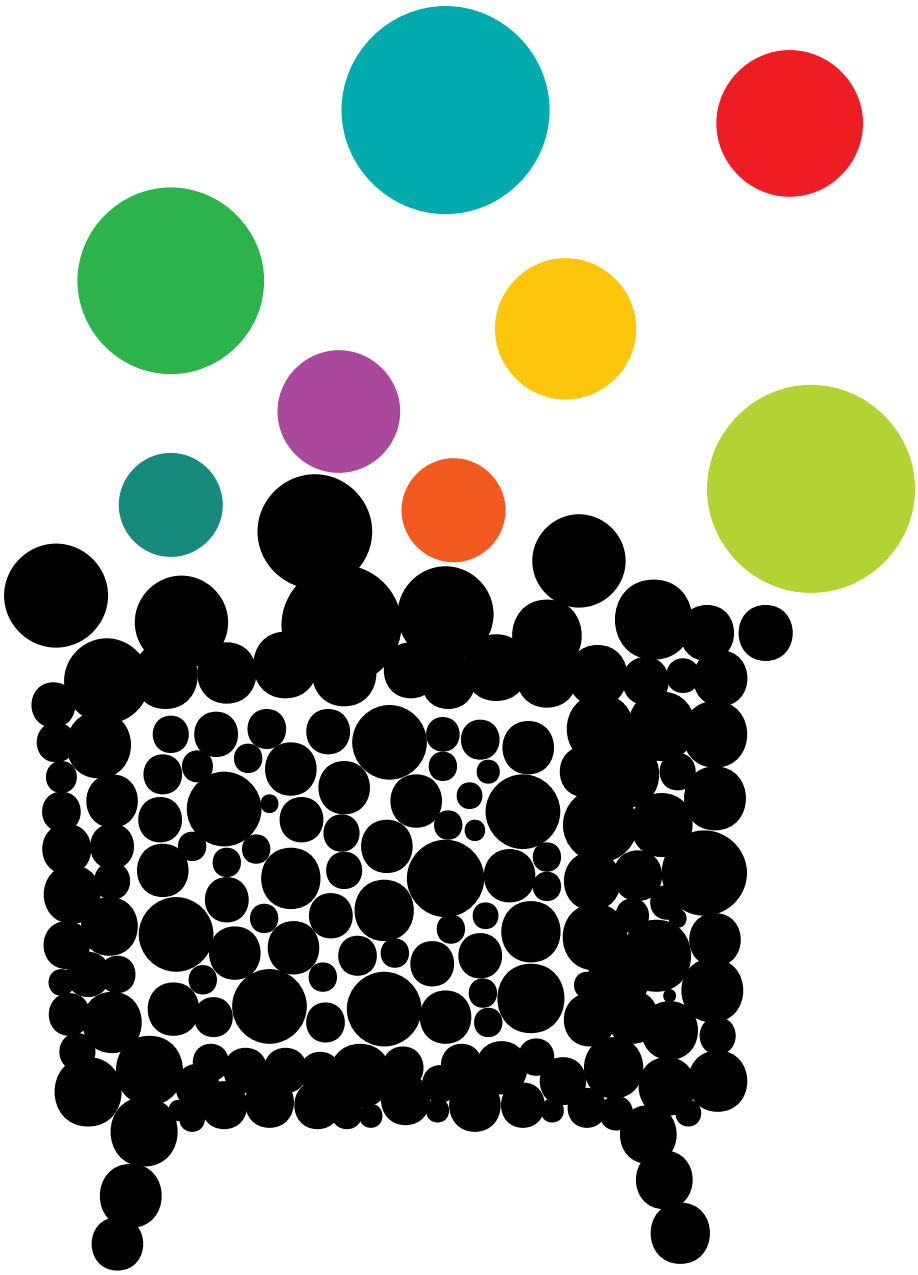
Archaeology on Stage, Or Staging Archaeology?

A content analysis of documentaries on The National Geographic Channel in 2013

LARA WEGDAM



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A content analysis of documentaries on The National Geographic Channel in 2013

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Leiden, 15 June 2015, Final version

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Preface

*“People assume that time is a strict progression of cause to effect, but *actually* from a non-linear, non-subjective viewpoint - it's more like a big ball of wibbly wobbly... time-y wimey... stuff.”*

– Doctor Who (2007)

1. Introduction

1.1 Digging into the history of TV archaeology

Since the fifties television has been a popular stage for archaeologists, through programmes such as *What in the world?* on CBS in the United States and its renowned British equivalent *Animal, Vegetable or Mineral?* on the BBC (Kulik 2007, 116). In each episode famous archaeologists such as Sir Mortimer Wheeler and Glyn Daniel mused over ancient artefacts to determine their origins.

More recently, immense popularity was gained by Channel 4's *Time Team* (Kulik 2007, 123) in which every episode an excavation was followed by a team of specialists and was presented by actor Tony Robinson. Not only has this show, which ran for two decades, received much renown from the British public, but it has also attracted viewers worldwide and has raised awareness and funding for archaeological heritage and research projects (Simpson 2009, 45-52).

It seems that in the United Kingdom there is much interest in archaeology, and also in Germany it has been popular on television through programmes such as *Schliemann's Erben* by archaeologist Gisela Graichen (Holtorf 2007a, 34-36). Nowadays, many documentaries and TV programmes about archaeology are produced and broadcasted all over the world by for instance the BBC, The History Channel and National Geographic Channel.

1.2 Archaeology and TV: A successful, but controversial relationship

As public surveys have pointed out, TV is the public's most popular source for information about archaeology (AIC and NIPO 1996, 16; Clack and Brittain 2007, 14), and in The Netherlands this is mainly in the form of films, documentaries and television programmes (Huysman and de Haan 2007, 151). Moreover, EU citizens consider TV as the most trustworthy source for information about scientific research (TNS Opinion & Social 2007, 17). TV has served as a medium through which archaeology has successfully interested, educated and entertained many people – but it also has a dark side.

As successful as this marriage of science and media may sound, it has been perpetually addressed with displeasure and criticism by many archaeologists (Clack and Brittain 2007; Fowler 2007; Greene and Moore 2010; Lemaitre 2009; Stern and Tode 2009). For instance the TV show Diggers on The National Geographic Channel – in which buried artefacts are located, unearthed and later on sold to collectors – has received criticism for glorifying treasure-hunting and therefore potentially endangering archaeological heritage. National Geographic has been pressured by professional archaeologists to stop setting a wrong example and has since been working together with archaeologists towards a better understanding of archaeological heritage and the dangers of metal-detecting (National Geographic Society and National Geographic Channel 2012, 1-8).

So the attention mass media gives archaeology is not always well-received by the discipline itself (Henson 2005, 1). Some archaeologists claim mass media misrepresents archaeology (Clack and Brittain 2007, 16; Stern and Tode 2009, 17), which can cause the public, and funders, to develop unrealistic expectations about the way archaeology should be practised, which in turn can lead to an actual change in the way it is practised. For example, the assumed stereotypical portrayal of the archaeologist as the adventurer or old professor (Clack and Brittain 2007, 15; Holtorf 2007b, 84) may affect the credibility of the real archaeologist if he does not match that description.

Another example is the frequent use of 3D- reconstructions in TV programmes, which may result in the increase in public demand for these reconstructions, which some archaeological institutions simply cannot offer due to financial strain or lack of time (Simpson 2009, 45-52). It is said that archaeologists have themselves come to believe they cannot do without 3D- reconstructions (Stern and Tode 2009, 16).

Furthermore, the simplification of archaeological research (Clack and Brittain 2007, 13) – displaying fieldwork as a fast-paced process (Clack and Brittain 2007, 17), and merging the results of other disciplines to come to a rounded interpretation (Greene and Moore 2010, 307). As a result people may have misconceptions about archaeology and expectations which archaeologists simply cannot meet.

Finally, a focus on certain subjects, such as mummies, on high tech tools in research, and on special finds, because they are visually rich (Simpson 2009, 45-52),

sensational (Stern and Tode 2009, 17) – and therefore interesting – may cause neglect of visually less rich sites and a decrease in their funding.

Consequently, it could lead to a disappointment in real archaeology (Simpson 2009, 45-52) and a decrease in visits to archaeological institutions such as sites, visitor centres and museums. Indeed, a survey amongst the participants of a public archaeology event, during which they could help with an excavation on an archaeological site in Oss (the Netherlands), pointed out that they had unrealistic expectations of finding something important due to the portrayals of the media and popular films like Indiana Jones (Wu 2013, 51-52). It may even result in drop out from archaeology courses (Clack and Brittain 2007, 22-23), because archaeology was not as it was like on TV.

1.3 Current perspectives on TV archaeology

There are numerous negative consequences can be thought of when it comes to the misrepresentation of archaeology. The position of archaeology in TV media has been discussed ever since its first appearance on television.

However, in recent years more attention has been given to this subject from within the field, as archaeological institutes and universities – namely in the UK – seem to have been spending increasingly more time and effort in discussing and researching archaeology's relationship with audiovisual media, and solving the problems it has led to. For instance, in 2010 the University College London Institute of Archaeology set up the Centre for Audio-Visual Study and Practice in Archaeology, with its main goals to research the relationship between archaeology and the media, to act as a voice for archaeology within media, and to promote and enable the use of audiovisual media within archaeology (Henson 2011, 35). Some universities' curricula focus on archaeology in the media; the University of Bristol even offers a master programme dedicated to archaeology for screen media. During the yearly British Archaeological Award ceremony, an award is handed out for the best public presentation of archaeology - advancing towards a better public understanding of archaeology through high quality presentation.

That audiovisual media is a useful medium for communication with a wider audience is also recognised by archaeologists, given that an archaeological channel has

arisen on the internet. *The Archaeology Channel* [1] broadcasts not only their own audiovisual productions on their website, but also offers other archaeologists space to publish their work. Another appearance on the internet is the critical website *Bad Archaeology,* [2] written by archaeologists to point out and discuss the occurrence of disputable archaeological research or fringe archaeology within the media.

Archaeologists have made great advances in acknowledging, researching and observing their position within the media; they are aware of the influence mass-media has on their field. However, a considerable amount of the publications on the subject seem to be concerned only with how archaeology is presented in the media, and the negative consequences it may have on the field itself, or on the public understanding of archaeology (Merriman 2004, 6).

Yet, the amount of research these critical articles are based upon is considerably low. Despite the research methods at hand to study the presentation of archaeology in audiovisual media, and the relation between archaeology and the media, such as content analysis and media literacy, few archaeologists use them. In some cases these methods have been used by archaeologists (Nichols 2004; Sperry 2008; Tringham 2009) and not only can it lead to interesting results, but by using these research methods, otherwise unfounded arguments can be validated. This research is especially needed in the case of studying the presentation of archaeology, because every person watches a TV programme from their own perspective and therefore every viewing is subjective.

The discussion that developed around archaeology and the media amongst archaeologists is generally divided into two attitudes towards mass media: that of reluctance towards its portrayal of archaeology, or that of amazement at its potential to engage the wider public, to raise public awareness of archaeological heritage, to increase funding for research projects (Henson 2005; Simpson 2009), for its educative qualities (Clack and Brittain 2007; Clarke 2004; Henson 2005; Tringham 2009), or even for its potential as a teaching tool in academic education (Clarke 2004, 279, 283).

However, both attitudes nearly always come with a sense of caution, because many archaeologists are also aware that mass media's effects are powerful. In their writings on archaeology's relationship with the media they often call out for more

[1] http://www.archaeologychannel.org/
[2] http://www.badarchaeology.com/

research into the effects of media to either use media for their own gain (Clarke 2004, 283) or to protect the practice of archaeology (Stern and Tode 2009, 17). They also advocate for a better use and understanding of media towards productively informing people about archaeology and the past, or for the attraction of new audiences (Henson 2005, 3).

Although further research is frequently called out for, it is hardly ever done. By approaching the discussion of archaeology's relationship with the media with preconceived ideas about the portrayals of archaeology on TV, one is ignorant of the reality of TV's portrayal of archaeology – how archaeology is actually presented on television. Also, by not looking further into the medium, one also fails to understand the medium television itself and media in general. Thus it remains uncertain whether archaeologists are actually facing a problem concerning media, and what that problem actually is and how it can be helped.

1.4 Should archaeologists be concerned about TV archaeology?

To shed new light onto this debate, the aim of this research is to answer the question:

- *Should archaeologists be concerned about the portrayal of archaeology in television documentaries, and if so, for what reasons?*

To provide the answers, an essential part of this research is an in-depth analysis of several television programmes, in order to answer the sub-question:

- *How is archaeology – its research, researchers, sites and objects – presented on television?*

The analysis mainly concerns the differences in which various research methods are presented in the TV documentaries, particularly the ways in which they are discussed, and the role of the archaeologists in the programmes. The presentation of archaeological sites and objects, the differences in the presentation of research processes and the role of researchers may be due to factors inherent to the structure of the type of research, especially that of archaeological fieldwork.

In order to explore the presentation of archaeology in TV documentaries, and what the underlying factors may be that influence it, the contents such documentaries

were systematically analysed, using Altheide's design for ethnographic content analysis (ECA). TV documentaries are – at least in Europe – the most popular format on television through which the public learns about science (TNS Opinion & Social 2007, 19-20). The sample consisted of nine documentaries that were produced in 2012 and 2013, and that were broadcasted in 2013 on the National Geographic Channel in The Netherlands. National Geographic Channels International (NGCI) was specifically chosen for its association with the National Geographic Society (NGS), which was founded on the principles to enhance and provide education, conservation and scientific research – principles that its media outlet, NGCI, must endorse whilst operating in the sphere of commercial television (National Geographic Society and National Geographic Channel 2012, 2).

To assess the findings of this research, a study of the workings of media and also those of archaeological research was undertaken beforehand to answer the following sub-questions:

- *What influence does the medium television have on the presentation of archaeology in television documentaries?*
- *What influence does archaeology have on its own presentation through the medium of television documentary?*
- *Are archaeologists biased due to the media they wield – namely the academic publication – and could that explain their heated response to television portrayals of archaeology?*

As mentioned before, the power of media, whether we speak of it as popular mass media or as a tool for communication, is generally considered by archaeologists to be strong. The influence of a medium may be that it shapes the content it carries - for example, television uses the audio-visual, and is limited in the way it can depict archaeological research only in image and sound. Yet, is the power of media so strong, that it also exerts influence on archaeologists?

My assumption is that an understanding of the workings of media is essential for archaeologists, because trends and changes in the transmission of knowledge not only influence society (McLuhan 2013, 12), but also reflect how society communicates and perceives knowledge (Altheide 2013, 17-18). Surely, when archaeologists are conscious

of the way archaeology is communicated to the public, then that may affect their expectation of what media can do for them. This knowledge can also be employed to get across their own subjects and messages to the public. After the analysis of the research results and the analysis of media and archaeology I will lastly set out the answer the last sub-question:

- *How can archaeologists harness the power of media to adapt to a rapidly changing society and to the future?*

Furthermore, as media reflect society, an understanding of media may help archaeologists to understand society, and what may be expected in the future from current changes in the media and society in terms of archaeology's relationship and communication with the public. As society changes, the practice of archaeology and the role of the archaeologist will probably change too. By studying media archaeologists may gain the tools to adapt to a rapidly changing world.

1.5 Exploring the presentation of archaeology on TV

Firstly, this study shall begin by exploring the workings of archaeology and media in general, and then television, television documentaries and academic publications specifically. The theoretical framework shall be outlined in chapter two.

Secondly, ECA was used to analyse the documentaries' content, in which the visual content was categorised according to a research protocol, concerning for example, research types and interviews. The technicalities and practicalities of this methodology are outlined in the methodology chapter – chapter three.

Thirdly, the main patterns that were discovered in the sample are presented in chapter four.

Furthermore, in chapter five the compatibility of archaeology and television shall be discussed. This discussion includes the friction between them and a possible future of archaeology and audiovisual media.

Finally, the conclusion will give a final overview of what was found in this study and answer the research question.

2. Theoretical Framework

2.1 What makes TV archaeology?

The focus of this study is the portrayal of archaeology and archaeologists on television, specifically in television documentaries, and the concerns of archaeologists hereof. As these documentaries are popular representations of archaeology, they exhibit how contemporary society sees, gives meaning to, and wishes to interpret archaeology (Holtorf 2005, 17-18). This chapter examines specifically the workings of media, as well as the nature of archaeological practice and thought, and how they influence each other.

Here, the content is not merely seen as a product created by a filmmaker, but as a product influenced by media. Every part of the process is highly influenced by the way media affects society and affects other media. Media influences the choosing of television as a medium to convey a message, to the creation and resulting TV programme, as well as the audience's – including the archaeologists' - reception of the programme.

The form of the content of documentaries is influenced by the medium television in combination with its archaeological content. It is influenced by the properties, limitations and advantages of the audiovisual medium. As a social product it reflects society (Altheide and Schneider 2013, 19, 61) - how society interacts and transmits knowledge – which is determined by the modes of interaction: the media that society uses in turn shapes society (McLuhan 2013, 12-14).

2.2 The true effects of media

These thoughts strongly echo a theory by Canadian communication theorist Marshall McLuhan, which serves as the foundation of this study's theoretical framework. In 1964 McLuhan, in his book *Understanding Media: The Extensions of Man,* coined the phrase: "*The medium is the message*" (McLuhan 2013, 12), with which he suggested that the impact of medium on the individual and on society is the medium itself and not the content it carries, as he described in the first paragraph of his book:

> *"In a culture like ours, long accustomed to splitting and dividing all things as a means of control, it is sometimes a bit of a shock to be reminded that, in operational and practical fact, the medium is the message. This is merely to say that the personal and social consequences of any medium — that is, of any extension of ourselves — result from the new scale that is introduced into our affairs by each extension of ourselves, or by any new technology."*
>
> *(McLuhan 2013, 12)*

In addition he believed that people, when employing a medium, adopt its logic and behave in a way that conforms to the properties of the medium (McLuhan 2013, 19). A medium in this sense includes television, film, books, as well as media that is the content of other media, such as typography, text and language (the media contained in a book). It can also be any other phenomenon that extends our scale of action and interaction (McLuhan 2013, 12-14), like archaeological artefacts. For example, ceramic vessels: whatever people in the past kept in their ceramic vessels is secondary to the simple fact that the ability to store and transport food changed their way of living.

A new medium or technology can enhance, weaken, or discard already existing processes in society or the effects of other media (McLuhan and McLuhan 1992, 7). However, people are often unaware of the effect media has on them and how it affects their perception (McLuhan 2013, 22-23).

The influence of a medium is defined by the type of medium, of which McLuhan distinguished two, each at one end of a scale and each with its own set of characteristics: *Hot* and *cool* media (McLuhan 2013, 26-35). A hot medium is described by McLuhan as: *"one that extends one single sense in "high definition." High definition is the state of being well filled with data."* (McLuhan 2013, 26). For example, the book's data is contained in its text and that of the lecture in the speech of the lecturer. Furthermore, hot media are linear, logical and sequential. As it is dense in information it is "*low in participation*", and so the audience does not need to fill in any gaps of information (McLuhan 2013, 26). Cool media, on the other hand, are *"high in participation"*, because the information given is *"low definition"* (McLuhan 2013, 26).

Applying this theory on this study, I suggest that archaeology, in this case the content of the medium television documentary, is also a medium: a cool medium. The reasoning behind this, shall be clarified in the following subchapters in the examination of television, television documentaries and archaeology, in order to reach an understanding of their workings and of how they can influence the content of TV documentaries about archaeology and whether the media are compatible with each other. Furthermore, the very reason for the archaeologists' attitude towards television portrayals of archaeology may very well be the effect of the medium archaeologists usually employ to express their ideas: the academic publication, which shall be briefly discussed as well.

2.3 The workings of television and TV documentaries

First of all the medium television – defined in this chapter as non-scripted television shows and series – is a cool medium. McLuhan states that:

> *"Because the low definition of TV insures a high degree of audience involvement, the most effective programs are those that present situations which consist of some process to be completed."*
>
> *(McLuhan 2013, 291).*

Rather than spoon-feeding a dense complete package of information, which a hot medium like the academic publication does, TV invites people to react and to give meaning to it. Non-scripted television works with formats, which are set processes or situations that are by themselves meaningless, until there are TV actors engaged in the process, or better yet, when the audience is involved in the process.

A good example related to TV archaeology is the format of the show *Animal, Vegetable, Mineral?*, in which each episode artefacts were presented to a panel of archaeologists, who then discussed their origin. Yet, the show was not about the artefacts, but about the archaeologists' assessment of the artefacts. Similarly, a team of archaeologists engaged in a three-day archaeological dig, which was the successful formula of the popular television programme *Time Team*, also demonstrated television's focus on the involvement in processes. This was amplified by including audience

involvement in the process, granting them the opportunity to opt sites to be excavated by the team.

These examples illustrate quite well that television is not about transmitting messages of factual knowledge, but about people engaged with and reacting to situations. However, the television documentary works in a slightly different way. The television documentary is somewhat a hybrid of television and documentary film and according to McLuhan it is television that enhanced the documentary film:

> *"The yen of the TV medium for themes of process and complex reactions has enabled the documentary type of film to come to the fore. The movie can handle process superbly, but the movie viewer is more disposed to be a passive consumer of actions, rather than a participant in reactions."*
>
> *(McLuhan 2013, 292)*

Similarly to television series the television documentary does use formats (Kilborn and Izod 1997, 20), but does not weigh as heavily upon them. The TV documentary is self-containing, in that it does not require an awareness of the programme's concept or genre conventions, or of the content of multiple episodes, as is the case with many TV programmes.

Furthermore, TV documentaries are less open to involvement than a television series, because they favour more the closed-off complete package of information. In many TV documentaries a host sets out on a quest to solve some archaeological mystery, which indicates the host's involvement in the process of collecting data. However, he has no actual influence on the data he then gathers, so the TV documentary wraps up its complete package with a mere *sense* of involvement.

2.4 The structure of archaeology

Alongside television, TV documentaries and academic publications, archaeology appears a rather unusual addition to media. However, the structure of archaeology as a discipline – its methods, practice and theory – strongly resembles that of McLuhan's cool medium. Similar to television the archaeological record by itself is meaningless, until people (archaeologists) interact with it and give – intentionally or unintentionally – meaning to it

(Gamble 2001, 7-8; Johnson 1999, 12; Renfrew and Bahn 2008, 13). The process of making sense of the past in the present, – which is what archaeologists do through the study of material remains (Daniel 1967, 24; Stiebing jr. 1993, 22) – the archaeological record, and changes throughout the past are very complex in their nature, and not at all linear, sequential, objective or repeatable like natural sciences (McLuhan 2013, 289).

Additionally, the features of hot and cool media are also encompassed in McLuhan's concept of visual and acoustic space, described in *The Global Village* (McLuhan and Powers 1992). In acoustic space, as well as in cool media, information comes simultaneously from all sides (McLuhan and Powers 1992, 48), which stimulates the right hemisphere of the brain that *"deals in simultaneous comprehension and the perception of abstract patterns"* (McLuhan and Powers 1992, 26).

Accordingly, archaeology relies on the configuration of multiple sets of information: the fragmented archaeological record (Childe 1956, 10-12), and all the factors and processes that affect it. These factors and processes do not subsist in a linear sequence, but are simultaneously and interdependently involved in the creation, use, disposal, decay, study, value and preservation (Renfrew and Bahn 2008, 51) of an archaeological artefact in the past, as well as in the present. These vary from natural processes causing decay, to power struggles between conflicting groups. Archaeology requires an understanding of the many facets that are involved in shaping the past: knowledge of human behaviour, geological and natural processes, law and politics, to name a few. Then, it is no wonder that archaeology as a discipline cannot be pinned down as either science *or* humanities (Childe 1956, 17; Renfrew and Bahn 2008, 13), because it is always corresponding between multiple branches of science, adopting knowledge and methodology, only unified in its purpose to understand the human past.

Then, the practice of archaeology, with its high degree of complexity and need of involvement, is a very subjective and therefore a delicate business. Because archaeological interpretations are man-made products, they are prone to bias. Interpretations of the past are not only affected by physical factors, such as natural processes of decay, but also by intellectual movements that define how people in a society perceive themselves and the world, that resonate in art, science, politics and philosophy. They can be political (Johnson 1999, 107), such as several political groups laying claim to a heritage site, leading to several conflicting interpretations of the past; or

in extreme cases the destruction of heritage that does not conform to presiding political ideas (Skeates 2004). In science, in this case archaeology, a bias on what knowledge is and how it should be accumulated can be so deeply embedded that a scientist is oblivious to it, but all data is seen *"through a cloud of theory"* (Johnson 2011, 126).

2.5 Perception-b(i)ased archaeology?

These intellectual movements, as McLuhan would argue, are the effect of the technologies we use and interact with, which were in the previous centuries mostly hot media (McLuhan 2013, 162-163). They amplify or replace pre-existing processes in society, but society is unaware of this change and often has no idea how to use a new medium and simply approaches it in the same way as the old (McLuhan 2013, 28). This principle has and is still influencing archaeology in its practice, thoughts about the past, and its communication of ideas.

Archaeology in the Western world developed under a strong literary bias that was amplified by the introduction of print (McLuhan 2013, 289), which was at its peak in the nineteenth century (McLuhan 2013, 42). Correspondingly archaeology at that time was mostly concerned with classification of artefacts (Daniel 1967, 264) and the development of chronologies (Johnson 1999, 26, 31; Renfrew and Bahn 2008, 50).

After WWII new technologies, such as C14 dating, were applied to archaeology and it became increasingly more scientific, and thus amplified the thought patterns of objective study of the archaeological record, hence New Archaeology was born in the 1960s (Johnson 1999, 34-36; Renfrew and Bahn 2008, 50).

Yet, its positivist ideas of objective study through repeatable testing were soon to be countered by the interpretive archaeologists in the 1980s and 1990s (Renfrew and Bahn 2008, 50), whose ideas of multiple perspectives of the past and multivocality in archaeological practice (Greene and Moore, 2010, 317-318) closely resemble the cool structure of television as described above.

