα δεν ήταν διαδραστική.)

Alex

Αυτό πρώτη φορά το ακούω και δεν θα ήθελα κιόλας.

Max

Μα δεν χρειαζόταν καθόλου να είναι διαδραστικό το βίντεο.

Despoina

Εσένα, Alex, κιόλας, σε πείραξε.

Alex

Πολύ. Τάση για εμετό; (Γέλια και σχόλια πάνω στην εικονική πραγματικότητα).

Despoina

Κάποια άλλη παρατήρηση; Οτιδήποτε;

Alex

Εγώ χάρηκα που πήρα μέρος σε αυτό το πείραμα, αν και ήταν πολύ περιπετειώδες. Που τα καταφέραμε παρά τις όποιες αντιξοότητες. Αυτό και ευχές!

Max

Καλά αποτελέσματα να έχεις!

Despoina

Σας ευχαριστώ όλους για τα ενδιαφέροντα πράγματα, που μου είπατε.

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Despoina

Ξεκινάμε; Ωραία, τώρα μου λέτε ό,τι θέλετε. Πώς σας φάνηκε, τι έχετε να παρατηρήσετε, γενικώς ό,τι θέλετε να μου πείτε.

Charlie

Να μιλήσω εγώ; Εμένα μου άρεσε πολύ. Πολύ ωραίος τρόπος διδασκαλίας και να σου αποτυπωθεί και αυτό που κοιτάς, που διαβάζεις. Έχεις πολλούς τρόπους να το δεις, δηλαδή όλοι οι τρόποι συνδυαστικά θα ήταν ιδιαίτερα χρήσιμοι για διδασκαλία.

Sage

Μπορείς να το κάνεις και σαν βιβλιαράκι, σαν κόμικ.

Charlie

Ναι, ό,τι θες. Δηλαδή πραγματικά είναι ευχάριστο, δεν σε κουράζει. Έτσι μου φάνηκε.

Sage

Και μαθαίνεις.

Charlie

Ναι, και μαθαίνεις. Δηλαδή και κάποιες ερωτήσεις που στην αρχή τις έκανα λάθος, μετά από αυτό με βοήθησε να το θυμηθώ, οπότε τις απάντησα σωστά.

Sage

Εγώ δεν είχα συνδυάσει ότι η περίοδος αυτή ήταν η Εποχή του Χαλκού.

Charlie

Ναι.

Despoina

Δεν το είχες συνδυάσει, Sage;

Sage

Όχι.

Despoina

Τι δηλαδή; Ότι η Μυκηναϊκή εποχή είναι η Εποχή του Χαλκού;

Sage

Ναι, αυτό.

Despoina

(Στον Drew) πώς σου φάνηκε;

Drew

Ωραίο μου φάνηκε. Εμένα νομίζω πιο πολύ μου άρεσε το κείμενο, που έκανα δεύτερο.

Despoina

Σου άρεσε πιο πολύ το κείμενο;

Drew

Ναι. Η ΕΠ (εικονική πραγματικότητα) ωραία ήταν, αλλά ήταν κουραστικό επειδή ήταν μεγάλο σε διάρκεια. Αν και το να το ακούω μου αρέσει κι εμένα καλύτερα, αλλά ίσως επειδή ήταν στατικό, δεν κουνιόσουν (δεν διαδρούσες). Το πρώτο (Twine) δεν μου άρεσε τόσο. Προτιμώ το δεύτερο.

Despoina

Το γραπτό;

Drew

Ναι. Που το διάβαζα όλο εγώ. Με σειρά προτίμησης: γραπτό, ΕΠ, Twine.

Sage

Κι εγώ.

Sage

Κι εγώ συμφωνώ. Το γραπτό, γιατί θέλω να ξέρω τι θα δω. Να έχω μια εικόνα, μετά θα τη δω και μετά θα την επιβεβαιώσω.

Despoina

Ναι, απλώς να διευκρινίσω ότι υπό κανονικές συνθήκες θα ερχόσασταν σε επαφή με ένα μόνο από τα τρία μέσα. Οπότε ας συζητήσουμε έχοντας υπόψη ότι δεν θα τα κάνατε ποτέ όλα μαζί σαν πλύση εγκεφάλου!

Drew

Αν είχα να διαλέξω ένα θα ήθελα την ΕΠ. Γιατί μ' αρέσει να το ακούω.

Sage

Κι εγώ.

Despoina

Περίμενε. Πριν μου είπες ότι προτιμάς το κείμενο.

Drew

Ναι, επειδή ήταν στη σειρά όλα. Αν ήταν μόνο ένα, θα ήθελα την ΕΠ. Απλώς έτυχε να είναι στο τέλος και με κούρασε. Αν ήταν μόνο του θα το προτιμούσα.

