

**Archaeology, Museums and the Communication of Climate Change**

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## *Abstract*

Climate change is widely acknowledged to be one of the most pressing issues of our time. The effects of the current climate crisis will impact on all areas of society. Museums, as trusted public institutions and sites of learning and inspiration, are starting to address their role in the effective communication of climate change. With their multi-disciplinary collections and expertise, museums have the resources to engage audiences with the causes and results of climate change in ways that are positive and affirming, in the face of the frequently negative and frightening narratives in the media.

Museum archaeology has so far received little attention in the growing discourse around museums as climate change communicators. This study seeks to investigate the potential for an archaeological voice to be heard in climate change engagement in museums. The connections between archaeology and climate change are explored, in the context of human response to environmental change both in the past and today. Museums as sites for the communication and creation of archaeological knowledge are examined, along with a consideration of the visitor experience, museum objects and constructivist learning in the museum. The qualities that make museums appropriate places for climate change communication are analysed, as well as the constraints they face. Examples of climate change initiatives in museums are outlined.

Using data gathered from structured interviews with museum practitioners, and empirical observations made at selected museums, reflections and suggestions are offered on the opportunities that exist for museums to create climate change engagement involving archaeological objects and ideas. Archaeology by its nature demonstrates resilience, adaptation and survival. This study concludes that by bringing a human element to 'difficult' science, along with a wealth of stories, archaeology has a unique contribution to make in museum narratives of climate change.

### *Key words*

Climate change communication, public archaeology, role of museums, museum learning, structured interviews

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## *Chapter 1 Introduction: waking up to climate change*

### *1.1 A climate change background*

In May 2018 a group of twenty researchers from the University of Exeter and the Met Office came together with a group of arts practitioners in the beautiful setting of Dartington Hall in Devon. Their aim was to come up with a new method for engaging the public with one of the most pressing issues of our time: climate change.

Over three days, the group explored how to use their understanding of climate science to inspire creative writing, print making, song writing and theatre performance. This was the first stage of the project Climate Stories (<http://climatestories.virb.com/> Accessed 19.2.19), an arts and science collaboration led by the University of Exeter and funded by the Natural Environment Research Council as part of their Engaging Environments Programme.

Following an intensive and enjoyable three-day workshop, the participants, including the author of this study, engaged with various community groups to explore what climate change meant to them. A group of ten to eleven year olds on a residential visit to Farms for City Children spent time writing poetry about nature and the fragility of the natural world; a group of adults explored objects on display at the Royal Albert Memorial Museum in Exeter as an inspiration for creative writing. Songs were written during a weekend on Dartmoor and animations made at the Double Elephant print workshop in Exeter. Much of the work produced was collated and published in a book. The project generated enthusiasm among those who took part, and is seen as a starting point for further collaborations in climate change communication. In the words of Peter Stott, the Climate Stories Principal Investigator:

‘The participants in Climate Stories have opened up a box of creative possibilities and they’re not going to shut the lid. There is much more to do where art meets science’ (Stott 2018, 8 – 9).

The use of audience-friendly approaches like those of the Climate Stories group has become a vital element in connecting people with climate change. The need for informed understanding has become urgent, with talk of climate change being framed increasingly in terms of a climate crisis, climate emergency, and climate breakdown. In seeking to investigate the role of museums as ‘friendly’ sites for climate change engagement, the research presented in this study is timely. A focus on the contribution of museum archaeology, which gives a human face to ‘difficult’ science and links narratives of past change with the future, is also apt.

Climate action is one of the Sustainable Development Goals (SDGs) of the United Nations Development Programme, adopted at the UN Sustainable Development Summit in New York in 2015. The seventeen SDGs address environmental, social and economic sustainability and emphasise the interconnectedness of the global community. The SDGs aim to transform the world for the better by 2030. Climate change forms the basis of SDG 13, which advocates urgent action in the face of the impacts of climate change: changing weather patterns, rising sea levels, increasing extreme weather events and greenhouse gas emissions at their highest level ever (<https://www.un.org/sustainabledevelopment/climate-change-2/e> Accessed 19.2.19).

The Paris Agreement, sealed in December 2015 at the twenty-first Conference of the Parties (COP 21) of the United Nations Framework Convention on Climate Change (UNFCCC), was a major step in working towards the attainment of SDG 13. 175 parties agreed to work to limit global temperature rise. Importantly in the context of this study the Agreement also detailed the role that non-party stakeholders, including civil society, the private sector and cultural institutions – such as museums – needed to adopt in reducing emissions, promoting cooperation and building resilience (Cameron 2019, 648).

In 2017, in further support of the UN’s SDGs, the world’s science museums developed the Tokyo Protocol, with the aim of encouraging science centres and museums to fulfil their mission as educators and communicators, and as catalysts for deeper understanding and coordinated worldwide action around the SDGs. But no specific mention was made of climate change, and the focus was narrow, emphasising museums’ role in science communication rather than allowing for:

‘...the full range of their resources and opportunities – collections, staff expertise, partnership possibilities and in support of climate-related research – to connect with climate change action’ (McGhie 2019a, 18).

A further step forward was the adoption by the UNFCCC of the ‘Talanoa Dialogue’ in 2018, an international conversation aimed at accelerating progress on climate action. ‘Talanoa’ is a Fijian word describing an approach that values mutual respect; it is ‘a process of inclusive and transparent dialogue during which participants share stories, build trust and empathy, and strive to “make wise decisions for the collective good”...’ (<http://sdg.iisd.org/news/unfccc-launches-talanoa-dialogue-platform-to-boost-climate-ambition/> Accessed 19.2.19). These values of trust, inclusivity, participation and the sharing of skills link in with the opportunities museums have to go beyond a narrowly-defined role as science educators. Museums can arguably provide a much broader form of climate change engagement. Henry McGhie of Manchester Museum, speaking at the International Symposium on Museums and Climate Change at Manchester University in 2018, commented that the spirit of Talanoa is ‘based on stories, which is one of the things museums do best.’ It is also ‘based on what we can do something about’, which is important at a time when to focus attention on what can no longer be changed seems a waste of energy. Adhering to this spirit of cooperation brings opportunities for museums to work with each other, and with external partners, towards a common goal of climate engagement and action.

The Talanoa approach informed the COP 24 meeting in Katowice, Poland, in December 2018. Here, David Attenborough famously took occupancy of the ‘People’s Seat’, which links the public with policy-makers, and exhorted decision-makers to take urgent action on climate change to prevent ‘the collapse of our civilisations and the extinction of much of the natural world’ ([https://unfccc.int/sites/default/files/resource/The%20People%27s%20Address%202.11.18\\_FINAL.pdf](https://unfccc.int/sites/default/files/resource/The%20People%27s%20Address%202.11.18_FINAL.pdf) Accessed 19.2.19). COP 24 was significant in being the first Conference of Parties to be held since the publication, in October 2018, of the ‘Special Report on Global Warming of 1.5°C’ by the Intergovernmental Panel on Climate Change (IPCC). This report stated that human influence on the climate system is clear, with recent anthropogenic emissions of greenhouse gases the highest in history (<https://www.ipcc.ch/sr15/> Accessed 19.2.19).

Limiting global temperature to 1.5°C would require far-reaching changes in all aspects of society, the report concluded, although this could go hand in hand with ensuring a more sustainable and equitable future.

Against this background of rapid change and uncertainty it is understandable that, for many years, people have felt disempowered, confused and fearful about the effects of climate change, and that it is often a subject people do not wish to think about at all. As the historian Dipesh Chakrabarty commented:

‘The anxiety global warming gives rise to is reminiscent of the days when many feared a global nuclear war. But there is a very important difference. A nuclear war would have been a conscious decision on the part of the powers that be. Climate change is an unintended consequence of human actions...’ (Chakrabarty 2009, 221).

Given the predominantly negative media messages around climate change, there is a need for trusted, more reflective spaces for people to engage with this difficult subject. Museums are one kind of venue where that role can be fulfilled. At the heart of their local communities, possessing collections and knowledge that bridge science and culture, and skilled in creating accessible learning experiences, museums have the potential to reach out to audiences in distinct ways. A video, ‘Museums and the Climate Challenge’, produced in 2018 by the Alberta Museums Association in partnership with the Coalition of Museums for Climate Justice, argues that in helping people to deal with climate change the museum sector has an important responsibility to lead, inspire and motivate on climate action:

‘Climate change is not just about science and politics; it is also about social justice, economic equality, drought, natural disasters, food insecurity, war and refugee crises – topics that are relevant to museums as key civic resources and must be addressed in their exhibitions, programmes and research. These social issues are entwined with the environmental ones.’

(<https://www.museumsassociation.org/video/13042018-museums-climate-challenge> Accessed 19.2.19)

The International Symposium on Climate Change and Museums at Manchester University in April 2018, mentioned above, aimed to further an understanding of the responsibility of museums and to see what action is already taking place. The

author of this study attended the symposium, and presented a session. The event provided a platform for museum workers, research institutions, NGOs and climate change enterprises from across the world to network with each other, share information, present their work and to develop methodologies for climate change engagement across various audiences.

It is clear that many people working in museums are responding actively to the climate crisis, and to the challenge of connecting their audiences with the realities and implications of climate change. However, the extent to which this is taking place in the sector as a whole is another question. What are the constraints that museums face, in attempting to present climate change? What opportunities exist for museums, as places of learning and inspiration, to use their collections in effective climate change engagement?

Speaking at the Manchester conference, George Marshall from the Climate Outreach Information Network pointed out that climate narratives often talk about ‘things that people don’t care about’, or they make people think that the impacts of climate change only happen far away or are ‘just too terrifying to contemplate’. Can museums play a part in defusing apathy and fear? Can they provide ‘strong’ communication that takes on board the threats of climate change while at the same time creating positive narratives that urge people to act and thus make the world more how they want it to be? Can museums occupy the ‘People’s Seat’ and be an authoritative voice for change? The research presented here will attempt to address these questions.

## **1.2 Aims and content of the study**

This study brings together three areas of research: archaeology as it is presented to the public, museums as sites for learning and inspiration, and the communication of climate change. Archaeology is currently understated in the discourse around museums as climate change communicators, and this study aims to explore its particular role in climate change engagement.

The research begins with an examination of the connections between archaeology and climate change. Studies of the human response to environmental change in the past will be discussed, as well as the potential



contribution of archaeological studies to modern climate change discourse. The study will then go on to look at archaeology in a museum context, showing how a museum's role has changed through time, and how archaeological knowledge has become increasingly accessible to a wider audience. It will build on the author's experience as a teacher and museum educator to discuss learning in the museum, the visitor experience and the role of museum objects. A further chapter will address the links between museums and climate change, presenting the challenges faced by museums as well as the opportunities that exist for positive and creative engagement. Case studies of climate-based initiatives and exhibitions will be presented.

The study then sets out a methodology for a qualitative research enquiry into the potential of museums as sites for communicating climate change, with a focus on the contribution of museum archaeology. Two further chapters will analyse and discuss the data gathered. An analysis of, and reflections on, empirical observations made at a sample of museums will be presented. Also presented will be an analysis of the responses from a series of interviews with curatorial staff, arranged around a structured questionnaire designed to elicit as much information as possible on the perceptions of the participants on the viability of museums as climate change communicators, and how archaeological collections could play a part. A prototype for an imagined climate change exhibition using archaeological artefacts will be outlined.

The over-arching theme of this research is the quest to find a place for archaeology within the discourse on museums and the climate emergency. The study aims to explore how museum archaeology can act as a force for change at this time of crisis. It seeks to explore how a specifically archaeological voice could be heard in climate change engagement in museums.

An archaeological voice can be defined as one that puts across a distinctively archaeological perspective, crossing the divide between nature and culture. In a museum setting an archaeological perspective on climate change would draw on themes of imagination, curiosity and memory. It would appeal to people's fascination with old objects and past lives, using archaeological artefacts to offer an accessible introduction to the difficult questions raised by climate change. It would draw on archaeological stories to explore the resilience of human

communities in dealing with environmental change; additionally, it would offer insights from the past on sustainable living practices for the future. An archaeological perspective would take the long view, indicating how communities have adjusted to change over vast timescales, thus highlighting the speed with which modern anthropogenic climate change is taking place. This study aims to consider how these various aspects could be brought together to allow a unique archaeological voice to be added to the conversation on museums and climate change.

Through its combination of archaeology, museums and climate change this study contributes to several research areas. These include: public archaeology and the discourse on archaeology's role and relevance to society; research into learning and communication in museums, and into the nature and responsibilities of museums today; and the theory and practice of climate change communication. The study aims to show how museums, and museum archaeology, can act as a very real force for change, in telling the many 'climate stories' that need to be heard.

## ***Chapter 2 Archaeology and climate change: making the connections***

### ***2.1 Introduction: archaeologists and climate change***

What is the nature of the relationship between archaeology and climate change? When did this relationship begin, how has it evolved through time and has it altered significantly in the light of current concerns over the impacts of climate change on culture and society? Have these connections been fully acknowledged and understood by archaeologists themselves? This chapter aims to address these questions, and covers, firstly, a description of the relationship between climate change and archaeology as it has evolved over time; secondly, the connections between archaeology and climate change as perceived today; and finally a brief review of two academic journals, which aims to provide an indication of the quantity of climate-related research undertaken by archaeologists over the past decades. A broad definition of archaeology is used for the purposes of this study: archaeology is understood to mean a particular theoretical approach, employing specific methodologies; and, also, a body of evidence, data and constructed knowledge.

It has been apparent for some time that historical and archaeological studies could be making distinct contributions to modern climate change discourse (McIntosh 2000, 3). After all, people have been living with and responding to climate and environmental change for millennia. But the potential contribution of such studies seems to have gone largely unacknowledged. Archaeological sites potentially hold information not only about past climate, but also about the way human communities adapted as climate changed; given this, the fact that the survival of so many sites around the world is under threat from the effects of current climate change seems especially poignant (Nimura et al. 2017, 1).

It is important here to emphasise the distinction between climate change caused by natural variations throughout Earth's history, and anthropogenic climate change, occurring as a result of human activity. Recent years have seen the increasing use of the term 'Anthropocene' to describe the period of time during which human activity has had an impact on earth systems, such as the atmosphere, biosphere and hydrosphere, to the extent of constituting a distinct

geological age. Since 2013 a dedicated journal, 'Anthropocene', has brought together research from many disciplines, including archaeology, to explore human-environmental interactions across time. A start date for the Anthropocene has been a matter for debate and definition, reflecting different disciplinary perspectives; various suggestions for the Holocene/Anthropocene transition have included the time of the initial domestication of plants and animals, the onset of agriculture, and the alterations of the earth's surface by human civilisations (Erlandson and Braje 2013, 1; Smith and Zeder 2013, 9 – 13; Braje and Erlandson 2013, 116). But the consensus is generally that the Anthropocene began in the latter part of the eighteenth century, with the onset of the Industrial Revolution (Crutzen and Stoermer 2000, 17; Crutzen 2002, 23), which links in with the general acceptance that carbon emissions from industrial times onwards have precipitated the rapidly changing climatic conditions we see across the world today.

Archaeological evidence, by offering a vital long-term perspective on human-nature interactions, has much to contribute to a broad range of Anthropocene studies (Murphy and Fuller 2017, 8). Archaeologists are well placed to disentangle the various aspects of landscape change and how this relates to social, behavioural and technological changes at a given point in time. They are experienced in deducing the extent to which past peoples either caused or responded to change in the environment. The inception of the Anthropocene as a concept reflects a recognition of the challenges involved in attempting to separate natural and cultural process and their effects. The nature-culture relationship is central to this study and will be referenced further in subsequent chapters.

The current environmental crisis has a uniqueness and gravity that sets it apart from the human-nature interactions of pre-industrial times, as studied by archaeologists. But the traditions of archaeological research are starting to be used to define a role for archaeologists in addressing future climate change, in addition to offering a window on human-nature 'entanglements' of the past (Lane 2015, 486; Shaw 2016, 452).

The relationship between archaeology and climate change can be said to have two broad aspects. The first is the contribution made by archaeology-based

studies to our knowledge of climate past – which knowledge, in turn, enhances our ability to predict the nature and likely outcomes of present-day climate change. The second aspect, conversely, involves the ways in which studies of environmental change in general and climate change in particular inform our understanding of past cultures and societal change, including the nature of people’s adaptive capacities. To put it another way, what is the role of archaeology in modern climate change research? And what is the relevance of climate change research to archaeology?