The literary bias is now – not without resistance – slowly losing strength after the introduction of newer technology like television and the internet. However, even though the post-processualist notions of archaeological data in a matrix of theory, the active individual and the variety of experiences of and in the past (Greene and Moore 2010, 317,

306; Johnson 1999, 101-107) correspond to characteristics of archaeology – as well as those of television – they are not commonly accepted in the field. First of all they oppose the western bias of uniform and objective science (Hodder 1999, 6), in that the thoughts of humans in the past cannot be scientifically verified (Johnson 2011, 109). Secondly, the recognition that people have different thoughts about the past and experience the past differently, and that archaeologists should take these into consideration, evokes questions about the archaeologist's authority (Hodder 1999, 6) to interpret the past – and the exclusion of other people to do so – as well as about the validity of other narratives of the past (Clack and Brittain 2007, 13; Greene and Moore 2010, 253, 294; Renfrew & Bahn 2008, 562-577) by, for example, pseudo-scientists.

Claims of authority and validity of information are also reflected in the archaeologist's use of academic publications, as well as in their attitude towards television. Academic archaeologists – even though archaeology itself is a cool medium – still dominantly use print in the form of the academic publication to communicate their ideas – mostly to their peers. Print, being a hot medium, encloses all its information solely in its text and is in its production as well as its reading linear and repeatable (McLuhan 2013, 27, 42). Academic publications are vast packages of information, in which the archaeologist's idea is completely communicated – its information validated and completed with references to other works as well as by reviews from their peers. This way the reader is excluded from the process of creating the information or to give meaning to it, leaving no room for misinterpretation.

This is, simply put, the way the academic publication works and the way many archaeologists still work comfortably. Archaeologists Cornelius Holtorf and Håkan Karlsson, being aware of these effects of print, attempted to contradict it by publishing an affordable book in which all the articles were peer-reviewed and the commentary incorporated in the volume (Holtorf and Karlsson 2000, 1-7), which somewhat lessened the exclusiveness of the book. Yet, the book *Philosophy and Archaeological Practice* (Holtorf and Karlsson 2000) is quite unique.

The bias that has dominated archaeological thought for many years and that is still embedded in the archaeologist's use of print is also prominent in the archaeologist's attitude towards television. Concerns of authority and validity dominate the discussions on TV archaeology, and the attitude towards television reflects the attitude of many

archaeologists towards interpretive archaeology. These concerns are, for example, over the simplicity of information, the validity of television narratives (Clack and Brittain 2007, 13) and interpretations (Clack and Brittain 2007, 18).

From this perspective television would suit archaeology very well, because much like television, archaeology is concerned with simultaneous processes and information, that demand a high degree of involvement to give meaning to its findings, or in other words, to interpret it. Archaeologists themselves are probably very aware that archaeological data requires a high degree of involvement and interpretation in order to be understood, and that television enables this involvement. This is exactly the crux of the matter, because TV could invite anyone in to 'have a go at it'.

Yet, an understanding of the effects of the media we employ is the only way to shield ourselves from them, and to use the media for our own purposes (McLuhan 2013, 6). Therefore, the aim of this research is to find out whether the effects of the medium are manifested in their content and how. Perhaps through this research one may understand which precautions can be taken to minimise or maximise the effects of television, and whether National Geographic has taken them.

3. Methodology

3.1 Introduction methodology

In the previous chapter both archaeology and television were discussed, which presumably influence the content of the documentaries. Through the analysis of the content the aim is to discern the influential factors.

This chapter outlines the methodology of this research. A sample of nine documentaries with archaeological content, produced in 2012 or 2013 and broadcasted in 2013 on the National Geographic Channel in the Netherlands, was analysed through ethnographic content analysis (ECA), using Altheide's design (Altheide and Schneider 2013) as a guideline. The aim was to analyse the presentation of archaeology, by observing the appearances of archaeological research, objects, sites, and researchers.

3.2 Ethnographic content analysis

Content analysis is a method used in the social sciences and humanities to study the content of communicated material (Krippendorf 2013, 16). Its strengths are that it is unobtrusive and that it can be applied to large quantities of content (Krippendorf 2013, 12-13).

However, this study's method is ECA – a more qualitative variant of content analysis. Rather than the conventional quantitative content analysis that concentrates on the collection of numerical data, ECA is concerned with the *context* of that which is studied (which Altheide calls *documents*), the *process* that created the documents and the researcher's developing understanding of the meanings and patterns in the documents (*emergence*) (Altheide and Schneider 2013, 31-33). Its approach to content complements the theoretical framework of this study as the content is seen to be created by the driving force, or logic, of media, as described below.

> *"Here, the key concept is "reflexivity," or how the technology and logic of communication forms shape the content and how social institutions that are not thought of as "media arenas"—such as religion, sports, politics, the*

family—adopt the logic of media and are thereby transformed into second-order media institutions"

(Altheide and Schneider 2013, 19)

This systematic method assigns the content of a sample to categories (*coding*) according to a protocol, which is a tool that helps to collect data from the documents (Altheide and Schneider 2013, 37). This protocol includes questions, categories and variables to assign the content to. It also allows researchers to add new categories as the research progresses and new ideas develop. In this sense the researcher's focus and understanding of the content leads the research process (Altheide and Schneider 2013, 41-42, 69). The resultant data are not completely quantitative: the ethnographic aspect of the research allows much descriptive data to be collected as well (Altheide and Schneider 2013, 42).

The method works with a step-by-step scheme described in Altheide and Schneider's book (Altheide and Schneider 2013 54-83), in which steps are regularly revisited (Altheide and Schneider 2013, 37). These steps include formulating a research question, sampling, studying the information source, drafting a protocol, data collection and coding. The process of this research is described accordingly below.

3.3 Exploratory phase

- *"Step 1: Pursue a specific problem to be investigated."*
- *"Step 2: Become familiar with the process and context of the information source (e.g., ethnographic studies of newspapers or television stations). Explore possible sources (perhaps documents) of information."*
- *"Step 3: Become familiar with several (6–10) examples of relevant documents, noting particularly the format. Select a unit of analysis (e.g., each article), which may change." "*

(Altheide and Schneider 2013, 54)

In the early stages of this study the scope of research was the presentation of archaeology and archaeologists in NGCI's television documentaries, but this eventually narrowed

down. The initial research was exploratory: its intent was to find patterns in the documentaries' content, therefore the analysis was very inclusive in its collection of data.

Following step two of the procedure (Altheide and Schneider 2013, 54-59), a profile of the information source, NGCI, was constructed by becoming familiar with its principles, goals, programming and aim audience. News articles mentioning NGCI's archaeological programming – there were plenty due to the recent commotion around their programme Nazi War Diggers – were included in this background study. Accounts on the production processes of TV programmes – though not always about those of NGCI – and the collaboration between archaeologists and filmmakers were also obtained through literature (Aston 2012; Pitts 2009; Simpson 2009; www.sha.org;[3] personal consultation with archaeologists and filmmakers).

For a complete understanding of the opinions held on NGCI's programmes in particular, and archaeology's appearance on television in general, literature written by mainly academic archaeologists was studied. In addition internet blogs, vlogs and forums on the subject were also included in this study. The academic as well as the public sources were helpful in gaining insight in opinions held and the way these opinions were shared.

Hereafter NCGI's programming was investigated and documentaries for analysis were sought by combing through 365 days of online Dutch TV guides.[4] The sample is an almost complete collection of all the documentaries that were produced in either 2012 or 2013 and were broadcasted on the National Geographic Channel in the Netherlands during the entirety of 2013 (Table 2). One documentary could not be accessed and has therefore been excluded from the analysis.

To become more familiar with the content of NGCI's documentaries, two of their documentaries (that were not part of the sample) were watched and their formats closely observed. The first protocol was drafted after these observations and the documentaries were coded according to this protocol as a pilot study. Because this study's focus is on the manner of transmitting information, which is in audiovisual material mostly contained in the visual part (Shelton 2004, 8-9), the visual content of documentaries was coded, but also the audio of interviews and the manner in which subjects in interviews were discussed.

[3] www.sha.org, NGCI's background on the production of Nazi War Diggers.
[4] www.tv2day.nl

Fairly early during the research procedure it became clear that it was essential to observe the sample also as a whole - rather than only in cut up pieces of imagery - to understand the bigger picture. Therefore, the documentaries were coded entirely, an analysis in which the format, frames, themes, discourse and subject of the sample, which were noted on a form (see appendix B). Accordingly, the categories in the protocol were adjusted to enable any observed patterns to be clearly visible in the collected data.

3.4 Research protocol and content analysis

- *"Step 4: List several items or categories (variables) to guide data collection, and draft a protocol (data collection sheet)."*
- *"Step 5: Test the protocol by collecting data from several documents."*
- *"Step 6: Revise the protocol, and select several additional cases to further refine the protocol"*

(Altheide and Schneider 2013, 59)

Then, a research protocol was designed, based on the observations that preceded the content analysis, as well as two similar studies that were conducted in the last decade (Nichols 2004; Sperry 2008), literary study on the discussion of archaeology and media. With the establishment of the broad set of categories seen below in Table 1, the objective was to touch upon a wide range of issues and to identify previously undetected ones. The full definitions of each category and subcategory are in appendix A.

A meticulous protocol, and enabling visual material to be assigned to multiple categories, allowed the context or wholeness of a situation to be recorded. The distinctive quality of this research is that it considers the content of the documentaries wholly, not as a sequence of hollow images adorning the screen, but as situations in which all attributes - artefacts, sites, scientists – are meaningful in their connection to each other and are not only single entities. As Renfrew & Bahn put it: *"The very act of displaying an artifact may establish it as an art work or as a historic witness to a shared belief." (Renfrew & Bahn 2008, 571).*

Table 1: Categories and subcategories in the research protocol

Categories	Subcategories	
❖ **Interview type**	▪ *Talking head* ▪ *Animate*	▪ *Interaction*
❖ **Interview audio**	▪ *Yes*	▪ *No*
❖ **Person speaking**	▪ *Host* ▪ *Archaeologist* ▪ *Specialist with a specialism related to archaeology*	▪ *Other specialist* ▪ *Non-specialist*
❖ **Nature of speech**	▪ *First-hand analysis and/or interpretation* ▪ *Practical commentary*	▪ *Explanation or recounting*
❖ **Research type**	▪ *Excavation* ▪ *Field/underwater survey* ▪ *Archaeological sciences* ▪ *Historical research* ▪ *Other archaeological research*	▪ *Epigraphy* ▪ *Experimental archaeology* ▪ *Other non-archaeological research*
❖ **Archaeological objects/artefacts /finds**	▪ *Funerary container(s)* ▪ *Ceramics* ▪ *Animal bone(s)* ▪ *Human remains* ▪ *Fossil(s)* ▪ *Stone tool(s)* ▪ *Prehistoric rock art*	▪ *Wall painting(s)* ▪ *Inscription(s)* ▪ *Sculpture* ▪ *Historical material* ▪ *Gold* ▪ *Double category* ▪ *Other*
❖ **Archaeological sites and monuments**	▪ *Active archaeological site* ▪ *Inactive archaeological site*	▪ *Other*
❖ **Research products**	▪ *3D-scan* ▪ *CT-scan or X-ray scan(s)* ▪ *Scan(s) of geophysical research* ▪ *Remote sensing image(s)*	▪ *Graph(s), chart(s), diagram(s)* ▪ *Drawing(s)* ▪ *Other*
❖ **Other activities**	▪ *Interaction* ▪ *Solitary* ▪ *Going somewhere*	▪ *Preparing research* ▪ *Other*
❖ **Natural landscapes**	▪ *Cave* ▪ *Desert* ▪ *Field* ▪ *Steppe/savannah* ▪ *Woods &forests*	▪ *Mountains & hills* ▪ *Rivers, lakes* ▪ *Seas & oceans* ▪ *Sky* ▪ *Other*
❖ **Built environment**	▪ *Camp* ▪ *City* ▪ *Village*	▪ *Historical building* ▪ *Research institute* ▪ *Other*
❖ **Visual Effects**	▪ *Map* ▪ *Text* ▪ *Timeline*	▪ *Arrows & lines* ▪ *Other*
❖ **Stock footage**	▪ *Historic footage* ▪ *Television footage*	▪ *Photograph(s)* ▪ *Other*
❖ **Re-enactment**	▪ *Yes*	▪ *No*
❖ **Reconstruction**	▪ *Yes*	▪ *No*

Even though, the extensive protocol allowed much of the content to be analysed, not all the results are incorporated into the discussion. The analysis was inclusive and explorative in that it considered all of the content equally to avoid that a research interest may conflict with the analysis. It was not set up to prove or falsify assumptions about the portrayal of archaeology on television, because that may have resulted in a subjective search for desired answers while neglecting other potentially interesting data.

Although the protocol was tested, fundamental difficulties were encountered during the coding process of the sample. Consequently, it was during this phase that most (sub)categories were added to the protocol.

In the attempt to code interviews it was not always certain whether that which was simultaneously shown on screen, such as an artefact or research, was the subject of the interview and in what manner it was spoken about. This obstacle led to the introduction of a unique, yet subjective category: *nature of speech*. It seeks to define whether the interview is about what is simultaneously shown on screen, and specify whether interviewee is analysing, commenting on, or explaining it. Although it was created as a mere tool to straighten out systematic inaccuracies, it became an essential factor in analysing the complex structure of interviews, and in providing information on the manner of social action that a qualitative document analysis should incorporate (Altheide and Schneider 2013, 61), but which this protocol was previously lacking.

3.5 The sample

> *"Step 7: Arrive at a sampling rationale and strategy—for example, theoretical, opportunistic, cluster, stratified random. (Note that this will usually be theoretical sampling.)"*
>
> *(Altheide and Schneider 2013, 68)*

The sample was intently chosen for being recent, varied and diverse. The source, NGCI, was chosen due to its global orientation and ethical principles.

Firstly, to obtain insight in current portrayals of archaeology on television, it seemed logical to only address recently produced and broadcasted programmes, but also a variety of programmes. A diverse sample was obtained by choosing television documentaries, because unlike television series such as *Time Team*, they are stand-alone

products. Even though the documentaries are part of the channel's programming, the information they carry is not spread out over a series that must be viewed as a whole for complete understanding of each part, and it is therefore possible to analyse each documentary individually. Combined with the fact that the documentaries in the sample were also produced by various production companies, the documentaries represent an assortment of various subjects, narratives and film styles, as opposed to a sample that consists of one television series.

Secondly, as the documentaries are broadcasted by NGCI, they are oriented towards a global audience. NGCI broadcasts in 171 countries, and archaeology is frequently seen in their factual and entertaining programmes directed towards adults.[5] There are of course other channels that broadcast documentaries about archaeology, such as the BBC and the History Channel, but being a part of the NGS, NGCI is subject to its and must uphold them while competing in the domain of commercial television (NGS 2012, 2), which leads us to the next point.

Thirdly, the sample is a product of a balance between ethics and commerce. As one of the world's largest non-profit scientific and educational organisations, the NGS pursues its goals to enhance and provide scientific research and education through the funding of many scientific research, conservation, education and exploration projects and uses its various media outlets to reach a large global audience, including its own television channel and production company.[6] Some of these research projects that have received funds from the NGS include renowned archaeological projects, such as Louis and Mary Leakey's research[7] and the Stonehenge Riverside Project.[8] Adjacent to these funds, archaeological projects also appear in documentaries on the NGCI.

However noble the NGS' goals may seem, the NGCI is still subjected to the demands and pressures of commercial television; they must find a balance in maintaining both their ethical principles and audience ratings. Then, theoretically the documentaries on the NGCI can be considered as the outcome of this challenge, and by closely inspecting

[5] http://www.ngcideas.com
[6] http://press.nationalgeographic.com/boilerplates
[7] http://www.nationalgeographic.com/explorers/bios/leakeys
[8] http://www.ucl.ac.uk/archaeology/research/directory/stones-of-stonehenge-parkerpearson

them we may come to a better understanding of the relationship between science and commercial media, such as television.

The sample's documentaries (Table 2) were roughly 45 minutes each, apart from documentary 9, which twice as long. The sample totals up to 26810 seconds – or seven hours and 40 minutes – of documentary film footage. The sample was varied in several aspects: a broad range of subjects and areas, from human origins to World War II. Only three were made by National Geographic's own production company, National Geographic Television – the rest were made by different external production companies.

Table 2: Sample of archaeological documentaries produced in 2012 and 2013 and broadcasted in 2013 on The National Geographic Channel in The Netherlands.

#	Title	Production year	Production Company
1	The Forbidden Tomb of Ghengis Khan	2012	National Geographic Television
2	Maya Underworld: The Real Doomsday	2012	National Geographic Television
3	Two-Million Year Old Boy	2012	National Geographic Television
4	Saving Egypt's Oldest Pyramid	2012	Green Bay Media LTD
5	Nazi Temple of Doom	2012	Furneaux & Edgar productions Ltd
6	Cradle of the Gods	2012	Atlantic
7	Lost Continent of the Pacific	2012	Wildlife
8	Bones Of The Buddha	2013	Icon Films
9	Ultimate Tutankhamun	2013	Blink Films

3.6 Data collection and mode of measuring

- *"Step 8: Collect the data, using preset codes, if appropriate, and many descriptive examples. (…) Midpoint analysis: About halfway to two thirds through the sample, examine the data to permit emergence, refinement, or collapsing of additional categories. Make appropriate adjustments to other data. Complete data collection."*

  (Altheide and Schneider 2013, 76)

The analysis resulted in 4337 data records (see Appendix C) - each record represents a sequence of shots that could be attributed to the same set of (sub)categories. The amount of seconds for each sequence was recorded and the values of the results in the next chapter (4. Results) are the sum of seconds that the (sub)categories occur. Additionally the amount of shots per sequence were also noted, to obtain a rough average of a shot's duration. When footage could not be assigned to a subcategory, because there was no fitting subcategory, it was assigned to the subcategory *other* of the appropriate category.

To store the data, a database was set up in Microsoft Access, in which the protocol's categories were integrated in a form, with which data records could be swiftly processed. Then the dataset was exported to Microsoft Excel. The act of coding was done by one person. Only one documentary was viewed per day to avoid exhaustion and subsequently inconsistency in coding. The documentaries were viewed and coded again in a second round. The interviews were viewed a third time to affirm the same rate of coding was maintained throughout the sample.

3.7 Limitations, validity and reliability

There are possibly some limitations concerning the reliability and validity of the results. Three factors, as described below, should be taken into consideration.

Firstly, reliability here means that the research is repeatable; when other coders would independently apply the same set of coding rules to the same sample, then they would reach identical results (Krippendorf 2004, 414). In conventional content analysis this would be statistically tested through an inter-coder reliability test, such as *Krippendorf's Alpha* (Krippendorf 2004, 412), which is a statistical formula that measures the degree of agreement between coders (Krippendorf 2004, 414).

Yet, in ECA the investigator is central. The protocol guides the study, but does not exclude a change of focus as the investigator discovers new patterns in the sample (Altheide and Schneider 2013, 41-43). This contrasts with conventional content analysis, in which the protocol is pre-determined and the research therefore easily repeatable.

Secondly the large amount of categories in the protocol increased the risk of systematic failure(Krippendorf 2004, 413). All of the overlapping categories and derived combinations could be simply too many to consider, leading to misunderstandings and

inconsistencies in coding. If multiple coders were to be involved in the analysis, then an intensive training in coding and a high rate of communication would be required (Altheide and Schneider 2013, 113). However, multiple coders are not required in ECA and the high amount categories enabled that more of the content was included in the analysis.

Thirdly, the results of this analysis cannot be taken to be representative of all documentaries about archaeology, all recent documentaries, all NGCI documentaries, nor all documentaries on Dutch television. The sample is too restricted to be representational for such large groups. Therefore it is essential to not generalise the results, but to see each documentary related to its individual source and study not only the resemblance between documentaries, but also their differences (Altheide and Schneider 2013, 42-43). A small sample was chosen for this study, so that the material could be studied in-depth.

So the results may not be copied as a representation of what are popular subjects and images in documentaries about archaeology, but rather as an insight on how the archaeological content of documentaries is formed and inherently what factors may be responsible for this. The actual patterns in current documentaries about archaeology may not lie so much in subject choice, but in the narrative; how a story is told rather than which story, yet they are connected and must both be taken into account (Altheide and Schneider 2013, 54-55).

4. Data Analysis

4.1 Main patterns in the sample

The aim of this chapter is to outline how archaeology – its research, researchers, sites and objects – was portrayed in the sample, before addressing the main research question whether archaeologists should be concerned about TV portrayals of archaeology, in the next chapter.

Through the analysis of the sample's contents, the largest pattern discovered was the general focus on activities and people involved in activities, specifically on the process of scientific research. It seems that the documentaries are less about conferring factual knowledge extracted from research, and more about the research and interpretation processes. Nearly all the documentaries' storylines were small hubs of evidence, in which the research processes were often shown and explained, that were then linked together to substantiate a larger interpretation that covers the extent of the film, eventually leading to a conclusion.

There were variations in this construction per documentary, that either tended towards the *cool* 'open-ness' of *television*, or the *hot* 'closed-off-ness' of documentary *film*, as described in chapter 2. They differed in how they showed the research processes, yet there was a general focus on activity: on the preparation for research and going to places to do research. More importantly – and this aspect relates very much to the medium television – their focus lied on the people engaged in the activities, who were besides the host mostly researchers. Key themes in nearly all the documentaries were the reactions of the researcher, for example to new evidence, and the fascination or passion of the researcher in their work. In short, the documentaries covered the whole 'science experience'.

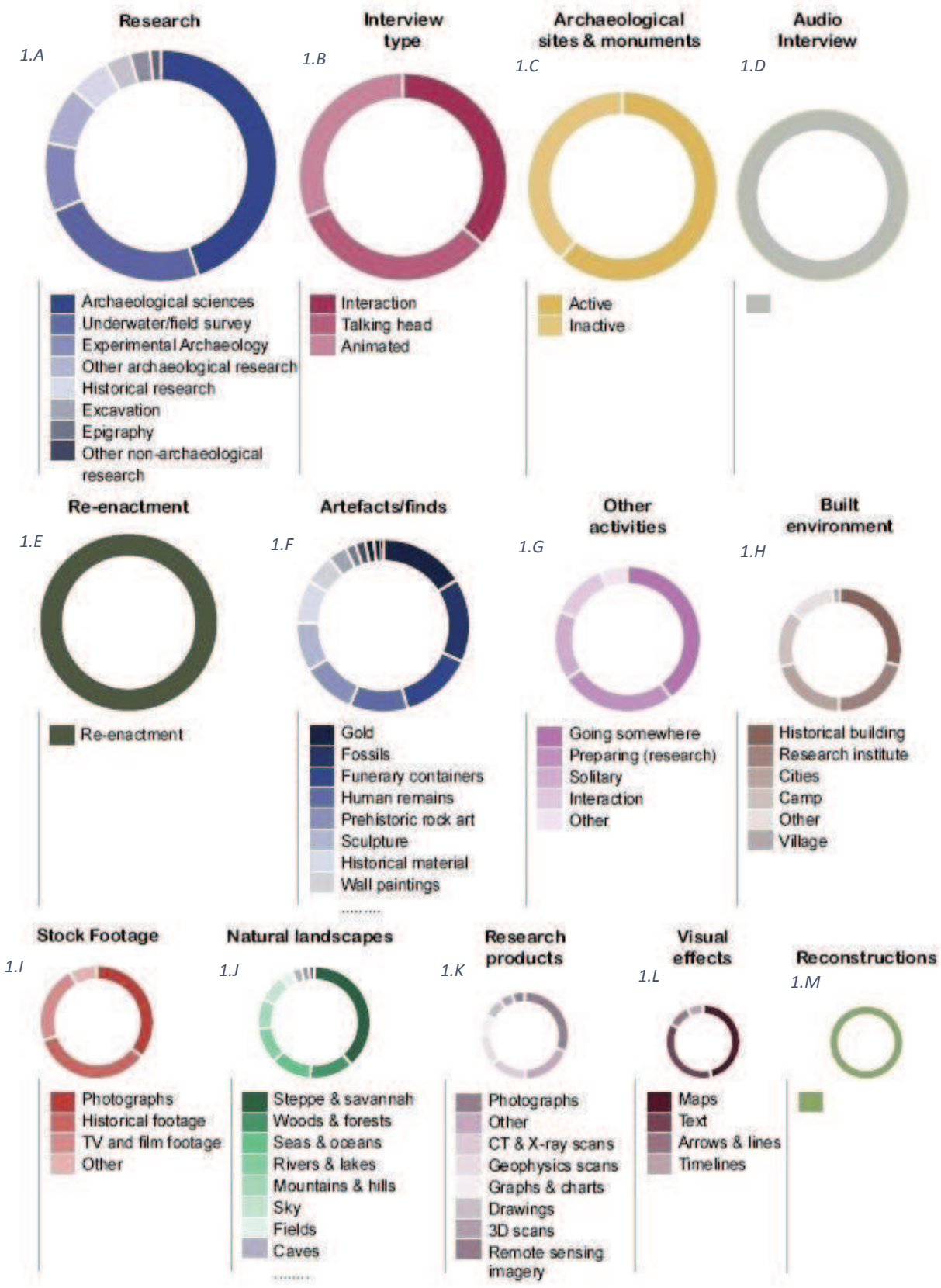

Figure 1: Visual representation of the occurrence of each category in the sample. The size of each circle represents the time of occurrence in the sample relative to the other categories. It descends from left to right and from top to bottom. The pie chart within circle represents the occurrence of each subcategory in that category, defined in the descending list below each chart.

Another find was a very high occurrence of interdisciplinary research throughout the sample. Unexpectedly, archaeological research and archaeologists appeared very little in comparison to other academic fields, which seemed rather atypical for documentaries that are about archaeology. However, the structure of archaeological research as well as the structure of other research types may very well have been the cause for archaeology's exceptional appearance in the documentaries, because rather than being a small hub of evidence, the process of archaeological interpretation was interwoven throughout the entire storyline. In this, the archaeologists were assigned a special, authoritative role

4.2 The 'science experience'

The filmmaker's focus on research practice and the involvement of actors herein - the hosts, scientists and professionals that were interviewed or were part of the research team or expedition – manifested itself in the documentation of every part of the research process, rather than on the research results.

This focus is apparent in the high occurrence of *research practices* throughout the entire sample, which was the highest of all categories. As figure 1.A shows, it transcended the appearance of artefacts and archaeological sites and monuments. In addition, the archaeological sites – which also appeared quite frequently, as figure 1.C shows – were mostly sites at which research appeared to be conducted at the time of filming.