Despoina

(Στ@ Sage) Εσύ αν είχες ένα να διαλέξεις, ποιο θα διάλεγες;

Sage

Κι εγώ την ΕΠ.

Despoina

Εσύ γιατί; Κι εσύ πριν είπες προτιμάς το κείμενο.

Sage

Ε, μου είπες ένα να διαλέξω, οπότε θα προτιμούσα την ΕΠ.

Despoina

(Στ@ Charlie) Εσύ;

Charlie

Εγώ σαν παλιακ@ θα πω το κείμενο. Αλλά πρόσεξε, θα μου άρεσε η ΕΠ να μην ήταν στατική, δηλαδή να έβλεπα ένα βίντεο μέσα. Να μη βλέπω μια στατική εικόνα και απλώς να ακούω τη φωνή του.

Sage

Όπως το βιντεάκι στο πλάι.

Charlie

Ναι, μ' άρεσε η φωνή του. Ήταν πιο ξεκούραστο να ακούς τον άλλον να στα λέει, αλλά ήθελα και εικόνα μπροστά (βίντεο) να εναλλάσσεται, σαν φιλμ.

Despoina

Εσύ, Drew, ήθελες διάδραση;

Drew

Αυτό, κάτι να υπάρχει, να μην είσαι 20 λεπτά εκεί, αυτό.

Charlie

Να είναι φιλμ.

Despoina

Απλώς να διευκρινίσω ότι είναι διαφορετικό να θέλει κάποιος φιλμ, κάτι σαν ντοκιμαντέρ δηλαδή και διαφορετικό να θέλει να διαδράσει μέσα στην ΕΠ. Δεν υπάρχει όμως σωστή και λάθος απάντηση, απλώς διευκρινίζω (συνεχίζει να επεξηγεί). Drew, θα ήθελες δηλαδή να κλικάρεις πράγματα;

Drew

Ή αυτό, ναι, απλώς να μην κάθεσαι εκεί χωρίς να κάνεις τίποτα.

Charlie

Να υπήρχαν εικόνες, να σου δείχνει π.χ. τις Μυκήνες.

Despoina

Με ποιο από τα τρία μέσα νιώσατε ότι μπήκατε πιο πολύ μέσα στην ιστορία;

Drew

Με την ΕΠ.

Sage

Με το κείμενο.

Charlie

Με το κείμενο. Είναι θέμα ηλικίας. Αν είχα τον γιο μου τον μικρό, θα έλεγε ή το Twine ή την ΕΠ σίγουρα.

Drew

Ναι, γιατί μίλαγε αυτός (ο σκελετός).

Despoina

Είναι υποκειμενικό και όχι θέμα ηλικίας, γιατί και μικρότεροι άνθρωποι έχουν αναφέρει το κείμενο (για να μη νιώθουν άσχημα).

Charlie

Το λέω με την έννοια ότι εμείς μάθαμε το έντυπο. Εγώ παιδί έπαιρνα έντυπα, διάβαζα, μου άρεσε να ξεφυλλίζω και να διαβάζω κείμενα. Από αυτή την άποψη. Επηρεάζεσαι πιστεύω. Τώρα ναι, μπορεί να είναι και ένα νεότερο παιδί, που να προτιμά το κείμενο.

Despoina

Ωραία. Νιώσατε κάποια συναισθηματική σύνδεση με τον νεκρό; Δεν είναι απαραίτητο, απλώς αν νιώσατε ότι είναι πιο «άνθρωπος», ότι δεν ξέρουμε πώς τον λένε, μια συμπάθεια;

Drew

Ναι, ότι δεν μάθαινες πώς τον λένε.

Despoina

Άρα, κάπως σε πείραζε αυτό;

Drew

Ναι, ναι.

Charlie

Αυτό είναι θέμα ανθρώπου.

Despoina

Ρωτώ αν ένιωσες κάποια συναισθηματική σύνδεση, αν συμπάσχεις π.χ. με τον νεκρό.

Charlie

Ναι, μπαίνεις μέσα στην ιστορία, συμπάσχεις, μπαίνεις μέσα στην ιστορία και σκέφτεσαι τα διαλείμματά του και τα ερωτήματά του, και το άγνωστο, την απορία του. Σε βάζει μέσα.

Despoina

Εσένα, Sage, σε επηρέασε;

Sage

Ναι.

Despoina

Ωραία. Ποιο μέσο νομίζεις ότι σε επηρέασε πιο πολύ;

Sage

Το κείμενο.

Despoina

Κι εσένα, Drew;

Drew

Ναι, νομίζω το κείμενο ήταν πιο...

Sage

(τ@ διέκοψε) Γιατί είχε και τις λεπτομέρειες κάτω, οπότε ήταν το κάτι παραπάνω.