However, the two aspects seem seldom to be addressed together. Partly this is a function of scale. A mismatch in both spatial and temporal resolution often exists between the data produced by archaeological investigations and those data sets relating to climate change (Sandweiss and Kelley 2012, 372; Catlin 2016, 14). The palaeoenvironmental evidence retrieved from an archaeological site – routinely presented in the final publication almost as a by-product of the excavation – is by nature local in its coverage, or at most regional. Varying proxy indicators, commonly pollen, beetles or molluscs, are used to reconstruct patterns of vegetation cover and land use over a given timescale within the vicinity of the site. The possibilities afforded by such patterns for identifying human-induced landscape change, for example as a result of farming, deforestation, the use of a particular resource or the construction of settlements and monuments, are frequently explored. The proxy evidence may alternatively be used to provide a climatic backdrop, based on the record of implied changes in temperature or rainfall, for known human activity within a given area.

The proxy data used by climate change researchers, however, operates at an altogether different level, both temporally and geographically, from those used by archaeologists. Gas bubbles trapped deep in the ice, or sediments from an ocean core, present a picture of changing climate not just over enormous timespans but on a scale which may well be pan-continental, or pan-oceanic, in its extent.

The disparities of scale mean that although the archaeologist may use a methodology similar to that of the climate change scientist, combining the results from a number of proxies to produce a detailed history of change, the data sets are not exactly compatible, though they may be complementary. As far back as

the early 1990s the palaeoecologist Frank Oldfield, whilst acknowledging the polar ice fields to be one possible exception to his argument, maintained that:

‘...the palaeoenvironmental record contains very few situations where global scale and fine temporal resolutions can be combined’ (Oldfield 1993, 20).

It is true that long-term climate change data may give a broader context to, say, the occupation and abandonment of a Palaeolithic site; but in general the answers indicated by the one discipline are not especially useful to the other. Neither, of course, are they replicable.

Another issue in attempting to define the relationship between climate change and archaeology, and to suggest how the strengths of one area of study might be usefully combined with the strengths of the other, lies with the practitioners themselves. It seems too obvious to say that climate change scientists are interested not in archaeology but in climate. But perhaps this needs exploring.

Archaeology is, of course, far more than the study of the interactions of various groups of humans with the physical world they inhabit, exploit, influence, nurture and destroy. But it is perhaps fair to say that archaeologists, since the inception of archaeology as a separate discipline, have dealt as a matter of course with the engagement of people with their environment – or, perhaps more accurately, people’s actions within their environment: on the one hand responding to changes in the world as they perceive it, on the other hand inducing change.

The functional/processual New Archaeology of the 1970s, characterised by the application of quantitative methodology to data collection and interpretation, had at its core the study of human responses and adaptations to the environment. The work of Binford demonstrates the importance given at this time to the influence of the environment on culture, and the adaptive processes involved (see for example Binford 1972). Subsequently, Hodder’s analyses illustrate a shift away from an emphasis on adaptive processes towards something more subtle and complex, involving the role of people’s attitudes and beliefs; in the context of ethnoarchaeology, for example, the limitations of processual thinking were recognised (Hodder 1976; Johnson 1999, 99).

From the 1980s onwards the culture/environment debate has been honed, modified and enriched by post-processual or interpretive ways of thinking (see for example Hodder 1986, 147 – 70; Shanks and Tilley 1987, 103 – 15). These newer theories include, for example, those relating to phenomenology, agency and social complexity, and hermeneutics and dialectics in archaeology. Central to post-processual thinking has been the acknowledgement that cultural change is contingent, and needs to be viewed within its historical context (Hodder 2002, 85).

At first sight it would appear that the functional/processual approach, with its emphasis on humans adapting to the environment and to environmental change, is the one more intrinsic to an examination of the role of archaeology within climate change research. However, the significance given by the post-processualists to the thoughts and actions of individuals in the past is also highly relevant, as it connects with the fact of grave decisions having to be made today in relation to the effects of modern climate change.

Archaeology undeniably possesses a huge repository of site-specific palaeoclimatic and palaeoenvironmental records which – questions of scale aside – represent the discipline's most obvious contribution to the climate change debate (Mitchell 2008, 1096). Sandweiss and Kelley, for example, showed how paleoclimatic and paleoenvironmental data gathered from four sites in north and south America, northern Europa and southwest Asia provided important insights into the natural world in the past, even though the principal objective was to understand human behaviour (Sandweiss and Kelley 2012, 372 – 3). Such data can also contribute to modelling future climatic and environmental change, which could in turn be of great significance to human communities. It is important, therefore, to re-assess continually the symbiotic relationship that has existed for many decades between archaeological research and the study of environmental change.

It may be that the full potential of archaeology to contribute to climate change discourse has yet to be realised, and that in the absence of an archaeological voice the discourse itself is being diminished (Van de Noort 2011b, 1039). As suggested above, this absence may be partially explained by the incompatibilities in scale between the palaeoenvironmental data that the archaeological evidence

base has to offer, and the data required for long-term predictions and for measuring and comprehending climate change. However, an increasing number of environmental/palaeoenvironmental archaeologists are making their data accessible in ways that are useful to the palaeoclimate community, thus enabling palaeoclimatologists to become familiar with both the nature and potential of archaeological data, and its potential for understanding earth systems generally (Sandweiss and Kelley 2012, 383 - 4).

It is worth noting too that until very recently, the absence of an archaeological voice in climate change discourse may have been due to a reluctance among archaeologists to engage with what could be seen as no more than the latest manifestation of a familiar narrative. As mentioned above, archaeological research has long concerned itself with human-nature interactions in the face of climatic and other environmental changes. But the exceptional nature of anthropogenic climate change, and the urgency of its impacts, are now more fully accepted. Archaeologists, as academics and professionals, are starting to explore a definitive role for themselves in approaching the challenges, threats and opportunities posed by the current climate crisis, and to be more collaborative and multidisciplinary in their approach.

## ***2.2 The relationship between archaeology and climate change***

### ***2.2.1 Climate and culture in the Enlightenment***

Interest in the effects of climate on culture goes back much further than the inception of archaeology as its own discipline. Modern European thought connecting human culture with climate change can be traced back to the work of the diplomat, historian and critic the Abbe Du Bos (Fleming 1998, 12). In his 'Critical Reflections' of 1719 Du Bos put forward the idea that only in countries with suitable climates, more specifically with suitable air temperatures, would artistic genius flourish. Changes in climate must therefore have occurred, Du Bos concluded, to account for the rise and decline of the creative spirit in particular nations. This circular kind of reasoning, further expounded by environmental determinists such as Baron Montesquieu and David Hume, dominated late eighteenth century Enlightenment thinking on the role of climate in human culture.



Changes in climate were also being invoked in an attempt to explain the fortunes of past civilisations. Gibbon's classic narrative of the decline and fall of the Roman Empire, published between 1776 and 1788, was the first systematic account to relate climatic factors to the destabilising and eventual collapse of a major civilisation. It is interesting to note that climatic changes have been invoked as a cause of decline more often than they have been used to explain the rise of a civilisation (Hulme 2009, 28).

### *2.2.2 Early palaeoenvironmental work*

The connections between archaeology as a discipline and climate change can be said to have their roots in the early palaeoenvironmental work of the nineteenth century. Originating in Scandinavian archaeology, such studies sought to explore the interdependence of prehistoric human communities with the wider biosphere. As far back as the 1830s, for example, the Danish archaeologist Steenstrup was relating archaeological finds to the succession of forest types identified in bog sites, whilst by the 1860s Nilsson was arguing that pastoralism had given way to farming in Sweden as a response to increasing population densities - an early example of a processual approach being used to explain change in prehistory (Trigger 2006, 315).

Along with an increasing interest among archaeologists in anthropological and sociological aspects of human culture, these palaeoenvironmental investigations mark the very earliest inroads into functional/processual archaeology, at a time when the limitations of a purely culture-historical approach to prehistory were beginning to be realised.

### *2.2.3 Scientific developments in the nineteenth and early twentieth centuries*

Developments during the nineteenth century brought about the scientific transformation of climate discourse, beginning with the attempts by Joseph Fourier in the 1820s to understand terrestrial temperatures. Building on suggestions by James Hutton and other geologists that ice sheets might once have covered parts of Europe, the Swiss naturalist Agassiz was the first to

propose the existence of an 'ice age'. Research by Agassiz into the retreat of Alpine glaciers proved to the scientific community that climate was capable of changing substantially, and indeed had done so in the past, leaving its vestiges behind in the form of altered geological features (Burroughs 2007, 231 – 2; Hulme 2009, 41). The latter part of the century saw the work of John Tyndall and Svante Arrhenius on the relationship between carbon dioxide and climate, and the first use of the term 'greenhouse gases'. Croll's atmospheric theory for explaining the onset of ice ages, formulated during the 1870s, was reworked several decades later by Milan Milankovitch, who by 1920 had provided a working model – Milankovitch's Orbital Theory – to explain the variations in solar heating that account for the pattern of glacial and interglacial periods (Turney 2008, 62).

Also in the 1920s, prescient and diverse research was being undertaken in the US by T.C. Chamberlin into multiple glaciations, as well as the geological agency of the atmosphere and the influence on climate of deep oceanic circulation. Chamberlin's greatest contribution to modern climate science was arguably his awareness of the interconnectedness of Earth's dynamic systems (Fleming 1998, 93).

Building on the work of nineteenth century scientists such as Arrhenius, engineer and inventor Guy Callendar developed the theory – known as the Callendar effect – that rising carbon dioxide concentrations in the atmosphere were linked to global temperature. In 1938, Callendar demonstrated that global land temperatures had increased over the preceding fifty years: his theoretical work, including his estimation of doubled carbon dioxide concentrations in the atmosphere leading to an increase in atmospheric temperature of 2°C – a quantity now known as the climate sensitivity – have proved to be remarkably accurate and ahead of his time (Bowen 2006, 95 – 6; Archer and Rahmstorf 2010, 8) and represent the first inroads into what has been termed by the IPCC (Intergovernmental Panel on Climate Change) the 'detection and attribution' of human-induced climate change. Although Callendar's theory was not well received at first, his pioneering work has been compared to the IPCC Assessment Reports, with their robust and thorough investigations into the causes and effects of climate change (Hulme 2009, 50).

As climate discourse became centred on what was quantifiable and measurable, so too did the interrelationship between climate and human history – and prehistory – continue to be explored during the early twentieth century. The work of the US geographer Ellsworth Huntington on the influence of climate on the fate of world civilisations still serves to demonstrate the pitfalls of an overly deterministic philosophy. Huntington’s ideas seem today as both racist and naive. But the legacy of his 1915 book ‘Civilisation and climate’ endured through much of the twentieth century (Hulme 2009, 29), with historians and geographers alike linking particular latitudes and temperatures with the location and distribution of ‘civilised power’.

#### *2.2.4 An ecological approach to archaeology*

Meanwhile, palaeoenvironmental research continued to inform European archaeology throughout the late nineteenth century and into the twentieth. The ground-breaking work by Graham Clark at the Mesolithic hunter-gatherer site of Star Carr set the standard for the application of an ecological approach to archaeological excavation (Clark, 1954). Because of its emphasis on ecological and economic questions, and its move away from an artefact-orientated approach, Clark’s work differed from that of his contemporaries – for example the investigation by Andersen of lakeside settlements in Denmark during the late 1940s (Trigger 2006, 358). From the 1970s onwards the approach taken by Clark became a catalyst for debate on the interpretative aspects of environmental evidence (Mellors and Dark 1998, 9), while archaeologists began increasingly to collaborate with natural scientists in the recovery of environmental and climatic data directly from archaeological strata, rather than having to rely solely on proxy records from elsewhere (Sandweiss and Kelley 2012, 372).

Many archaeological studies have since applied an interdisciplinary approach in considering the web of interactions between human subsistence and use of resources, and natural climatic changes and people’s adaptation to these, and the resulting evidence as manifest in an altered landscape or palaeoenvironmental record. Years before the publication of the Fourth Assessment Report of the IPCC in 2007 which first set academic alarm bells ringing, such studies were capable of considering the future of human-

environment relationships, and of setting their findings within a broader timescale. John Evans' lucid account of the environment of the British Isles from an archaeological perspective, from the Hoxnian Interglacial to the industrial modern age, concluded:

'We cannot know what technology may achieve, nor can we predict the nature of environments to come. To view the present... as a single episode in the long unfinished history of human environment is to awaken in us a realization of both the fleeting nature of our age and its great consequence' (Evans 1975, 186).

Evans followed this statement with a reference to the oscillating Pleistocene climate:

'... the fact that the Post-glacial has long past the period of maximum warmth strongly suggests that northern Europe will once more be subjected to an age of ice. In Britain the destruction of cities, towns, villages and farm land either by glacial inundation or by ice-wedging and solifluxion will ensue. The falling sea will accelerate river erosion and lead to the destruction of ports and harbours... Mass migration of human population southward and the need to adapt to totally new environments and ways of life will follow' (Evans 1975, 186).

This passage demonstrates eloquently the difference between a mid-1970s understanding of the nature of impending climate change, as we headed worriedly towards a long-overdue ice age, and that of the second to third decades of the twenty-first century when anxieties over global warming have reached crisis point.

Similarly, writing at the start of the 1980s, H.H. Lamb in his preface to 'Climate, history and the modern world' referred to a technology-based view on climate change, which had centred on the possibility of deliberately altering the climate, in order to increase the area of land available for food production; and the fact that this view had been replaced in recent years by a realisation among climate specialists of the role of human activity in altering the familiar climate regime inadvertently (Lamb 1982, xviii). But although the existence of global warming, and its anthropogenic causes, has been recognised by climate scientists for decades, it is only since the 2000s that it has really make its way into the public

consciousness. Writing in 2009 the historian Dipesh Chakrabarty referred to ‘the collapse of the humanist distinction between natural history and human history’ (Chakrabarty 2009, 207); human beings, with the onset of human-induced climate change, had themselves become a force of nature in a geological sense:

‘The geologic now of the Anthropocene has become entangled with the now of human history’ (Chakrabarty 2009, 212).

Archaeology, with its long view, and its familiarity with the ‘deep past’ of our origins as modern humans in the last Ice Age, and our emergence thereafter as agriculturalists and on into the industrial age, would seem a natural companion to the study of the climate crisis and its human causes and consequences.

## **2.3 *Archaeology and climate change today***

### *2.3.1 The nature of archaeological discourse on climate change*

From an overview of the literature it would appear that archaeological discourse relating to climate change can be divided into three categories:

- Studies that explore human-climate/environment interactions in general, including those focusing on human activity as an instigator of, or contributor to, climate/environmental change.
- Studies that deal specifically with the fragility and/or resilience of human society when it comes to climate/environmental change, including those that explore society’s adaptive capacities.
- Discussions of the role and responsibility of archaeologists in the light of climate change today and of issues relating to the impacts of climate change on the preservation, recording and rescue of archaeological sites.

The term ‘climate/environmental change,’ as opposed to climate change, is used in defining the first two categories, because although climate might be the main factor in initiating change, at a human scale what is experienced is the effects of change on human engagement with the environment; this may be in the form of

altered vegetation patterns or crop seasons, for example, or in the availability – or otherwise – of land or other natural resources. Variations in the weather over a generation or two are more likely to impact on social memory than large-scale climatic variations over the long term. Also, depending on the circumstances, it may not be the changing climate as such that leads in a simplistic, causal way to the necessity for societal change, but rather the results of human interaction with the environment that tip the balance in favour of that change taking place.

### *2.3.2 Climate change and human activity*

Studies that examine human-climate/environment interactions use material evidence, such as climate records and the associated evidence for human activity, to construct narratives which ascribe historical agency to climate (Sorlin and Lane 2018, 6). For example, Turney and Browne used a singular climatic event in an attempt to explain the onset of widespread farming across Europe. They hypothesised that following the collapse of the Laurentide ice sheet, which raised sea levels by up to 1.4m, the marine flooding of the freshwater Black Sea led to sudden loss of the land favoured by early farmers, initiating in turn an abrupt expansion of Neolithic peoples across Europe (Turney and Browne 2007, 2036). Archaeological evidence is used to support this theory, whilst radiocarbon dates and reconstruction of the palaeo-shoreline are used to place this event to within 8350 and 8239 calendar years BP.

Conversely, Ruddiman's paper of 2003 argued for human influence over climate, hypothesising a Neolithic start date for anthropogenically-induced climate change. Challenging the accepted view that human-induced climate change began circa 1750 with the onset of the industrial era, Ruddiman proposed that increased concentrations in greenhouse gases in the atmosphere as a result of human activity could be traced as far back as 8,000 years ago, when Eurasian landscapes first began to be altered by forest clearance and agriculture (Ruddiman 2003, 262). Ruddiman, however, was writing not as an archaeologist but as an environmental scientist, and archaeological aspects of his argument are referred to only sketchily. A few years after its publication Ruddiman's paper was referred to – though not expanded upon - in the Fourth Assessment Report

of the IPCC (Solomon, S., Qin, D., Manning, M. et al. 2007, 460); other than this mention there was little discussion of pre-industrial greenhouse gas emissions and the possible impact of early agriculture, in the IPCC Report.