A significant amount of the time in which research was shown throughout the entire sample, a stunning 44.7%, falls under the category *archaeological sciences*. The archaeological sciences (also known as archaeometry), contain a number of scientific methods from the fields of chemistry, physics, engineering, conservation sciences amongst others (Greene and Moore 2010, 190). Table 3 shows that these methods appeared in nearly every documentary. Of the more traditional archaeological research types, underwater and field surveys make up for 23.8%, but excavation unexpectedly only 3.6%.

Table 3: The appearance of research types per documentary in percentages of the total time research appeared in the entire sample. Results that are marked red or green are significantly low values (marked in red) and significantly high values (marked in green).

Research type	1	2	3	4	5	6	7	8	9	Total
Archaeological sciences	4.2%		7.9%	12.2%	0.3%	1%	1.7%		17.4%	44.7%
Underwater/field survey	4.1%	13%	4.2%	0.4%			1.3%		0.9%	23.8%
Experimental research						1.3%	4.7%		3.7%	9.7%
Other archaeological research			0.7%	4.5%	0.4%		0.1%	0.5%	2%	8.2%
Historical research		1.1%			1.6%		0.1%	1.8%	1.1%	5.7%
Excavation		0.1%	0.1%			0.5%	3%			3.6%
Epigraphy		0.2%		0.4%				1.8%	0.4%	2.8%
Other non-archaeological research			0.1%		0.3%				1%	1.5%
Total	8.4%	14.3%	13%	17.5%	2.5%	2.8%	10.9%	4.1%	26.6%	100%

In documentaries 1, 2, 3, 4 and 9 the stories' focus lied mostly on the research methods themselves, and it is in these documentaries that the appearances of research were the highest, and were mostly one or two specific research type(s). For example, *The Forbidden Tomb of Genghis Khan* emphasised the use of non-intrusive methods such as ground-penetrating radar, magnetometry and the observation of satellite imagery by citizen scientists, to locate a site that could be the final resting place of Genghis Khan, and accordingly only field surveys and archaeological sciences appeared in it.

Involvement in activities was also incorporated in the interviews: most interviews in the sample were dynamic interviews in which the actors were interacting with each other or with the environment. Figure 1.B shows that interviews formed a substantial part of the documentaries' content; interviews, including those in which only the audio is heard whilst other footage is being shown make up for almost 40% of the documentaries' content Table 4.

Table 4: Occurrence of commentary styles in seconds and percentages of total time of the sample.

Commentary	Total in seconds	Total %
No commentary	15421	57.5%
Audio interview	4341	16.2%
Interviews	6354	23.7%
▪ *Interaction*	*2297*	*8.6%*
▪ *Talking Head*	*2069*	*7.7%*
▪ *Animate*	*1988*	*7.4%*
Outside interview	694	2.6%
Total	**26810**	**100%**

In animate interviews the actor employed his surroundings to tell a story, such as walking around an archaeological site to tell a story about the past, or discussing an activity he was currently engaged in. *Interaction* interviews are similar, but are between two people, which were quite common in documentaries with a host (Table 5) that interviews people – which was in documentaries: 1, 2, 5, 6, 8 and 9. So central to animate and interaction interviews are the reactions of actors to the environment and each other, in contrast to *talking head* interviews in which the interviewees are static and in which most of the information is contained in their speech.

However, the activities and situations were not only discussed in interviews directed towards the camera, but in 3% of the documentaries' content they were discussed amongst actors, which gave the audience a glimpse of the actors 'in action' from a fly-on-the-wall perspective.

Table 5: Occurrence of interviews per documentaries in percentages of total occurrence of interviews in sample, which is the combined total of 'Audio interview' (16.2%) and 'Interviews' (23.7%) in table 4. Results that are marked red or green are significantly low values (marked in red) and significantly high values (marked in green).

#	Animate	Interaction	Talking Head	Interview total	Interview Audio	Total
1	1.7%	0.9%	1.8%	4.3%	2.1%	6.4%
2	3.6%	4.5%	0.4%	8.5%	2.1%	10.6%
3	1.3%	0.0%	5.5%	6.8%	11.2%	18.0%
4	1.2%	0.4%	3.0%	4.6%	3.1%	7.6%
5	0.9%	0.3%	4.7%	5.9%	3.9%	9.8%
6	1.6%	4.0%	0.1%	5.7%	2.8%	8.5%
7	1.1%	0.6%	0.9%	2.6%	5.4%	7.9%
8	1.3%	2.5%	0.7%	4.5%	4.0%	8.5%
9	5.9%	8.2%	2.3%	16.5%	6.2%	22.7%
Total	18.6%	21.5%	19.3%	59.4%	40.6%	100.0%

Unsurprisingly, in documentaries that had talking head as their chief type of interview, a gross part of the interviews were only heard (see Table 5). According to the theoretical framework, talking head interviews are low in involvement. Furthermore, talking head and interaction interviews each occured quite often in total, though they were not regularly spread out over all the documentaries. In Table 5 it seems that in documentary 2, 6 and 8 interaction interviews appeared considerably, but they rarely contained talking head interviews. Similarly, in documentaries 3, 4 and 5 talking head interviews were used to a large extent, but interaction interviews only little or not at all. This pattern could mean that filmmakers either chose to focus more on the involvement of actors in processes and situations through animate and interaction interviews, which are more typical of the medium television. Or they opted for less involvement and for a more closed-off message through talking head interviews, that tend more towards documentary *film*.

Accordingly, of all the activities it was research that was part of interviews the most. In no less than 36% of all interview time research was conducted and its process

explained, described, or its results analysed. The way in which it was discussed differed per research type and will be explained in the following subchapter.

But the conduct of the actual research was not the only part of demonstrating the research process. Also the practical aspects of the research were included, which are in figure 1 described as *other activities*. Substantial parts of the documentaries showed the main actors engaged in varying activities, for example: driving over the steppe or through the deserts to reach an archaeological site (going somewhere), getting into a diving suit (preparing research), wandering about alone while observing Tutankhamun's tomb (solitary), meeting a fellow scientist at a research institute (interaction), or the daily life around an expedition team's camp (*other*). Such activities contribute little factual knowledge.

What is more is that these rather trivial activities were not always just exciting footage that keep the audience's eyes busy while the narrator talked, but Table 6 shows that in 14% of the cases *other activities* were undertaken the actors also commented on the activity they were engaged in. In these cases the activity, and also the actor experiencing the activity, seemed to become a meaningful part of the story.

Table 6: The appearance of 'Other activities' in and outside interviews

Other Activities	No speaking	Outside interview	In interview	Audio interview only	Total
Going somewhere	35%	2%	3%	0%	40%
Preparing research	18%	4%	4%	0%	26%
Solitary	15%	0%	0%	0%	15%
Interacting	11%	1%	0%	0%	13%
Other	6%	0%	0%	0%	6%
Total	86%	7%	6%	1%	100%

Furthermore, there was a very low occurrence of digital reconstructions, but the results show that unpolished research tools, such as GPR scans, were far more frequently used. This raw material of research was not presented as an end product, but the scientists explained or interpreted them. Sometimes they took the form of rather simplistic blueprints, such as in *Saving Egypt's Oldest Pyramids* and *Ultimate Tutankhamun*, the latter having a style similar to a crime investigation show such as CSI, in which they use lines and arrows to point out aspects of Tutankhamun's tomb. In *Saving*

Egypt's Oldest Pyramids reconstructions were also used to show the possible procedures of the restoration of the pyramid, carefully considering the advantages and drawbacks of every option. So reconstructions and research products were not displayed as end results, but were used as means to an end.

4.3 Discussing research on screen

In the storyline of most of the documentaries, as mentioned earlier, a large interpretation or narrative of the past was built from segments of evidence interlaced with the analysis and interpretation of the evidence. Exceptions are *Saving Egypt's Oldest Pyramid*, which is a recording of the conservation work on Djoser's pyramid, and *Two-million Year Old Boy*, in which the discovery and post-discovery period is illustrated. In the other documentaries, the components of the story consisted of results from research, and in many cases the research process was also shown and explained. Of the documentaries overall contents, 26% consisted of the practice of research, 3% of its preparation. Furthermore, 40% of the total time that practice and preparation of research appeared, it was also talked about in and outside interviews (Table 6).

That research was being talked about is indicated by the combination of research practice with the *nature of speech*-category (see Table 7). In some cases (12%) this was a first-hand analysis or interpretation; the host or researcher appeared to be confronted with new research data for the first time and interpreted it. When researchers or hosts were engaged in research they frequently commented on what they were doing (practical commentary 14%) by explaining the process of the research, what they were about to do, or by sharing their thoughts on the experience. The latter varied from cries of amazement when making a new discovery, to announcements that storm was coming.

Both first-hand analysis and practical commentary are very focussed on involvement. Firstly on the involvement of the researchers or hosts through their thought-processes when interpreting research results, and their experience of the research process. Secondly on the involvement of the audience, as they catch a glimpse of research in-action, and that the actors share their experience with the audience. First-hand analysis and practical commentary indicate that the research appeared to actually be conducted at the time of filming, which was mostly the case.

Table 7: The manner in which each research type was discussed during its conduct in percentages of total time that each research type was simultaneously undertaken and discussed. Results that are marked red or green are significantly low values (marked in red) and significantly high values (marked in green).

Commentary styles	Archaeological sciences	Field/ underwater survey	Experimental research	Other archaeological research	Historical research	Excavation	Epigraphy	Other research
First-hand analysis	21.6%	40.8%	20.6%	51.1%		38.2%	77.2%	
▪ *Outside interview*	*3%*	*4%*				*27.3%*		
▪ *Audio*	*1.8%*			*2.1%*			*5%*	
▪ *Interview*	*16.9%*	*36.9%*	*20.6%*	*48.9%*		*10.9%*	*72.3%*	
Practical commentary	39.3%	50.1%	48.1%	2.6%	1.8%	33.6%	4.5%	
▪ *Outside interview*	*16.8%*	*15%*	*6.8%*	*2.6%*	*1.8%*	*14.5%*		
▪ *Audio*	*4.7%*	*2.3%*	*13.5%*			*12.7%*	*1.5%*	
▪ *Interview*	*17.8%*	*32.9%*	*27.7%*			*6.4%*	*3%*	
Explaining/recounting	39.1%	9%	31.3%	46.3%	98.2%	28.2%	18.3%	100%
▪ *Audio*			*14.2%*	*5.3%*	*11.5%*			
▪ *Interview*	*39.1%*	*9%*	*17.1%*	*41.1%*	*86.6%*	*28.2%*	*18.3%*	*100%*
Total	100%	100%	100%	100%	100%	100%	100%	100%

However, a potential downside to these types of interviews and discussion is that the hosts and researchers reacted spontaneously and shared their first impressions. Therefore, the validity and reliability of the things they said is questionable, because these first interpretations were not yet tested. Filmmakers were probably aware of this themselves, because occasionally it was expressed by the narrator or the actors in the documentaries. For example by an archaeologist in *Saving Egypt's Oldest Pyramid* who said, after she translated Egyptian hieroglyphs on a coffin off the cuff, "Well obviously one needs to look at this at the text more carefully, but we can try and at least start to understand what went on." (41:02)

There are indicators that suggest research is conducted 'live', but there are cases (recounting/explaining 14%) when research was seen and talked about, but was not actually happening at that time. Sometimes the audience was tricked into thinking that they were witnessing research, but the research process was actually being simulated while its process was explained. Sometimes the research had actually been caught on film, but the interpretation process was not filmed, and so the results were explained later. Sometimes the research or interpretation process cannot be caught on film – when for example the research has already been done when the documentary is being made. In this way the research process was still included, which would not have been the case if the results of the research had merely been summarised. Nevertheless, recounting the research is less involving, because the process had actually already happened. Yet, the information it gives is more reliable than with the previous two types.

However, in a +/- 45-minute long documentary these segments of presenting or gaining evidence are quite short; too short to present each and every part of research in detail. This limitation forces the research to be downsized, to only show a small fragment of it, or to not show it at all. My suggestion is that the way in which the processes of research are communicated in TV documentaries, is due to the structure of the research method, which make them more or less suitable for particular interview or communication styles. Of course the way in which research is recorded on film is also the choice of the filmmaker, but the results show that differences in which varying research types appeared, did so consistently in the same patterns, which I believe not to result from the mere coincidence of choice.

4.4 Science on stage, or staging science?

Resulting from the analysis of the documentaries' contents was a set of variables, that, in broad terms concern the complexity and dynamic of research methods, and, that define whether a research type is more or less suited for first-hand analysis, practical commentary, or recounting of its process. Below are Table 8 and Table 9 that outline the variables – they are similar to the features of McLuhan's hot and cool media described in chapter 2 – that I will use to analyse the appearances of research types. However, a research type does not have to conform to every variable to be (un)suitable - there are many variations possible - but they serve well as guidelines.

Table 8: Factors affecting the suitability of simulating and explaining a research process

Suitable for recounting	Unsuitable for recounting
• Linear process	• Non-linear process
• Short process	• Long process
• Continuation process requires little intervention from researcher	• Continuation process requires much intervention from researcher
• Short interpretation process, because	• Long interpretation process, because
• Results absolute	• Results relative/dependent on many factors
• Repeatable	• Not repeatable
• Small sample	• Large sample
• Post-find retrieving	• Find retrieving
• Filming of result can be planned	• Filming of result cannot be planned

To begin with the archaeological sciences, that appeared frequently, and one could argue that the high occurrence only meets the audience's appetite for science, which reflects in current television programming with programmes such as Discovery Channel's *MythBusters* and *Through the Wormhole*. However, these scientific methods are also highly suitable to be a small hub of evidence in TV documentaries, because their processes can be summarised and explained in interviews, and also result in absolute evidence.

It was mentioned earlier that the methods of the archaeological sciences are extracted from the natural sciences. The natural sciences were in chapter two compared to McLuhan's definition of a hot medium, because similarly a scientific method test hypotheses objectively through experiments that require little subjective inference from the researcher and is therefore linear. Consequently, this makes an experiment repeatable, so also repeatable on screen. Processes like these can be compressed and included nearly wholly in documentaries, which allows the audience to understand it in its entirety. Also the results it produces are easy to comprehend, because they are quite absolute and not relative to many other factors, and it tests quite small samples, unlike the massive and complex datasets resulting from archaeological survey and excavation. As a result archaeological sciences meet all the conditions listed in Table 8.

In Table 7 it can be seen that archaeological sciences were indeed discussed mostly in interviews in which the process was simulated or repeated and explained, or in comments on its preparation or conduct.

Besides explaining the process the results of these scientific methods can also be subjected to a first-hand analysis, but they comparatively were, because in doing this the results have to be placed in the context of the past. Yet the scientists that usually conducted these experiments in these documentaries were specialists in their own field and not in archaeology or a related field like Egyptology.

However, the results were not left uninterpreted. Frequently cases were brought explicitly to an archaeologist for analysis. Or as in *Ultimate Tutankhamun*, an archaeologist joined the scientist in his experiment to help him with the analysis (Blink Films 2013, 44:01). In short, archaeological sciences were strong additions to the documentaries, as their process could be shown on screen and they delivered rather straightforward and unambiguous results.

On the other hand, this does not mean that archaeological surveys and excavations do not have meaningful outcomes, but they cannot be presented in the same way as archaeological sciences. Their processes are very difficult to visualise as they cannot be repeated or shown wholly due to their complex nature – it could even appear as unauthentic. The instances in which fieldwork was shown, and in which an archaeologist interpreted some findings, they did not yield very strong or significant

evidence that contributed to the larger narrative of the past that the documentary created.

Table 9: Factors that affect the suitability of analysing research results during the research process

Suitable for first-hand analysis	Unsuitable for first-hand analysis
• Continuation process requires intervention from researcher	• Continuation process requires no intervention from researcher
• Results require interpretation	• Results require no interpretation
• A researcher adequate to interpret the results and to place them in the context of the past (e.g. archaeologist) is available.	• A researcher adequate to interpret the results and to place them in the context of the past (e.g. archaeologist) is not available.
• Interpretation process is easy to catch on camera, because it occurs frequently or can be planned.	• Interpretation process is difficult to catch on camera, because it seldom or sporadically occurs, or cannot be planned.

When it came to interviews in which research was simulated and explained (*recounted*) it was quite obvious with most research types that such was the case , but the reproduction of a discovery (survey and excavation) had a tendency towards unauthenticity. Moreover, the act of finding artefacts was not relevant to the evidence, so there seemed little use in simulating this process. On the other hand *other archaeological research*, which was in many cases observation and interpretation without a distinct methodology – which was probably why it was hardly commented on its practice (2.6%) - was often recounted (see Table 7). Basically it was then a step-by-step (in a research-like setting) through the observations an archaeologist made during the research that eventually led to an interpretation.

Archaeological fieldwork is not suitable for recounting it, because in contrast to archaeological sciences the process of fieldwork is very long, with an ongoing interpretation process that takes place mostly during post-fieldwork. As discussed in chapter two, the proceedings of fieldwork rely on many natural as well as social factors, and requires a lot of interference from the archaeologist. The interpretations are as well relative to many interdependent factors. Therefore, this process is not repeatable on film. Table 7 shows that field and underwater surveys were hardly ever recounted in

interviews, but excavation was, although this 28.2% was only one situation, which was rather an anomaly that was difficult to ascribe to a category at all.

In *The Lost Continent of the Pacific* the narrator tells the audience about a remarkable find that changes the narrative of the trade routes of the Polynesians. An archaeologist walks over a site that is being excavated, jumps into a trench, and begins brushing away with his brush, which makes the scene quite exciting. He stops digging, then grabs an adze from a bunch of adzes outside the trench and starts describing it (15:24). The scene suggested that a startling find was made, but actually he did not uncover anything. Usually such situations would be coded as an artefact explained in an interview, however, it seemed uncertain whether the filmmaker intended to simulate the process of excavating.

To me it seems as if the filmmakers were searching for a way to incorporate the archaeological find-process, because in the same documentary there were two attempts to include field surveys that were already undertaken and completed before filming. Basically, it seems the sites were revisited – one even with a helicopter – and the whole process of walking and searching was included, possibly acted out, because the narrator said the research had been done.

In contrast, in the documentary *Two-Million Year Old Boy* a survey was also repeated, but it was distinctly shown as a re-enactment of the discovery of the Australopithecus Sediba. The conflicting messages of the narrator versus the visuals made the line between reality and acting in the *Lost Continent of the Pacific* unclear. If a clear distinction is not made simulating the find-retrieval processes of archaeology (survey and excavation), it could harm the authenticity and credibility of factual documentaries.

4.5 Archaeological fieldwork captured on film

How then is archaeological fieldwork presented? The dynamic processes of archaeological fieldwork were discussed regularly as they were ongoing, with a focus on its practice and the researcher's thought-processes of decision-making and interpreting findings. Table 7 shows that of the total time underwater survey was undertaken and discussed 50.1% were comments on the practice itself and 40.8% was an analysis of its findings. Likewise, in the cases of excavation this was 33.6% and 38.2%.

Even though these occurrences gave a glimpse of the work archaeologists do – which can be exciting, authentic and interesting – the risk that nothing relevant will be found is large, as the processes of fieldwork can be long and unpredictable, which makes filming difficult. However there are some factors that increase the chance of capturing interesting situations and lower the risk that filmmakers will be left empty-handed if nothing special is found.

The chance that the film crew captures something interesting that happens during the fieldwork increases when there are enough camera's at their disposal. *Time Team* archaeologist Mick Aston stated that, in order to capture the discovery of finds and processes of decision-making for an episode of *Time Team*, three film crews were available on the archaeological site (2012, 452).

It also increases when a film crew follows the fieldwork for an extended period, which in National Geographic's case would be during the expeditions they fund. Correspondingly, table 3 shows that two documentaries in which a lot of field and underwater surveys took place were documentary one and two, that each covered a National Geographic expedition, *The Forbidden Tomb of Genghis Khan* and *Maya Underworld: The Real Doomsday*.

However, expeditions are quite expensive undertakings with a risk that it will not lead to ground-breaking evidence, in which case changing the focus of the documentary could be an outcome. These two documentaries were largely or completely about particular fieldwork projects, and so were focussed less on the creation of a narrative of the past, and more on the research methods that were used. When the main theme or narrative of the documentary is to capture research, such as in *Time Team*, then there will be an end product no matter what the results are which would lower the pressure to deliver ground-breaking evidence – a pressure which may even result in fraud.

The expedition in *Maya Underworld: The Real Doomsday* revolved around diving into the cenotes, or sinkholes, in which the Mayas sent human sacrifices to their rain god. It suffered from misfortune when their team was not able to survey the cenote Holtún, due to bad weather. When the rain persisted for over a month – one could argue that the rain god's sacrifices should not be trifled with – the team decided to dive the cenote San Antonio in Guatemala, one which featuring archaeologist Guillermo de Anda had already surveyed. But what was the relevance of this dive? With the $50,000 underwater lamp

that National Geographic provided – the price was indeed mentioned – archaeologists could only see much more bones than they did before. However, de Anda did provide a description and an analysis of what he saw, which he later put in the larger context of his research, and also emphasised the respect one should have for the dead lying in the caves and that therefore nothing was taken from the cave.

In my opinion the filmmakers succeeded in portraying the difficulties and excitement of underwater archaeology. They also combined background information from the stories of archaeologists, visits of archaeological sites, epigraphical, historical and contemporary sources to create a narrative of the Maya downfall. The documentary did not conclude with an attempt to make any evidence look more significant than it actually is, but with an explanation of how the Maya calendar probably worked and a social statement that people should learn from the Mayas and should stop panicking, because the world is not going to end when the Maya calendar ends. The storyline's focus was not to bring new evidence, therefore the lack of it did not matter – although it did seem sometimes unclear what the focus actually was, and the scientific value of these very expensive dives seemed questionable.

On the other hand, even when the discovery of something special is caught on tape, the significance of the find has to be recognised immediately, and even then it is not yet strong evidence. As mentioned before, when a find is analysed first-hand – possibly still in the field – then it is still only a first attempt at understanding its nature, and more research has to be done before making conclusions. This was well illustrated in *The Forbidden Tomb of Genghis Khan*, when host and engineer Dr. Albert Yu-Min Lin states that even though he cannot jump to conclusions yet, he is ecstatic about his team's finds, and archaeologist and National Geographic fellow Friedrich Hiebert is more sceptical, saying "because science takes time." (42:02).

4.6 The archaeological interpretation as a storyline

When the aim of a documentary is to create a narrative of the past, then probably some strong evidence is needed. As mentioned before, it cannot be ascertained that something significant will be found during fieldwork, and besides that it is also perhaps too optimistic to think that one single find will suffice as evidence. Sometimes freshly uncovered finds

were analysed, and even when this find was not a significant or relevant addition to the evidence, it served as an impression of the fieldwork. Archaeological finds have to be considered in context in order to understand the site. Such awareness emerges as the fieldwork progresses and afterwards when the data is further analysed. This long process of ongoing interpretation probably cannot be captured in mere minutes of film, yet it was included in the storyline.

Table 10 shows that, even though archaeological fieldwork was seldom recounted or explained in interviews, archaeological objects and finds appeared quite frequently in interviews in which they were explained, but not in a research context. Remarkably, as table 3 shows, the documentary *Cradle of the Gods*, about the archaeological site Göbekli Tepe that was being excavated during filming, showed hardly any excavation work. Instead, the host interviewed the excavation supervisor on site who guided him around, explained what had been found, and shared some of his ideas. This way of giving evidence may not show the research and interpretation process itself, but the information is probably more reliable, as it has had more time since its excavation for analysis and validation.

Table 10: The manner in which artefacts and sites were discussed in and outside interviews in percentages of total time they were discussed in the sample. Results that are marked red or green are significantly low values (marked in red) and significantly high values (marked in green).

	Outside research context			Inside research context			
Sites/ artefacts	First-hand analysis	Practical commentary	Recounting/ explaining	First-hand analysis	Practical commentary	Recounting/ explaining	Total
Sites	0%	4%	26%	7%	15%	4%	56%
Artefacts	3%	0%	10%	2%	3%	7%	25%
Artefacts on sites	1%	1%	9%	5%	1%	1%	18%
Total	4%	5%	46%	14%	19%	13%	100%

Archaeological fieldwork is a long process of interpretation, and in order to understand it, it has to be considered in its whole context. Only a small piece of it can be shown on film, so it only shows a sense of what archaeology is. However, archaeological sites and artefacts are shown and explained, but not showing how that information was gained through research.

Yet, if we were to assume that the intention of archaeological research is to create narratives of the past through the study of its material remains, and by linking evidence together with interpretation, then it was included in many of the documentaries. The ongoing interpretation-process of archaeological research was embedded in the storylines. The documentaries often consisted of pieces of evidence and the research processes that went beforehand - in many cases the processes of the archaeological sciences, which were linked together to form an interpretation of the past.

4.7 Archaeologists: guides to the past

In the sample archaeologists acted as an intermediate between the past, and understanding the past in the present; they linked the evidence together. In the compilations of interdisciplinary research, which many of the documentaries were, the role of the archaeologists was to use their specialist knowledge and skills to interpret results from research, and to place evidence in the context of earlier studies and in the context of the past. In this way archaeologists distinguished themselves from scientists of other fields that also appeared in the documentaries. Patterns in the archaeologist's performance show that rather than taking the limelight in the documentaries, they had a supporting role as guides in understanding the past.

Firstly, there is a distinction in the time that archaeologists spoke in documentaries, compared to other actors. On the basis of their study of archaeological programming on German television in the past, researchers Stern and Tode claimed that the archaeologists do not say much on television. Likewise, in the total sample of this study only 18.8% of the all the talking was by archaeologists, as Table 11 shows.

Additionally archaeologists also appeared little in number, as only thirteen actors (of a total of 87) were specifically defined as archaeologists and were not hosts - which is the same amount of engineers in the sample. Yet, on average each archaeologist in the sample spoke 166 seconds, which was longer than the researchers from other fields. This could imply that for the matters they talked about, they needed more time.

Table 11: The amount of time each type of actor spoke in seconds, percentages of total speaking in the sample and average amount in seconds per speaker. Results that are marked red or green are significantly low values (marked in red) and significantly high values (marked in green).