Charlie

Ναι, οι υποσημειώσεις που εξηγούσαν το κείμενο από πάνω. Και το πλιάταζε. Είχες έτσι πρόσβαση σε απαντήσεις που είχες την αγωνία, ενώ διάβαζες το κείμενο. Πώς; Τι;

Despoina

Για τον Σταματάκη και τον Σλήμαν τώρα. Σχόλια;

Sage

Το γεγονός ότι ο Σλήμαν θεωρούσε ότι όλο το πρότζεκτ ήταν δικό του και ότι εγώ είμαι ο αρχηγός, και εγώ θα κάνω ό,τι θέλω και δεν λογαριάζω κράτος, δεν λογαριάζω κανέναν. Αυτό εμένα με πείραξε. Ήταν σε κάποια ξένη χώρα, δεν ήταν στη δικιά του τη χώρα. Αν ήταν στη δικιά του να κάνει ό,τι θέλει.

Charlie

Ναι.

Despoina

Ένιωσες λύπη για τον Σταματάκη;

Sage

Ναι. Γιατί… (δυσκολεύεται και τ@ διακόπτει ο Drew).

Drew

Και δεν ήταν και σαν απρόσεκτος ο άλλος;

Despoina

Ναι, έκανε ό,τι ήθελε.

Sage

Ναι, δηλαδή ο καημένος δεν αναγνωρίστηκε κιόλας. Γιατί ακούγεται μόνο ο Σλήμαν. Εγώ αυτόν δεν τον ξέρω. Τώρα τον έμαθα.

Despoina
Εσείς ξέρατε τον Σταματάκη;

Charlie
Εγώ θυμήθηκα μετά, γιατί κάπου το είχα ξαναδιαβάσει αυτό. Αλλά κι εγώ στην αρχή δεν θυμόμουν. Μάλιστα έκανα λάθος και την ερώτηση, δεν είπα Σλήμαν, είπα τον Έβανς. Έτσι, μου ήρθε φλασιά, μπερδεύτηκα. Και λέω μετά χαζομάρα είπα, αλλά τέλος πάντων. Πιστεύω ότι κι εμένα με ενόχλησε αυτή η σχέση. Πιστεύω ότι θα μπορούσαν τα πράγματα να είναι διαφορετικά. Να έχει (ο Σλήμαν) πιο πολύ σεβασμό στο όλο θέμα και να υπήρχε καλύτερη συνεργασία. Αν υπήρχε καλύτερη συνεργασία, θα ήταν και το αποτέλεσμα καλύτερο.

Despoina
Άρα σε πειράζει, Charlie, γιατί φοβάσαι, κυρίως, για τις αρχαιότητες;

Charlie
Ναι.

Despoina
Εσένα, Sage, σε πειράζει πιο πολύ ηθικά;

Sage
Και τα δύο. Πιο πολύ όμως ηθικά, ναι.

Despoina
Εσένα, Drew;

Drew
Αυτό πιο πολύ. Και ότι δεν αναγνωρίστηκε και ότι ο άλλος (ο Σλήμαν) δεν τα πρόσεχε ιδιαίτερα.

Despoina
Άρα δηλαδή νιώθεις ότι είναι κακό το θέμα;

Drew
Ναι.

Despoina (Στ@ Drew) Τον ήξερες τον Σλήμαν γενικότερα;

Drew
Όχι, όχι.

Despoina
Ωραία. Charlie, είναι η πρώτη φορά που έρχεσαι σε επαφή με ΕΠ;

Charlie
Όχι, έχω ξαναδεί.

Despoina
Με γυαλιά ή προβολή σε τοίχο;

Charlie
Με γυαλιά.

Despoina
Drew;

Drew
Έχω ξαναχρησιμοποιήσει.

Sage
Εγώ πρώτη φορά.

Despoina
Άλλο σχόλιο, οτιδήποτε θέλετε να προσθέσετε;

Charlie
Τα καλά λόγια στα είπαμε (γέλια).

Despoina
Charlie, μια ερώτηση. Θα τα προτιμούσες δηλαδή συνδυαστικά τα τρία μέσα;

Charlie

Ναι, αν το ήθελες σαν τρόπο διδασκαλίας, για έναν φοιτητή ας πούμε....

Despoina

Σου φαίνεται δηλαδή ότι θα μπορούσαν να συνδυαστούν;

Drew

Ναι. Ή το ένα να συνεχίζει το άλλο. Όχι και τα τρία μαζί το ίδιο, κουράζει.

Charlie

Μπορεί κι αυτό που λέει ο Drew, ναι. Το ένα να καλύπτει το άλλο.

Despoina

(Στ@ Sage) Συμφωνείς κι εσύ;

Sage

Ναι. Θα με ενδιέφερε. Είσαι εκεί, το ζεις.

Charlie

Ή θα μπορούσες να αφήσεις τον άλλο να το επιλέξει (ένα από τα τρία μέσα).