The debate surrounding a definition for the onset of the Anthropocene, as discussed above, indicates an acceptance of the sometimes subtle changes inherent in the paleoenvironmental record that can be traced to human activity. Although the consensus is that the anthropogenic climate change impacting the world today was triggered by the Industrial Revolution, it is acknowledged that human-nature entanglements have been going on for millennia, and that human societies have influenced earth systems in many ways.

### *2.3.3 Human responses to climate change past*

The second category of study is concerned less with the causes of climate/environmental change, and its quantification, than with the human response to climatic fluctuations, and how this response is revealed in the archaeological record. Aspects relating to the development of early agriculture, for example, have been debated with reference to the interplay between social practice and the constraints and opportunities posed by climate change (Bogaard and Whitehouse 2010, 109 – 10).

Climatic ‘deterioration’ – usually in the form of either increased aridity or increased wetness – has very often been cited as the reason for settlement abandonment. One example is the research into the Bronze Age reaves on Dartmoor, south-west England. The long-held hypothesis is that increasing rainfall and decreasing temperatures were responsible for the abandonment of the reaves; using palaeoecological evidence, this hypothesis was investigated and upheld (Amesbury et al. 2008, 87 – 98); the authors emphasise, however, that a direct causal link cannot be inferred and that societal/cultural reasons for abandonment may have had a part to play. Coastal sites are especially vulnerable, with episodes of coastal erosion acting as tipping points leading to settlement abandonment (Fig. 1).

At a much larger scale, climatic deterioration has been explored in the context of an entire civilisation’s demise. From Ellsworth Huntington onwards there has

been a tradition of citing climate change as the reason for a society's collapse: if they happen to coincide closely in time, the temptation is hard to resist. But the situation is frequently much more complicated, as shown for example in a discussion of the links between climatic deterioration – in this case desertification – and the decline of the Hohokam civilisation in the US Southwest, and of sites in north Mesopotamia (Tainter 2000, 333); in both regions the material culture indicates that for different episodes of deterioration society could become either more complex, or less.



*Fig. 1 Times of change: the Neolithic settlement of Skara Brae, Orkney, was most likely abandoned because of encroaching sand dunes and sea water.*

Similarly, Orlove's investigation into human adaptation to climate change considers three case studies separated in time by centuries: the Viking settlement in Greenland, the Classic Maya of Mexico and Central America, and the US Dust Bowl (Orlove 2008, 539). This study argues the connections between comparative history and the 'sociology of the future' and emphasises the value of an integrated approach when using the past to inform current policy on adaptation to climate change.



Employing a different perspective, Keys took a single natural event – a massive volcanic eruption in the middle of the 6<sup>th</sup> century AD – and used an approach described as ‘evolved determinism’ (Keys 1999, vii) to examine the impact of this event on peoples around the world. Collating evidence from ice cores, tree rings, lake deposits and historical sources, Keys described the economic, political and ecological changes taking place over the span of a few years in geographically widely separated regions, and related them to the destabilisation of the climate in the wake of the eruption (Keys 1999, 251 – 63). This study explored not so much the human responses to climate change but rather the consequences for humanity of a catastrophic climatic event.

Slightly conversely, but on a similarly global scale, a seminal work by Diamond explored the impacts of unsustainable living by past peoples. Using archaeological examples as widely spaced as Easter Island and the Pitcairn Islands, the Maya civilisation and Norse Greenland, Diamond examined the contribution of environmental change – whether natural or human-induced – to the eventual collapse of societies, linking these ancient cultures with modern-day case studies. The isolation of the Easter Islanders was used as a chilling metaphor for the isolation in space of Earth’s modern inhabitants (Diamond 2005, 119). It is worth pointing out that the role of climatic variation in a society’s decline or otherwise was not always a dominant one; in the case of Easter Island, human environmental impacts such as deforestation, along with political factors such as competition between clans for resources, had a greater influence.

Diamond’s study of societal ‘ecocide’, along with other collapse studies, have not gone unchallenged (see for example Tainter 2006, 63 - 7; McAnany and Yoffee 2010, 5; Van de Noort 2013, 26); but such studies still have a value in unravelling the interconnectedness of climate/environmental change with political, economic, social and religious factors.

On a smaller geographical and temporal scale altogether, yet closely related, are questions investigating the cultural responses of a particular society to climatic change, through particular ‘events’ as they appear in the material culture record. One highly relevant example is the votive or ritual artefact assemblages believed to have been deposited as a response to changing climatic regimes. Although the deposition in watery places of such assemblages or hoards occurs across a

huge time span, from the Mesolithic to the early historical period (see for example Bradley 1998), the links between structured deposition and periods of increasing wetness during the European late Bronze Age is especially well-attested. It has been noted, however, that a consideration of the context of such assemblages tends to be overlooked in many archaeological reports, where 'dedicated' artefacts are frequently considered separately both from each other and from the rest of the evidence (Osborne 2004, 3).

A more cognitive approach - one which seeks to explain why these objects were made, prepared and chosen for these acts of deposition or dedication - may be more challenging than one which describes an object and allocates it along traditional divisions. The process may well be fraught with difficulties of its own. Yet these assemblages, in offering an insight into how communities thought, may have a value which as yet remains untapped and will surely merit further research. The objects deposited during the Neolithic and Bronze Age in the tidal wetlands around the North Sea coast, believed to be offerings made in response to rising sea levels, represent a prime example of how the archaeological record reflects a climate-induced change (Van de Noort 2011a, 69; Van de Noort 2013, 111 – 2), whether or not there may have been other, additional reasons for the artefacts' deposition that remain unknown. It is interesting to postulate that to the people at the time the structured deposition of artefacts may have been not so much a desperate or placatory act, but a positive community effort involving careful preparation of objects and choice of location.

It has been claimed that rather than necessarily narrating a society's decline, the archaeological record testifies to the ability of societies to respond creatively to episodes of climatic or environmental stress (Mitchell 2008, 1097). Studies which emphasise the fragility of human societies, and their *resistance* when it comes to changing their patterns of activity, can be countered by others which demonstrate the *resilience* of communities with regard to change. Communities are able to adjust; somehow they do survive. As Rowland stated, in a paper which warned against over-dramatised narratives of climate change and attempted to place global warming in the context of other factors relating to human survival, principally population growth:

'Archaeological evidence indicates that the capacity to adapt is arguably one of the most fundamental characteristics of humankind' (Rowland 2010, 1167).

The resilience and adaptive capacity demonstrated by human communities living around the North Sea over a period of 10,000 years, for example, in the face of episodes of repeated sea level rise and land loss (Van de Noort 2011b, 1046), potentially provides lessons for the present and future. An example of a study on a smaller spatial and temporal scale is the research by Blockley et al. which combined the archaeological record from Star Carr with a series of high resolution early Holocene palaeoclimate records from nearby lake beds. The study concluded that activity at the site continued for several hundred years, despite the area being subject to numerous abrupt climate events. Although the study showed that changes in local ecological conditions were also drivers of human adaptation, it was concluded overall that a degree of resilience in the face of climatic instability was demonstrated by the Mesolithic communities who occupied the area (Blockley et al. 2018, 814 – 6).

The fact that much combined paleoenvironmental and archaeological research is focusing on the positives associated with change, rather than the negative aspects, is very likely symptomatic of our own anxieties over our responses to climate change.

#### *2.3.4 Archaeology and current climate change*

The third broad category of study covers research which actively questions the responsibility of archaeologists - and indeed the purpose of archaeology itself (Mitchell 2008, 1093) - in the face of modern-day climate change.

Contributions that archaeology might make to our understanding of the long-term evolution of the relationship between people and their natural environment were outlined by Van de Leeuw, in a study of land degradation as a socio-natural process. Arguing against the often artificial distinction made between the natural and life sciences on the one hand, and the humanities and social sciences on the other, Van de Leeuw concluded by advocating greater cohesion within the

archaeological community itself; if archaeologists build on their strengths as a multidisciplinary group, he argued, and not become obsessed with studying the past for its own sake, they will be better equipped to contribute to an understanding of both the past and the present, and to make comparisons between the two (Van der Leeuw 2000, 380).

The importance of an interdisciplinary approach, and the potential strength of archaeology in its ability to make comparisons between the present and the past, was similarly emphasised in a study of Arctic climate and culture (Henshaw 2003, 217). In this study archaeology was combined with Inuit oral tradition and palaeoenvironmental science, with a view to increasing an understanding of human-environment interactions in climate-sensitive locations, and of adaptive strategies used by people both in the past and today. This illustrates a very forward-looking approach by archaeologists at the time.

A study by Van de Noort, similarly linking human-environment interactions in the past with those of today, used case studies from the world's coastal wetlands to explore how modern societies may learn from the adaptive strategies of past communities (Van de Noort 2013). Coastal wetlands – as diverse and as widely dispersed as the North Sea, the Iraqi Marshlands and Florida's Gulf Coast – were selected as the focus for this research precisely because of their vulnerability: the impact of global sea level rise is having direct impacts on coastal communities worldwide. Also, people have always been attracted to living on the coast, not least because of the sea's abundant resources (Van de Noort 2013, 5), and will continue to be attracted, despite the risks involved.

Embedded within Van de Noort's research were the concepts of resilience, historical ecology and sustainability. Resilience theory was first advanced in the 1970s in the context of ecological systems. In the 1990s it was extended to include human societies, with the concept of 'socioecological systems' reflecting the belief that there are no ecosystems remaining in the modern world completely unaffected by the impact of human action. In a 2005 study of how societies in coastal areas deal with disasters, resilience was defined as 'the capacity of linked socio-ecological systems to absorb recurrent disturbances such as hurricanes or floods so as to retain essential structures, processes and feedbacks' (Adger et al. 2005, 1036).

Multiple studies have shown that human resilience is the rule rather than the exception; it is thus considered a more accurate term than 'collapse' to describe the human response to extreme or sudden change (McAnany and Yoffee 2010, 11 -12). In relation to archaeology, and of significance to this research, it has been argued that resilience theory as a conceptual framework allows for the past to be interpreted in ways that are potentially of relevance to contemporary concerns. Archaeological and historical research contributes a long-term or 'deep time' perspective to multidisciplinary studies of the causes of change and decline in social and ecological systems, providing multiple completed cycles; in addition, when combined with an anthropological perspective, it allows for a richer understanding of the dynamics of human behaviour and ecological systems across a range of scales – from household to village, city to entire civilisations (Redman 2005, 70 – 1), which cannot be accessed by ecology or anthropology alone.

Historical ecology is an interdisciplinary field that studies the interactions through time between natural environments and human societies. It examines the consequences of these interactions in understanding both past and contemporary cultures, with modern ecosystems being seen as the result of long-term processes of environmental changes both natural and human-influenced (Balée 2006, 76; Braje and Erlandson 2013, 119). As a field of research, historical ecology seeks to overcome the divide between the humanities and social sciences, with their emphasis on qualitative narrative, and the physical sciences with research based largely on quantitative analysis. Originally, historical ecology examined events from the geological, pre-human era. But, largely due to the pioneering research of Carole Crumley from the 1990s onwards (see for example Crumley 1994), the concept is now used in studying the impact of the archaeological past.

The unit of analysis typically used in historical ecology is the landscape. Landscapes retain as physical evidence the outcomes of decisions made by individuals or whole communities over varying timescales (Crumley 1994, 9). The ambiguity in meaning and scale of the term 'landscape' allows it to provide a meeting point, where practitioners from many different disciplines can combine their research. The landscape is thus seen as 'a place of interaction with a

temporal dimension that is as historical and cultural as it is evolutionary... upon which past events have been inscribed, sometimes subtly, on the land' (Balée 2006, 77).

Historical ecology uses complex systems theory to integrate the findings from biophysical and social systems. It is important to note that historical ecology as a concept neither presumes that environmental change causes cultural change, nor that the reverse is the case; rather it seeks to study the interrelationships between biophysical and cultural/economic/social changes.

The findings of historical ecology have been referenced in a practical sense in nature conversation projects and ecosystem management, in what has been termed 'applied historical ecology', whereby an understanding of past events is instrumental in informing management plans for the future. An important example was the 1999 study by Swetnam et al. of the restoration of a montane grassland in northern New Mexico, which used aerial photography combined with reconstructed fire-scar chronologies to date the invasive trees and the use of fire to manage woodlands; the study addressed both the advantages and constraints of applying a historical ecological approach to the management of ecosystems (Swetnam et al. 1999, 1200 – 2). Studies of past ecologies, using long term records, are increasingly considered of value in understanding biodiversity conservation in the present day and its management for the future (Willis et al. 2007, 184).

Sustainability is a concept much used in heritage management and heritage studies, with its own research journals and research centres such as University College London's Centre for Sustainable Heritage. Research into the sustainability of archaeological and historic landscapes and buildings takes account of the impacts of climate change, with organisations such as Historic England assessing the threats posed by the climate emergency and addressing the potential solutions.

In archaeological research, the idea of sustainability has been cited as a counterpoint to the concepts of ecocide and collapse (see for example Costanza et al. 2007). When considered in relation to the survival of communities living sustainably in the past, it is closely linked to the resilience concept. Sustainability also relates to the link between the study of past human experience and how the

greatest challenges of the present – including environmental degradation and the impacts of global warming – can be met (Hutchings and La Salle 2019, 1653; Pikirayi 2019, 1671). Although it is acknowledged that past ‘collapses’ are not analogous in a straightforward way with possible future ones (Tainter 2006, 27), it has been suggested that archaeological studies can assist in distinguishing those features of social systems and human-environment interactions that can be altered to achieve more desirable social and ecological outcomes (Redman 2005, 71). Archaeology thus has a role in envisioning sustainable futures.

Archaeology also has a broader connection to sustainability, in relation to its relevance to society today. It is recognised that heritage is important to a sense of identity and belonging, and that adaptation by communities to the effects of climate change will take place most successfully where people’s sense of place and quality of life are preserved. This connects with the role of cultural institutions, such as museums, as communicators and as focal points for community, discussed later in this study.

Using these three concepts – resilience, historical ecology and sustainability - and building on the comparative archaeological and societal evidence from several coastal wetland regions, Van de Noort’s study sought to evolve a definition of climate change archaeology. It was suggested that the past can be viewed as a ‘repository of adaptive pathways’ (Van de Noort 2013, 227). Such pathways provide not so much ‘lessons from history’, since direct parallels between the present and the past can seldom be drawn; rather, it was believed, they offer strategies whereby the socio-ecological resilience of modern communities can be strengthened in the face of rapid climate change.

Social memory and applied traditional ecology are further concepts which can potentially inform an understanding of modern-day adaptations to climate change (see for example Cooper 2012, 46 – 52). A case study focusing on these concepts used comparative research from pre-Columbian and early modern sites in the Caribbean to find evidence for adaptation in the form of settlement relocation, altered house architecture and differing food procurement strategies (Cooper and Peros, 2010). Such studies which explore the inherent mitigation strategies of past peoples are significant in relating the human experience of

weather events to long-term climate variability (Cooper 2012, 50 – 1), and are thus of relevance in considering our strategies today.

Turning to the actual practice of archaeology, the threats to archaeological sites across the world from the impacts of climate change – such as rising sea levels, flooding, erosion, desertification, the thawing of permafrost or the drying out of waterlogged conditions – have heightened awareness of the need to protect these vulnerable sites and the unique cultural heritage they represent. Site protection is not the only consideration: archaeological activity itself is having to adjust to new and volatile conditions. In the field of experimental archaeology, for example, questions are being asked about how changes in temperature and humidity are affecting the materials used in reconstructed buildings, and their eventual lifespan, while changing growth patterns are influencing experimental crop production (D. Freeman, ‘The Effect of Climate Change in Experimental Archaeology’, <https://exarc.net/issue-2019-1/mm/effect-climate-change-experimental-archaeology> Accessed 11.2.19).

It has been pointed out that although discussion on action in the face of climate change has been on the agenda of governmental policy-makers for many years, it is only recently that threats to heritage have been considered; in 1,550 pages of the IPCC Fifth Assessment Report, published in 2014, the term ‘cultural heritage’ appears only twice (Nimura et al. 2017, 1).

However, heritage practitioners themselves have long recognised the need for action. In 2006 a requirement came into effect for World Heritage Sites to include in their management plans an assessment of the impacts of climate change. Mitigation strategies, as appropriate, were to be included. A study of World Heritage Sites in the UK, some years later, used interviews with heritage professionals to explore the extent to which climate change was incorporated into management plans. It identified the key challenges in climate change policy development and implementation; overall there was a sense that the appropriate and necessary resources to ‘plan for’ climate change are simply not there (Phillips 2014, 293 – 7).