Time speaking in seconds and %	Host	Archaeologist	Specialist (related to archaeology)	Other specialist	Non-specialist
Total speaking (seconds)	3193	2154	2424	3312	357
Total % speaking	27.9%	18.8%	21.2%	29.0%	3.1%
Average time speaking per specialist (seconds)	532	166	143	72	71

Secondly, Table 12 presents that archaeologists were infrequently interviewed as stiff talking heads that merely sum up knowledge, but were consistently in interviews in which they were 'in-action', in thee animate and interaction interviews. Above all, most of the interviews archaeologists were in were interaction-interviews, in which they interacted with a host or other scientist.

Thirdly, based on the interviews they were in, it seemed as if archaeologists were the ones to make sense out of the past and out of the archaeological record, and that they had the authority to do so. In their interviews archaeologists conducted research, analysed and interpreted results, walked around archaeological sites, or held archaeological objects whilst talking about them. Researchers from other fields also appeared in dynamic interviews in which they spoke about their research, but

Table 13 shows that they mostly commented on their research or explained it, and that the task of interpreting results was left mostly to archaeologists. Table 14 shows which actors did first-hand analyses and in what interview settings. Of all the time that first-hand analyses were given, 42% were by archaeologists.

Table 12: The commentary styles of each speaker-type in percentages of the total of second of speech of each speaker type. Results that are marked red or green are significantly low values (marked in red) and significantly high values (marked in green).

Commentary styles	Host	Archaeologist	Specialist (related to archaeology)	Other specialist	Non-specialist
Outside interview	5%	5%	6%	8%	3%
In interview	59%	61%	46%	57%	54%
▪ *Animate*	*26%*	*16%*	*7%*	*19%*	*4%*
▪ *Interaction*	*19%*	*32%*	*17%*	*17%*	*17%*
▪ *Talking head*	*14%*	*13%*	*22%*	*21%*	*32%*
Audio interview only	36%	35%	48%	35%	43%
Total %	100%	100%	100%	100%	100%

Table 13: The manner in which each speaker-type discussed the archaeological sites and objects, research, research results, or other activities in percentages. Results that are marked red or green are significantly low values (marked in red) and significantly high values (marked in green).

Speaker	Other	First-hand analysis/ interpretation	Practical commentary	Explaining/ recounting	Total
Host	12.8%	2.4%	5.2%	7.5%	27.9%
Archaeologist	7.7%	4.0%	2.0%	5.2%	18.8%
Specialist (related to archaeology)	14.8%	1.7%	0.5%	4.2%	21.2%
Other specialist	15.3%	1.4%	5.2%	7.0%	29.0%
Non-specialist	2.8%			0.3%	3.1%
Total	53.4%	9.5%	12.9%	24.3%	100.0%

Yet, the interpreting of finds (during interviews) was not a one-man job, but was 59% of the time part of an interaction between researchers, or between a researcher and a host. However, archaeologists also did 9% of these analyses by themselves in animate interviews, which is more than the other researchers did. These results perhaps indicate that the archaeologists are a vital factor and an authority in interpreting the archaeological record. Yet it may also indicate that the interpretation process is an involving process in which several people can or should be engaged in. The archaeologists are then not the sole authority to interpret the past.

Table 14: The amount of time each speaker-type gave a first-hand analysis or interpretation in percentages of the total amount of seconds first-hand analyses and interpretations occured. Results that are marked red or green are significantly low values (marked in red) and significantly high values (marked in green).

Speaker	Outside interview	Animate interview	Interaction interview	Audio interview	Total first-hand Analysis/interpretation
Host		2%	16%	7%	25%
Archaeologist	4%	9%	23%	6%	42%
Specialist (related to archaeology)	2%	2%	10%	3%	18%
Other specialist	2%	2%	10%	1%	15%
Non-specialist					0%
Total	9%	16%	59%	16%	100%

Also, the hosts were 25% of the time involved in the interpretation process, but mostly in interaction with (other) researchers. Even though several hosts are professionals in archaeology or a similar field, and therefore probably able to interpret the results themselves. For example, *Ultimate Tutankhamun*'s host was an Egyptologist himself and the director of the Egypt Exploration Society. Yet, whenever he collected a new piece of evidence from one of the many scientific experiments in the hour and a half-long documentary, he brought it to one of his colleagues to discuss. This was emphasised by the narrator: "Armed with this explosive new evidence, Chris is back in Cairo. He wants to discuss these findings with mummification-expert Salima Ikram." (52:42). This highlights the role that archaeologists often played in the documentaries: characters that appeared several times throughout the documentary to answer the questions of the hosts and other actors. This role involved the comparing of evidence with the evidence from other studies, or telling stories about the past based on the material culture - in either case they added a context in which finds could be understood.

5. Discussion

5.1 Discerning the 'problem'

The previous chapter assessed how archaeology was presented in NGCI's TV documentaries; this chapter examines whether these presentations should be of concern for archaeologists. In chapter two it was suggested that the problems that archaeologists may have with TV archaeology are due to the subjective nature of archaeological research, record and thought, and the likewise open and involving character of television.

Yet, what are these struggles exactly? Do these concerns reflect the data from the content analysis outlined in chapter four? Analysis of the documentaries helped to discern some of the difficulties in presenting archaeology on TV, and also how these difficulties are dealt with by National Geographic and/or their associated production companies.

There are ways to deal with the difficulties in presenting archaeology accurately, interestingly and intelligibly. However, to find a right balance in involving audiences in the process of research and interpretation of the archaeological record, as well as providing valid and unambiguous information, remains difficult. Therefore, the solutions are not as straightforward and simplistic as I had hoped for.

5.2 TV Archaeology: concerns of validity and authority

Discussing the relationship between media and archaeology, or any other academic field for that matter, is likely to lead to debating the – in my eyes non-existent – balance between education and entertainment, and sometimes even the mention of ghastly words like 'edutainment'. Perhaps it is time we consider that we are barking up the wrong tree when try to fit archaeological programming on an imaginary scale that should define the quality and educational value of a television show.

There is no rule that education cannot be entertaining, and many things can be learned from things that were meant to be entertaining only. This was beautifully put by Dutch scholar Johan Huizinga tracing the word for school back to its Greek origin (Vargas

2014, 1), in which *schola* means leisure: "*For the Greek, the treasures of the mind were the fruit of his leisure*" (Huizinga 1949 , 147). In this sense television documentaries, which people watch for their leisure, are closer to the original meaning of school than formal education; a distinction between leisure and learning, or education and entertainment therefore seems the wrong approach.

I suggest that the actual problem archaeologists have is with the ambiguity or invalidity of the content of television programmes, which *could* be effects engendered by television's open character as discussed in chapter two. This can be discerned from the archaeologists' criticism, to name a few: interpretations in TV programmes are simplified and do not show the rightful complexity (Clack and Brittain 2007, 13); a constant process of interpretation is maintained throughout the show, leading to an end product that is open for criticism (Clack and Brittain 2007, 17-18); on TV archaeologists do not get a say (Stern and Tode 2009, 17); and in Time Team the non-specialist host forged the connection between archaeology and the public (Clack and Brittain 2007, 17). These are concerns about wrongful and incomplete interpretations, general misunderstanding of the past, but perhaps also about television programmes not showing archaeologists as a key factor in interpreting the archaeological record; that they are not acknowledged as an authority (Pitts 2012, 1) in understanding the past.

However, it is exactly this openness of information that is key to the involving character of the TV medium; according to McLuhan, TV is a *"mosaic mesh"* (2013, 286) of information, which *"favors the presentation of processes rather than of products"* (McLuhan 2013, 282). It is, then, not a medium to transmit only factual knowledge, like an academic publication – complete interpretations of the past in all their complexity, excluding others from involvement in their creation. Academic archaeologists are perhaps more comfortable with communicating their ideas in publications, and they often address television archaeology as if it should do the same as their publications (Henson 2005, 1), completely unaware that TV is not an audiovisual replacement for their publications. Television works differently and therefore has different effects.

In contrast, I suggested in chapter two that television actually suits archaeology very well, because much like television, archaeology is concerned with simultaneous processes and information, that demand a high degree of involvement to give meaning to their findings, or in other words, to interpret. Archaeologists themselves are probably very

aware that archaeological data requires a high degree of involvement and interpretation in order to be understood, and television enables this involvement. In turn, television can invite the involvement of other people than archaeologists. In the professional and archaeological field, television has raised concerns and questions regarding the authority of studying the past and the validity of its interpretation, which is very much the same anxiety that post-processual archaeology prompted (Clack and Brittain 2007, 13).

5.3 TV documentaries: variety in validity and authority

Nevertheless, in our assessment of TV archaeology, we cannot generalise by lumping all programmes together as if they are the same in their treatment of archaeology, and have the same effects. There are different genres of programmes; in this study the focus was on TV documentaries and this study showed that even the each individual programme is not a perfect example of its genre, but are a combination of features (Chatman 1978, 18).

There are variables that affect the degree of openness, validity and authorisation of the documentary. Some of these variables are characteristic of the genre and others are innate to the research method and the degree to which certain research processes can be shown. The use of certain variables, such as the use of interaction interviews, the appearance of a host, or that of an archaeologist, I believe to be the conscious choices of the filmmakers or NGCI, in an effort to enable involvement in archaeology, while maintaining a degree of valid and authorised information, to subsequently uphold their authority and reputation as an organisation.

Perhaps showing authentic archaeological research is a more effective way to transmit knowledge (Grierson 1946, 146-147), and the audience might be far more interested in experiencing the subject, than hearing the stated facts (Holtorf 2007, 6; Kilborn and Izod 1997, 10); archaeologists may learn something from NGCI's tactics in communicating archaeology.

However, a high degree of involvement is not always always good, but nor is the opposite of stating facts and information in a closed-off manner, such as in talking-head interviews. Varying narrative styles can be used to achieve certain effects (Kilborn and Izod 1997, X). Yet, finding a balance which preserves authenticity can be precarious, because it has to stay within the genre conventions of non-fiction documentary. TV

documentaries also contain fictional aspects - such as in simulating research or re-enactment – which raise concerns on whether the content has to be completely factual, or otherwise transparent in its division of fact and fiction (Apple and Apple 1993, 754; Kilborn and Izod 1997, 9, 14-15; Stern and Tode 2009, 18), and when it concerns assumptions or uncertain information. Below I shall describe a few examples and the implications they may have.

5.4 The host: an unwelcome intruder, or welcome participant?

First of all, hosts appeared in six of the nine documentaries in the sample. On one hand they lead the story from their point of view, which I believe not only shifted the focus from factual knowledge to experience, but also made the documentary more personal. This personal aspect seemed to be a vital factor. The accomplishments, thoughts and emotions of the hosts, or other actors, formed a considerate part of the conclusions in the ends of the stories, except in the documentaries *Nazi Temple of Doom* and the *Lost Continent of the Pacific* – which were anomalies in various aspects.

However, in four of these six documentaries the hosts were not a specialist in archaeology or a related field, which could be seen as undermining the appeal of archaeologists (Clack and Brittain 2007, 17), perhaps because they are not very good communicators (Derry 2011, 539), or as intruders that meddle with the past.

Despite the complaints there are also several potential assets in having a non-specialist host. They may have a certain distance from archaeology, as they are free from jargon and specialist knowledge, so they are able to translate to the audience clearly, without clinging to details. In a way they represent the audience (Sperry 2008, 8) and their perception of the past may be closer to that of the audience, as well as very different from that of an archaeologist. In *Maya Underworld: The Real Doomsday* this lead to an interesting conflict of emotions, when an archaeologist dove into a cenote and explained to the host that it was full of the bones of children. The documentary showed very well the contrast between the archaeologist's fascination with the dead, and the repulsion of the host. Not only does it lead to such interesting situations, but it also stimulates the viewers' empathy because they connect with the host, which positively affects the influence the documentary has on the audience (Shelton 2004, 35).

Furthermore the non-archaeologist hosts had questions about the past, and they gained access to knowledge as well as participated in the experience of doing research that answered these questions. The latter could be seen as a risk, if we maintain a standard that only archaeologists can understand the results of research. Hosts did not, however, lead the story with their interpretations – because they hardly interpreted evidence, and when they did it was with a researcher – but rather with their understanding of the past. Perhaps the greatest benefit for archaeology as a field was that the hosts – as part of the general public – approached archaeologists to help them understand the archaeological record and the past, which from my point of view presents archaeology and archaeologists as accessible to the public.

5.5 Transparency above validity and authenticity

One could argue that the processes of research and interpretation and the thought process of the archaeologist involved – which the sample focussed on – are very interesting, but do not lead to very strong evidence (Clack and Brittain 2007, 17-18). This may be true, but as discussed before it is only a first impression, which was in the sample frequently pointed out by the narrator, hosts or the researchers. However, showing the processes of research and interpretation openly, is not only interesting and may give a sense of involvement in the process, but it is also transparent. This transparency enables the audience to see the process and make up their own mind about whether they believe the conclusions made by the researchers or not, which they cannot discern from stated facts.

On the contrary, doing research before the camera may be interesting, but there is a risk that the experiment fails to deliver the evidence that the filmmakers require; a situation in which the interests of the researcher may conflict with the commercial interests of the filmmakers. This conflict of interest between has been reported in the news[9] to have caused the staging of experiments in science shows on Channel 4 and Discovery Channel. Several researchers that have worked with these channels claim that in some science shows researchers were required to explain the science behind an experiment, and were in some cases forced to confirm an outcome they did not approve

[9] http://www.theguardian.com

of. Not only would this abuse the authority of scientists, it would also grossly harm the authenticity of a programme that is expected to be factual, as well as purposely send a wrongful message into the world for the sake of audience ratings.

This is especially relevant in archaeology – mainly in fieldwork – because of the uncertainty of discovery and the subjective nature of its interpretations of the past. It is not guaranteed that anything will be discovered, let alone something relevant to the story. When something is discovered there has to be a camera nearby to film the discovery, which is more likely when the recording is done over a longer time and with many cameras, which undoubtedly will be very expensive. This uncertainty would cause no problem if the intention was not to find ground-breaking evidence, but to portray the fieldwork itself. Yet, the danger is that a lack of evidence could result in either the creation of evidence, or overemphasising the significance of the little evidence there is. In short, archaeology is very sensitive to fraud. Unscripted television shows are perhaps more susceptible to this because there certainly has to be an outcome when a programme centres around a piece of research, whilst TV documentaries may suffer less from it because quite often it seemed that the evidence was collected afterwards.

Research that led to evidence that was used in the documentaries was not always filmed. To ensure that the process was shown, the research was in many cases repeated or simulated before the camera and its process was explained, or in cases where the research was filmed, but not the interpretation process, the interpretation was explained afterwards. This perhaps goes against the expectations that documentaries record original or 'real' situations, but as in these cases the analyses of the results or the research themselves were not caught on camera, one advantage could be that the evidence then was more reliable as it not only a first impression. Another advantage could be that by recounting the process of research and thought, it was still quite transparent in that it could understood how the evidence had come to be. Yet, to avoid unauthenticity, transparency also applies in showing that the research is actually repeated and not genuine.

Unfortunately, archaeological research – mainly fieldwork – is rather difficult to show on screen, due to its complexity and length. As discussed in the previous chapter, recounting the process of discovery would appear unauthentic, unless it is clearly not real, in which case I then doubt the relevance of showing the process of discovery in the first

place. The archaeological interpretation process, however, is embedded into the entire storyline. The documentaries were mostly composed of a wide variety of interdisciplinary researches and evidence, which were then connected to create a larger narrative of the past. The meaning of the results is not presented as self-evident, but to help with the interpretation and to provide context the archaeologists come into the story.

5.6 Researchers and the (ab)use of authority

However, this does not mean that the archaeologists were depicted as lecturers, but as guides in understanding the past. Several times the results of research were interpreted during interactive interviews in which researchers, or a researcher and a host, discussed them together. However, the archaeologists appeared in these type of interviews the most. Not only in interpreting the results of research, but also in the general understanding of the archaeological record and what it may tell us about the past, the archaeologists in the sample were very helpful. For example, in Saving Egypt's Oldest pyramid one of the engineers found a shaft in the pyramid, after which the narrator comments: "Before drilling into it, Dennis wants some specialist advice, and mummy-specialist Salima is only too happy to help." (32:43). In the sample a wide variety of specialists appeared, such as engineers, paleoanthropologists, radiologists, but only a few archaeologists. Yet, in several documentaries there were one or two archaeologists, or specialists of a related field such as Egyptology, to help hosts or other specialists by providing an explanation of findings that were made. The results in the sample suggest that archaeologists are still seen as a key factor in understanding the past and as an authority to enhance the validity and credibility of a documentary, but without assigning them with a monopoly on interpreting the past.

It could be seen as an advantage that archaeologists in the documentaries were involved in the interpretation of research results and in providing context and that also other scientists were involved in presenting research. In a public survey, the majority of EU citizens claimed that they rather hear about research from the researchers themselves, rather than a journalist, and many others would like to see researchers and journalists bringing scientific news together (TNS Opinion & Social 2007, 16). However, it also ascribes researchers an authority that could also be abused, as mentioned previously.

Documentaries are – even though their aim to capture reality – still subjective, and by editing the footage in a sequence in a particular way, filmmakers can emphasise aspects and even determine the documentary's message. This is especially delicate when the footage consists of closed-off messages, such as talking head interviews, and by not showing transparently how evidence was acquired through research.

For example, the documentary *Nazi Temple of Doom* seemed rather dubious, because it was a very speculative documentary about the Chiemsee cauldron and the Nazi's fascination with the occult, that summed up only speculations and evidence that was in some cases not even accessible with background information about the Nazi's. Some of this background information was given by researchers respected in their fields. Yet, they often did not analyse the results, but only provided background information, that in some cases was carefully placed in the sequence between the questionable evidence and assumptions of the host and the narrator, as if the researchers indirectly agreed with them. However, it was not clear whether the researchers actually agreed with the narrative, but it gave the documentary a sense of authority. This would not have been the case if the research processes were shown, or if the researchers placed the evidence in context themselves.

5.7 Welcome to the new age

Perhaps the academic and professional field of archaeology can take an example from the open character of interpreting with others outside the field, and the role of an archaeologist as a guide. In this sense archaeology does not belong to the archaeologists, but archaeologists use their extensive knowledge of the past and of research, by giving people a helping hand in understanding the past, and in maintaining standards of research and conservation. This attitude may be very important in the future. If we were to assume that the media reflect the current state of society, rather than causing changes to happen (Fowler 2007, 105), then perhaps we can state that society is more interested in seeing the way in which evidence is extracted through research, rather than a polished interpretation of the past; perhaps people would like to be closely involved in the archaeological process.

However, television programmes should now be seen in a different context, one that time and progression of technology during that time has created and has drastically changed the media landscape (Altheide and Schneider 2013, 56). Archaeologists now may have less to fear from the mass media – that produces messages suitable for a large and diverse audience – because the internet as a massive easily-accessible communication platform has decentralised mass media's power of transmitting knowledge, and has changed the media landscape from exclusive to inclusive, and from vertical transmission of information to horizontal citizen-to-citizen communication, providing more space for specialist niches (Rosen 2006).

This has two major advantages for archaeologists. Firstly, on the internet more specific subjects and complex matters can be addressed and people who look for it have the opportunity to find it, so they are not reliant on TV to provide information on a subject. Secondly, archaeologists can use the space that internet provides to tell the stories they find interesting to the people that also find it interesting. They can do this at low-cost, in contrast to costly television productions, while employing multimedia resources the internet provides, such as visual, auditory, audio-visual and textual media and formats such as blogs, vlogs, internet radio and social media. Several archaeologists have already taken up their place on the internet, such as Neil Silberman with his blog *Discovering Authenticity,*[10] Mike Pitts with his *Digging Deeper,*[11] and the channel *Archaeosoup*[12] – which has at least 4000 subscribers on Youtube and posts new videos several times a week.

On the other hand, this also has a downside. Internet provides this space for everyone and the integrity of its contents cannot be assured; alongside archaeologists and archaeological institutes, other interest groups – some concerning fringe archaeology – have found their place as well. With such a wide array of information available to the public, it is essential that archaeologists are able to meet their demand for information and participation. In order to achieve this, archaeologists have to be prepared to engage with the audience. Internet is not a one-way communication system and feedback is given by both sides (McDavid 2004, 174-176). Internet has changed society in that people now

[10] http://www.coherit.com/blog
[11] http://mikepitts.wordpress.com
[12] https://www.youtube.com/user/Archaeos0up

can be easily involved (European Science Foundation 2014, 23) with what archaeologists – as well as other scientists – do, which is not per se a burden. For example, in the documentary The Forbidden Tomb of Genghis Khan, the researchers set up a `citizen-scientists' project on the internet, in which the participants examined satellite imagery of a vast area in Mongolia to locate potential archaeological sites that the expedition team then investigated. A small team of researchers would not be able to look through these images as extensively without the help. The `citizen-scientists' in their turn wanted to participate in the project, so it was beneficial for both sides.

When society develops further in this direction, so too may the role of the archaeologist. As the media landscape transforms, the responsibility of communication lies increasingly more with the archaeologists themselves. It is therefore crucial that archaeologists become more engaged in interacting with the public and that they become proficient in communicating their work. Perhaps for public engagement to become default in archaeological practice an attitude shift has to take place, and that has to root itself in the place where archaeological practice starts: university. Public outreach and media awareness has to be addressed during education to become embedded in later practice. This includes internships in public projects (not only fieldwork practice), presentations to peers and interested public, writing articles and books for the public (Bathurst 2000/2001, 7), and becoming familiar with museum education and other educational programmes about archaeology for children. In short, if archaeologists want to be heard in the information society we now find ourselves in, then they have to shout the loudest.

6. Conclusion

The aim of this research was to find whether archaeologists should be concerned about the portrayal of archaeology – its research, researchers, sites and objects – in television documentaries. In the introduction chapter I presented questions about: the appearance of archaeology in television documentaries, the issues archaeologists have posed regarding archaeology on television, and the roots and possible solutions for these issues. In search for the answers, one part of this research was the in-depth analysis of the content of nine documentaries through ethnographic content analysis (ECA)

The sample included all the documentaries – apart from one documentary that could not be accessed – that were produced in 2012 and 2013 and were broadcasted on the National Geographic Channel in The Netherlands in the year 2013. Another part of the research was an investigation into the workings of media, and archaeology as a discipline. Because of their ethical principles to enhance education, conservation and research, NGCI was chosen as a source to explore if and how they communicate archaeological research whilst maintaining their standards.

This final chapter summarises the conclusions to the main and sub-questions of this research.

6.1 The compatibility of archaeology and television

- *What influence does the medium television have on the presentation of archaeology in television documentaries?*
- *What influence does archaeology have on its own presentation through the medium of television documentary?*
- *Are archaeologists biased due to the media they use – namely the academic publication – and could that explain their heated response to television portrayals of archaeology?*

My suggestion is that the actual problems archaeologists have with TV archaeology are over concerns of ambiguity, validity and authority of information. However, I believe television and archaeology – its practice, its thoughts and the archaeological record it

studies – to be very compatible with each other, because both are complex structures of simultaneous processes and information that require high degrees of involvement to acquire meaning.

The subjective nature of archaeology requires involvement, and television enables this. Perhaps archaeologists fear that when they have to share their position of interpreting and engaging with the archaeological record, this could lead to ambiguous or invalid information, or even to the exclusion of archaeologists as a vital part in understanding the past.

The cause for the archaeologists' distress may be partly due to their use of the academic publication to communicate their findings and thoughts. The academic publication is not two-way, but one-way traffic, as no response from others is required for its completion. As soon as an article is published, it is finished. The academic article therefore disables involvement – apart from peer reviews. In this way the academic publication is in sheer contrast with television.

6.2 The presentation of archaeology on television (and studying it)

- *How is archaeology – its research, researchers, sites and objects – presented on television?*

The key feature of this research was that it was not a counting-game of how many times an archaeologist or certain artefact appeared, but instead viewed them in the contexts in which they were presented, how they were presented in relation to each other, and their appearance in interviews.

The main pattern that was observed throughout the sample was a focus on the research process, including the fascination of the researcher and the practicalities of undertaking research. Most of the documentaries were structured in a like manner: as a collection of several pieces of evidence from researches – often demonstrating the research process or part of it – that were analysed and formed a larger interpretation that encompassed the storyline. Regularly the research practices were discussed in interviews, and also outside interviews amongst the scientists themselves.

There were considerable differences in the appearance of various research types – such as archaeological sciences and archaeological fieldwork – which lied specifically in

the explanations of their processes in interviews. My suggestion is the structure of the research processes are at the root of these differences. The factors that influence the way a research is presented on television roughly include the repeatability and length of its process, and the complexity of its results (see chapter 4).

Archaeological fieldwork such as excavation or field/underwater survey are long processes that are simultaneously influenced by several processes (e.g. natural processes of decay), which require the continual involvement of the archaeologist undertaking it. Additionally there is no assurance that something relevant to the documentary will be found during the fieldwork, only during find-processing can the collected data be properly assessed, and the results are often related to the results from other research, which can increase the complexity of the results. These factors make it very difficult to capture the entire fieldwork process on film, so it cannot be compressed into a short summary that can be shown on screen - thus only fragments of fieldwork can be shown for an impression of the fieldwork itself.

The results relevant to the documentary's story can be summarised by showing the sites and objects that were researched, without actually demonstrating the fieldwork process. In fact, the attempt of recounting the fieldwork process may even appear as unauthentic. The process of archaeological research and interpretation – complex as it is – was therefore interwoven into the entire storyline, in which pieces of evidence from several researchers were analysed and combined together in one larger interpretation forming the storyline of the film.

The appearance of fieldwork in documentaries is in contrast with the appearance of the archaeological sciences, which is a collection of methods from the 'hard' sciences applied to the study of the past. These methods are in comparison to archaeological fieldwork quite linear and have more objective outcomes rather than relative results. It is therefore possible to compress these experiments: quite often these experiments were repeated in front of the camera, even though the initial experiment was already undertaken. Although this means that some experiments may have been staged, it also enabled that the research processes that led to the results could be shown and explained to the audience, rather than leaving out the process altogether.

Furthermore, throughout the sample the role of the archaeologist seemed to be one of a guide in understanding the past, rather than taking the lead. Archaeologists did

not appear in large numbers, but one or two archaeologists per documentary did appear several times throughout the documentary as an authority to interpret results or to provide context.