Despoina

(Συζήτηση για άλλες προτάσεις που έχουν γίνει σε άλλα γκρουπ.)

Drew

Αυτό το Twine πρέπει να είναι λίγο κουραστικό γενικά.

Despoina

Το βρίσκεις κουραστικό; Μου κάνει ιδιαίτερη εντύπωση.

Drew

Ειδικά εκεί που πάταγες ένα και σου έβγαινε ένα τεράστιο (κείμενο), καλύτερα να το είχα στο χαρτί και να το βλέπω παρά εκεί.

Despoina

Στην ΕΠ σας άρεσαν οι φωνές κ.λπ.;

Sage

Εμένα μου άρεσε η φωνή του σκελετού, γενικά όλες οι φωνές.

Despoina

(Εξηγεί λίγο για τους ανθρώπους που συμμετείχαν στη δημιουργία του βίντεο και αναλύει και εξηγεί τον στόχο του διδακτορικού και κατ' επέκταση του πειράματος). Ερώτηση: έγινε σαφές ότι οι αρχαιολόγοι δεν έχουμε πάντα όλες τις απαντήσεις;

Sage

Ναι.

Charlie

Ναι, υπάρχουν κάποιες απορίες που μένουν.

Despoina

Το άλλο που ήθελα ήταν να μιλήσω για την κακομεταχείριση του Σταματάκη, που θεωρώ ότι το καταλάβατε όλοι.

Sage

Ναι.

Despoina

Οπότε αυτά φάνηκαν.

Sage

Ναι.

Despoina

Ωραία, έχετε ερωτήσεις;

(όλοι) Όχι.

Despoina

Ωραία. Ευχαριστώ!

Sage

Εμείς.

Glossary and abbreviations

3D: three-dimensional.

$^{87}Sr/^{86}Sr$: strontium isotopes used to determine residential origins and migrations patterns among populations.

AAA: American Anthropological Association.

Agamemnon: a mythical king in Homer's *Iliad.*

AR: Augmented Reality

Archaeogaming: the study of the archaeology of gaming.

ASMR: Autonomous Sensory Meridian Response.

Avatar: an icon or figure representing a person in the digital world.

BiP: Break in Presence.

Cryptocolonialism: colonialism which is not recognised as such by the people who suffer from it.

CSS: Cascading Style Sheets; a programming language for laying out and structuring web pages.

DAH LAB: Digital Archaeology and Heritage lab.

Diploë: the spongy cancellous bone separating the inner and outer layers of the cortical bone of the skull.

DIY: Do it Yourself, simply referring to projects that are done by an individual rather than a professional.

EH: Early Helladic Period

Enthesophytosis: the development of bony proliferations that develop at an enthesis, that is at the attachment of a ligament, tendon or articular capsule onto the bone.

ERT: The Hellenic Broadcast Television.

GCA: Grave Circle A, a Bronze Age cemetery at Mycenae, Greece.

GCB: Grave Circle B, a Bronze Age cemetery at Mycenae, Greece.

GIS: Geographic Information Systems.

Harlowe: the default style for Twine 2.0.

Homeric epics: The *Odyssey* and the *Iliad*, two 8th century BC poems attributed to Homer.

HTML: Hypertext Markup Language: a standardized system for tagging text files and changing the fond, graphics, and hyperlinks on World Wide Web pages.

Hypertrophy: an abnormal enlargement or thickening of something.

IDN: Interactive Digital Narrative.

In situ: in place.

JavaScript: a programming language used to create interactive effects withing web browsers.

Lab: laboratory.

LH: Late Helladic Period

Linear B: a syllabic script used during the Mycenaean era.

Megaron: a prehistoric palace complex.

MH: Middle Helladic Period

MR: Mixed Reality

MYC_1V: the code name of the individual who is the main character in the narratives.

NAM: National Archaeological Museum in Athens

PalaeoHub: Centre for Human Palaeoecology and Evolutionary Origins, the laboratory at the Bioarchaeology Department at the University of York.

Palynology: the study of the microorganisms which occur in sediments.

Peribolos: a circular construction around a piece of land to enclose it.

Phygital: combination of physical and digital.

RTA: Reflexive Thematic Analysis

Rundbau: a structure or building with a round layout, a rotunda.

SAA: Societies of American Archaeology.

SHA: Societies for Historical Archaeology.

SMI: Saint Martin's Institute of Higher Education.

Sternoclavicular: referred to the breastbone and the collarbone.

Sugar Cube: an alternate JavaScript library for Twine.

TA: Thematic Analysis, which is used interchangeably with Reflective Thematic Analysis (RTA) in this thesis.

Temenos: a sacred space.

Text: the textual form of narrative created in this research.

Twine: a tool for telling interactive non-linear stories.

VR: Virtual Reality

VR-video: a 360 film made to be experienced as a VR and thus lacking interaction with the virtual environment.

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