In 2007, the Council for British Archaeology held a conference on ‘Adapting archaeology: foresight for climate change in the UK’. Various organisations came



together to discuss the likely impacts of climate change on the historic environment. Presentations covered such themes as managing change in the coastal zone, changes in soil and water, changes in rural land use and the involvement of community groups in the recording of archaeological and historic sites threatened with erosion. It was acknowledged that some reorientation in thinking would have to be undertaken, with the global phenomenon of climate change taking over from development and agriculture as the main risk to archaeological preservation (Chitty 2007). As well as the direct impacts of climate change there are indirect impacts which also need to be considered, such as the disruption caused by adaptation and mitigation strategies. For example flood alleviation programmes in river valleys could be detrimental both to archaeological sites and to the buried archaeological record (Howard et al. 2008, 405 – 7). The need for heritage organisations to be proactive in the process of informed decision-making is evident.

Similarly, as mentioned above, Historic England has set out its strategy for responding to the threats posed by climate change to the UK's cultural heritage. Its web page on 'Heritage, climate change and environment' summarises the impacts of environmental change on historic and archaeological sites, for example through flooding and other extreme weather events (<https://historicengland.org.uk/research/current/threats/heritage-climate-change-environment/>). The effects of climate change on the built environment, on buried sites, on landscapes and on coastal environments are detailed, and information offered on the adaptation strategies that Historic England are currently researching in order to minimise damage and protect their sites.

The preservation and future of archaeological sites in relation to the threats of climate change, and how communities can be actively engaged in their survival, was the theme of the annual meeting of the European Association of Archaeologists in Glasgow in 2015. Case studies from across the world covered themes such as the vulnerability of World Heritage sites, managing archaeological sites at a time of accelerated coastal erosion, the preservation of sites in the Arctic, and questions around citizen science, the role of volunteers and community archaeology (Dawson et al, 2017).

From the protection of archaeological sites and cultural heritage, to informed decision-making around mitigation strategies, to regional or site-specific studies seeking to elucidate interactions that take place between human communities and the environment, the connections between archaeology and climate change are clearly in themselves a significant and prescient topic of study.

## **2.4 Archaeology and climate change in academic journals**

### *2.4.1 Methodology*

The nature and quantity of research undertaken by archaeologists into climate-related topics, and how this research has changed over the past decades, is broadly indicated by looking at the frequency of climate-related articles in archaeological journals. Two journals are examined here: the *Journal of Archaeological Science* and *Antiquity*.

It is acknowledged that the occurrence of articles on palaeoenvironmental research might well be higher in a science journal such as *Nature* or *Science*. Some of these articles will relate to past climate change and incorporate archaeological studies. However, the research articles published in science journals reflect the interests of many different scientific disciplines. For the purposes of this study, it was decided that a comparison of two dedicated archaeology journals would more usefully reflect a changing interest in climate change over the years by academic archaeologists. This was more important than choosing a science journal which may reach a wider audience.

The journals were chosen deliberately to contrast with each other: *Antiquity* was founded in 1927 and covers research topics in archaeology across the world and from every time period; the *Journal of Archaeological Science* was established much more recently, in 1974, and focuses on the development and application of scientific method to all areas of archaeology.

For the *Journal of Archaeological Science*, a search was made for the term “climate” OR “climatic” as it occurred in research articles from the journal’s first year of publication in 1974 up to the end of 2018. The search was then refined to look for occurrences of the term “climate change” OR “climatic change”. For

purposes of comparison, a similar search was made for *Antiquity*: in this case the results included book reviews and editorials, along with research articles.

Alternative ways of referring to climate change were not used in the search for climate-related articles. However, it is acknowledged that terminology has changed over time, and the phrase 'global warming' could have been included to expand the search. The term 'climate change' is, on the other hand, a broader definition; since scientific research has begun to point increasingly towards more unpredictable climate patterns, 'climate change' has been widely adopted over the narrower term 'global warming'. 'Climate change' also covers all past variations in climate, including periods of cooling, that may be the subject of site-specific archaeological research.

The results of the search can only be a rough guide as to the appearance in these journals over the years of climate-related research, not least because of the difficulty of gauging what proportion of the total published articles these samples represent, and the number of articles published per year may well have changed over time. However it is hoped that the search will indicate broadly how an interest by archaeologists in climate-related research has developed over the years.

#### *2.4.2 Results: analysis and discussion*

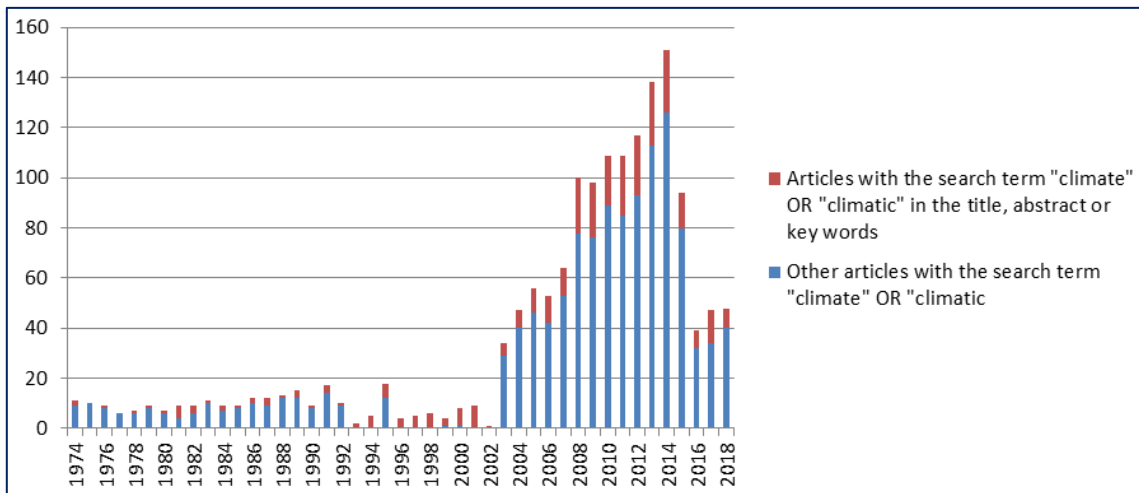
The table below shows the results for the *Journal of Archaeological Science* (Fig. 2). It can be seen that of the total number of research articles mentioning "climate", those which expressly mention the term in their title, abstract or key words make up just over a fifth (21.0%). The proportion of "climate change" research articles where the term "climate change" occurs in the title, abstract or key words is again roughly a fifth (21.3%). Of the total number of articles where "climate" is mentioned, those which specifically refer to "climate change" account for a little over a quarter (29.2%). The complete table of results can be found in Appendix 1.

	Search term “climate” OR “climatic”	Search term “climate change” OR “climatic change”
Total no. of articles containing search term	1,560	456
No. of articles containing search term in title and/or abstract and/or key words	328	97

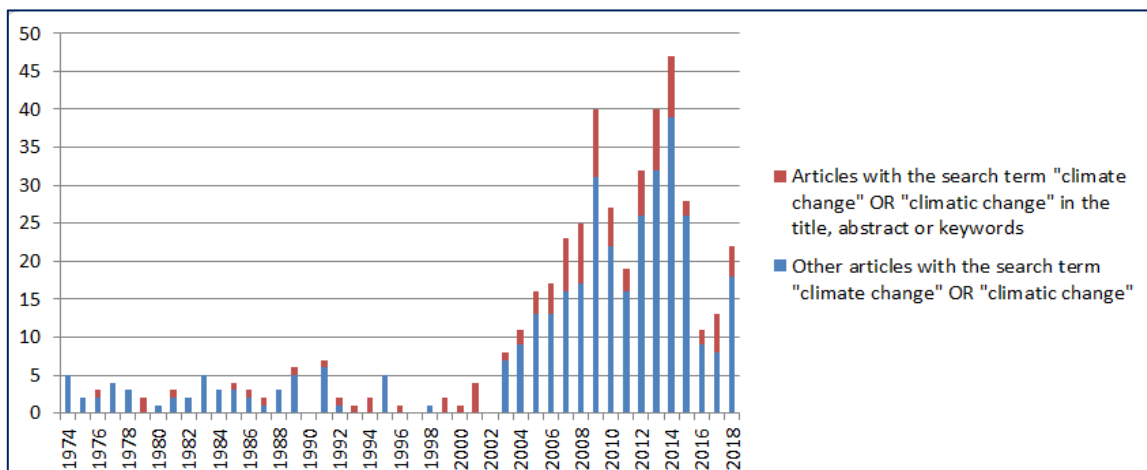
*Fig. 2 Journal of Archaeological Science: number of articles containing the search term “climate” OR “climatic” and “climate change” OR “climatic change”, 1974 – 2018.*

The spread of occurrences of the two search terms over the years can be seen in the graphs below. The proportion of articles where the search term occurs in the title, abstract or key words is also depicted: this is useful as an indication of the significance of climate, or climate change, in the research undertaken. The third graph depicts the results for the two search terms side by side, for purposes of comparison.

Looking at the first graph (Fig. 3) for the search term “climate” OR “climatic”, it can be seen that during the 1970s and 1980s there was a small but steady stream of climate-related articles; these peaked in 1991 and again in 1995, though the 1990s as a whole are marked by a lull. From 2003, when 34 occurrences of the search term were noted, there is a steep rise which proceeds mostly uninterrupted until peaking in 2014, when the search term occurs 117 times. After this there is a sudden drop, down to 94 for 2015 and 39 for 2016, rising again slightly in the next two years. It is perhaps interesting to note that during the 1990s, where there are very few articles, a majority of articles that do occur feature the search term in their titles, abstracts or key words.



*Fig. 3 Journal of Archaeological Science: research articles containing the search term “climate” OR “climatic”, 1974 – 2018.*



*Fig. 4 Journal of Archaeological Science: research articles containing the search term “climate change” OR “climatic change”, 1974 – 2018.*

Looking at the results for the search term “climate change” OR “climatic change” a similar pattern appears (Fig. 4), with a distinct rise in the number of occurrences of the search term from the early 2000s. The exceptions to the general pattern are a relatively higher number of occurrences in 2009, and a slight dip in 2011. Narrowing the focus down to articles which include the term “climate change” in their title, key words or abstract, it is worth noting that the years 2006 to 2009 are

the years when articles containing the term “climate change” in their title, abstract or key words make up the largest proportion of the total: in both 2007 and 2008 they account for just under a third.

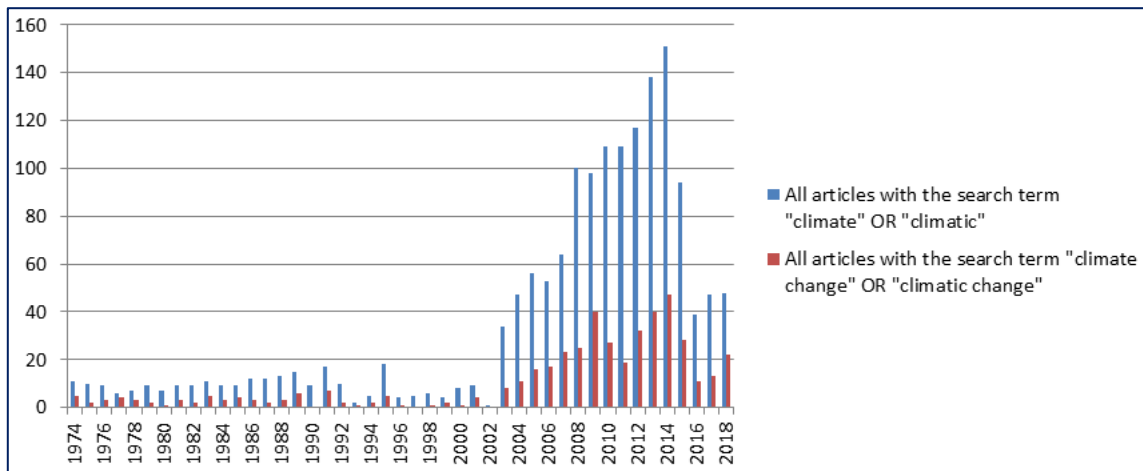


Fig. 5 *Journal of Archaeological Science*: research articles containing the search term “climate” OR “climatic”, and “climate change” OR “climatic change”, 1974 – 2018.

For purposes of comparison, it is interesting to look at the results side by side (Fig. 5). It is apparent that in certain years the articles which directly mention “climate change”, as opposed to just “climate”, make up a larger proportion of the total number of climate-related articles. Articles referring to climate change account for just over a third of the total in 2007, and about two fifths in 2009, while in 2018 they make up just under a half of the total.

A similar search was made for the journal *Antiquity*. In this case, the search returned a very small number of occurrences, so it is not considered useful to present them in a graph: the results, however, have been included in Appendix 1. Entering the search term “climate” or “climatic” returned 88 results for the years 1927 to 2018, and 74 for the time period 1974 to 2018 (the time span of the *Journal of Archaeological Science* search). The search term “climate change” OR “climatic change” occurs first in 1993. In line with the pattern for the *Journal of Archaeological Science* there is an increase in the frequency of the search term from the early 2000s onwards, though the numbers are still low. From 2007 there are occurrences of each search terms for every year, with frequencies of between

1 and 6. When the occurrences of the search terms in book reviews are put aside, the highest frequencies are in 2010 and 2011. Interestingly the result of 4 occurrences of the search term “climate” OR “climatic” for the year 1999 is the same as the result for the same year for the *Journal of Archaeological Science*.

Despite the very small returns for *Antiquity* it is worth pointing out that climate-related articles have been appearing since the 1920s, reflecting the fact that archaeology as a discipline has long been addressing, in one form or another, the effects of climate on human populations.

In summary, looking at the results of this journal search, specifically the results from *Journal of Archaeological Science*, several points can be made:

- The number of research articles that refer to climate, or climate change, has fluctuated over the years
- From the early 2000s there has been a marked increase in the number of research articles that refer to climate, or climate change
- Following a fall after 2014 the number of research articles with a reference to climate, or climate change, has increased in recent years (2017 and 2018)

From these points it can be inferred, firstly, that interest in climate-related research has varied over time; secondly, that since the early 2000s there has been a rapid growth in research that acknowledges, or makes reference to, the role of climate in archaeology; and finally, that climate and climate change are continuing to be studied within the context of archaeological research.

Without further investigation it is impossible to comment in detail on the nature and content of the research articles that refer to the influences of climate, and how their character may have differed over time. The most recent and relevant articles cover many different aspects of climate change and variability in the past, and the intricacies of human response to such changes. It is worth noting that of the many climate-related articles returned for the “climate” search, as opposed to the “climate change” search, many nonetheless addresses closely related subjects, such as climate-driven environmental change, or the effects of climatic shifts, variability and deterioration.

Rather than simply the reconstruction of past climates as the backdrop against which people lived out their lives, a predominant theme seems to be the agency of climate, acting as an influence within the lives of communities. It seems likely that this research interest echoes an accelerated sense of urgency about modern, human-induced climate change and the responses of people today.

## 2.5 Conclusion

From a discussion of the long-standing relationship between archaeology and climate change, it can be concluded that archaeology as a discipline can contribute to modern climate change discourse in several ways. Indeed, it could be said that archaeology has a unique role to play.

A brief history of the connections between archaeology and climate change reveals that archaeologists have dealt from the outset with questions of people's engagement with the environment and their responses to environmental change. From antiquarian attitudes to climate and culture, to the palaeoenvironmental work of the late nineteenth century which signalled the beginnings of scientific archaeology, and from the developments in climate science – for example the work of Callendar – which heralded the idea of human-induced climate change, to an increasingly ecological approach to archaeology from the mid-twentieth century onwards, it can be seen that climate, the environment and the activities of past human communities have long been interconnected topics of study.

Current archaeological discourse relating to climate change can be divided into studies which examine past human activity in relation to climate/environmental change, those which focus especially on past societal response to such change, and those – fewer in number as yet – which seek to define a role for archaeology in relation to how people deal with climate change today.

A review of two journals, the *Journal of Archaeological Science* and *Antiquity*, gives a snapshot of the evolution of climate-related discourse among archaeologists. From the early 2000s onwards a marked increase can be identified in the number of papers that explore or at least have a reference to climate change, and indications are that these papers increasingly view climate



less as a single element in the backdrop against which people operate, and more as an active agent affecting people's lives.

From studying the interconnectedness of archaeology and climate change two themes can be identified:

- The continuing importance, in the light of climate change today, of applying archaeological methodology and data to the study of past environmental change and its effect on human communities
- The significance of archaeological studies to present-day and future climate change, especially with regard to human adaptations

Archaeological data in this context may equally consist of material culture or palaeoenvironmental evidence. The archaeological record, however incomplete, gives unique insights into past activities which in turn reflect the complex human responses to the perceived environment (O'Connor 1998, 4). There remains the question of the disparities of scale between the proxy data used by archaeologists and that of climate science. However, it is precisely because archaeology deals with more localised change – both geographically and temporally – and at a human scale, that its contribution as a discipline to the wider climate change discourse can be seen to have especial value.