6.3 Assessing the 'problem'

- *Should archaeologists be concerned about the portrayal of archaeology on television, and if so, for what reasons?*

My suggestion is that NGCI may have chosen its modes of presentation with the intention to authorise and validate information. For example, it can be seen in the high number of specialists that participated in the projects and their manner of presenting research in interviews. Yet, these manners of validating and authorising information do not affirm that the information given in documentaries is indeed correct or trustworthy.

Perhaps archaeologists could take an example from NGCI, in their portrayal of the archaeologist. That is, as an authority that is not the sole owner of the right to interpret the past, but as one that can be approached by the public to help them to understand the past, whilst maintaining standards of research and conservation. Also, NGCI has shown itself to be very skilful in showing a wide audience the processes of research, the advances that are made in archaeology and other sciences, and communicating narratives of the past through compelling storytelling, as well as touching upon subjects of current social importance, such as identity.

On the other hand, authority can be abused and research can be faked. As referred to in chapter five, there are known cases in which the authority of scientists was abused in scientific television shows by forcing them to endorse false outcomes of scientific experiments, because it would provide more entertainment value.

To avoid unauthenticity or fraud, a high degree of transparency is necessary when communicating archaeology to the public. Although that would require more involvement, by openly showing the processes of research and interpretation – which archaeologists in their turn may disapprove of, because the risk of communicating ambiguous or invalid information or evidence.

6.4 Some thoughts for the future

- *How can archaeologists harness the power of media to adapt to a rapidly changing society and to the future?*

There is still plenty to be studied about the presentation of archaeology in the media. Content analysis was found to be a very useful method for understanding the logic of media, here the medium of television documentary, and the depictions of archaeology on television, as well as how this may reflect society's exchange of knowledge. Its usefulness could be enhanced by enlarging the sample for a wider variety of presentations, and by increasing the number of researchers to avoid biased results and augment their validity.

However, as previously mentioned content analysis is limited to the perception of the researcher. In chapter 5 I alluded to scenes in the sample as being misleading, because the undertaking of research appearing to me as unauthentic or in which the statements of specialists seemed to be used to confirm the documentary's otherwise disputable narrative. Unfortunately, the method I have used does not allow this to be recognised and therefore the latter cannot be stated with certainty. In order to obtain such information it is imperative to immerse oneself in the production of TV documentaries, by either participating in production or by interviewing and observing the parties involved in it. However, interviewing either filmmakers or specialists involved in the making of documentaries does not guarantee candid information. Thus, a degree of conjecture when researching documentaries will remain.

For the times to come it is especially necessary that archaeologists have an open character: with the rise of the internet and other new technology, knowledge has become decentralised, and information openly available. People's attitudes may have changed in that they can and want to be more involved in matters they did not have easy access to before. The internet has enough space and means for archaeologists to engage with their audience, but they have to be willing to put in time and effort, because there is also enough space on the internet for fringe archaeology. If archaeologists want to be heard above the noise of the others, then they have to put effort into engaging with the public, show them what they do, and enable more public involvement in what they do – such as citizen science projects. In short, archaeologists will have to shout the loudest.

Summary

Archaeology on television has been a widely debated subject amongst academic archaeologists. Perhaps the dilemma that archaeologists face is that archaeology – its practice, its interpretations and the archaeological record it studies – is much like television, in that they both require high degrees of involvement to give them meaning. Thus concerns arise over the validity and ambiguity of the television programme's information, and the archaeologist's authority in discerning the past. However, should archaeologists be concerned about portrayal of archaeology in television documentaries?

To provide answers to this question, the presentation of archaeological research, sites, objects and researchers in nine documentaries on the National Geographic Channel in the Netherlands in 2013, that were produced in 2012 and 2013, were analysed through ethnographic content analysis.

The documentaries mainly focussed on the practice of research, including the scientist's fascination with research. Sometimes research methods were repeated before the camera after it initially had taken place, or they were shown 'live' and its results were analysed first-hand.

However, the appearance and discussion of the research processes varied per type, possibly due to the structure of the method. In particular, archaeological fieldwork is a difficult process to capture on film, but the process of archaeological interpretation was often embedded in the entire storyline.

Amongst other researchers, archaeologists appeared few in number. However, the archaeologists had a specific authoritative role as guides in understanding the past, and they would appear several times in a documentary to provide context or to interpret research results.

It was found that certain narrative styles enabled, or disabled, involvement in the research and interpretation processes. There were many cases in which archaeology was presented in an open, yet informative way, while regarding the archaeologists (and researchers in other fields) as authorities. However, research can also be faked or appear unauthentic and authority can be abused. Therefore in communicating archaeology to the public a high degree of transparency is key.

Samenvatting

Archeologie op de televisie is een veelbesproken onderwerp onder academische archeologen. Het dilemma dat hen confronteert is wellicht dat archeologie (de beoefening, de interpretaties en het archeologische bestand dat zij bestudeert) sterk overeenkomt met televisie in dat zij allebei grote betrokkenheid vereisen om hen betekenis te geven. Hierdoor ontstaan er zorgen over de validiteit en de ambiguïteit van de informatieve inhoud van het televisieprogramma, en over de autoriteit van de archeoloog in het uitzoeken van het verleden. Echter, zouden archeologen bezorgd moeten zijn over de presentatie van archeologie in TV documentaires?

Om deze vraag te beantwoorden achterhaalt dit onderzoek hoe archeologisch onderzoek, objecten en vindplaatsen in beeld werden gebracht in negen documentaires op de Nederlandse National Geographic Channel in 2013, die in 2012 en 2013 zijn geproduceerd, door middel van etnografische inhoudsanalyse.

De documentaires richtten zich vooral op onderzoekspraktijken, waaronder de fascinatie die de onderzoeker heeft voor zijn onderzoek. In sommige gevallen werd onderzoek herhaald voor de camera nadat het daadwerkelijke onderzoek al had plaatsgevonden, en in andere gevallen werd het onderzoek 'live' verricht en werden de resultaten direct geanalyseerd.

Echter, de manieren waarop onderzoeksmethoden verschenen en werden uitgelegd verschilde van elkaar, mogelijk door de structuur van de methode. Vooral archeologisch veldwerk is moeilijk in beeld te brengen, toch is het proces van archeologische interpretatie in de verhaallijn ingebed.

Van de vele onderzoekers in de documentaires, waren hiervan slechts een paar archeoloog. Toch hadden de archeologen een specifieke autoritaire rol als gids in het begrijpen van het verleden. Zij verschenen meerdere malen per documentaire om context te geven of om onderzoeksresultaten te interpreteren.

Het is duidelijk geworden dat bepaalde verteltechnieken betrokkenheid in het proces van onderzoek en interpretatie mogelijk of juist onmogelijk maken. In vele gevallen werd archeologie open en op informatieve wijze gepresenteerd, terwijl archeologen (en andere onderzoekers) werden behouden als deskundige. Echter, onderzoek kan ook

vervalst worden en autoriteit kan worden misbruikt. Daarom is het essentieel in het communiceren van archeologie om een hoge graad van transparantie te behouden.

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Appendix A: Definitions of the (sub)categories in the research protocol

Footage data recording	
Documentary	The number and title of the documentary the data record belongs to.
Start time	The point in the playtime of the documentary where the shot or sequence of shots begin. This time is noted in 6 digits, recording hours, minutes and seconds each in 2 digits.
End time	The point in the playtime of the documentary where the shot or sequence of shots end. This time is noted in 6 digits, recording hours, minutes and seconds each in 2 digits.
Seconds	The calculated seconds the record lasts. The amount of seconds determine the value of the record.
Number of shots	The counted number of times the edit changes.
Interview style	A shot is recorded as interview when at least on interviewee is seen giving an interview, either with his/her face directed to the camera or to the other person involved in the interview. When the camera zooms in are focusses on another part of the interviewee than his/her head, or on something the interviewees are apparently physically or visually engaged in, this footage then also is coded as an interview.
Interview audio	When the interview can be heard, but not seen, this box is ticked to the footage shown is not related to the interview in the way that the interview is taking place at the same moment in the same place.
Nature of speech	This category specifies the speech of the specialist speaking, but only when they are engaged in an activity or with an object. The subcategories within this category determine whether research the research shown is indeed happening at that moment or if its retold and the research is used as an illustration.
Person speaking	These boxes are ticked to determine what kind of specialist is speaking. Multiple boxes can be ticked at the same time if people are talking through each other's words or when the interaction is too quick to separate.
Research types	Research is seen being carried out or it seems as if research is carried out to illustrate the story that is being told.
Research products	Research products are solely shown on screen or are very clearly shown, often on a computer, to analyse or explain results.

Archaeological objects/artefacts/finds	Artefacts are solely or very clearly shown in the image. This category is often combined with another category. Combinations with other categories determine its context: when combined with *Interview style* it is often used to tell a story, when combined with *Research* it is subject to research and when its combined with *Photograph* the object is shown on a photograph. In combination with *Archaeological site* it is an artefact/find that is in situ. An artefact/find is solely grouped within this category when nothing else is shown around it or when the background cannot be defined.
Archaeological sites & monuments	An active or inactive archaeological site or monument is clearly shown. It can be the background or location of an *Interview* or *Research*. It can also be shown on a *Photograph*.
Other activities	One or multiple characters are shown engaged in a different activity than research practices.
Natural Landscape	A landscape that is not man-made. When this category is combined with other categories, it means that the landscape is seen being used for something.
Built environment	A built environment is an environment created by humans, such as cities and research institutes. Also close-ups of random people belong to this category.
Re-enactment	A re-enactment shot or sequence is shown. This category can only be combined with the category *Interview audio*, unless it overlaps with another image.
Reconstruction	A digital reconstruction or reproduction is shown.
Stock footage	Footage or images that appear not to be produced for this documentary film are shown. This can be, for example: photographs, historical footage, news footage and home videos.
Visual effects	Effects that are not filmed, but later added into the film. They are often used to illustrate information or to point out something within another image. They nearly always overlap other footage and are therefore often combined with other categories.
Overlapping images	Images are overlapping, which makes the coding complex and confusing. When this is the case, the coder ticks this box, so it can be recognised as such when the data is analysed.

Interview styles	
Talking head	The interviewee sits or stands still and speaks. He or her are not using their surroundings to tell the story. This category can be combined with other categories, such as archaeological site, in which the site is used as a background for the interview.
Animate	The interviewee is engaged in another activity and/or uses his/her surroundings to tell the story.
Interaction	The interview is an interaction between two or more people. They can be engaged in another activity and/or using their surroundings to tell a story, but they do not have to be. For example: the host asks questions to a specialist who explains what he/she is doing or what the evidence means or how a research method works.

Nature of speech	
First hand analysis	It appears that the specialist or host is confronted with information for the first time, which he or she then describes, analyses, interprets or contextualises. This is only the case when research is genuinely undertaken and it is not an explanation of evidence that was already known.
Practical commentary	The specialist or hosts gives comments on practical actions (mostly research) they are undertaking or the condition in which they are doing it. They could be explaining a method, explaining what will be done, giving instructions are commenting on work conditions.
Explanation/recounting	The specialist or host is explaining something that has already happened or was already known, because the research for it has already been done, but uses his or her surroundings, or the activities he or she is engaged in to illustrate the story. When this category is combined with the category *Interview style*, it can only be combined with *Animate* or *Interaction*.
Other	The nature of speech cannot be specified or does not belong to any other subcategory within the category *Nature of Speech*.

Person speaking	
Host	The host is speaking in the fragment or his/her speech overlaps another fragment. Narration done by the host does not count.
Archaeologist	The archaeologist is speaking in the fragment or his/her speech overlaps another fragment.
Specialist with a specialism related to archaeology	A specialist with a specialism related to archaeology is speaking in the fragment or his/her speech overlaps another fragment. Specialists belonging to this category are: paleoanthropologists, Egyptologists, epigraphers, Indologists, metallurgists, evolutionary anthropologists and anthropologists.
Other specialist	A specialist that is not an archaeologist, nor has a specialism related to archaeology, is speaking in the fragment or his/her speech overlaps another fragment. Some of these specialists are chemists, geologists, historians and engineers.
Non-specialist	A person whom does not appear for his/her specific professional or academic specialism. In most cases these people are eye-witnesses.

Research types	
Excavation	The practice of excavation Is clearly seen in the image, including sifting earth for finds.
Field/underwater survey	It is clear that a survey is carried out, whether extensive or intensive. Or the researchers try to find an archaeological site.
Archaeological sciences	In accordance with (Greene & Moore 190-244)
Historical research	Historical research is carried out on screen in which historical material is seen being analysed. This includes the study of historical documents, maps, aerial photographs, and oral history.
Epigraphy	Inscriptions are being translated and/or analysed within the image.
Experimental Archaeology	Research is carried out in which hypotheses are tested by replication. This can be based on archaeological data as well as historical data.
Other Archaeological research	The research undertaken is of an archaeological nature, but cannot be grouped in any other subcategory in the category *Research practices*. The analysis of structures and artefacts or archaeological observation could belong to this category.
Other non-Archaeological research	The research undertaken is not archaeological research and cannot be grouped in any other subcategory within the category *Research practices*.

Other Activities	
Interaction	Characters in the documentary are seen interacting with each other. They could be, for example: meeting each other, walking around together probably while chatting with each other, or otherwise interacting with each other.
Solitary	A character is seen undertaking activities by him/herself which is not a research activity. Visiting and wandering around sites and museums and/or observing his/her surroundings belong to this subcategory.
Going somewhere	One or more characters is/are determinately on his/her/their way to some place, or is preparing to do so.
Preparing research	One or more characters are undertaking activities that are not the research itself, but a practical preparation in advance to the research or the practical activities (of cleaning up for example) after the research. Kitting up for a survey is a good example that would belong to this category.
Other	One or more characters can be seen undertaking activities that do not belong to any other subcategory within the category Other Activities or any other category.

Archaeological objects/artefacts/Finds	
Funerary container(s)	Container(s) in which human or animals remains are stored. The urn, coffin, sarcophagus and inhumation belong to this category.
Ceramics	Object(s) created by the hardening of clay by heat.
Animal bone(s)	The non-fossilised archaeological bone material of deceased animals.
Human remains	Non-fossilised archaeological remains of deceased human beings. Included within this category are human mummies, bone material and other human remains recognisable as, or described as human remains, such as ashes from a cremation.
Fossil(s)	Fossilised material of animals, plants and hominids.
Stone tool(s)	Human-made tool(s) fashioned from stone.
Prehistoric rock art	Prehistoric rock sculpture, such as petroglyphs, statues and carved reliefs, and pictographs.
Wall painting(s)	Non-prehistoric wall painting(s) that is/are dominantly pictorial.
Inscription(s)	Carved text and hieroglyphs. Wall paintings that are dominantly comprised of hieroglyphs also belong to this category.
Sculpture	A visually stimulating three-dimensional shape formed by humans out of material. This can be carved from stone and wood, made from ceramics or from casting metal. Statues and reliefs belong to this category.

Historical material	Material consisting historical data, mostly on a textual basis. Non-inscribed historical documents and historical maps belong to this category.
Gold	An object that may belong to another category or none of the above categories that is mostly made from gold. Such an object is classified as *gold* due to specific research interests.
Double category	Several objects not of the same category are displayed in the same shot and one is not more dominant over the other. Or objects that are each depicted in an individual shot that overlaps or is shown beside each other.
Other	Archaeological artefacts or finds that are not specified or do not belong to any other subcategory within the category *Artefacts/Finds*.

Archaeological sites and monuments	
Active archaeological site	It is apparent that the archaeological site or monument is being excavated, investigated, or the subject of heritage conservation or restoration practices. Observations made during the visit of inactive Archaeological sites are not counted as an investigation.
Inactive archaeological site	The archaeological site or monument appears not to be subjected to excavation, investigation or conservation or restoration practices. These sites are often shown as mere visually pleasing images or are visited to illustrate information, such as stories and evidence.
Other	None of the subcategories in the category *Archaeological site* can be attributed to the archaeological site.

Research products	
3D-scan	3D-scans of an archaeological object or structure.
CT-scan or X-ray scan	CT-scans or X-ray scans of archaeological objects.
Scans of geophysical research	Images (scans) produced through geophysical survey.
Remote sensing images	Images produced by remote sensing techniques, such as aerial photographs or satellite imagery.
Graphs, charts, diagrams	Graphs, charts and diagrams resulting from research are clearly shown.
Drawing(s)	Archaeological drawings such as, Harris Matrix, profile, architecture and artefact drawings.
Other	Other research proceedings that cannot be filed under any other subcategory within the category *Research proceedings*.

Natural Landscapes	
Cave	The interior or exterior of a cave.
Desert	A desert landscape.
Fields	Plains of grassland or plains used for agriculture, even though that is a cultural landscape.
Steppe/savannah	A plain with sparse vegetation apart from grass and shrubs, in a montane area.
Woods &forests	A landscape with dense vegetation that consists mostly of trees. Tropical forests, such as the jungle, also belong to this category.
Mountains & hills	An image wherein mountains and hills are dominant.
Rivers, lakes	Rivers, lakes and riverbanks and the shores of a lake.
Seas & oceans	Seas and oceans and the shores of seas and oceans when the sea is also apparently visible.
Sky	An image of the sky without any other landscape, unless the landscape is unrecognisable. For example: sunsets, stars and the moon.
Other	The natural landscape does not belong to any subcategory in the category *Natural landscapes* or cannot be recognised or specified further than that it is a natural landscape.

Built environment	
Camp	A small short term settlement set up for specific purposes, such as research.
City	A cityscape without any specific focus on historic buildings or research institutes.
Village	An environment which can be defined as a village, or a small community.
Historic building	The interior or exterior of a historic building when it can be recognised that it is a historical building or when a historical building is dominant within the image and the historic building is not a research institute.
Research institute	An institute or centre with a purpose to do research. To this category belongs: universities, museums and other institutes.
Other	When an image of a man-made environment does not belong to any other subcategory within the category *Built environment* or *Archaeological Site*, or when it cannot be specified any further than that it is a built environment. Random close-ups of humans also belong to this category.

Visual effects	
Map	Animated or still maps. These maps are often used to point out a certain region or route.
Text	Text that is not parts of a map or a timeline. This text often overlaps other images. The title belongs to this subcategory.
Timeline	A timeline to clarify certain (sequences of) events or processes.
Arrows & lines	Arrows and lines, often to point out something within the image or to illustrate something on the image.
Other	Visual effects that do not belong to any other subcategory within the category *Visual Effects*.

Stock footage	
Historic footage	Historic film footage.
Television footage	News footage, film footage and amateur footage.
Photograph	A still image or photograph, this may overlap with other categories at it can often be a photograph of an archaeological discovery or research.
Other	Stock footage that does not belong to any other subcategory within the category *Stock footage* or cannot be specified further.

Appendix B: Observation forms

The Forbidden Tomb of Genghis Khan

Details programme

Title:	The Forbidden Tomb of Genghis Khan	
Production Company:	National Geographic Television	
Production Year:	2012	
Running time:	Minutes: 44 Seconds: 29	
Times broadcasted in 2013:	3	
Dates and times broadcasting(s):	Saturday 27 Juli 2013	19:00 tot 20:00
	Sunday 28 Juli 2013	09:00 tot 10:00
	Friday 2 Augustus 2013	12:00 tot 13:00
Narrator (gender, accent):	Yes, the same person as the host. (American)	
Host and gender host:	Yes, male.	

Specialists appearing

NR.	NAME	SPECIALISATION
#1	Dr. Albert Yu-Min Lin (host)	National Geographic explorer; Materials Science and Engineering
#2	Luke Barrington	Human Computation Expert
#3	Dr. Kostas Stamatiou	Expedition Historian
#4	Dr. Nathan Ricklin	Field Systems Engineer
#5	Dr. Alex Novo	Geophysical Survey Specialist
#6	Dr. Shay Har-Noy	Communications Expert
#7	Jake Felderman	Legal Counsil
#8	Omri Paran	Oktokopter Engineer
#9	Dr. Fredrik Hiebert	National Geographic Archaeology Fellow
#10	Prof. Tsogt-Ochiryn Ishdorj	Intl. Assoc. for Mongol Studies

Note: The team of experts are experts in very specific areas. However, sometimes they are not actually experts in the field that the text on screen indicates. According to information on the experts retrieved from their personal websites and LinkedIn pages, most of the specialists are actually Technical and computer engineers. One of the experts was said to be a communications expert and one other a expedition historian, but both of them turn out to be engineers.

Plot synopsis

This documentary follows the young scientist (engineer) Dr. Albert Yu-Min Lin, who had a dream a few years ago to search for the legendary tomb of Genghis Khan. His family descents from this region. He and a team of experts undertake a journey by truck, care and on horseback to find the tomb, using modern non-destructive technology. The tomb

lies in a region called 'The Forbidden Zone' and through historical texts and analysis of sattelite imagery they try to find the tomb at a sacred mountain. They find a modern shrine and around it they find old structures which implicate a significant architectural structure, this site they called 'Archsite 1' was scanned with geophysical methods, surveyed and samples were taken for dating.

Focus of documentary (Narrative, frames, themes, discourse)

The documentary is not so much a summary of interpretations and conclusions, but it follows the researchers how interpretations come to be.

- The story revolves mostly around the 15-day expedition itself. It's interesting that they lay emphasis on the experience and challenges of the team. There are a minimal amount of shots of artefacts, but a lot of the time trucks can be seen driving and being pulled out of the mud, telling how raggedy the terrain is and how it must have been in the time of Genghis Khan as well.
- Besides a focus on the team there is much attention for the process of conducting research, such as working with the magnetometer and the ground-penetrating radar. Also the team, especially the archaeologist Fredrik Hiebert, are followed while they interpret what they find.

Research Methods

Non destructive
The government and the people fear Genghis Khan. Some believe opening his tomb will bring bad luck. No digging was allowed.

Remote Sensing: Citizen scientists investigating satellite imagery
The research project published many satellite images of the area, which the public were allowed to examine to identify patterns on the earth surface that indicated that man-made structures would lie there.

Historic Texts
Historic texts were used to indicate the location of the tomb.

Remote Sensing: Aerial Photography
An oktokopter is a flying mechanism with a camera and a a programmable GPS which was used to have a more specific look at a small area with Bronze Age structures.

Field Surveying
The team surveyed the architectural structures of several area, but more so on the Archsite 1 where they flagged everything that seemed significant. Samples of the wood and tiles were taken.

Geophysical Surveying

Magnetometry
The team used a magnetometer to scan Archsite 1 to find man-made structures. They explain the traits of man-made structures that the magnetometer can detect and that wearing anything metal while scanning could distort the results. Dr. Fredrik Hiebert interprets the results by a computer.

Ground-Penetrating Radar

The GPR was used to further investigate Archsite 1. Dr. Albert Yu-Min Lin explains in the narration the GPR allows them to dig without a shovel, because they are not allowed to dig.

Virtual Archaeology 3D-Reconstruction

The GPR results were used to construct a 3D reconstruction of the temple.

Thermoluminescence

A tile sample was taken to find out through thermoluminescence when the tile was fired, Fredrik Hiebert explains.

C14 dating

Wood samples were taken and C14 dating was used to find out which period they are from.

Note: Even though Dr. Albert Yu-Min Lin sometimes makes conclusions about findings, interpretations on findings and research results were mostly done by archaeologist Dr. Fredrik Hiebert.

Results

- Archsite 1 contained man-made structures according to the scan results. The C14 and Thermoluminescence dating exposed the structures were probably from the 12th or 13th century, which is the exact time of Genghis Khan.
- Dr. Fredrik Hiebert is more sceptical about their findings at first, but is enthusiastic when the C14 dating comes out positive. He does tell Dr. Albert Yu-Min Lin that he should not jump to conclusions quickly, because science takes time.

Conclusions

- It is still too early to say, but the team convinced Archsite 1 contains a 13th century Mongolian-period temple.
- The team believes they found new evidence that indicates the tomb of Genghis Khan indeed lies at this sacred mountain.
- The team will present the scans and dating results to the Mongolian government.
- Dr. Albert Yu-Min Lin hopes their findings build a new foundation for conservation and that it will enhance the cultural pride of the Mongolian people for this sacred mountain.
- Dr. Albert Yu-Min Lin realised his dream to search for the legendary tomb of Genghis Khan.

Notes on Conservation and protection of Cultural Heritage

At one point the team finds out that at one of the structures looters have dug. They appear to be very negative about looting cultural heritage. They are worried that the looters will find the tomb before the team does.

Maya Underworld: The Real Doomsday

Details programme

Title:	Maya Underworld: The Real Doomsday	
Production Company:	National Geographic Television	
Production Year:	2012	
Running time:	Minutes: 44 Seconds: 58	
Times broadcasted in 2013:	7	
Dates and times broadcasting(s):	Friday 22 February 2013	03:00-04:00
		18:00-19:00
	Sunday 24 February 2013	10:00-11:00
	Sunday 24 March 2013	01:00-02:00
	Sunday 2 June 2013	10:00-11:00
	Sunday 7 July 2013	10:00-11:00
	Sunday 14 July 2013	10:00-11:00
Narrator (gender, accent):	Yes, the same person as the host. (American)	
Host and gender host:	Yes, male.	

Specialists appearing

NR.	NAME	SPECIALISATION
#11	Diego Buñuel (host)	Journalist/Explorer
#12	Guillermo de Anda	Archaeologist/Cave diver
#13	Becky Kagan Schott	Underwater videographer
#14	John Hoopes	Archaeologist
#15	David Stuart	Epigrapher
#16	Marshall Masters	Survivalist/Author
#17	William Saturno	Archaeologist
#18	Erin Harvey	Cinematographer

Plot synopsis

The documentary follows journalist and explorer Diego Buñuel on a National Geographic Expedition to find out what the Mayan human sacrifices in two sacred cenotes can tell us about the Maya downfall and how it influenced their prediction of the apocalypse of December 21st 2012.

Underwater archaeology in two cenotes was undertaken by Guillermo de Anda and his team to find out what motivated the Mayans to make human sacrifices and offer

these to the rain god Chaac and if they are related to the Maya downfall in the 9th and 10th centuries.

Also other experts are interviewed and these perspectives and pieces of evidence are put together to get an overview on whether the Mayans predicted an apocalypse in 2012, where this belief in a pending apocalypse comes from and how some people are responding to it.

Focus of documentary (narrative, frames, themes, discourse)

The documentary follows Diego Buñuel who asks questions about the Maya apocalypse in 2012 and finds experts to answer them by interpreting findings. The experts are mostly archaeologists.

- Diego Buñuel looks at the apocalypse from different perspectives. He wants to know how the Maya apocalypse fear has come to be and interviews someone who believes in it and who is already preparing for it. He shows proof for and against the Maya apocalypse happening in 2012. He also gives some background information on Mayan culture and history, sacrifice rituals and their calendar.
- Archaeologists are followed into caves, tunnels, onto a temple and next to a wall and their interpretations, thoughts and experience of the area, findings and architecture are filmed. Diego Buñuel often asks them questions to understand what they are seeing. The archaeological thought process seems a relevant part of the documentary.
- The part about diving into the cenotes seems to have little to do with the 2012 apocalypse. This parts is mostly about the downfall of the Mayans correlating with many human sacrifices, specifically of children. These two parts don't seem to correlate very much at first, but it comes together in the conclusion and this duality is reflected in the title of the documentary.
- There is a big focus on underwater archaeology and diving, including the hazards of (cave) diving and the conditions where they dive in.
- There are re-enactment scenes of rituals quite often during narration. Perhaps to create empathy with the viewer to emphasise that the human rituals were real living human beings.
- The storyline seems quite random sometimes, switching from one perspective to another research. It is not very clear what is there to come.

Research Methods

Underwater survey

Two underwater cenotes were inspected. The first Cenote was in Chichen Iza 112 kilometres away from the capital Merida, but the visibility underwater was so bad due to the rain, it was impossible to see and it was dangerous. So the team waited for the water to clear for a month, but as the situation did not get better they moved on to another cenote 112 kilometres away: the cenote San Antonio.

Both dives were preliminary and were not an actual intensive survey, but a mere first-look at the caves. A team dived into two cenotes with a special tool developed by National Geographic: the sunsphere, an underwater lamp that bursts bright light. The

price of this lamp was told in the narration: 15000 dollar. It is quite difficult to see well in the cave, but this light reveals much on what lies on the bottom.

Archaeologist Guillermo de Anda tells about the cenotes and what lies within them. Nothing was picked up, because it is a sacred cenote, but de Anda analyses the human bones he sees.

There quite a few mentions of the hazards and difficulties of diving and the cave being a mass grave. The sunsphere was glorified several times.

Historic texts/literary study

In a secret library Diego Buñuel and John Hoopes visit, lies a early 19th century copy of the Dresden Codex. They use this book to illustrate how the apocalypse frenzy started. The texts on the walls in the scribers' working room in Xultun were also analysed for their meaning.

Climate research

Climate research was not conducted in the documentary, but is used to correlate the esteemed large amount of human sacrifices at one point with a terrible draught in the 10th century that occurred at the same time as the Maya downfall.

Epigraphy

New hieroglyphs were analysed by the famous David Stuart. This is the second mention of the end of the calendar on 21st of December 2012.

Advanced photographic techniques

The wall paintings found in a in Xultun in Guatamala were very vague and difficult to see with the naked eye. With advanced photographic techniques that were not explained any further, they were able to see what the wall paintings depicted.

Results

- The human sacrifices in the cenote San Antonio comprise mostly that of children. Guillermo De Anda believes that human sacrifices in the cenote are made in times of trouble and that more sacrifices were made when times were very bad as it was in the 10th century when terrible draughts struck them. The sacrifices in the cenotes implicate a first Maya doomsday.
- The last page of the Dresden Codex contains a image of a rainstorm which was interpreted as a worldwide cataclysm by German scholar Ernst Wilhelm Förstemann. It caused the Maya apocalypse stir, but turns out to be a mere interpretation of an image.
- The hieroglyphs David Stuart analysed are the second mention of the end of the calendar on the 21st of December 2012.
- William Saturno believes he found a workroom of scribes, the keepers of the calendar, in an ancient Mayan city. The texts on the wall are dates that span over 7000 years, beyond 2012.

Conclusion

- The Mayan time does not end in 2012. Their cycles of time extend on and repeating themselves. The cycles don't end, they continue. Saturno compares it to an odometer on a car, when it is about to reach 100000 miles it goes back to zero and

the car does not vanish.
- Diego Buñuel learned that even though the Mayans did not depict an apocalypse, what happened to them can happen to us, but on a larger scale as we are globally integrated. He believes we have a lot to learn from the Maya.

***Note*:** When the Mayans thought their end was coming they sacrificed many people, even their own children. This could happen to us in the present if we believe our end is near, but on a much larger scale. This seems to be a warning that we should not give in to blind panic, but think about the Maya and know that that panic can lead to us doing terrible things to each other.

Definition of title

It is probable the first part of the title *Maya Underworld* is referring to the cenotes that were believed to be the entrance of the Underworld. The Mayans brought offerings for the god Chaac to the cenotes in the hope the god would provide rain.

The Real Doomsday probably refers to the Maya downfall in the 9th and 10th centuries when terrible draughts caused Mayan societies to disintegrate and they left their cities and temples. The human sacrifices in the cenotes were mostly done in bad times and there are many present in the cenotes, which implicates that the Mayans were quite desperate and they sacrificed many of their own people and their enemies.

Combined together the title summarises how the cenote tells us that the real doomsday was the Maya downfall a thousand years ago and that many humans were sacrificed as acts of desperation.

Notes on the conservation, protection, ethical approach of cultural Heritage

In this documentary they seem to carry out a strong message about respecting the dead and approaching them respectfully.
- The sacredness of the cenotes is mentioned several time and a careful approach is stressed by the host and archaeologist Guillermo de Anda. It is not allowed to enter the cenote Sacrado in Chichen Itza, because the cenote is sacred. In the cenote San Antonio the host tells how he must be careful where he puts his fin, because he may move objects and distort the context of the objects, it is repeated to him by Guillermo de Anda. Also he may not touch anything because the cave is sacred and Guillermo sees the cave as a graveyard and he wants the dead to be respected.
- Even though Guillermo is excited there are so many skeletons and they are mostly those of children, which can tell a lot about what may have happened in the past, he says that the cenote feels like a very strong place and that it inspires a lot of respect.
- The host mentions several time and stresses that the bones lying in the cave are those of human beings that once lived and that it is a mass grave. He is also quite disturbed by the child skeletons and this duality between his repulsion and the archaeologist's excitement about the skeleton's scientific value is quite apparent.

Other comments

- The structure of the documentary is quite vague and only became apparent at the second viewing. At first there seem to be two unrelated stories, one about human sacrifices and underwater archaeology and the other about the Maya calendar and the pending apocalypse of 21.12.2012. It does come together in the conclusion, but the concluding message that does so is not very specific.
- The first cenote was abandoned because the visibility was bad. It seemed they went to another cenote, which was said to be archaeologically rich, just so that there was something to film. These are of course only suspicions.

Two Million Year Old Boy

Details programme

Title:	Two Million Year Old Boy	
Production Company:	National Geographic Television	
Production Year:	2012	
Running time:	Minutes: 44 Seconds: 58	
Times broadcasted in 2013:	2	
Dates and times broadcasting(s):	Sunday 26 January 2013	20:00-21:00
	Saturday 2 February 2013	20:00-21:00
Narrator (gender, accent):	Yes, male (Richard Dreyfuss, American)	
Host and gender host:	No.	

Specialists appearing

NR.	NAME	SPECIALISATION
#19	Lee Berger	Paleoanthropologist University of Witwatersrand
#20	Matthew Berger	Son of Lee Berger
#21	Job Kibii	Paleoanthropologist University of Witwatersrand
#22	Bernard Zipfel	Paleoanthropologist University of Witwatersrand
#23	Steven Churchill	Evolutionary anthropologist Duke University
#24	Paul Dirks	Geologist James Cook University
#25	Lucinda Backwell	Paleoanthropologist University of Witwatersrand
#26	Darry de Ruiter	Paleoanthropologist Texas A&M University
#27	Brian Kuhn	Paleozoologist University of Witwatersrand
#28	Celeste Yates	Fossil preparator University of Witwatersrand
#29	Bonita de Klerk	Malapa Laboratory Manager University of Witwatersrand
#30	Jeremy Desilva	Biological anthropologist Boston University

Plot Synopsis

This documentary tells the remarkable story of the anthropologist Lee Burger and his son Matthew who discovered a new hominid species that lived nearly two million years ago: the Australopithecus Sediba. Two skeletons were initially found, one of a young boy and a woman in her thirties. Not only is this a new species of hominid, these skeletons are very well-preserved and quite intact, something that almost never occurs. While more research is undertaken we gradually begin to realise that something very special in the world of science has been found and it raises one big question: is the Australopithecus Sediba our direct ancestor?

Focus of documentary (narrative, frames, themes, discourse)

The story covers the process of finding the two skeletons and the events, emotions and questions it initiated in a somewhat chronological order. Every event that follows the finding itself is told chronologically and given with each step is background information about aspects of the field of paleoanthropology and the cradle of humankind in Africa, and conforming questions about the skeletons are raised. Every step in the story make the scientists reach a new level of realisation on what they found and how important it is for their field and our knowledge of human origins.

- The story is mostly told through interviews with the specialists who were the first to come into contact with the skeletons. They share their experiences, their emotional response as well as their professional activities regarding the skeletons. The specialists are mostly paleoanthropologists working for the University of Witwatersrand, the institute in charge of this research.
- The narrator is not constantly talking, but most of the narrative is in the interviews. The narrator mostly guides the big lines of the story, by asking questions or otherwise leading the audience to the next step of the story.
- The central person in this documentary is paleoanthropologist Lee Berger who discovered the skeletons with his sons and it is due to his approach these special findings were done.
- Lee Berger's son Matthew is not a specialist, but the 13-year old finder of the boy skeleton. He tells about his experiences about the finding itself and the attention he was given, but also the connection he feels with the boy skeleton.
- Why scientists do research seems to be a large theme in this documentary. There is much focus on the amazement of scientists when something as special as this discovery occurs. Besides the general astonishment some scientists explain why they do research.
- Another major theme is the importance of this discovery and how it changed our knowledge of our own origins.
- For some events re-enactment was used to portray the situation, perhaps to fortify the illustration and the experience. Where there was no re-enactment to illustrate Lee Berger's own footage was used or footage showing the type of research told in the narration. Re-enactment was also used to portray the Australopithecus Sediba.

Research Methods

Field surveying
Lee Berger visited the mapped sites to see if any significant material could be found on the surface.

3D scanning/making casts
In several shot the 3D scanning of the skull is shown. Perhaps these scans are made to make casts of the skull.

Landscape archaeology: Mapping sites in the area
Lee Berger was the first to systematically map (cave) sites in the Cradle of humankind area. He used his geological knowledge to locate sites.

Remote sensing: Satellite imagery (Google Earth)
In 2007 Lee Berger discovered Google Earth and used this tool to continue to locate sites in the area. The productivity highly increased when he started this approach.

Artefact studies: Comparative analysis
The human fossil record is quite sparse, therefore comparative analysis is one of the few methods used to recognise hominid fossil elements. The found fossils are compared with other bones in the record to determine whether they are similar to a human species already known.

Artefact studies: Drilling blocks fossils
To release the bones from the rock specialists drilled the rock from the fossils. The skull of the young boy took three months to release from the rock.

CT scanning
To identify what is in the rock Matthew Berger found, Lee Berger asked his wife in the radiology department of the hospital if she could make a CT scan of it. Soon they found out through the CT scan results that it contained an entire hominid skull.

Data-sharing
Soon after the discovery the University of Witwatersrand made copies of the found bones to share the discovery with scientists all over the world. Some over 70 scientists received the copies to research them for themselves. Instead of keeping the find for themselves they rapidly shared it with other academics. That this is an unusual act in the field of paleoanthropology is said multiple times in the documentary.

Results

- Besides the first two skeletons four other skeletons of the same hominid species were found. It is almost certain these are a newly discovered species, but it is uncertain whether they are related to modern humans.
- On the same site, on the same spot, many other skeletons of animals were found. They believe the cave used to be very deep and people as well as animals were trapped in the cave, perhaps because they tried to get access to water.
- The bones were preserved very well, probably because the limestone of the cave was mixed with water which created some sort of cement cast in which the bones were kept.
- The bones show signs that the Australopithecus Sediba was bipedal, but also very capable to climb into trees. Perhaps it was some sort of transitional phase towards becoming bipedal.

- Because children as was as adult bones of the same species were found in the same area, scientists believe they must have been a group, probably a family.

Conclusions

- Much more is to be discovered on the site that is now called Malapa. Perhaps there is an entire group of 20-30 people ready to be found. The University of Witwatersrand is now preparing for full-scale excavation and are turning Malapa into a laboratory.
- The Australopithecus Sediba has raised fundamental questions about our origins and more research has to be done to find a link to our ancestors in the past. Australopithecus Sediba is two-million years ago.
- This discovery is not just finding a physical object, but make us realise that us humans are part of a much bigger process and that there is a lot more on planet earth that we don't know.
- To make great discoveries, says Lee Berger, one has only to look through children's eyes, to step off the path.
- Matthew Berger says the spot where he found the fossil was under a remarkable tree, because it is the only tree in the area that has been struck by lightning.

Notes on the conservation, protection, ethical approach of cultural Heritage

- Treasure-hunting is mentioned in the very beginning of the documentary. Lee Berger says when he is talking about moving to Africa to find hominids: “This is the ultimate treasure-hunting.” Perhaps all archaeologists have some sort of fascination with treasure-hunting, but live it through science. Nonetheless, this could give a wrong image towards the audience, who maybe interpret it differently.
- The protection of heritage is mentioned by the narrator who tells that the World Heritage site is protected now, but more than a century ago limestone miners destroyed many caves with dynamite to retrieve limestone that was used to process gold. Many cave sites are therefore destroyed.
- The University of Witwatersrand quickly shared the newly aqcuired data with other scientists around the world instead of keeping the bones for themselves and let everybody wait for their publications on them. This open access to data is quite remarkable and may very well give science a boost.

Saving Egypt's Oldest Pyramid

Details programme

Title:	Saving Egypt's Oldest Pyramid	
Production Company:	Green Bay Media LTD	
Production Year:	2012	
Running time:	Minutes: 44 Seconds: 58	
Times broadcasted in 2013:	3	
Dates and times broadcasting(s):	Saturday 23 February 2013	19:00-20:00
	Sunday 24 February 2013	09:00-10:00
	Thursday 28 February 2013	16:00-17:00
Narrator (sex, accent):	Yes, male. (Mark Strong, British)	
Host and gender host:	No.	

Specialists appearing

NR	NAME	SPECIALISATION
#31	Dr. Zahi Hawass	Archaeologist
#32	Dr. Hassan Fahny	Geotechnical Engineer
#33	Peter James	Managing Director Cintec International
#34	Richard Swift	Structural Engineer
#35	Dennis Lee	Project Manager
#36	Dr. Salima Ikram	Archaeologist
#37	Hag Saad	Stone Mason
#38	Yasser Godo	Engineer
#39	Michael Jones	Production Manager
#40	Malcolm Spring	Drilling and Installation Technician
NR	Name	Specialisation
#31	Dr. Zahi Hawass	Archaeologist

Plot Synopsis

The Step Pyramid in Egypt is the oldest pyramid in the world and remarked as the most important pyramid in the world. But this structure's existence is challenged by looters, earthquakes and time. For 5 years British and Egyptian experts are trying to rescue the pyramid that has been closed to everyone since the 1930's due to its dangerous fragility.

Not only the outside is being restored, but also the inside and that job belongs to the Wales-based company Sintac. Together with a team of Egyptian engineers they will restore the burial shaft of the pyramid. While the British team fortifies the roof, the Egyptian Engineers clear rubble on the floor. Not only is the job very dangerous to the

people that carry it out, but also damage can be conflicted to the structure itself.

Conflicting opinions between the English and the Egyptian teams, technical challenges and the Arab spring provides the teams with insecurity and difficulties they have to overcome to rescue the world's oldest pyramid.

Tags: *North Africa/Egyptology, Architecture, Restoration, Burial rituals, Ancient Old World Civilizations.*

Focus of documentary (narrative, frames, themes, discourse)

The main storyline is about the restoration of the burial chamber, the fortyfying of the roof in particular. The British team's process of planning, preparing, testing and crying out the job is the main storyline and is alternated with background information on the pyramid, explanation of other situations that caused challenge, surprise discoveries that are analysed by Dr. Salima Ikram and the development of the other simultaneous restoration activities.

- The story seems to build up through planning, preparing and calculating the risk to the point the revolution breaks out and everything is unsure. This is the breaking point, after that they start working on the restoration of the roof.
- There is a narrator who leads the story, but the story is mostly told through interviews with the people working on the restoration and footage of mostly the engineers at work and describing their activities and the effects and risks of their activities.
- To enhance the story the following footage was used: reconstructions, audiovisual footage of the earthquake in the '90's and the revolution, footage of the people at work on the restoration including the planning and preparing phase, interviews with specialists, specialist explaining their activities.
- No re-enactment scenes were shown. When the history of the building of the pyramid was explained they used footage of the current builders restoring the pyramid and filtered the colours out to which made it look sepia-like.
- Central in this documentary is the process of restoration and its challenges, mostly the cautiousness in which such an operation must be undertaken and the vulnerability of the pyramid.
- The plans of the Egyptian and British engineers are explained through reconstructions. Planning seems to take up a large part in this documentary as well as explaining the pros and cons of the plans, even when they are rejected eventually. So it displays many possibilities and the effects.
- There is a focus on trying to restore the building properly, but risking irreparable damage in the process. A lot of time is spend on changing plans, calculating risks and viewing the problem from both Egyptian as British sides.
- The archaeologist's function in this documentary is the protection of heritage and interpreting finds. For example, during the first drilling activities archaeologists Zahi Hawass tells the engineers to stop when the vibration it causes is too much. It is through his approval that they can continue. The role of the interpreter is clear when engineer Dennis Lee believes he found something special and asks Dr. Salima Ikram for her help, they work together to understand what it is that he found.

- Dr. Salima Ikram interprets the discoveries behind her laptop, because the images of the discoveries are shown on it. Which is understandable since the pyramid is still hazardous.

Research Methods

Restoration

It seems that the restoration was mainly to restore the pyramid not to make it look like it did several thousand years ago, but to prevent it from further decay or entire collapse and to make it safe to enter again. Even though the restorers' intervention is quite big, they used such methods that their intervention will hardly be noticed.

Removing the debris

The British team proposed they would hoist the stones upwards and out the south entrance, but the Egyptian team believed the tunnel leading to the chamber was too fragile to take the weight. To take minimal risk of damaging the pyramid they chose to sort the stones by hand and to move them one by one through the tunnels out of the north entrance. Even though it is potentially dangerous it led to the team find artefacts, including the king's sarcophagus.

However, because the rubble was removed, the sarcophagus was no longer held together by it and that caused the sarcophagus to collapse. To prevent complete collapse temporary measurements had to be taken directly.

They removed all the secondary material that had ended up on the floor due to collapse, in order to reveal the primary material underneath that is the tombs of the royal family including the king's sarcophagus. This way they could access information that was lost and create a clear surface for the scaffold towards the roof needed for further restoration of the chamber.

In one case archaeological material had to be removed and it had to be removed by archaeologists. Perhaps because they can document the object within its context before removal.

Fortifying the roof

The plan was to insert steel anchors into the roof to prevent it from collapsing. This is a long-term restoration, but could cause major damage to the structure if it goes wrong and it requires much intervention as well as inserting unauthentic material and it will probably be irreversible. On the other hand, even though steel pins are inserted, they can hardly be seen and the roof will keep its authentic look, but will be safe.

The process could also be very damaging, but by using air bags to support the roof it was less risky. Also the vibration caused by the drilling was constantly monitored. The operation was risky, but minimal risk was taken.

A second part of fortifying the roof was to remove the old mortar and replace it with new mortar. Even though this is irreversible and requires much intervention, the same type of mortar made of limestone was used. The replacing material was therefore compatible with the rest of the structure.

Restoration of the exterior

To restore the exterior many blocks had to be replaced. This process requires quite a lot of intervention and is irreversible. For this process no industrial tools were used, but the same material and techniques were used as when the pyramid was build. The industrial

tools could damage the pyramid, so this seemed the best option. The new material is compatible with the old material and because they used the same building techniques to restore, it keeps its authenticity in a way.

Results

- Five years after the Egyptian and British engineers teamed up 350m3 of rubble was cleared, thousands of boulders from the exterior were replaced, they have pointed, drilled and anchored the burial chamber of first pyramid ever build, leaving little scars.
- The king's sarcophagus, as well as many other human bones, artefacts and tombs have been revealed.
- The team has discovered signs of previous restoration 2500 years ago.
- The team has found another coffin of the Late Period, probably the 26th or later.
- Dennis Lee has found a shaft on the north face of the pyramid, which Dr. Salima Ikram believes to be the shaft where the king's spirit travelled through.

Conclusions

- When the anchors are positioned and all the tools are cleared up, the burial chamber has guaranteed protection for a few more centuries.
- The team has performed architectural surgey and they left little scars.
- The British team finds the job was challenging, but it was the best job they have ever done and it has left them with the feeling they have contributed to something amazing.
- When the pyramid is rescued its many secrets are ready to be revealed.
- Dr. Zahi Hawass believes the pyramid should be opened to the public, because it belongs to everyone over the world.
- Dennis Lee believes the pyramid has been given a new lease of life.

Notes on the conservation, protection, ethical approach of cultural Heritage

- A major theme in the documentary is the risk of damaging the pyramid while trying to restore it using modern technology. The whole affair is not only incredibly hazardous for the people working on it, but it could also irreparably damage the pyramid. However, in this documentary they make very clear that it is risky and much has to be taken into account. The least risk has to be taken, even if it means it would take more time and effort. The struggle between the Egyptian and British team is a good example of this, because the Egyptian team thinks the plan to insert stainless steel pins can cause too much damage and they do not approve of the plan. The British team has to change their plan, thinking outside the box to take the least risk possible. It takes quite a while before they are allowed to actually start anchoring the roof. Restoration is not easy.
- That archaeological objects cannot simply be removed is clear when the engineers find planks, which the archaeologists have to remove.

- Halfway the documentary there is a three and a halve minute part about the revolution in Egypt and the vulnerability of Egypt's antiquities. During the revolution the Cairo museum was attacked by thieves and Dr. Hawass tried to protect it with other people. Outside Cairo the situation was also critical. Dr. Salima Ikram tells that police and military abandoned archaeological sites and that it was terrible. Dr. Hawass adds that in Saqqara several tombs were opened by looters. The British team was very worried their equipment would be taken as well. The step pyramid was in a very vulnerable position and there was no security that the tomb and the equipment would survive and that the team could continue the restoration. Looting in times of political disorder is mentioned strongly within this documentary.

Nazi Temple of Doom

Details programme

Title:	Nazi Temple of Doom	
Production Company:	Furneaux & Edgar productions LTD	
Production Year:	2012	
Running time:	Minutes: 44 Seconds: 28	
Times broadcasted in 2013:	9	
Dates and times broadcasting(s):	Sunday 17 March 2013	10:00-11:00
	Friday 10 May 2013	13:00-14:00
	Saturday 22 June 2013	10:00-11:00
	Monday 24 June 2013	01:00-02:00
	Saturday 31 August 2013	10:00-11:00
	Friday 6 September 2013	21:00-22:00
	Saturday 7 September 2013	10:00-11:00
	Sunday 8 September 2013	10:00-11:00
	Saturday 7 December 2013	11:00-12:00
Narrator (sex, accent):	Yes, male. (Shaun Dooley, British)	
Host and gender host:	Yes, but not clearly.	

Specialists appearing

NR	NAME	SPECIALISATION
#41	Andrew Gough (host)	Journalist
#42	Axel Effner	Local Journalist
#43	Kai Schmidt	Dealer in Celtic Art
#44	Dr. Peter Northover	Metallurgist University of Oxford
#45	Adrian Weale	Military historian & author
#46	Prof. Peter Longerich	Author, “Heinrich Himmler: A Life”
#47	Chris Going	Military historian & archaeologist
#48	Maximilian Heiden	Managing Director, Heiden Goldsmiths & Jewellers
#49	Kirsten John-Stucke	Director, Kreismuseum Wewelsburg
#50	Agnes Butner	Eye Witness (schoolgirl living in village nearby Wewelsburg)

Plot Synopsis

In 2001 a 10,5 kilo golden cauldron was found on the bottom of the Bavarian lake Chiemsee. The cauldron had Celtic decoration and its worth was estimated 1.4 billion dollars and was described as the Celtic find of the century. However, it was scientifically dated a modern object. What is this mysterious artefact? Could it be a Nazi relic? This investigation goes into who made the cauldron and how it could fit in with Himmler's fascination with the occult and if it was kept at the SS stronghold Wewelsburg and why.

Focus of documentary (narrative, frames, themes, discourse)

This story covers an investigation into what the cauldron found in 2001 is, through answering questions concerning its nature, its discovery, its origin and its previous owner they try to relate this object to the SS stronghold Wewelsburg. Several pieces of evidence are taken into account, but it remains to be a lot of speculation. The investigation is more a journalistic research than a scientific one.

- This documentary has an investigation style. The narrative is composed in a sort of journalism research structure, answering the who, what, where, when, why and how of the story. The gathering of evidence is also in quite a journalistic manner in the way that all kinds of evidence were taken into account, such as information from eye witnesses and orally transmitted stories, interviews, documents and archaeological research, rather than study one case in depth employing scientific research methods. The investigation style is also apparent in the visual material shown, such as the typewriter-style font used for all the titles, and the particular re-enactment scene where Himmler's documents are investigated in the dark using a flashlight.
- The story was told through interviews and much was told by the narrator, especially background information of the Nazi's and leading the story. Journalist Andrew Gough is intrigued by this cauldron and investigates the matter, although he does not quite take the role as host. The story was mostly told through interviews with scientists, eye witnesses, journalists and an art dealer. Much was told by the narrator, especially background information of the Nazi's and leading the story.
- To tell the story, the following types of visual footage were used: Historic footage depicting Nazi's, re-enactment, interviews, research, people at work, landscapes, architecture, historic maps, documents and photography and a 360 degree view of the cauldron.
- The focus lies mostly on the Nazi fascination with the occult and how they carried it out.
- The documentary is much about mystery and speculation. The narrator as well as the people interviewed repeatedly mention the secrecy around the subject and the speculations.