This point connects with the second theme to have emerged, that of linking archaeological knowledge and approaches to issues of present-day climate change, along with the associated concerns over how communities will adapt. Archaeology operates – quite literally – at a grass-roots level. Given the global nature of climate change, which can make the future of human adaptation appear overwhelmingly complicated and fraught with uncertainty, case studies at a regional or local scale which highlight the human element are of great significance.

There will, of course, always be constraints on learning from the past. Perhaps the biggest of these is the one common to every archaeological endeavour – the fact that we can never get inside the mindset of past people's perceptions and beliefs. Unlike us, people in the past had no access to an evidence-based scientific understanding of future climate change, so their adaptations could be

said to be reactive responses rather than proactive behaviours consequent upon a predicted state of affairs (Van de Noort 2013, 41). However, as this chapter has shown, archaeological studies remain central building blocks in understanding how humans in the future might adapt and survive.

The importance of the human element is increasingly acknowledged by the global research community, as can be seen for example in the creation of the research initiative IHOPE (Integrated History and Future of Peoples on Earth). IHOPE is a branch of PAGES (Past Global Changes) ([www.pages-igbp.org](http://www.pages-igbp.org) Accessed 31.1.19), which supports research into understanding the past in order to better predict Earth's future climate and environment, and to inform sustainability strategies. IHOPE was initiated to 'better understand the dynamic interactions between all aspects of human behaviour and the environment by connecting the histories of humans, climate and the environment at multiple temporal scales' ([www.pages-igbp.org/news/all-news-items/9-latest-news/6-ihope-science-plan](http://www.pages-igbp.org/news/all-news-items/9-latest-news/6-ihope-science-plan) Accessed 31.1.19); from the outset IHOPE researchers sought to model and quantify historical change across timescales that reach beyond those of history and even archaeology (Sörlin and Lane 2018, 5). The overarching aim is to foster collaboration between researchers, practitioners, governments and local communities, and one of its projects explores the threats of global environmental change threats to heritage (see <http://ihopenet.org/emerging-knowledge-hubs/> Accessed 31.1.19). It will be interesting to follow the contribution of archaeological studies within this evolving research remit, to see whether they continue to embrace such concepts as resilience, social memory and a sense of place in an attempt to link past communities with the adaptive pathways we need to follow today.

How can a move be made from the theoretical considerations surrounding archaeology and climate change towards a communication of the issues involved and the implications of these for everyone – archaeologist and non-specialist alike? Can complex ideas be refined and reconstituted in such a way that they become accessible, relevant and more easily understandable, without oversimplification or loss of integrity? In other words, to what extent and by what means do the connections between climate change discourse and archaeology lend themselves to being interpreted for a wider audience?

The next chapter will consider the role of museums in the communication of archaeology, while the following chapter will return to climate change and assess whether - and how - museums are attempting to address climate change and engage their audiences with this highly topical issue. The role of archaeology in climate change communication will be introduced, and explored further in subsequent chapters.

## ***Chapter 3 Archaeology and museums: communication and change***

### ***3.1 Introduction: why museums?***

Why are museums a suitable focal point for this study? What facets of museum theory and practice are of especial relevance when considering how archaeology is communicated, and how the connections between archaeology and climate change can best be explored?

Archaeology is presented to the wider public in many ways. Television documentaries, on-site interpretation for visitors to historic monuments, YouTube and other digital media, and the CBA (Council for British Archaeology) with its mission statement 'Archaeology for All', do much to increase people's understanding of how archaeology works. Museums, however, have a unique role to play. With their collections of artefacts and their repositories of information, often developed over many decades, they represent a rich visual resource unlike any other, which the specialist and non-specialist alike can use to construct knowledge of the past. Museums are thus intrinsic to the communication of archaeology.

The opening up of professional archaeology, to make it more accessible and relevant to society at large, has been a subject of debate for several decades, with public archaeology emerging as a sub-discipline in its own right. The idea has gradually gained acceptance that archaeology has to be topical; concurrently, there has been a move away from a narrow focus on objective learning - what might be termed 'disinterested knowledge' (Merriman 2002, 541). These changes are embedded within heritage discourse in general, which reflects, in turn, a growing concern among archaeologists and heritage management professionals with issues of economics and tourism, identity and conflict.

Public archaeology is in itself a broad field, with its practice ranging 'from grassroots community activism to high-level international diplomacy' (Moshenska 2017, 3). As such it eludes a simple definition but can be thought of as

encompassing the multiplicity of ways in which ‘the practice and scholarship of archaeology meets the world’ (Moshenka 2017, 3).

In 2000 the first edition of the journal *Public Archaeology* highlighted the significance of archaeology’s shift towards a more participatory approach, stating that issues in public archaeology are about problems which arise ‘when archaeology moves into the real world of economic conflict and political struggle. In other words they are all about ethics’ (Ascherson 2000, 2). Whatever the complexities, the opening up of archaeology has without doubt involved recognising how it connects with society. In advancing our understanding of the concepts of time and place, and of how the past resonates in the present, archaeology in general – and archaeological education in particular – has the capacity to promote a more empathetic approach to the world and a feeling of common humanity, both of which are of relevance in dealing with issues faced by society today (Henson 2017, 45).

Should museums, as key venues for archaeological communication, be addressing these same questions? Is there indeed something in the character of museums – specifically of material culture in the ‘distinctively assembled form of the collection’ (Thomas 2016, 8) – that renders them uniquely placed to embrace issues like climate change? Museums are often by their nature multi-faceted and cross-disciplinary places, where visitors view displays of archaeology as just one aspect of the total experience, which may also include natural history, science, geology, social history and art. For encouraging people to think through issues of climate change, past and present, this all-embracing approach characteristic of many museums seems to present particular opportunities.

To a certain extent, museums have always had to adjust according to the political, social, and economic circumstances that surround them (Hooper-Greenhill 1992, 1). They are an appropriate focus for this study precisely because they possess the ability to connect their audiences with areas of contestation and change. In practice, however, it has to be said that the degree to which museums are able or willing to address controversial or difficult topics varies. The capacity of museums to respond thoughtfully to traumatic events in the news, for instance,

is contingent on their organisational structure, their mission and on the nature of their collections (Sullivan 2017, 12). Many museums do indeed address contemporary subjects. They strive to be forward-looking and questioning in their approach, aiming to provoke discussion and thought as much as to provide answers. But it is also true that museums are perceived as conservative institutions, where new ideas are slow to take root; they are seen to uphold and reflect the dominant power relations in society, and their exhibits and galleries often reflect and encourage consensus and an acceptance of the status quo.

A search of the Museums Association's publication *Museums Journal* reveals a number of articles that highlight this contradiction, in the context of how museums can address emotive and controversial issues. The global phenomenon of migration, for example, is a topic that the museum sector was initially slow to respond to (Westley 2008, 34 – 7). The multicultural nature of many museum collections, coupled with their skill in uncovering untold stories, means that immigration is often explored in galleries in a historical sense (Stephens 2015a, 4); but the discussion in *Museums Journal* reveals that the experience of contemporary migrants is more difficult for museums to tackle. The cautious nature of many museums means they have been reluctant to enter the debate, or to engage with what is seen as a political hot potato (Atkinson 2014 <https://www.museumsassociation.org/museums-journal/museums-journal-blog/13052014-elephant-in-the-room> Accessed 1.4.20). However, many museums have been willing to address contemporary attitudes and the Migration Museum in London, created following a report on the representation of migration in existing institutions, has recently opened its own physical space (Stephens 2014, 4; Olorunshola 2020, <https://www.museumsassociation.org/museums-journal/q-a/13122020-migration-museum-opens-in-London-shopping-centre> Accessed 1.4.20; <https://www.migrationmuseum.org/lewisham/> Accessed 1.4.20).

Political activism, the experience of refugees, slavery and the interpretation of sites of tragedy and suffering are further topics where museums have become engaged in controversy. There has always been a complex relationship between politics and public institutions such as museums. Examples where aspects of this

relationship have been addressed include discussions by Burgess, 2013, on the need for museums to engage with contemporary politics when portraying activism in the past (<https://www.museumsassociation.org/comment/09072013-museums-need-to-confront-politics-chris-burgess-peoples-history-museum-working-class-library-salford> Accessed 1.4.20); by Jones, 2017, on how racism needs to be confronted in a proposed slavery museum in London (<https://www.museumsassociation.org/museums-journal/comment/01112019-museum-of-slavery-must-avoid-mistakes-of-past> Accessed 1.4.20); Sullivan, 2017, on the display of contentious objects from the recent past (Sullivan 2017, 12 – 3); and Mulhearn, 2018, on the sensitivity needed to deal with difficult and disturbing histories (Mulhearn 2018, 32 – 5).

So although the more conservative of institutions may be reticent about linking past stories to current concerns – for example an exhibition about suffragettes may feel ‘safer’ if it concentrates on the history of the movement, rather than addressing contemporary issues of gender equality (Burgess 2013, <https://www.museumsassociation.org/comment/09072013-museums-need-to-confront-politics-chris-burgess-peoples-history-museum-working-class-library-salford> Accessed 1.4.20) - the museum sector as a whole does not appear to be averse to engaging with challenging subjects.

The conflicts and contradictions within the museum sector link in neatly with how museums define themselves and their role. The Museums Association defines museums as institutions that ‘collect, safeguard and make accessible artefacts and specimens, which they hold in trust for society.’ They enable people to ‘explore collections for inspiration, learning and enjoyment’ ([www.museumsassociation.org](http://www.museumsassociation.org). Accessed 1.2.19). It is interesting that this description gives emphasis to a museum’s audience.

The International Council of Museums (ICOM), founded in 1946, periodically updates its definition of a museum in line with developments in the global museum community. The current definition, adopted during the twenty-first conference in Vienna in 2007, describes a museum as:

‘a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment.’

(<http://icom.museum/en/activities/standards-guidelines/museum-definition/> Accessed 1.2.19).

In 2016 ICOM launched a participatory process of selecting a new definition, to be voted on at the twenty-fifth General Conference of ICOM, held in Kyoto in September 2019. The new alternative definition agreed was as follows:

‘Museums are democratising, inclusive and polyphonic spaces for critical dialogue about the pasts and the futures. Acknowledging and addressing the conflicts and challenges of the present, they hold artefacts and specimens in trust for society, safeguard diverse memories for future generations and guarantee equal rights and equal access to heritage for all people.

Museums are not for profit. They are participatory and transparent, and work in active partnership with and for diverse communities to collect, preserve, research, interpret, exhibit, and enhance understandings of the world, aiming to contribute to human dignity and social justice, global equality and planetary wellbeing.’

(<https://icom.museum/en/news/icom-announces-the-alternative-museum-definition-that-will-be-subject-to-a-vote/> Accessed 1.4.20)

At the Kyoto conference many opinions and proposals were expressed, and the decision was made to postpone the vote ([https://icom.museum/wp-content/uploads/2020/03/EN\\_ICOM2019\\_FinalReport\\_200318\\_website.pdf](https://icom.museum/wp-content/uploads/2020/03/EN_ICOM2019_FinalReport_200318_website.pdf) Accessed 1.4.20); the proposed ICOM definition is therefore still a matter for debate. However, both the proposed and current definitions clearly emphasise and reflect the responsibilities of museums towards society at large, as does the Museums Association definition quoted above.

Within the UK, museums fall into various categories. These include national and local authority museums, university museums, museums which are independently funded and sites owned by bodies such as the National Trust or run by government departments such as Historic England and Historic Scotland. Depending on what is included, there are an estimated 25,000 UK museums; of



these, over 1,800 have been accredited by the MLA (Museums, Libraries and Archives Council). For a museum to be registered under the MLA Accreditation Scheme it has to have achieved a nationally approved standard in management, collections care, and delivery of information and visitor services.

([www.museumsassociation.org/about/frequently-asked-questions](http://www.museumsassociation.org/about/frequently-asked-questions)) Accessed 1.2.19).

Following a brief examination of the changing nature of museums through time, this chapter discusses museums and the communication of archaeology, looking at questions relating to public archaeology, learning and communication in the museum, the visitor experience, and the particular place of museum objects.

## **3.2 *The changing museum***

### **3.2.1 *A museum's role***

Over the past thirty to forty years many changes have taken place in the way museums organise and present themselves, and in how they are perceived both by those who work there and those who visit. The traditional view of museums as temples of culture imparting knowledge to an essentially passive audience is a thing of the past. From being seen all too often as staid, 'dusty' places, museums have revitalised themselves, growing since the latter part of the twentieth century into far more than a series of galleries and adopting a more active and energetic role: across the world museums, even smaller institutions, offer changing exhibitions, gallery talks, schools programmes and friends' events, and cultivate an on-line presence, embracing social media to include a whole new audience (Thomas 2016, 23 –24).

Much of the literature on museum theory and practice emphasises the aspiration of museums to become more socially engaged and more relevant to the communities they serve. A museum today aims to be sympathetic to the needs and expectations of its visitors. It seeks to involve them actively. A museum's role in public education, inspiration and entertainment is seen to be a major

justification for its continued existence, especially when issues of funding are taken into account.

The origins of the modern museum – as opposed to those of classical antiquity - were discussed in a seminal work edited by Impey and MacGregor in the 1980s (Impey and MacGregor 1985). The evolution of museums as institutions was subsequently linked by Hooper-Greenhill to the work of Foucault on the structuring, ordering and creation of knowledge. Rather than argue for a gradual change or continuum, Foucault's work adhered to the notion that the shaping of institutions in the past was allied to ruptures in the status quo, whether these be economic, social, cultural, political, scientific or theological (Marstine 2006, 21).

Whatever view is taken of the mechanisms through which the modern museum came into being, it can be stated with some certainty that museums as the repositories of collections have performed and continue to perform several linked tasks:

- The preservation of objects, both cultural and natural, important to the society in question
- The pursuit of knowledge through research, with the collections/objects supporting and informing this process
- The sharing of knowledge with those who visit

A revealing aspect of museum history is to see how the balance has shifted through the years between the tasks of knowledge increase and knowledge diffusion, and the relative importance attached to each at different times. Of relevance to this study is to see how these changes are manifest and contextualised within the social and political landscape of the age.

### *3.2.2. The Renaissance museum and museums of the Enlightenment*

The collections of objects established during the European Renaissance by scholars, merchants and princes served both to show off their wealth and to exhibit their knowledge (Hooper-Greenhill 1992, 33). Knowledge itself was altering at this time, as the medieval view of a 'fixed' cosmos gave way to an

acceptance that things could – and had – changed, and would continue to change. It was also the case that knowledge gleaned from the ‘reactivation’ of the classical past remained firmly within the domain of a privileged few.

The collecting of objects had become a widespread activity across Europe by the end of the 16<sup>th</sup> century (Hooper-Greenhill 1992, 78). The aim was to produce a ‘cabinet of curiosity’, which through its arrangements of *naturalia* and *artificialia* sought to represent a harmonious picture of a world created, it was believed, by both God and humankind. Objects procured from across the globe were linked to one another and displayed by their collector using the concept of similitude (Marstine 2006, 25; Hooper-Greenhill 1992, 140). The search for order and understanding which – along with greed and acquisitiveness – informed these private collections eventually gave rise to the classical museum of the Enlightenment.

The museum as a public institution had its origins in the intellectual ferment and social changes occurring in the aftermath of the English Civil War (Abt 2006, 123). These changes were to resonate later, in the eighteenth century, in the American and French revolutions. Along with much else about the established order, the ownership of cultural material was called into question. Knowledge was changing again: the curiosity cabinet, over time, began to be perceived as haphazard and disordered, and an inadequate expression of the new learning of the day.

A sense began to grow that collections could be of wider interest than to the private collector’s admiring circle of friends. The Royal Society, founded in 1660, had as one of its aims the establishment of a comprehensive collection of objects, known as the Repository; from this collection observations of the world were to be made (Hooper-Greenhill 1992, 145). However, the Repository still functioned essentially as a private collection, used by Society members alone in support of their research. In time, it would be subsumed into the collections of the British Museum.

By contrast, the collection of the John Tradescants, father and son, which came to be known as ‘Ark of Lambeth,’ was open to anyone wishing to view its contents

– distinguished visitors from the continent and ordinary local people alike. The accessibility of the Ark made it unique among collections of the day (MacGregor 2001, 204). Its richly diverse material was eventually bequeathed to Elias Ashmole, a founder member of the Royal Society. Ashmole donated the collection to Oxford University as a foundation gift for the museum which was to bear his name; opening in 1683, the Ashmolean was Britain's first purpose-built museum, and was intended from the outset to be fully accessible to the public, with an admission fee being charged (Abt 2006, 124). It is of note, however, that the Ashmolean's success appears to have been built not on the museum as such but on the interest shown by the scientific community in the attached laboratory and lecture hall (MacGregor 2001, 206).