Note: Noticed was how some scientists told something and the narrator would take over and take the information further towards speculation. It is now uncertain if the scientist meant his information the way the narrator uses it. This could mislead the viewer into thinking the scientist thinks the same way. Also, it sometimes came across as if the information of some scientists, such as professor Longerich, was used to back their own story, to interpret it the way it seems fit for their theory and to give their speculations more strength.

Research Methods

Laser Ablation Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
This type of research was not undertaken for this documentary, but it was retold as it was conducted on the cauldron by Dr. Peter Northover. What this method is used for is explained by Dr. Peter Northover and the results of the cauldron are also given by him. The narrator explains how the method was conducted on the cauldron.

Historic Aerial Photography
Historic aerial photography was used to find out what lied on the route taken by the Nibelungen in april 1945 and if there was a hindrance which could have affected their initial plan.

Historical Documents
One of the major pieces of evidence for the cauldron belonging to the Nazi's, where it was kept, who made it and how it end up in Bavaria, was an order that listed around 30 valuable object that had to be relocated. However, this document was found in an attic and is inaccessible for further investigation. It's existence is only known because it was reported by Swiss journalist Luc Bürgin in his magazine Mysteries. The whole story stands on this document and due to its unavailability and rather questionable source, as it was reported in a magazine covering mysteries and the reporter is a well-known author of books on fringe science (http://en.wikipedia.org/wiki/Luc_B%C3%BCrgin accessed 06/05/2014), it can hardly be regarded as hard evidence. However, the narrator concludes it is indeed unreliable and that more evidence is needed, so to harden the evidence Andrew Gough searches for the name on the document: Otto Gahr, and the city next to it: Munich. The name Otto Gahr was found in an old guild inventory at Heiden Goldsmiths and Jewellers. Otto Gahr was the goldsmith of the NSDAP.

Oral history
Maximilian Heiden, director of Heiden Goldsmiths and Jewellers is certain the cauldron is made in his family's workshop. Maximilian's family often talked about meetings Otto Gahr had with Haiden's chief-craftsman Knotz asking for advice how he should make the cauldron out of 10 kilos of gold. Maximillian tells that Gahr got the gold from Albert Peach and that they came to Gahr to make the cauldron because he worked more often for the NSDAP.

Historical maps
A map of Wewelsburg with a circular structure around it serves as proof that Himmler wanted to build some sort of Nazi Vatican.

Eye witness
The transforming of Wewelsburg into some sort of Nazi Vatican was allegedly carried out by slave labourers. A woman who as a young schoolgirl used to live in a village near Wewelsburg during this time, remembers the men carrying large stones and that they had to march and sing. The villagers were not allowed to give them food, but did so in secret anyway, so the labourers could eat.

Results

- The composition of the cauldron, determined by Dr. Peter Northover, is that of a modern object, probably 20th century.

- The jeweller whom may have made the cauldron was Otto Gahr.
- Aerial photograph may have point out the route the Nibelungen took.

Conclusions

- In this story of secrecy, deceit and speculation not much is certain, but maybe in the past 10 years some of the cauldron's secrets.
- The cauldron could be the perfect gift to the Nazi's and if they did receive such a gif it would be logical to keep it at Wewelsburg.
- On 2 May 1945 the Nibelungen were cornered in Chimsee which could relate to the cauldron being found there.
- Sometimes circumstantial yet powerful evidence is all we have to go on.
- The documents that reportedly were belonging to Himmler are unavailable for closer research and also the cauldron remains locked away from sight in Zürich.
- Does the cauldron even still exist or was it melted?
- The cauldron lies again in the dark, but maybe it will come out again to give definitive answers.
- Maybe it will remain a mystery, which are rare in this world nowadays.

Notes on the conservation, protection, ethical approach of cultural Heritage

In the beginning the dark underworld of the antiquities trade is mentioned. It is described as shady and the entrepreneur who owned the cauldron was put in prison for three years for fraud, because the cauldron was not an ancient artefact, which he attracted investors with.

In contrast, one of the specialists is an dealer of Celtic art. Even though it is implicated that he had direct contact with the cauldron and analysed it, it is rather peculiar that he appears right before the scene in which the antiquities trade is not described positively. They could very well have used a researcher specialised in Celtic art and why they chose an art dealer is not very clear and may send a positive message concerning the antiquities trade.

Other comments

Speculation, so much speculation. No hard evidence to begin with. Further research on speculation:

- Himmler documents strengthened by stories Maxilimian, no hard evidence.
- A lot of 'empty' shots. Cauldron, Wewelsburg, City, Historic footage, photographs.
- Many repetitive scenes.
- Mostly narrative by narrator. A narrative of historic events.

The educational and professional background information on the specialists appearing in this documentary are quite difficult to trace on the internet. Some specialist could not be traced at all and some do not seem to be the type of specialist they are given to be in the documentary. A background check was done for all the specialists appearing the documentary through company, university and personal websites and LinkedIn profiles. Two that were difficult to trace are described below.

Andrew Gough's background is hard to trace on the internet. On his personal website he describes himself as an esoterica enthusiast who studied with a Cabalist and is editor-in-chief of The Heritage Magazine, that covers esoteric and alternative history genres. He is the director of the Institute of Interdisciplinary Sciences (ISIS), which should not be confused with Institute for Science and Interdisciplinary Studies (ISIS). He describes his website as providing "a perspective on history's mysteries."

Celtic art dealer *Kai Schmidt* could not be traced for a background check.

Cradle of the Gods

Details programme

Title:	Cradle of the Gods	
Production Company:	Atlantic	
Production Year:	2012	
Running time:	Minutes: 44 Seconds: 43	
Times broadcasted in 2013:	2	
Dates and times broadcasting(s):	Saturday 29 June 2013	19:00-20:00
	Sunday 30 June 2013	09:00-10:00
Narrator (gender, accent):	Yes, male. (Corey Johnson? British)	
Host and gender host:	Yes.	

Specialists appearing

NR.	NAME	SPECIALISATION
#51	Dr. Jeffrey I. Rose (host)	Institute of Archaeology & Antiquity University of Birmingham *(description by narrator: Specialist in early human historySpend years studying turning point in human history)*
#52	Prof. Klaus Schmidt	German Archaeological Institute Site Director, Göbleki Tepe *(description by narrator: Is a renowned German archaeologistMade an astonishing discovery in 1995 and has been excavating it ever since.)*
#53	Prof. Joris Peters	Ludwig Maximilian University Munich
#54	Dr. Bahattin Çelik	Harran University *(description by narrator: Turkish archaeologistExpert on Şanlıurfa's distant past.)*
#55	David Chapman	Ancient Arts *(description by narrator: Expert in stone carving Has spent years studying and replicating the way prehistoric people worked with stone.)*
#56	Prof. Trevor Watkins	University of Edinburgh
#57	Dr. Tristan Carter	McMaster University *(description by narrator: Has worked on the excavation of ÇatalhöyükFound a number of links between Çatalhöyük and Göbekli Tepe.)*

Plot Synopsis

For years it was thought that it was the invention of agriculture that made human beings take a giant leap out of the Stone Age into relatively rapidly developing religion, temples, cities and civilization, bringing us the way we are today: travelling to space. But an astonishing discovery changed that belief. Dr. Jeffrey I. Rose travels to Göbekli Tepe in Turkey to the oldest temple in the world to investigate how and why we took that big step out of the Stone Age.

Tags: Near East, Hunter-Gatherer to Farming, Stone Age

Focus of documentary (narrative, frames, themes, discourse)

The documentary follows archaeologist Dr. Jeffrey I. Rose in his investigation of Göbekli Tepe in Turkey to explain how this site has changes the way we think about human cultural evolution. The documentary has a very clear construction, that is divided into six parts (excluding the intro and the outro), each part asking and answering an important question about Göbekli Tepe and subdivided into smaller questions. These main six questions about Göbekli Tepe are: What was found at the site? Who built it? How was it built? What was it build for? Why was it buried after building it and several years of use? What happened to the beliefs that created Göbekli Tepe? To answer these questions Dr. Rose makes use of several pieces of evidence and interviews several specialists about their research and thoughts about the site. Also background information on the common theory of human cultural revolution is given as well as background information on the period (Stone Age) and the its relation to other periods and developments in other places of the world.

- Every part is divided by a fade-out, the screen is black for about a second and then a new part begins. Beforehand the story leads to a small summary of what is told so far and a new question, which is often repeated after the fade out, sometimes with a summary of what is told so far and sometimes even telling what questions will be answered later on the in the story.
- The story is told through the experience of the host Dr. Rose. His investigation is the main line of the story. He speaks about his experiences, thoughts, interpretations and questions and he also interviews the specialists to get answers to his questions. So another part of the story is told by specialists and their research and how that adds to the story. There is also a narrator, but heoften speaks on behalf of the host, often saying things like “Dr. Rose now understands..”
- There is a lot of footage of Dr. Rose and the specialists discussing finds and discoveries, mostly on site and sometimes in another setting.
- Re-enactment was used quite often while the narrator or someone else was speaking. Illustrating the way people in Göbekli Tepe may have lived during the temple’s building. Later re-enactment scenes of farmers were used.
- Reconstructions were used to show what of Gobekli Tepe was excavated and what it must have looked like in the past.
- Photographs, GPR scans and other research results are often showed on screen, sometimes by its own and sometimes explained by a specialist.

- Text on screen to show the chronology of the common theory on cultural revolution. Also a timeline is shown now and then.
- Footage of finds and landscape are also regularly appearing.

There is a strong focus on how ground-breaking the finding of the temple of Gobekli temple is, that it is the oldest temple and how it changed our theory on human cultural evolution.

Another aspect that is stressed is that the temple is unique for its time. How could it be that hunter-gatherers had the desire to build such a thing, why they had already settled and that they were capable of making such a sophisticated building. It is mentioned several times that it was thousands of years before agriculture and before the pyramids. It is also much older and much more sophisticated than Stonehenge.

Because it is told through the investigation of a host, who is an archaeologists, the story also portrays the fascination of the scientist, who is amazed by a discovery and is determined to find out what it means.

Research Methods

Excavation

The temple of Göbekli Tepe was found in 1995 and professor Schmidt has been excavating it ever since. So far they have laid bare four circular constructions with extreme care and patience. These constructions are described in the narration.

In Şanlıurfa excavations have pointed out that there was a Stone Age settlement before the city was there and that similar statues as in Göbekli Tepe were found, but with facial features. These findings were used to strengthen the thought that the people from Şanlıurfa built Göbekli Tepe and that facial features on the monoliths in Gobekli Tepe were left out on purpose to create a supernatural being.

Ground-Penetrating Radar

The ground-penetrating radar survey in the narration is probably not the same as the one is seen in the documentary. However, professor Schmidt knew that with his excavation he had only covered a small part of the site. A GPR-survey was undertaken to find out how big the site actually was. The site covered nearly 9000m2 and Göbekli Tepe's overall site was determined to be 300m by 300m. A short explanation of the technical workings of the GPR and what it is used for is given in the narration.

Archaeological Laser Scan

These scans show a 360 view of the site in its current excavated state and are shown various times when the site is described. The text "Archaeological Laser Scan" is shown at the top, perhaps to distinguish them from the 3D reconstructions of the architecture.

3D-Reconstruction

No explanation is given as how the reconstructions of the temple have come to be, but they are frequently shown to illustrate how the circular structures must have looked while mostly the narrator describes the structures, or particular elements of the structures.

Experimental Archaeology

To find out whether it was possible for the Stone Age men were able to make the carvings on the pillars and monoliths David Chapman reconstructed one of the carvings using the same type of material and tools. He says that he and others have remade all the pictures to estimate how long it would have taken to make the carvings and the enclosures. He also explains how they have probably carved and moved the pillars.

Iconography

In the documentary it is stressed that Dr. Rose believes the answer to understanding Göbekli Tepe lies in the carvings of the temple. An interpretation of the meaning and purpose of the animal and human carvings are given by professor Schmidt. At Çatalhöyük other depictions are described by Dr. Tristan Carter and related to Göbekli Tepe and to some extend to the present.

(Aerial) Photography

Photo material of the Stone Age village Nevalı Çori, which is now underwater, are studied to find out it can give a reason for the downfall of Gobekli Tepe. It has a religious building, a small rectangular version of the temple of Göbekli Tepe 30km away.

Also photos of another archaeological site which was simultaneously in use with the early period of Gobekli Tepe, Jefel Achmed. It was a village with plastered houses. One of the houses had several enclosures, but no entrances to them. This was probably a communal storage facility.

Material studies: Archaeozoölogy

The large quantity of animal bones were studied by professor Joris Peters to find out who the people of Gobekli Tepe were, according to the animal bones that lay at the temple. What animals were they? Were the animals domesticated? What were the animals used for? Professor Joris Peters shows the bones and explain what observations can answer the questions.

Results

- Excavations have laid bare four circular stone structure, consisting of high walls with T-shaped pillars decorated with carvings of wild animals. In the middle are two five meter tall monoliths carved as humans, but without facial features. The facial features were perhaps left out to depict a supernatural being. Schmidt believes these are the oldest gods in the world. The human-like gods are towering over the wild animals, which implicates that the humans saw themselves as superior to the beasts. The representations of gods are also a marker for some kind of sanctuary.
- The animal bones mostly belonged to the meaty part of the animals, indicated that these are consumption refuse. All the animals were wild animals and there is no sign of domesticated animals, which implies that the people of Göbekli Tepe were hunter-gatherers, a pre-agricultural society. This evidence strengthens that agriculture is not needed to build monumental structures.
- A Stone Age village from the same time as Gobekli Tepe, Jefel Achmed, was inhabited at the same time as Gobekli Tepe and had a communal storage facility. This strengthens the idea that Gobekli Tepe could be built by a pre-agricultural society, harvesting and storing wild grains and sharing them amongst the community enabling the people to build a temple.

- People could not have lived in Gobekli Tepe, due to the accessibility to water and food. This documentary points out that the builders may have been from a city 15 km away, Şanlıurfa. Flint tools found during an excavation indicate that there was a Stone Age settlement here 11000 years ago, during the time of the building of Göbekli Tepe.
- Human statues from Şanlıurfa are similar to some statues from Gobekli Tepe. This indicates that the builders could be from Şanlıurfa and that they were able to carve human faces, but chose not to, perhaps to depict supernatural beings.
- GPR-survey showed not only the size of the site (300m by 300m), but also that there were more structures (16 more than the excavated 4), older structures from 140000-15000 years ago, and that there were structures built atop each other. This implies that Göbekli Tepe was buried and a smaller structure was built on top of it, so the temple was downsized.
- Experimental archaeology shows that it takes six hours to make one carving, it would have taken 300 hours to carve one enclosure and to build one enclosure would cost 6-12 months with a crew of 60-70 people and a little longer with a smaller crew.
- Perhaps the door, which is made out of one piece of stone, is a door to the Netherworld.
- It is very plausible the temple was built to establish their religion, a moral code that was necessary to live in a bigger group, to share with one another and to live in peace. The building of the temple and the ritual could have been something that pulled the community together.
- The animal bones suggest that they may have gathered at the temple for feasts. Schmidt's theory is that the religion was the base for the idea to manage nature for food production and that religion brought people toward farming.
- Schmidt believes, due to the carving of the headless man, that the temple of Gobekli Tepe was dedicated to death, to burial rites. At other sites at the time of Gobekli Tepe the burial rituals were quite strange: the bodies were buried, later dug up and the heads were removed and used as relics.
- The Stone Age village Nevali Churi had a communical space in the village that appeared at the same point as Gobekli Tepe's downfall. A small square religious centre, similar but smaller to the one in Gobekli Tepe, stood in the village. Perhaps Gobekli Tepe lost its importants, but it was a victim of its own succes. The sense of unity was spread through all communities. Or perhaps the descendants of Gobekli Tepe were not interested in the ways of their ancestors.
- Similar religious depictions were found in Catalhoyuk, thousands of years later and hundreds of kilometres away. The imagery were even in the houses.
- The skull cult was ancestor worship. The headless man at Gobekli Tepe could be an early expression of the resurrection idea, where a deceased person or deity is brought back from the dead unifying people in a common cause or belief.

Conclusions

- Göbekli Tepe possibly marks the greatest turning point in human cultural evolution: It is a point in which people formed large communities, began to re-evaluate their place in the world, and began to domesticate plants and animals. It was the first giant step out of the Stone Age towards the space age.

Dr. Jeffrey Rose now understands that:

- Even though the temple disappeared its religious foundations, such as the resurrection idea, continue to influence religious beliefs throughout time for the past 12000 years. It even survived in Christianity today.
- We might never fully understand what went on in Göbekli Tepe, but some of the gathered clues may clarify some things.
- The construction of the temple represents that it may have been a phase in a much longer tradition of craftsmanship and though. It must have extended into the Last Ice Age.
- It was a social centre where communities from far and wide gathered.
- Most importantly it represents a giant leap in the spiritual expression of humans, because instead of being part of the world, humans began to see themselves as the masters of it.
- By creating a temple for giant stone deities created in our own image, humans started a new way of life, for beneath the towering pillars of the temple they gave birth to the gods.

Notes on the conservation, protection, ethical approach of cultural Heritage

Even though this documentary is about an excavation, hardly any excavation is shown. The research and its results are only explained and compared to other studies. In the case of the experimental research of recreating the sculpting of the temple, it was repeated for the camera and the specialist explains the research and talks about the bigger research they did and what results it had. So no new excavations or surveys seem to be undertaken for the production of this documentary.

Lost Continent of the Pacific

Details programme

Title:	Lost Continent of the Pacific	
Production Company:	Wildlife	
Production Year:	2012	
Running time:	Minutes: 45 Seconds: 03	
Times broadcasted in 2013:	3	
Dates and times broadcasting(s):	Saturday 27 April 2013	19:00-20:00
	Sunday 28 April 2013	09:00-10:00
	Friday 3 May 2013	13:00-14:00
Narrator (gender, accent):	Yes, male. (American)	
Host and gender host:	No.	

Specialists appearing

NR.	NAME	SPECIALISATION
#58	Durita Holm	Anthropologist Member, EXPLICO Expedition Team
#59	Sturla Ellingvåg	Historian Leader, EXPLICO Expedition Team
#60	Alberto Chavez	President, Rapa Nui Council of Elders Easter Island, Chile
#61	Barry V. Rolett, PhD	Professor Department of Anthropology University of Hawai'i
#62	John Stinton, PhD	Professor Department of Geology and Geophysics University of Hawai'i *(described by narrator as: Vulcanologist)*
#63	Bonno Louis	Boat Restoration Expert Marquesas, French Polynesia
#64	Nainoa Thompson	Master Navigator Polynesian Voyaging Society

Plot Synopsis

The inhabitants of Easter Island claim to come from a Polynesian homeland called Hiva. But how did an ancient people, marked as savages, cross over the Pacific in primitive canoes to colonise an island far away. It has baffled experts for centuries, but today scientists and adventurers will find out where the Easter Islanders come from and who these people were. How could they have the knowledge and tools to colonise vast

stretches of the Pacific? But the most stunning of all is that they may have reached the America's hundreds of years before Columbus.

Focus of documentary (narrative, frames, themes, discourse)

The documentary covers the hunt for proof for the Easter Islanders Polynesian origin. Through recounting archaeological, historic, geological, genetic and experimental evidence, experts are trying to prove that the Polynesians were capable of travelling long distances and did do that and to find out where the Easter Islanders are from. The story is divided in parts in which each part a bit of the mystery is solved by raising questions and theories and answering or proving them through interviews, research, bringing up evidence and telling the stories from the Islanders. Where do the Easter Islanders come from? Is the homeland Hiva in the Marquesas? Did the Polynesian set out on inter-island voyage and exchange? Did the Polynesians have the knowledge and tools to travel across the Pacific to colonise Easter Island or to intentionally colonise islands at all? Did the Polynesians travel to the America's centuries before Colombus?

- The story is told through interviews with experts, re-enactment and narration. The narrator has quite a large role in the documentary.
- Re-enactment is very apparent in this documentary, sometimes there are events acted out without much interference from the narrator.
- Re-enactment, maps, reconstructions, research, experts at work or preparing are common visuals in this film.
- Focus on searching proof for controversial theory

Research Methods

DNA Analysis

21 genetic samples were taken from elders of the Easter Island to determine where they originated from and how far their ancestors may have travelled. The elders believe they are from an ancient homeland named Hiva. The analysis was done in a laboratory in Norway.

Excavation

Dr. Rolett leads an excavation at an interesting coastal site in the Marquesas, 3000 kilometres Northwest from Easter Island. He hopes to find proof that the ancient people who used to live at the site colonised the vast Pacific and that this is their homeland. The site holds all the artefacts from the people who once lived at the site, over a 1000 years ago.

Survey

Dr. Rolett goes into the jungle and clears some of the plants on a site in the Wai Tahu valley, which was in the past one of the most inhabited valleys. Here he found evidence that the Marquesas' ancestors were an intricate society with a complex social order. They were more civilised than anyone imagined.

Geological Survey

Dr. Rolett and volcanologist Dr. Stinton charter a helicopter to drop them on the island Eioa, to find the stone quarry the adzes may have been made. For five days they survey the uninhabited island, which is hundreds of kilometres away from Rolett's dig site.

Chemical Analysis / petrochemical spectrometry

Dr. Stinton uses the core stone, of which adzes were cut off, to analyse its chemical composition and compare it to the stone adzes found on the Marquesas. He melts the stone and presses it between glass discs in order to analyse its composition.

Experimental research

Boat restoration expert Bonno Louis tries to rebuild a traditional wooden canoe that the Polynesians might have used. Because there is little written records of their maritime past, he uses knowledge that was passed on orally for centuries.

Nainoa Thompson trained with Micronesian navigator Mau Piailug: one of the two people that knew how the ancient Polynesians navigated by means of the stars. This knowledge was passed down through an oral tradition from generation to generation for 3000 years. Nainoa Thompson believes the Polynesians travelled by celestial navigation and undertook the journey with the Polynesian Navigation Society to find out if it was possible. Nainoa explains how the navigation works and what their plan is. Narrator explains it with a 3D-reconstruction.

Historical material: documents

A 300 year-old map, belonging to a Tahitian high priest, was used to find out what the islands were called before.

Oral History

The elders of Easter island and Bonno Louis of the Marquesas were asked about their stories of the people of Hotumatua that fled Hiva to go on an epic journey to find new land.

Results

- In the Wai Tahu valley a Pae Pae was found. This was a large stone platform, constructed on the command of a powerful chief, used for housing or ceremonies. The Chief's residence was build up from large boulders and was eight feet tall. The size of the house and the stones it was built from show the inhabitant's status. These Pae Pae's are part of an elaborate and well-ordered communal structure.
- Deep in the jungle large tiki's and petroglyphs were found. These stones contain pictures of deified ancestors. The Marquesas and Easter Island are the only places in the world where these giant tiki's can be found. The petroglyphs in the jungle are similar to the ones found on Easter Island. This is an interesting link and hints to a Polynesian homeland, but the narrator says the hunt for evidence is about to begin.
- During the excavation a rare unbroken pearl shell fishhook was found. Pearl shells grow best in lagoons, but lagoons are not present in the Marquesas. The closest place with lagoons harbouring this type of shell is the Tuo Motu island chain, over a thousand kilometres away. The larger pieces found at the site in the Marquesas are from the Tuo Muto islands and could be exchanged. But Rolett can't proof inter-island exchange.
- Dr. Rolett and Dr. Stinton found the workshop where the adzes were made on Eioa. The flakes and core stones that were found indicate that tools were made here. The chemical composition of the core stone found in Eioa is identical to that of the stone adzes found on Rolett's excavation. The adzes were therefore made of the exact same raw material that can be found on Eioa, hundreds of kilometres away. There was a major adze manufacturing complex on Eioa, which they exported on a regular

trade-route of hundreds of thousands of kilometres to the Marquesas, Tahiti, Tuamotu Archipelago and Manga Reva, where they also found these adzes. This is solid proof for inter-island exchange and voyaging. These people travelled much further than previously imagined.

- The war canoe Bonno Louis constructed from orally transferred knowledge are seaworthy. They are made from the light and water-resistant Uluh tree, which is perfect for long-distance travelling. The boat is fast due to the halve curved bottom and the flat very bottom.
- The 300 year-old map, belonging to a Tahitian high priest, shows that many island went by the name of 'Hiva', the homeland of the Easter Islanders. These islands are now known as the Marquesas. Perhaps the Marquesas are connected.
- The stories of the Easter Islanders and the Islanders of the Marquesas both tell of a tribe that fled the island after being defeated, to go on an epic journey for new land.
- Nainoa Thompson and his team undertook the journey from the Marquesas to Easter Island, only using ancient navigation techniques. The journey was successful.
- DNA analysis has confirmed that the ancient Polynesians are from a central-east polunesian homeland. The Easter Islanders are from Polynesia, which means that Hotu Matuʻa or one of his countrymen did make the long journey to Easter Island.
- 2 of the samples had South-American DNA deep inside their genetic history, which suggest that the Polynesians reached South-America hundreds of years before Columbus, but it still needs to be scientifically proven.
- The sweet potato can be find throughout Polynesia, but is native only to South-America. The sweet potato does not float, therefore it must have been brought to Polynesia. Carbonised sweet potatoes found in Polynesia were dated back to 1000 AD. Scientists believed it were the South-Americans themselves who introduced it, but due to all the discoveries made Rolett believes it could have been the Polynesians who brought it from South-America to Polynesia.
- Hawaii, New Zealand and Easter Island form a Polynesian triangle, making it the world's largest cultural territory. They were in contact with each other through long-distance voyaging and trade. The territory came to an end when they stopped voyaging.

Conclusions

- The Polynesians were crossing the Pacific ocean, which is the largest ocean, centuries before Columbus.
- The claims of the Easter Islanders do make sense. Their forefathers were great navigators on a remarkable human journey of their age. They travelled across an island world to colonise vast stretches of the Pacific.
- Polynesia is an ocean land. From that perspective it is not the ocean that divides us, but connects us. It is the highway of our ancestors.

Notes on the conservation, protection, ethical approach of cultural Heritage

At one point they discovered an object at Rolett's excavation. Rolett tells that he first has to note where it was found. This could be seen as pointing out that it is important to document the find, before further action.