The British Museum was established seventy years after the Ashmolean, in 1753. Like the Ashmolean it was open to visitors from the start, although there was some debate among the museum's trustees over the exact nature of the 'public' to be admitted. The 'Statutes and Rules' relating to the British Museum at its outset proclaimed it to be designed chiefly 'for the use of learned and studious men, both natives and foreigners, in their researches into the several parts of knowledge'; it was, however, 'judged reasonable' that the benefits accruing from the museum should be 'rendered as general as possible' (Abt 2006, 126).

The changes in the shaping of knowledge that characterised the Enlightenment re-defined how museums were to be structured. The unifying concepts that had drawn objects together in the Renaissance cabinet of curiosity were those of similitude, resemblance and attraction; by contrast, the organisation of Enlightenment knowledge was based primarily on comparison (Macdonald 1998, 7). The differences between things, and their categorisation, became paramount. Relations between objects and phenomena were expressed in terms of order and measurement. Knowledge – constructed, delineated and refined through the processes of classification, cataloguing and tabulation – became infinitely extendible. The typical was considered valuable, as representative of the laws of nature; anything that appeared anomalous was either made to fit or else rejected as uncharacteristic (Marstine 2006, 24).

One significant consequence of this epistemological shift was the separation of history and science, a separation which the physical organisation and lay-out of museums was to mirror and perpetuate.

### *3.2.3 The emergence of the museum as a modern institution*

In the late eighteenth and early nineteenth centuries the museum began to emerge as a modern institution. Again, this development was closely connected with epistemological changes. The complexity of the relationships between different phenomena was increasingly recognised; as a result, knowledge became less about describing and tabulating the world, in the Enlightenment sense, and more about understanding it (Marstine 2006, 24).

The nature of the developing museum was also influenced by the political dynamic of the time. While the museum of the Enlightenment was organised very much along the lines of its predecessors, as a private collection, the modern museum was to be a truly public institution, formulated specifically for the edification, instruction or indoctrination of its visitors. As a result, a direct link was forged between state responsibility and culture.

This connection was explored by Hooper-Greenhill in an account of how the formerly-restricted Louvre in Paris was transformed into a public space (Hooper-Greenhill 1992, 172 – 90). Napoleonic imperialism provided both the context and the means for the acquisition of objects for the Louvre, which were then put on display for a visiting public. Other museums in Europe followed the same pattern. Likewise, in Washington DC in the 1830s, the Smithsonian Institution was set up not just for the increase of knowledge but specifically with its dissemination in mind (Abt 2006, 130).

As museums evolved increasingly into public spaces, questions arose relating to the organisation of the objects on view. In the context of archaeological collections, nineteenth century developments in the British Museum tell an interesting story, since they reflect the changing attitudes towards how archaeology itself was conceptualised. For the classically educated Victorian the notion of ‘civilisation,’ as portrayed in the British Museum, was represented by

antiquities from Classical Greece and Rome, with Egyptian and Near Eastern artefacts similarly being accepted as products of early 'civilisations'. British prehistoric and medieval objects, together with ethnographic material, were considered anomalous, and therefore 'other', the implication being that all these collections were not part of the trajectory of civilisation (Wingfield 2011, 124 - 6).

In 1866, at the same time as the British Museum's natural history collections were moved to what was to become the Natural History Museum in South Kensington, a new department of British and Medieval Antiquities and Ethnography was set up. As well as British collections, this department had curatorial responsibility for Indian, Chinese and Arabic antiquities, and antiquities from the Americas. Crucially, it was also responsible for non-classical European objects. These included the recently discovered prehistoric cave material from the French Dordogne, which – along with finds by the geologist William Pengelly of stone tools in conjunction with the bones of extinct animals in Windmill Cave in Brixham, Devon, and nearby Kents Cavern (see Chapter 6) – were starting to demonstrate the previously unimagined antiquity of the human race (Wingfield 2011, 128). These cave discoveries sparked a great interest in prehistory at the time. The British Museum's Department of British and Medieval Antiquities and Ethnography became the focus for combining ethnography with prehistoric archaeology, and in this way was instrumental in helping to build a new global record of the human story, based on artefacts from every continent.

The second half of the nineteenth century thus witnessed an enormous change in the way prehistoric archaeology was conceptualised within museums – or, more specifically, in institutions such as the British Museum that mirrored imperial influence and power. From having been excluded or side-lined as 'uncivilised' or 'barbaric' extras, the artefacts of prehistory, and those of non-European cultures, became encompassed by the narrative as it sought to trace the 'rise' of civilisation and the development of human society.

Issues of imperial dominance, conquest and wealth were inextricably linked with the development of museums throughout the nineteenth century, and on into the twentieth. New technologies made possible the appropriation of cultural artefacts

and their removal to museums; active collecting, as opposed to a reliance on donated artefacts had, by the end of the Victorian era, become the order of the day. Museums organised themselves and their collections rigidly and along 'scientific' principles into categories and departments (Conn 2010, 21) as an increasingly professionalised body of curators, museum educators and other specialists emerged. Knowledge was presented to visitors in a didactic way, so as to define identity and legitimise the actions of the state (Marstine 2006, 25). A museum became, as Foucault might have it, a component in 'the network of constant and multiple relations between populations, territory and wealth' (Foucault 1979, 18; Hooper-Greenhill 1992, 190). The politicisation of museums, and issues surrounding the appropriation of the past and its subjugation to the present cause (see for example Miller, Rowlands and Tilley 1995), are fascinating studies in their own right, but beyond the scope of this research.

Certain attributes of many larger museums in the UK today have their origins in the institutionalised museum of the Victorian age. One example is the direct association of museums with wealth and privilege, with knowledge presented and indeed manipulated in the service of the established order; another is the separation of private and public spaces within the museum, as defined by its architecture and organisation, although these boundaries have loosened in the past three to four decades. Overall, in its role as a mouthpiece of the state the modern museum had, and maybe still has, the potential to be a hugely influential force. History demonstrates that museums as national institutions have, in certain circumstances, the capacity to wield great power.

#### *3.2.4 The post-modern museum*

In the latter part of the twentieth century efforts were being made by some museum professionals to break away from the traditional model of the museum as an institution. Ideas that had their genesis in nineteenth century Europe seemed no longer relevant to the ways in which museums worked. From the 1970s the pre-eminence of the museum as an academic research establishment was increasingly challenged by its expanding role in public education (Harrison 2005, 39); although this role had its roots in a preceding era, it now began to be accepted as a museum's main field of activity.

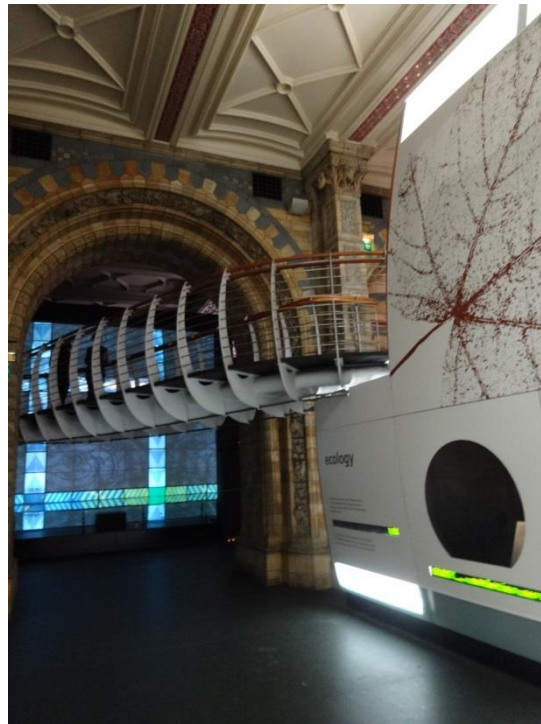
The example of the Centre Georges Pompidou in Paris, inaugurated in 1977, provides a striking physical manifestation of the re-conceptualisation of the museum at the time. Outwardly, in the radicalism and simplicity of its architecture and appearance, the building expressed a break with the past, while inside the traditional viewing of exhibitions was to be just one of the activities on offer; taken as a whole it represented an appeal to a newer, younger audience as well as a new vitality in museums (Thomas 2016, 23; Giebelhausen 2006, 56).

By the 1990s a 'new museology', as expounded by Peter Vergo, had emerged. The very nature of the museum and the underlying direction of the museum profession were being re-thought, along with such issues as the visitor experience, education and enjoyment in the museum and the altering role of museum objects (Vergo 1989). In response to funding pressures and cut-backs, and to counter the perceived image of museums as elitist, the new museology argued for a more community-driven approach, and a greater emphasis on visitors and the visitor experience (Harrison 2005, 43; Barrett 2012 107 – 9). In order to 'pay their way' museums, along with other providers in the heritage sector, were expected to increase their appeal to include as wide a range of visitors as possible. The rigid demarcation between private and public space began to loosen, as curators and museum managers began to see themselves less as dispensers of an objective body of knowledge and more as facilitators for learning (Hooper-Greenhill 1992, 200; Hooper-Greenhill 2000, 1).

Meanwhile the conversion and renovation of existing museum buildings created opportunities for renewal and for a dialogue between past and present. The Ecology gallery at the Natural History Museum, installed in 1991, was deliberately designed to over-write the nineteenth century narrative without obliterating it (Fig. 6). The Victorian building was to remain visible to visitors, with the new structure free-standing within it: both aimed to invite discovery and reflection (Giebelhausen 2006, 60). The same can be said of the Natural History Museum's popular Dinosaurs gallery. At the British Museum, the construction of the covered Great Court, which opened to visitors in 2000, demonstrated again how



architectural adaptations allow a historic institution to move with the times and to proclaim their commitment to the future.



*Fig. 6 The old embracing the new: the entrance to the Ecology gallery in London's Natural History Museum.*

By the start of the twenty-first century many museums were shifting towards what Hooper-Greenhill refers to as the 'post museum' (Hooper-Greenhill 2000, 152 – 3; 2007, 1 – 14). In this model the museum becomes less an instructive space and more a transformative one. Whilst its historic concerns of research and collection are maintained, the formal and authoritarian way of going about things vanishes. The emphasis changes from the continued accumulation of objects to concepts of inclusivity, cultural diversity, accessibility, and engagement with objects (Barratt 2012, 109). An overly didactic approach is no longer acceptable, with the interactions between visitors and displays becoming as intrinsic as the displays themselves. These developments are in accord with views of education that prioritise the experience and needs of the learner. Likewise, within the context of constructivist education theory, it is now a given that visitors will process the museum - and what they see in it - through the lens of their own experience, value systems and expectations (Marstine 2006, 30).

It is worth clarifying that the term 'post museum' does not need to be limited to places built within the last few decades – or even to a building at all. In many UK towns and cities, museums reside in their original nineteenth or early twentieth century structures: the museums in Exeter, Torquay and Bristol, for example, visited during the course of this research, fall within this category (Fig. 7). The presence of such buildings as solid and familiar components in the fabric of the urban landscape touches on important questions of heritage, belonging and identity which are intrinsic to a museum's role and to its survival.



*Fig. 7 Historic institutions: the museum buildings in Bristol and Exeter.*

The significance of the description 'post museum' is that it denotes the *ways of thinking* embedded within a museum's strategies for communication, including those for planning new exhibitions or events programmes. At its core, such thinking seeks not to indoctrinate but rather to offer space for engagement. Space, in this context, may be physical or psychological or both. The abstract ideas of Andre Malraux, a French art historian and theorist in the mid-twentieth century, are relevant here. Malraux formulated the concept of the 'musée imaginaire', arguing that the institutional framework of the traditional museum with its disciplined structures and emphasis on classification could stifle rather than extend the imagination, and could never do justice to the way artefacts or works of art were originally intended to reveal themselves to the viewer (Horne 1984, 16; Barratt 2012, 107).

The 'musée imaginaire' has been translated as the 'museum without walls', but this wording subtly alters its meaning. Architecture is not the issue here, although as mentioned above the ideas of the 'post museum' need not be confined to a building: with the internet and the advent of virtual exhibitions a museum can extend its activities, along with its visitor base, in ways unheard of in Malraux's day (Harrison 2005, 43; Barratt 2012, 108). The point is that there is room for manoeuvre in the museum of today, as it shrugs off its 'traditional' image and explores a range of methods and subject matter to assert itself as a place for learning and enjoyment. These ideas have been re-framed by Newell et al. in the context of the 'relational museum', one which:

'...develops its authority through supporting and curating networks of related things and their significance, rather than delivering knowledge from a single vantage point... Objects and collections are not merely observed and displayed in the relational museum, but are rather the pathways through which stories can flow' (Newell et al. 2016, 2).

A museum collection is put together and maintained, often over very long timescales, with the intention that at least part of it will at some stage be on display as an exhibit. Since it is generally accepted that – explicitly or otherwise – collections and exhibitions embody values and ideas (Hooper-Greenhill 2000, 3), questions of how people approach an exhibition and understand what they see and hear are highly relevant. Whose values prevail? Who, effectively, 'owns' the knowledge being presented? Who decides what is disseminated and thus communicated by this or that exhibit? New museum theory requires that both exhibition designers and museum visitors are increasingly drawn into such considerations (Lindaver 2006, 207), which in some cases may be both political and contentious.

Discussions have taken place too around the nature of the balance struck between museums in their role as repositories, where artefacts and information are preserved as a cultural resource for a remote and vaguely defined posterity (Merriman 2004b, 3), and museums as communicators of knowledge, who essentially use their collections for engaging with the present. Such discourse goes back to the very foundations of museums themselves, but the past half century has seen a specific acknowledgement of the value of maintaining and

preserving museum objects with visitors in mind: 'This is an age of communication. As it is then we must indeed experiment on how to bring these objects into communication with ourselves' (Ripley 1970, 99).

Having entered a digital and interactive extension of the 'age of communication', the need to become more populist in appeal is recognised by museums. The intention, frequently, is 'to attain attraction status, to be a destination, and to appeal to a mass audience' (Bruce 2006, 130), although it is acknowledged that there is a subtle distinction to be made between engaging the interest of visitors and simply 'giving people what they ask for' (Macdonald 2002, 240). From an archaeological perspective, the twenty-first century museum aims to balance 'disinterested scholarship and objectivity with a commitment to deliver something back to present-day communities' (Merriman 2004a, 100); for a museum to present past things simply to be looked at, with the concomitant expectation that knowledge and enrichment will somehow be soaked up by the observer, has become in itself a thing of the past.

In summary, museums have become less about presenting their collections and more about engaging their visitors; less about the transmission of knowledge, more about the construction of meaning (Hooper-Greenhill 1994, 1 – 3; Merriman 2002, 558; for a comprehensive discussion of museums as sites of meaning-making and communication see Mason 2005, 200 – 14). The challenge has been to rework the very idea of what a museum is, and this includes developing a greater understanding of the relationship between museums and their audiences (Hooper-Greenhill 2000, 22). Museums acknowledge the need constantly to review their methods of communication, to question their interpretive strategies and to analyse how their exhibits and exhibitions are understood by the visitors who view them.

Following a brief discussion of the relationship between archaeology and the public, the next part of this chapter will consider aspects of learning and communication within the museum, finishing with an examination of the visitor experience.

### 3.3 *Museums and the communication of archaeology*

#### 3.3.1 *Archaeology and the public*

The use of the term ‘the public’ to describe visitors to museums or historic sites is always unsatisfactory. Not only does a reference to ‘the general public’ cover a huge diversity of people, but also the word ‘public’ has, in itself, several nuances of meaning. Although there has been debate over its definition, there has been little thorough investigation into what actually constitutes ‘the public’ (Carman 2002, 113 – 4; Merriman 2004b, 1). In the context of this study the public ‘audience’ for archaeology – whether as museum visitors or participants in other archaeological activities – is considered to be, simply, people with whatever level of knowledge who are not themselves archaeologists.

Communicating archaeology in museums is a key element in connecting the non-specialist with the archaeological world. Along with educational programmes, site visits and lecture series by local societies, for example, museum exhibitions can be defined as one of the ‘archaeological products’ with which much of public archaeology is concerned (Merriman 2004b, 5). In the UK, the Society for Museum Archaeologists encourages the involvement of museums in all aspects of archaeology, campaigning for the acceptance of museums as guardians of an important part of the nation’s heritage. It cites as one of its aims the promotion of a ‘greater understanding of the archaeological past and a fuller public appreciation of the importance of archaeology’ (<http://socmusarch.uk/> Accessed 1.4.20).

A less obvious but nonetheless important aspect of public archaeology is the discourse surrounding the processes by which meaning is constructed from archaeological materials in the public realm: how do people react to archaeology, whether viewed in a museum or simply as part of the passing scene? What do they do with it?

Public archaeology has, therefore, an active side, relating to the creation of products through which archaeological knowledge is communicated; and also an

essentially reactive one. Its significance lies chiefly in its concern with the processes through which archaeology as a discipline becomes part of a wider shared culture. Given public archaeology's significance in fulfilling this role, archaeologists should, arguably, study their relationship with the public with the same degree of rigour as they study societies of the past (Merriman 2004b, 15).

From antiquarian times onwards archaeology has attracted a large amateur following, and it is difficult to pinpoint a moment when public archaeology became a sub-discipline as such. However, from the 1960s, large-scale redevelopment in the UK and the US elicited a distinct response, with the implementation of mitigation strategies – through legislation and the beginnings of contract archaeology – designed to protect archaeological sites from destruction. In such measures of 'cultural resource management' (Merriman 2002, 542; Harrison 2013, 197), public archaeology as we know it today has its roots.

A model for the changes in public archaeology since the 1960s was outlined by Merriman (Merriman 2004b, 5 – 8). Initially, archaeology was to be presented to people essentially for archaeology's sake, in other words to instruct people and fill them in on what archaeologists considered they should know. This 'deficit model' has gradually been replaced by a 'multiple perspective model,' whereby people are encouraged to connect with archaeology less as knowledge to be received, more as a way of enriching their lives.

The move away from an instructive model to something more people-centred is in line with theoretical developments in archaeology itself. Postprocessual forms of archaeological thinking, as outlined in the previous chapter, have questioned the objectivity of archaeological interpretation and created opportunities for a more diverse understanding of archaeological evidence (see for example Hodder 1995, 86 – 9; Thomas 1995, 343 – 62). It could be said that prior to this, archaeology was becoming increasingly remote, objective and esoteric, just at a time when the non-archaeological public were becoming aware of and fascinated by the past (Hodder 1995, 86). Theoretical approaches which allowed for different voices to be heard, and which embraced diversity as something to be valued –

indeed actively encouraged – helped to legitimise and promote public engagement as part of what archaeologists do.

It is worth clarifying the distinction between ‘interpretation’ of archaeological knowledge as an intellectual issue, debated among archaeologists for the sake of other archaeologists, and interpretation in the sense of conveying that information to a non-specialist audience (Jameson 1997, 12); this second definition – namely, the communication of archaeology and how effectively this can be done – has not, perhaps, attracted the same amount of debate as the first.

Beyond issues of cultural management, and the theoretical considerations outlined above, reasons for the growth in public archaeology towards the end of the twentieth century included both political and economic ones. Active contestation over the significance of archaeological sites was inevitable in a post-colonial world; this was especially the case in relation to the new assertiveness of indigenous peoples over their past (Merriman 2002, 544 – 5).

Meanwhile in western countries a huge growth in leisure and tourism created a demand for archaeological experiences of various kinds. People’s interest in archaeology encompassed not only information about the past, as derived from archaeological investigations, but the methods behind those investigations. The growth of on-site interpretation made it increasingly possible for visitors to understand the techniques used in the excavation of an archaeological site, and – significantly – to draw their own conclusions from the evidence as presented (Potter 1997, 38) (Fig. 8).

In the UK an expanding ‘heritage industry’, described by Hewison in the 1980s (Hewison 1987, 83 – 105) initiated debate on the nature and value of what to present to a visiting public eager for enlightenment and entertainment. Seen as symptomatic of living in an ‘old country’, heritage was at first linked with the way the definition of Britain’s past was rooted in imperial and economic decline after the Second World War, and with the dislocating influence of post-war planning and re-development (Wright 1985, 25; Lumley 2005, 16). Increasingly, however, heritage issues have become associated less with decline and more with

innovation and change: although the material with which heritage deals with comes from the past, heritage issues are very much about what is done with the past in terms of now (Howard 2002, 28). This leads to questions of how the past is manipulated – indeed fabricated; it also relates to the value and significance of the past in creating identity and a sense of belonging (Graham et al. 2005, 31), both of which, as indicated earlier, are central to considering a museum’s role in the community. A broad theoretical discussion of the potential of heritage resources in public education is to be found in Peter Stone’s 2005 paper ‘Presenting the past: a framework for discussion’.



*Fig. 8 Reality and reconstruction: on-site interpretation at the Bronze Age site of Flag Fen, Cambridgeshire.*

Value, in the sense of the worth of the knowledge/experience transmitted and received through an archaeological presentation, is an essential question to consider. The multiple perspective approach to public archaeology recognises both the importance of agency and the fact that audiences will always re-interpret archaeological material within the context of their own lives; but given its relativist nature, the quality of the learning experience stemming from such an approach can be difficult to monitor. Schadla-Hall, in a related context, discussed issues surrounding what has been termed ‘alternative archaeology’, which, it is claimed,



attracts as wide a public audience as mainstream archaeology (Schadla-Hall 2004, 255).

Given the inherent risk of public archaeology spilling over into 'an uncritical celebration of all public engagement with archaeology, no matter what its content or political orientation may be' (Merriman 2004b, 7), there remains the need for a balance. There still needs to be room for an injection of expertise into public archaeology. Clearly, archaeological educators and all who engage with the public, including museum staff and volunteers, have to be constantly vigilant with regard to their responsibilities as communicators.

### *3.3.2 Learning and communication in the museum*

In the light of the museum's altered role with regard to its visitor audience, it is pertinent to examine how learning and communication in the museum actually take place. Both the narrative content of a museum display and the methods used – in other words what is said, and how it is said – are of relevance. The production by the museum of 'communicative events', such as exhibitions, goes hand in hand with research into how these events are received and interpreted by those who experience them, although it is recognised that the processes of understanding are themselves a complex subject for study (Hooper-Greenhill 2006, 273).

Learning means two things. In an old-fashioned sense it is a noun, a body of objective knowledge to be imparted and acquired; this relates to a formal, hierarchical education system (Black 2012, 77), and accords with the long-held definition of the museum as a storehouse of knowledge. Learning is also a verb, a process. In today's museum learning is increasingly informal, active and interactive. It has been likened to travelling, as opposed to schooling; in addition to taking in the information presented, visitors of whatever age will immerse themselves in the experience in a holistic way (Munley 2004, 244 – 5).

Earlier models of communication theory within the heritage sector tended to oversimplify the learning process. They took insufficient account of the contexts in which communication takes place and glossed over the diversity of possible

audience interactions (Mason 2005, 201). Recent decades, however, have seen a shift away from the museum as an educational influence in the sense of being a transmitter of knowledge to an essentially passive audience; today there is a greater emphasis on understanding the visitors themselves, with the museum seen as an informal learning environment (Mason 2005, 200; Hooper-Greenhill 2007, 3). Education in the broadest sense has never been more central to a museum's mission, and many museum educators are seeking to redefine and expand their role in relation to the community a museum serves (Munley and Roberts 2006, 29).

It is acknowledged that what visitors gain from the process of informal learning in a museum is personal and contextualised. Museum learning can take time, is cumulative in nature, and may connect at a later date with other aspects of the visitor's life (Rennie and Johnston 2007, 59 – 62). The long-term effects of a museum visit are difficult to assess, though some US studies have explored how the impacts of museum experiences can be understood (see for example Anderson, Storcksdiek and Spock 2007, 197 – 215). Discussions also exist on modelling and evaluating the different kinds of learning that take place, including how these are informed and influenced by personal, social and physical contexts (Falk and Dierking 1992, 97 – 114; Falk and Dierking 2004, 140).

Related discourse has addressed those factors which can enhance or detract from people's enjoyment of a visit, which will of course affect what they learn and the message they take home. It is recognised within the field of environmental psychology, for example, that we as visitors all share certain requirements in order to learn effectively; these include freedom of movement and a comfortable setting, as well as the opportunity to feel competent and in control, not disorientated and not overwhelmed by what is being communicated (Hein 1998, 158; Falk and Dierking 2004, 141 – 2). Other debates have taken as their focus issues of design and presentation, such as how much text visitors can digest and people's movement around an exhibition, or whether or not there is a prescribed route linked to a particular idea or narrative thread the exhibition designers wish to emphasise (Mason 2005, 204).

One significant aspect of this discourse is the understanding that people will bring to a museum their own expectations, preconceptions and a multiplicity of memories and ideas. It has long been accepted that learning in a museum takes place in many different ways (Falk and Dierking 1992, 136); equally, nobody learns in a vacuum, and issues of social interaction, a person's previous experience of museums and their particular reason for visiting that day are all relevant. As visitors, we arrive with our own 'prior knowledge' and beliefs, which we use to connect with what is presented and to construct new meanings from what we experience. The more links we can forge between our pre-existing knowledge and what is new, then the more secure our new knowledge will be (Jeffery-Clay 1998, 3). In other words, the ways in which we interpret our sensory perceptions are predicated on who we are and on what we already know.

Similarly, the ways in which we learn and understand will be influenced by how we relate to the attributes of the objects on display (Hein 1998, 156 – 7; Dudley 2012b, 7). Apposite questions thus arise as to how the meaning we as visitors 'construct' is influenced by the intentions of those who produce an exhibition of objects, and what they wish to communicate (Hooper-Greenhill 2000, 3); and indeed by our own ideologies and possible ambivalence towards the museum itself, as we question how these beautiful and interesting artefacts were acquired in the first place (Thomas 2016, 46) (Fig. 9).



*Fig. 9 Open to question: cultural artefacts invite reflection at the RAMM, Exeter.*

A constructivist approach, both to exhibition design and to learning and communication in the museum, is based on the premise that since we as

individuals create meaning to form our own personal constructed world (Copeland 2004, 134; and for an earlier discussion on the role of constructivist theory in relation to the museum as a 'meaningful learning environment', see Jeffery-Clay 1998, 3 – 7), then it follows that visitor exploration and dialogue are to be actively encouraged. The experience of learning, it is suggested, is to be prioritised over any one desired content-related outcome (Black 2012, 80), while the authoritative curatorial voice should be 'muted and modified', in order to present visitors with the opportunities to reach their own understandings (Hein 2006, 347), and to relate what they see to their own lives. People viewing an archaeology exhibit, for example, are not solely the recipients of expert opinion, but thinking individuals with their own emerging ideas about the past (Copeland 2006, 90).

As we as visitors use our imaginations and emotions to engage with what we encounter, our response can be said to have a 'performative' aspect, especially in relation to the interconnectedness of our responses with what we are experiencing (Bagnall 2003, 88; Hooper–Greenhill 2007, 37). Likewise, the museum itself embodies a sense of performance in its exhibits: they are, after all, on show. A historical drama re-enactment or the experimental reconstructions of archaeology – both of which may occur in a museum context – are performances in a more direct understanding of the word. But there is another sense in which performativity as a concept is applicable: to take archaeology as an example, interpretation – of archaeological information for the non-archaeologist, which is what a museum does – is in itself a performance; it is what Shanks and Hodder have called 'active apprehension', whereby 'something produced in the past is made a presence to us now' (Shanks and Hodder 2007, 148).

Through this process of 'active apprehension', museum visitors are participants. They are not striving for some objective truth; they are producers of meaning as much as they are consumers, and may indeed be reading between the lines and asking whose knowledge is being presented. They may indeed question what is asserted and wonder what is implied (Lindaver 2006, 207). Of course, not every visitor 'left to their own devices' will come up with something interesting and constructive; to assume that they will could be regarded as both unrealistic and

irresponsible (James 1999, 129). Conclusions reached by visitors are validated, it is suggested, by whether or not they 'make sense' within a visitor's own constructed reality (Hein 1998, 34; Mason 2005, 208).

Learning and communication within the museum are thus seen to be deeply interconnected, with an appreciation of how visitors construct meaning close to the heart of current museum practice and theory.

### *3.3.3 The visitor experience*

Turning to the visitors themselves, it can be said that an increased recognition of its audience, and of the diversity of that audience, is a characteristic central to museum practice (Hooper-Greenhill 2000, 3). But to what extent are people aware, when they visit, of the thinking that has gone into creating those particular kinds of opportunities for engagement with objects, information and ideas? Can the visitor experience ever be evaluated?

Despite much debate around learning and communication, as discussed above, it seems relatively little work has appeared on visitor responses and what people actually make of their experience at a pragmatic level. If museums are a window through which archaeology – or indeed science, ethnography or art - makes itself visible to the world, then the museum visitor embodies the interface at which that process of revelation takes place. Meaning is produced from a concoction of object, interpretation and the viewer's own perceptions (Mason 2005, 203), and visitor interaction provides the glue for its construction. Any dialogue on learning and communication within the museum, any debate over object versus information, and indeed any discussion of a museum's changing nature and function needs to have at its heart an alertness as to what actually happens when visitors step through the door.

The commercialisation of the past, together with an emphasis on accountability for public funding within local and national government, has meant that throughout the heritage sector interpretive aims and the importance of understanding the visitor/audience has, by default, been highlighted and clarified

(Merriman 2002, 546). Visitor satisfaction, for the museum of today, is at once a desirable outcome and a necessity for the institution's survival.

A key survey by Merriman, on the patterns of people's visits to heritage sites, was crucial in acknowledging the importance to the museum of its visitors. The survey aimed to address the different ways in which people used – or 'consumed' – the past, whilst outlining suggestions for making museums more widely accessible, as places for community involvement (Merriman, 1991). In 2006 a critique by Eileen Hooper-Greenhill described the history and scope of visitor studies, along with the methodology and research paradigms involved (Hooper-Greenhill 2006, 362 – 76).

Early research into visitors sought to observe people's behaviour in the museum, and to assess the effectiveness of various elements in an exhibition. Typical visitor studies tended to focus on 'what people had learned', and whether or not they had 'got' the intended message; this represented a conveyor-belt model which assessed whether or not information had been transmitted successfully to an essentially passive audience, and which emphasised the barriers – including, for example, visitors' educational background – to the achievement of this goal (Macdonald 2002, 219).

Hooper-Greenhill cites as an example the precepts of exhibition design and evaluation developed at the Natural History Museum during the 1980s. Whilst still largely relevant as basic tenets for good museum communication, some of these precepts now appear to possess an underlying didacticism which places the communicator – more specifically the exhibition designer – in charge of the information transmitted, with the expectation that visitors would absorb and retain the message being conveyed (Hooper-Greenhill 2006, 366 – 7). This slightly judgmental element, with the visitors rather than the exhibition being somehow evaluated, feels inappropriate in museum practice today. An acceptance of visitors as active interpreters, and participants in the negotiation of meaning, has led over time to a more open-ended approach to exploring visitors' experience.

It is interesting to note that much work on the evaluation of exhibitions, in terms of how visitors respond, has taken place in science museums or science centres,

part of whose remit is indeed to transmit conceptually-based information, in accordance with their mission to increase the public understanding of science (Hooper-Greenhill 2006, 368; see McManus 1989, for an analysis of visitors' conversations at the Natural History Museum) (Fig. 10). This is highly relevant, given that the theme of this study is to explore the connections between museum archaeology and climate change: the science behind climate change is, even to climate scientists, exceptionally complicated and challenging to communicate.



*Fig. 10 Challenges of science communication: text panels and photographs in the former Earth Today and Tomorrow gallery in London's Natural History Museum.*

Acquiring information on visiting patterns has long been considered by many museums to be an essential part of management. Visitor surveys by individual museums are generally quantitative in nature, employing structured questionnaires to examine demographic variables such as education, age, income, ethnicity and occupation. The results provide a snapshot of visitor composition across a defined timescale (Merriman 1991, 43); but because they focus on who uses the museum, rather than what people get out of a visit, they do little to increase an understanding of the value of the museum experience. Questionnaires designed to gather impartial, statistical information give little indication as to the attitudes, values and feelings of museum visitors (Hooper-Greenhill 2006, 371); they cannot be used to assess what sense people have made of an exhibition or display – essentially, what it means to them.

The interpretive philosophies and qualitative research methods of the social sciences, however, along with constructivist education theories, are increasingly

gaining recognition for their value in the development of a more nuanced methodology for gauging the responses of museum visitors (Hooper-Greenhill 2006, 373).

One case study which linked the process of exhibition design with visitor responses was Macdonald's ethnographic analysis of a major exhibition, 'Food for Thought', at the Science Museum. The study is interesting because it deliberately went beyond the question of whether visitors 'got the message'. It included research specifically designed to explore at a more complex level how visitors framed their experience culturally, and how they decoded, and then recoded, what was presented (Macdonald 2002, 219).

It would appear that museums by their nature will predict or predicate the 'role' of the visitors, whilst visitors, similarly, appropriate for themselves a particular way of engaging and responding. Depending on the exhibition's purpose and design and on how we are feeling on the day, as visitors we fall on a spectrum, seemingly, with passive recipient at one extreme and active participant at the other. The nature of our understanding of 'being active', and 'participating', is of interest here.

Visitor expectations are constantly changing. Social media have made the idea of participation a 'given' for everyday life, for many people. It is not surprising that active, participatory learning and an 'entertainment experience' are what many people would now equate with a museum visit; the idea of simply 'attending' a cultural institution feels somewhat outdated, and to keep such institutions central to community life, it is claimed, people need to actively engage with them and to have some involvement in what is happening there (Simon 2010, ii). This type of participatory practice is increasingly prevalent in the museum sector, and in the UK has been supported in many cases by the Heritage Lottery Fund (Connelly 2019, 519). The HLF was set up specifically with the aim of helping greater numbers and a wider range of people to play an active part in making decisions about heritage.