Other comments

It occurred several times that it seemed as if some events in the documentary were supposed to come across as authentic, but gave itself away that it was not. For example, Dr. Rollett had not yet found any solid proof for his theory and he did not find much artefacts that could help him. However, they find a pearl shell fishhook, which is extraordinary. Several minutes later he believes the larger pearl shell objects may very well be exchanged. First he had found nothing, but then suddenly had much more finds of the same kind, which is a very sudden change. The same sort of event occurs when they research the adzes. He was working on an excavation and the narrator tells they had another find, an adze. Dr. Rolett, however, grabs an adze from the ground, it was not unearthed and one the ground seems an unusual place to keep artefacts. Were filmmakers trying to create some sort of authenticity, as if they filmed the discovery itself? Also the discovery of the chief's residence in the jungle seems a revisiting of a site Rolett already knew. In that case, it would not be a discovery they made on screen. When Nainoa sails the sea to test whether ancient navigation techniques were sufficient enough to travel all the way from the Marquesas to Easter Island, the narrator gives away that this is only a small part of the journey Nainoa had done before, the actual journey.

It is understandable that when the original material is not at hand, one tries to give an indication of what it was like or give the material at hand in an exciting way. But here it seems unauthentic.

Bones of the Buddha

Details programme

Title:	Bones of the Buddha	
Production Company:	Icon Films	
Production Year:	2013	
Running time:	Minutes: 44	Seconds: 57
Times broadcasted in 2013:	3	
Dates and times broadcasting(s):	Saturday 11 May	19:00-20:00
	Sunday 12 May	09:00-10:00
	Friday 17 May	13:00-14:00
Narrator (gender, accent):	Yes, male. (Charles Dance, British)	
Host and gender host:	Yes, male.	

Specialists appearing

NR.	NAME	SPECIALISATION
#65	Charles Allen (host)	Author & Historian
#66	Neil Peppe	Grandson of W.C. Peppe, who made the amazing discovery of the bones.
#67	Prof. Harry Falk	World's leading authority on ancient Indian Languages. Professor of the oldest institute of Indology in Berlin.
#68	Bantai Piprahwachackma(?)	Descendant of Buddha's Shakya clan

Plot Synopsis

In the 1890's a British amateur-archaeologist living in British India made a remarkable discovery when he excavated the Piprahwa Stupa. The bones of the Buddha surrounded by golden decorations and precious stones. The find was later regarded as a hoax by the professional archaeological world, but was it? Author and historian Charles Allen sets out on an epic journey to find a definitive answer.
Tags: India, England, History, History of archaeology 1800's, Buddhism

Focus of documentary (narrative, frames, themes, discourse)

The story follows author and historian Charles Allen, who recounts the story of an amazing find in India by the amateur-archaeologist W.C. Peppe in the 1890's. Allen sets out on a journey to find answers to his questions through historical, archaeological and linguistic evidence. The first part of the documentary covers the story of what was found and how it was found and what happened afterwards. Then Charles Allen sets out to find out whether the find is a fake. After finding out it is not a hoax he wants to know

who put it there and why. It ends with further investigation into why the finds were buried in that place and if it was the original burial place of Buddha as well.

- The narrator does a lot of the storytelling in this documentary. The story is further told through interviews, with Allen as the interviewer, and Charles Allen talking about history and about what he is doing and where he is going to answer which questions.
- This film is mostly a recounting of a discovery, so there is not much authentic research being done. Also the research results are probably older. Another quite interesting thing is that Charles Allen did historical research on archaeological research done over a century ago. Thus it could be stated that this documentary is sort of revisiting archaeology.
- This is the first documentary in which names and specialisms were given only through audio, either by the narrator or by the host. This kind of highlights the narrator's big role in this film.
- Even though the narrator has a big role, which is much like in older documentaries, there is also a host, which experiences and investigation is the main storyline of the film.
- Especially in the beginning there were a lot of re-enactment scenes as the story about the discovery of the bones was being told.

Research Methods

Historical research

Much of the background information and evidence comes from historical accounts. Not only historical accounts of the discovery, but also historical accounts surrounding the emperor Ashoka.

Indology (Linguistic research)

The text on the container is a very important piece of evidence. The linguistic nature of the text can tell when it was carved into the box.

Archaeological research

The discovery itself is that of an archaeological nature. The research of the artefacts, the material, the location and other properties, are archaeological. Also excavation results of and Indian excavation of Piprahwa Stupa from the 1970's are archaeological evidence.

Results

- The little urn found at the Piprahwa Stupa is not a fake. Dr. Fuhrer's knowledge of Sanskrit was too minimal to forge this text.
- The text is genuine and says that the bones of Buddha lie in the container, however the text is from at least 150 years after Buddha's death. It is in the Brami script, which was at the same time as the emperor Ashoka.
- Also, if it was the original burial place of Buddha, it would be a lot simpler. It is probable that this elaborate burial is a later reburial of the bones by someone else.
- The huge sarcophagus has the right measurements for Ashokan art, according to Dr. Falk. Also the stone of which it is made could be from the same quarry as the Lumbini pillar and perhaps build in the same time. Which means the reburial was

done by the Buddhist emperor Ashoka, 150 years after Buddha's death. Dr. Falk believes the sarcophagus was made when Ashoka was in Lumbini in his 20th regal year in 245 B.C. A very specific date, which is unusual.

- The Piprahwa Stupa was the original burial place of Buddha. In the 1970's another excavation took place at the Piprahwa Stupa. An earlier burial was found underneath the burial Peppe found. This burial of two small chambers contained a soapstone soapstone casket each together with red ware dishes. This burial was from the time of the Buddha himself.
- Moved to elaborate new tomb above, just like the inscription said.

Conclusions

- What W.C. Peppe's found was a reburial. The original ashes were moved and buried anew with the person's own tribute of jewels. This person was probably Ashoka: the sarcophagus was Ashokan, the writing was from the time of Ashoka.
- Charles Allen is relieved, because when they started he did not know whether they would come up with real answers, but they have. He is excited.
- W.C. Peppe's name is cleared. His grandson is told by Charles Allen that his grandfather was not a liar and that the inscriptions were genuine and the jewels he possesses are as well. Neil Peppe can hardly believe it and believes it is a fantastic ending.
- For nearly 400 million Buddhists worldwide Charles Allen has confirmed that Piprahwa is probably the original burial place of Buddha over 2400 years ago and where Ashoka later built a magnificent tomb to honour Buddha.

Notes on the conservation, protection, ethical approach of cultural Heritage

In one case it is mentioned that Peppe did not document the finds well, as he was no archaeologist. So which jewels came from which container is uncertain.

One part of the documentary is about fraud in archaeology. Especially how Dr. Fuhrer's fraud practices resulted in the disregard for Peppe's finds.

Other Comments

Some results are not specified, so it is still unknown as where these conclusions are based on. For example, whether the stone of the sarcophagus is the same stone as the Lumbini pillar. So some results are actually mere assumptions if the facts are not given.

Personal opinion: This documentary is in a way quite old-fashioned. The dominant role of the narrator is kind of similar to that of the documentaries in the 1990's. However, the host as a leading character of the storyline is quite modern. The research methods, however, are unlike the methods used in the other documentaries of the sample, which often contain high-tech research methods. The research methods seem old-fashioned, not out-dated, but a more classical approach to research.

Ultimate Tutankhamun

Details programme

Title:	Ultimate Tutankhamun		
Production Company:	Blink Films		
Production Year:	2013		
Running time:	Hours: 1	Minutes: 29	Seconds: 42
Times broadcasted in 2013:	3		
Dates and times broadcasting(s):	Saturday 13 July	19:00-21:00	
	Sunday 14 July	09:00-11:00	
	Friday 19 July	12:00-14:00	
Narrator (gender, accent):	Yes, male. (Samuel West, British)		
Host and gender host:	Yes, male.		

Specialists appearing

NR.	NAME	SPECIALISATION
#69	Dr. Chris Naunton(host)	Egyptologist, Director of the Egypt Exploration Society
#70	Yasmin El Shazly	Egyptian museum in Cairo
#71	Dr. Amit Roy-Chowdhury	Electrical Engineering University of California, Riverside
#72	Dr. Melinda Hartwig	Egyptologist Georgia State University
#73	Dr. Ashraf Selim	Professor of Radiology Cairo University
#74	Dr. Robert Connoloy	Anatomist University of Liverpool
#75	Dr. Jack Choi	Imaging Software Expert
#76	Dr. Anna Williams	Forensic Anthropologist Cranfield University
#77	Mike Brown	Accident Reconstruction Expert
#78	Dr. Peter Zioupos	Biomechanics Expert Cranfield University
#79	Dr. Ian Horsfall	Impact Trauma Expert Cranfield University
#80	Dr. Salima Ikram	Professor of Egyptology American University in Cairo
#81	Matthew Ponting	Archaeologist
#82	David Crowder	Senior Fire Investigator
#83	Dr. Neville Agnew	Field Projects

		Getty Conservation Institute
#84	Prof. Ralph Mitchell	Microbiologist Harvard University
#85	Dr. Ashley Cooke	Head of Antiquities National Museums Liverpool
#86	Stephen Cross	Geologist
#87	Prof. Tom Coulthard	Physical Geography University of Hull

Plot Synopsis

Tutankhamun is one of the great mysteries and has captivated the world since it was found in 1922. But his real story is for many people still a mystery. Egyptologist sets out to find vital new clues about Tutankhamun to separate fact from fiction. Forensic science and cutting-edge technology will help him in his quest. All data will be re-assessed from every angle to find out how Tutankhamun died, what makes his mummy so unique and why his tomb was found intact.

Focus of documentary (narrative, frames, themes, discourse)

The documentary is divided roughly into four parts. The first part covers the evidence for the theory that Tutankhamun was buried with second-hand grave goods, the second part covers the evidence as to how he died, the third part covers the evidence of the theory that Tutankhamun was buried in a rush and the fourth part explains how the tomb could remain untouched until Howard Carter found it.

Chris Naunton goes to place to find more evidence and to reassess the data from different angles to confirm several theories about Tutankhamun. A broad spectrum of sciences was applied. The evidence is not just taken for granted, but Chris Naunton goes to other specialist to ask for their interpretation, for example he goes to Egyptologist Salima Ikram to discuss the results and she gives context and her interpretation.

- The narrator adds in-depth information to the story of the specialists asks questions and summarises information to keep the story going.
- The theme seems some sort of forensic, CSI-like, investigation. The blueprint reconstructions, the amount of forensic methods used, speaking of clues and pointing them out with text and arrows on screen, with a little sound effect.
- Reconstructions were used and quite a lot of re-enactment of ancient Egyptian times and Howard Carter's time. Also a lot of people at work are filmed and the interviews are mostly animated, so they are at work and/or pointing out things on a screen (or elsewhere) as they talk. Old photographs are also used to point out what Howard Carter had found. Besides that there are quite a lot of shots of artefacts and mummies, compared to the other documentaries.

Research Methods

Studying excavation files

Chris Naunton tells the story of how Howard Carter spent the rest of his life documenting the finds, but never reached publication. His notes were stored and not

much studied later on. He is going to find out what Howard Carter found and see if there are any vital clues.
The narrator, but mostly the host Chris Naunton talks about this study. Visuals of Chris Naunton reading through old papers and making notes, interview and old photographs and drawings can be seen.

Observation of architecture tomb

The burial room was studied by Chris Naunton. The narrator explains the architectural structure in which Tutankhamun was buried using mostly reconstruction looking much like a 3D blueprint of a building. Also footage of the tomb and tunnels were used, sometimes with Chris Naunton in them.

Chris Naunton thinks the tomb makes no sense. The clues that lead to his thoughts are showed with arrows and text on footage of the tomb, making a little sound effect. He tells about it in interview on location and points things out. The narrator tells about what Howard Carte found using old photographs and again the blueprint reconstruction. It is a bit CSI-like.

Artefact studies: Death Mask

Chris Naunton interviews Yasmin next to the death mask in the museum. She tells him the death mask was only recently properly studied and explained and pointed out what they had found. Footage of the interview and footage of the death mask were used, but also the arrows and text (with sound effect) to point out the clues. After Yasmin, the narrator concludes what she had just told using close up material of the mask, but also a blueprint reconstruction over the mask to point out of what two pieces the mask was made of.

Facial-Recognition Software

Dr. Amit Roy-Chowdhury uses this software to discover who the middle coffin in Tutankhamun's tomb was meant for. He achieves this by objectively measuring the faces of the Neferiti mask and Tutankhamun's death mask. By measuring the faces he creates signature patterns for both faces and compares them with the coffin.

Dr. Amit Roy-Chowdhury develops facial-recognition software for the military and security firms, tells the narrator while footage of Dr. Amit Roy-Chowdhury at work is shown. Dr. Amit Roy-Chowdhury explains what he is going to do while pointing at the screen with Nefertiti and Tutankhamun on it. He tells that we are going to find out whether the face of the middle coffin shows more similarity with the face of Nefertiti or the face of Tutankhamun's death mask.

The narrator explains how the method works and the process of this study and a background to the results. For this footage of the following things are shown:
Dr. Amit Roy-Chowdhury working behind his desk, pictures of the faces with the signature points and meshes on them, people on the street, images of people to explain that faces are quite similar and the software has to be very precise.

Dr. Amit Roy-Chowdhury explains how he is working on Nefertiti's face mesh in the audio, while on video the face mesh (on a computer screen probably) is being shown. He also explains the purpose of objective measuring next to his computer screen and this footage is changed with footage of him writing on a whiteboard. He gives the results while sitting next to his screen with a bar chart on it. This footage is interchanged with images (sometimes a close-up of an eye) of the Nefertiti mask, the Tutankhamun

mask and the blue meshes. He points out that this study provides solid numbers to stand behind the theories.

Iconography: Tutankhamun's name

Dr. Melinda Hartwig provides a narrative of Tutankhamun's early life when he became king. Chris Naunton travels to Luxor, as seen on screen, to meet Dr. Melinda Hartwig showed surrounded by ancient ruins. He interviews her in a dark place (perhaps among the ruins) and she explains Tutankhamun's name and its history while showing photographs of a throne, on an Ipad. This throne shows the name Tutankhaten which is pointed out by text on screen. Later on the interview is on a boat.
The narrator further tells the story of Tutankhamun, using footage of re-enactment, ancient ruins and a map showing a certain route in the story, leading to Amarna. At a temple in Amarna Dr. Melinda Hartwig shows Chris Naunton another piece of evidence: a statue of Amun with the face of Tutankhamun, showing how far Tutankhamun has come with Amun Ra, that he even portrays his own face on the god.
The narrator tells story and Dr. Melinda Hartwig gives some context and interpretation.

Iconography: Relief

A dramatic discovery at Luxor gives Chris new evidence. A relief depicting a battle scene in which Tutankhamun is at the heart of action. The narrator tells what it was and what was shown on it. Melinda gives her interpretation on location with an open laptop in her hand, which she is not using, while she and Chris look into the same direction, perhaps both looking at the PowerPoint presentation. During this the interview can be seen, but also re-enactment scenes of a battle with synthesizer music (the kind you hear at house parties), drawings of the relief, a PowerPoint presentation (?), the reliefs with arrows and text on it (including the nifty sound effect) are shown.

X-Ray

The narrator tells about previous research, an X-ray of Tutankhamun's mummy conducted in 1968 by a team from Liverpool University. Authentic footage of their research is shown and corresponds with the narrator's story about their results. Some authentic footage of one of the researches stating Tutankhamun died from a blow to the head was shown. However, this piece of evidence is given, but immediately afterwards contradicted by newer evidence.

Later on in the documentary the one of the researchers brings new results. The narrator tells who he is and that he has gone through the scans again and found something, all the while one can see Dr. Robert Connoloy working. In an interview Dr. Robert Connoloy points out on X-ray scans what he has found and gives some interpretation and context about mummifying in ancient Egypt.

CT scan

The narrator tells about another research, a full CT-scan of the mummy lead by Dr. Ashraf Selim. It's pointed out by the narrator that this CT-scan was the first CT-scan of an Egyptian mummy. Chris Naunton goes to him. What they were trying to find and what they had found is told by the narrator and Dr. Ashraf Selim, showing the CT-scanning itself and the scans, which corresponds with the narration. These scans or not always still, but are also worked on a computer. Selim shows an important scan to Chris Naunton on his computer screen and explains what it means while moving his cursor over the important parts of the scan.

Virtual Autopsy (Forensic)

We see Chris walking to the Cranfield Forensic Institute and there is also a shot of the sign of the Institute. The narrator tells that Chris is going here to tie all the evidence together. The Cranfield forensic institute has gathered all data on Tutankhamun's body that was collected over the years, to create a virtual autopsy on a new invention called the Anatomage table. As the narrator explains this, we can see Chris walking around the Institute with a researcher and shots of researchers at work, simulations of the body and the Anatomage table. Dr. Jack Choi, Dr. Anna Williams, Dr. Peter Zioupos and Chris Naunton stand around the Anatomage table. Jack Choi interrupts the narrator to say one sentence about what it is (a medical display system), but the explanation is mostly done by the narrator.

There is a focus on how nifty this invention is, by saying what it can do and asking whether they can draw on it. Chris Naunton interviews the people around the table, he tells what was found earlier and asks about their specialist knowledge and interpretation. The researchers explain by pointing it out on the Anatomage table and drawing on it. Dr. Peter Zioupos says that it may be farfetched, but he asks whether the damage could be caused by a wheel running him down. The narrator gives some content about chariots in ancient Egypt and raises the question if it is possible a wheel could have done that damage.

Accident reconstruction

By Mike Brown from the crash investigation firm Advanced Syntec. The narrator explains what Mike Brown does and what he is going to do and why and how he's doing it while the video shows the actual process. Mike Brown tells what he thinks of the data and what he will do with it. Mike Brown is seen working on the scenarios. Later on he shows on a screen and explains the scenarios he made to the Cranfield Forensic team. The narrator explains further by comparing the scenarios to the evidence thety already have. The Cranfield Forensic team share their ideas about the scenarios using the Anatomage. Chris Naunton asks them questions and also asks whether the result is realistic. The narrator takes over and explains what the next step is.

Real bone test

Dr. Peter Zioupos tests on a rack of pig bones what damage a collision with a chariot would cause. Chris interviews him and Dr. Peter Zioupos explains what he is doing and what it means. The results are further discussed with Impact Trauma Expert Dr. Ian Horsfall.

Spectroscopy

Dr. Robert Connolly does a chemical analysis to find out what caused the blackening of Tutankhamun's tissue. He does the same analysis with a sample from another mummy that is roughly from the same time as Tutankhamun. Helping him with the analysis is archaeologist Matthew Ponty. The narrator explains how the method works. The interview of Dr. Robert Connolly and Matthew Ponty is done while they are working on the process. They both gave the results and their interpretation while pointing out the results on a computer screen. The researchers at work and photos of mummies are shown.

Fire investigation

Chris Naunton goes to BRE in Watford in England. BRE contains one of the world's finest fire test laboratories. David Crowder is going to help with the investigation and first shows him around. David Crowder gives his interpretation on what may have caused the charring of Tutankhamun. So they make a few samples with rags covered in linseed oil. David Crowder explains what they are doing and the narrator explains it more in depth. The visuals are mostly of Chris interviewing David Crowder while working on the process and old footage of big firesChris and David look at a computer screen showing the temperature in a distance and Chris keeps asking questions. The narrator gives in-depth explanation. Chris Naunton then goes to Salima Ikram to discuss the new evidence.

Mass-spectrometry

Mass-spectrometry was used to analyse the chemical composition of the brown spots on the wall paintings in Tutankhamun's tomb. The narrator explains what the method is used for. Prof. Ralph Mitchell gives the results and his interpretation. Prof. Ralph Mitchell is interviewed next to a screen he uses to point out and the visuals are of him at work in a laboratory.

Historical Research: documents

Dr. Ashley Cooke shows the Mea B document, a court case in antiquities concerning grave robbery. Melinda Hartig previously gave information on the context of grave robbery, but the document serves as physical proof. Chris Naunton interviews Dr. Ashley Cooke while they study the document. He explains what is written on it. Melinda Hartwig later on gives an interpretation.

Geological Research: Survey

Stephen Cross walks around the Valley of the Kings and shows his findings and explains his theory. The narrator also explains. As this part goes further and further the theory becomes more established, but is confirmed by a study from Prof. Tom Coulthard. Stephen Cross can be seen surveying and explaining the findings and he also shows old photographs of the layer of sediment he is talking about. Chris Naunton then interviews him about his big theory.

Geological Research: Hydrology

With a newly developed computer programme Prof. Tom Coulthard of the University of Hull can make a model of the flood that may have happened. He explains by using his computer the location and situation and how he can simulate the rainfall and where the sediment goes that is moved by the water. Some dramatic reconstructions of flood

Remote Sensing: Ground Penetrating Radar

At the end of excavations in 2009 Stephen Cross directed two GPR scans. He explains how it works and what it is used for, but also the results and his interpretation. The interview is in the Valley of the Kings. He explains the results with the use of drawings of the architecture.

Results

- The excavation files of Howard Carter reveal that Tutankhamun's burial was strange and had some anomalous aspects. For example, a drawing shows that great quantities of objects were deposited somewhat unorganised and a photograph of

the mummy shows that it was found in an unhappy state. As Carter noted, the mummy was here and there lightly wrapped in pads of linen being reduced to the consistency of sud?

- The burial chamber seems like it was meant for someone else. There were few hieroglyphs, the room is small the gifts were cropped up in a small space and there was a cut out piece of wall. This indicates that the shrine was too big for the space and probably meant for somewhere else.
- The mask was originally made for a woman and the face was cut off and replaced by Tutankhamun's face mask. Rivets and join lines in Tutankhamun's burial mask show that it was made from two pieces. Also different material was used for the headdress and the headdress also had earring, then worn only by women and children, not adult kings.
- The middle coffin was probably for Nefertiti. Facial-recognition software show a 85% similarity between Neferiti's mask and that of the middle coffin, more than Tutankhamun.
- 2nd hand grave goods.
- Tutankhamun changed the name he was given by his father. He inherited a kingdom in crisis, excavated bodies with stunt growth caused by malnutrition back this up. He probably was advised that the Akhen religion did not work and went back to the old gods. To embrace the god Amun, he changed his name into Tutankhamun. Statues of Amun sometimes carry Tutankhamun's face, showing he truly embraced this religion.
- Tutankhamun died from traumatic impact. The mummy was X-rayed in 1968 by a team of Liverpool University. They thought he was hit in the head. However, a full body CT-scan showed no head damage. The loose bone was from the neck vertebrae and the damage was probably caused during its excavation. He did have an open wound fracture in which resin ended up when the body was mummified.
- Tutankhamun was a warrior. Reliefs of Tutankhamun at Luxor depict him as a warrior in the heart of battle. The details of the relief make it seem more like a historical account than an imaginary one.
- Tutankhamun likely died in battle, due to a crash with a chariot's wheel while he was on his knees. The left side of his upper body is crushed, except his clavicle and head. The crush could have perforated his lungs through and reached his heart.
- Tutankhamun was mummified an buried in a rush. The procedures of mummification were not followed properly which caused the body to char due to linseed oil, which has self-heating properties. Also the wall paintings were not dry when the tomb was sealed, which turned the tomb into an incubator and caused brown spots on the paintings. The embalming incision was also quite rough and the mummification was overall poorly done for someone of royalty. The burial was a disaster.
- A theory is that the tombs of Tutankhamun and his advisor Ay were switched. Ay was buried with a tomb fit for a king, even though he ruled shortly.
- The reason why the tomb was untouched was due to a flood. The tomb was sealed quite quickly and after its sealing there was a flood which covered the tomb until Howard Carter found it. Some jewellery may have been stolen in antiquity, but the big things remain.

- GPR scans show that there might be another tomb only meters from Tutankhamun's.

Conclusions

- It's the end of Chris' journey and to reflect. He feels as if he knows more about Tutankhamun than before, he feels closer to Tutankhamun in knowing the real person, and he finds it incredibly awarding to take such a close look to the evidence.
- Tutankhamun is the boy king, who died suddenly at a young age.
- He was buried in a tomb that was not meant for him, in fact, the grave goods that were gathered were already in use for other people.
- The tomb was sealed and then as a natural act of god covered and not found until Howard Carter did. Making it the best known figure we have from ancient Egypt.
- GPR scans show that there may be another tomb in the Valley of the Kings meters from where Tutankhamun was discovered. If it is a tomb it could rival the discovery of Tutankhamun 90 years ago.
- It's the big question of Egyptologists: Are there still untouched tombs to be found in the Valley of the kings. Melinda believes it is the task of Egyptologist to keep that hope and she also believes there's tombs to be found.

Notes on the conservation, protection, ethical approach of cultural Heritage

Many times it has been said that Tutankhamun's tomb was untouched, but one part of the documentary gave quite a lot of attention to grave robbers. However, this concerned mostly grave robbers in antiquity. Nonetheless it is still remarkable that so much attention was given to it.

Also in the beginning there is a part about Hoqard Carter's excavation files being neglected, but still hold important information.

At the end of the documentary an explanation for the brown spot on the wall paintings is sought. Dr. Neville Agnew of the Getty Conservation Institute talks about their mission to protect Tutankhamun's tomb from natural and cultural forces. They study the visitor's impact on the tomb. The study is part of a programme on the conservation of the world's most iconic heritage sites.

Other comments

Not singular results mixed together, but interdisciplinary (team)work. Showing results to each other, leaving further analysis and interpretation to other specialists. The data and results are handed over or discussed together.

In this documentary the role of the archaeologist (or Egyptologist) is again quite remarkably the one of the guide and interpreter. Throughout the documentary counselling with either Salima Ikram or Melinda Hartwig is sought to discuss the evidence and to provide it with context and their interpretation. Sometimes it is even stated in the narration that the evidence must be discussed. Also the analysis of Tutankhamun's flesh was undertaken while an archaeologist helped with the analysis, this is stated in the narration. Chris also serves as interpreter, but mostly a collector of

data, a kind of journalist, who collects the information and brings it somewhere else, and so the story continues.

The amazement of the scientists is part of this documentary. Not only does Chris Naunton show his fascination, he also talks about Howard Carter and states that it must have been amazing, he states that it is “Everything an archaeologist would hope for. It’s an intact tomb, exactly as it was left 3000 years ago. It’s-it’s as good as it gets for an archaeologist.”

Appendix C: Database (digital file on CD)