However, it is worth remembering that there will be other visitors who go to a museum to get away from the kind of participation and sharing that is practically a prerequisite of our digital age. Some visitors will feel involvement and ownership through their own observations and thoughts within a museum gallery. It's important that opportunities for stepping back, and for critical reflection, are not swept away, and that this 'quieter' kind of engagement is not side-lined as being passive: some very active thinking may be going on the minds of these visitors, of whatever age. Museums should be places to feel safe in:

'Museums are places in which people can wander about at will without immediately being asked for their opinion on something. They are non-confrontational and allow time to absorb information in a way that allows responses to surface without being concerned about what others will think' (Newell et al. 2016, 4).

The diversity of a museum's 'audience' has long been a subject of study, and people who never visit at all are an obvious absence from the demographic. Under-represented audiences have tended to include minority ethnic groups, people living with a disability, families with very young children and lower socio-economic groups (Black 2012, 25). There are many reasons why people stay away from museums; these may include the feeling that cultural institutions are irrelevant and non-inclusive, or that they are not comfortable social spaces or creative places. It is true that museums have not always been willing to ask themselves the potentially disturbing questions about why people choose not to visit (Moore 1997, 15; Simon 2010, iii). For details of a UK survey relating to people's engagement in culture and sport, which revealed why people do not use museums, see Black 2012, 24 – 8; see also an earlier US study by Hood on the 'elusive', non-participating but potential audiences for museums and galleries (Hood 1983, 150 – 7).

Questions of inclusivity and relevance are important here, since what a museum understands by 'being relevant' to its community and potential visitors may be at odds with what people actually want. In the end it is the visitors who decide what is of interest to them, and this depends on whether they find in the galleries something which reflects and expands their own experience and allows them to

make new connections; importantly, people like to feel welcomed in not on the museum's terms but their own (Simon 2016, 64 – 5).

The important social function of a museum visit continues to be recognised. McManus noted long ago how the low-key, everyday style of people's conversations reflects the sociability that is intrinsic to many museum visits, with people sharing aloud their thoughts on a hands-on exhibit, or dinosaur display (McManus 1989, 158-9). However, it is also true that in some cases the very 'busy-ness' of an exhibition can detract from a more considered response; in her Science Museum case study Macdonald cites the 'constant requirement to make selections', along with a pressure to interact and to keep moving, as actually making it hard for people to stop and think (Macdonald 2002, 240). What it means to be active, and what it is to participate, are evidently thornier questions than they might first appear; the very processes of understanding are both 'complex and contingent' (Hooper-Greenhill 2006, 272-3), and recognising this is central to the further development of visitor studies.

It may be argued that a museum can't be all things to all visitors. But in fact that is one of its main strengths - it can quite easily be just that. So long as they feel welcome and safe, and not intimidated (Rennie and Johnston 2007, 61), people will be motivated to learn and to find their own ways of responding to what they see and engaging with where they are. It is acknowledged that participatory techniques – whether in the context of a single communicative opportunity, such as an exhibit, or in the sense of the entire visitor experience – must be employed in such a way that they further the mission and core values of the museum (Simon 2010, iii). There seems no doubt that the careful, creative implementation of such techniques increases both the enjoyment of a museum visit and people's enthusiasm for coming again.

In the case of archaeology museums, a time-honoured, proven and practical way of keeping visitors active is through their participation in hands-on events and various aspects of experimental archaeology and reconstructions (see for example Stone and Planel 1999, for case studies of ancient technology research projects from across the world, as examined in the context of visitor participation).

In the UK Flag Fen, Butser Ancient Farm, the museums of Ironbridge and the Beamish Museum are a just few early examples of largely open-air museums where the emphasis continues to this day to be on discovery and activity as ways of exploring past lives. From prehistory to our industrial heritage, keeping visitors engaged in a sensory way, with touchable objects, seems a sure-fire way of increasing a museum's populist appeal.

It remains true that a balance needs to be struck; rather than creating an experience for the sake of it, the emphasis should be on improving the quality of the experience by providing opportunities for review, focus and reflection (Osborne 1998, 9). Not everything that visitors do needs to be celebrated indiscriminately as a manifestation of agency (Macdonald 2002, 219), and in many museums, especially where educators and story-tellers are on hand, there is a place for the 'hands off – brains on' approach, which involves being 'active' in a particular way. Listening is a valuable activity in itself. Marstine describes an African art exhibition in which an art-historical 'museum speak' approach was abandoned in favour of 'acousti-guides' which relayed stories and proverbs, thus paying tribute to the importance and complexity of oral history in traditional Africa cultures while at the same time informing visitors about the artefacts on display (Marstine 2006, 29).

Speech, music, story and tangible 'hands-on' activities all have their place in the gamut of methods museums can use to ensure a valuable visitor experience. Perhaps the emphasis needs to stay less on visitor activity, more on interaction in every sense of the word.

#### *3.3.4 The role of museum objects*

If as visitors to a museum we are engaging in a dialogue, involved actively in the process of meaning-making even as we 'take in' those exhibits we see and experience, what is the role of the traditional vehicle of communication within a museum – the museum object? If meaning is no longer considered to be 'fixed' within objects and images (Mason 2005, 3), how do those objects and images 'speak' to us, and what do they say?

Every museum, of whatever size or scale, faces the same issues when choosing what to display. The presence – or indeed absence – of particular objects in an exhibition is a critical element in the construction of meaning (Hooper-Greenhill 2000, 3). Any museum object has a ‘life history’; this may be well-known or not known at all, and always is subject to multiple interpretations. Objects are more than labelled items in a case. They are agents of meaning, and the process of observing them is itself a facet of the whole museum experience (Newell et al. 2016, 11). Though an object may be understood from a factual, informational point of view it may also have resonances which are significant emotionally – sometimes powerfully so. It matters that exhibitions are made up principally of things rather than text, since objects may suggest the unexpected, stirring curiosity and allowing un-looked for connections to be made (Thomas 2016, 48 – 9) (Fig. 11). All this is important in considering how visitors respond to what is presented.



*Fig. 11 Making connections: a ‘cabinet of curiosity’ at the RAMM, Exeter, showcasing the variety of objects in the museum’s collections.*

It may be that archaeology exhibitions face a particular issue, which science museums and art galleries do not have to contend with. Intrinsic to the nature of archaeology is that it deals with context, and with the relationship between objects and their associated features. Archaeological material culture in a museum is, by definition, de- or re-contextualised (Carman 2002, 88). This represents a further

challenge to the visitor attempting to visualise and understand the archaeological process, as well as to the museum endeavouring to explain that process through archaeological displays.

Recent years have seen the role of museum objects and collections being re-evaluated in a number of studies (for example, in the UK Dudley 2012a; in the US, Conn 2010). From the Enlightenment onwards, objects – both natural specimens and human artefacts – have been defined by their morphology. An object's identity is understood within the context of the table of classification, as indeed are the relationships between objects. In post-modern understanding, however, material things primarily 'present themselves in their relation to human beings' (Hooper-Greenhill 1992, 204); they become 'objects' by an evolutionary kind of process, through many interwoven links; they are said to have stories.

In the 1990s Hooper-Greenhill identified the need for museums to incorporate anthropology, sociology and psychology into their strategies for knowledge construction, in relation to objects on display. The traditional museum label, for example, with its sparse and factual information, was seen to do little to make visible the human, social and cultural contexts that surrounded the object; instead, it was suggested, it was preferable that the 'many frames of reference that can contextualise material things are displayed along with the things themselves' (Hooper-Greenhill 1992, 205). However, one result of prioritising visitors' needs and perceptions is that objects can find themselves relegated, taking their place in an over-arching 'informational culture' as part of an 'object-information package', with museums veering from object- to experience-centred design as they embrace the digital age (Parry 2007, 81; Dudley 2010, 3).

There seems to be a fear that 'un-interpreted' objects will mystify the viewer. Historically, in some contexts, objects were indeed deliberately intended to induce feelings of mystification. Late nineteenth century museums were crowded with objects: walls covered from floor to ceiling with paintings, natural history specimens arranged in endless rows of glass cases. Museum displays were built on the assumption that those who viewed them would be educated simply by looking at objects in abundance (Conn 2010, 25). Gradually in the early twentieth

century interpretation began to be added, in the form of educational labels; but the effect was still imposing, didactic and object centred.

Discussions on the control of access to knowledge and understanding, and the creation of what Pierre Bourdieu termed the 'cultural capital' of dominant social groups, are relevant here. Bourdieu's extensive research in the 1960s into museum attendance influenced museum theory and practice for many years (James 1999, 127; Mason 2005, 208; Hooper-Greenhill 2006, 369 – 70; Barrett 2012, 120 – 3; Thomas 2016, 28 – 9); his findings informed new ideas, as alternatives were sought to the blatantly elitist approach of the past, which presented museum objects as rarefied things, only to be understood by those who were somehow already in the know. Today's view is that people's actual experience of museum visits and objects is of value in itself.

It can be argued, though, that a surfeit of interpretive material or text – for all that it may have the visitor's best interests at heart – has the potential to detract from a full appreciation of the objects or images on display. A classic principle of museum practice has been, for many years, the recognition that the chief aim of interpretation is 'not instruction, but provocation' (Tilden 1957, 9); this holds true today, and yet it is also the case that within the interpretation process museum objects can end up as accessories (Dudley 2012b, 3), hijacked into illustrating stories that are not essentially their own.

Museum catalogues, of course – from the card index cabinets of the twentieth century to the digitised records of the twenty-first – have long been concerned with the collecting and ordering of information. It has been suggested that we live today not just in an information society, but an *informational* one, characterised by its focus on the means by which information is produced and exchanged (Parry 2007, 80). But in terms of museum display and visitor response there is a risk that an overload of information, at the expense of objects, can inhibit the possibilities for engagement by visitors, rather than opening them up. There has to be a balance. Tilden's assertion is as true today as it was sixty years ago: 'Information, as such, is not interpretation. Interpretation is revelation based on information' (Tilden 1957, 9). If an individual and personal emotional response is

not to be precluded by an overtly information-driven approach (Dudley 2012b, 11), then objects need to be allowed to reveal themselves in some way.

The tendency for museums to reduce the amount of physical space occupied by displays of objects, whilst at the same time expanding the areas devoted to temporary exhibitions, circulation space, cafes and shops (Saumarez-Smith 2006, 546) is a further consideration. The question of what happens to objects removed from display is also relevant, along with the attendant issues surrounding public trust, acquisition and preservation. Conn has suggested that alternative or parallel 'museums' have been created out of objects relegated to storage facilities or study collections – objects which could in themselves be sources of information on changing tastes and values. At the same time, it is acknowledged that a narrative which relies on fewer objects needs to consider very carefully what those few objects are being asked to do, in a gallery setting (Conn 2010, 23).

Museums are constantly having to re-work their role in terms of economic development, civic identity and political relevance. With all the functions they have to perform there is a risk that objects and collections – once central to what a museum was and what it did – can begin to be seen as comparatively inert and almost extraneous, crowded out by other agendas (Conn 2010, 56 – 7). Yet visitors like to see real objects; they need to see them and relate to them in some way. Part of the enduring appeal of museum objects lies in their contradictions: a vessel, say, or an item of clothing or a weapon or a tool might well possess qualities that are familiar and enduring; even unfamiliar objects that cross cultures can be recognised and understood. But they also have ambivalence, for they are out of context: a museum object is 'both what it was and what it is' (Thomas 2016, 50). Essentially, objects are what most people come to museums to see. A museum with no objects would be as empty as a museum with no visitors.

How does an object 'speak' to us, then, if indeed it does at all? Constructivism would seem to imply that an object or display of objects only really sparks an interest if it resonates in some way with what the viewer/visitor already knows and understands (James 1999, 127). But looking is a complicated process

(Hooper-Greenhill 2000, 15); it involves what is available to be observed as well as what is already known to the viewer. Constructivism based on one's own experience isn't everything, and an object's intrinsic nature, its qualities and attributes – its here and now-ness – will influence a person's response at least as much, and probably more so, as their oft-quoted 'prior knowledge'.

Interestingly, within museum archaeology specifically – as opposed to social history, which tends to favour historic context and interpretation – a 'return to the object' has become a dominant theme, even as the overall trend for museums to be 'experience-centred' has gained ascendancy. The role of museum objects, and the relationship between object and visitor, has been assessed in the context of material culture studies (Dudley 2012b); the importance of our sense perceptions to how we react to an object's material qualities is highlighted, and a plea made for a greater emphasis on finding out what actually happens when people encounter objects on display.

Engaging with objects as objects, rather than primarily as elements in constructing narratives of past cultures, links in with what museums, as 'reservoirs of meaning' (Hein 2000, 55), arguably do best of all: namely, to engender feelings of awe and excitement, otherness and wonder (Merriman 2004a, 101). This is especially important when the complexities of exhibiting a topic such as climate change call for approaches which link museum collections with people in ways which create a sense of energy and hope:

'Multiple stories coalesce around and explode out of artefacts, opening out possibilities for shared production of new narratives of community' (Newell et al. 2016, 11).

There is nothing like the real thing. Material culture, seen at first hand, can be in all kinds of unpredictable ways inspiring, enlivening and uplifting (Thomas 2016, 51), and it may well be that the object needs to be placed once more at the heart of the museum, and re-instated within museum learning and communication - not in the positivist and static role it formerly held but, as has been suggested, as:



‘...a material focus of experience and opportunity, a subtle and nuanced, constructed, shifting thing, but also physical, ever-present... quickening the institution and all that it could be’ (Dudley 2012b, 5).

### **3.4 Conclusion**

The nature of museums, with regard to the work they do and the priorities they set themselves, has altered in many ways since their beginnings as public institutions. Over three centuries museums have consistently mirrored, readjusted to and embedded themselves within the social, economic and political narratives of the time. Likewise, since its inception as an academic discipline, archaeology has undergone vast changes in its outlook and opened itself up to the wider public.

From their Enlightenment origins, through their emergence as modern and subsequently post-modern institutions, museums have had an evolving relationship with their visitors. They have changed from inward-looking establishments focused on their collections to outward-looking organisations with a positive contribution to make to the lives of individuals and society at large (Black 2012, 10). From being tolerated and peripheral, the museum visitors of the past have become the museum users of the twenty-first century.

Similarly, public archaeology as a sub-discipline has had to adapt to rapid societal, economic and technological developments. The fact that these developments have proceeded at such a pace in recent years only enhances the need for change and flexibility. Just as museums must adapt to survive, accommodating themselves to new and different audiences and embracing new challenges, so all those seeking to communicate archaeology and construct archaeological knowledge are having to adapt too.

This chapter has outlined the changing nature of museums over time. It has explored public archaeology, constructivist learning in museums and the role of the museum object; it has also touched on issues surrounding the visitor experience. The history of museums and their function in today’s world alludes to the nature-culture relationship explored in Chapter 2 in the context of archaeology and climate change. In bringing together collections, objects, learning and ideas from many disciplines, museums are a focus for demonstrating the many human-

nature interactions or 'entanglements' that have occurred, and are continuing to occur, from the remote human past to the present day. How human societies have both influenced and been influenced by the natural environment is manifest in the objects and artefacts from across time, which have found their way into museum collections.

In summary, some important points can be raised about museum archaeology, communication and change:

- Museums have resilience. They have existed for centuries and possess what has been termed 'adaptive capacity' (Janes 2014). Over many generations museums have re-invented and transformed themselves; despite depleted resources, they will in one iteration or another likely survive the most obstructive of government policies
- Museum archaeology is in itself a way of demonstrating survival and change and the adaptive capability of human communities. This is done through the interpretation of archaeological material, particularly with reference to the power and potential of archaeological objects/artefacts
- Many museums are interdisciplinary by nature. Archaeological objects are adaptable and can be used to cross boundaries – for example they can be re-contextualised within an art or science-based museum exhibition
- Museums prioritise the needs and expectations of their audiences. They are less elitist and more socially inclusive than they were. Audiences include not just visitors to the physical space of the museum but those who engage on-line, through social media and mobile technology
- Museums are increasingly aware of the need to engage with contemporary issues, in whatever way they can. The museum of today seeks to embrace societal responsibility and act for the public benefit, over and beyond its function as visitor amenity or heritage attraction

In conclusion, it is without doubt a challenging time for museums as communicators. They are required to take on responsibilities that would not have been considered in the past. The weight of expectation is daunting; many museums are left unsure even as to what their mission is, let alone how to communicate it to their users. For many museums, financial uncertainty has led to an erosion of confidence, with cuts in public spending ironically often targeting those very people who engage directly with the public (Black 2012, 4).

The next chapter will stay with museums and with considerations of how the relationship between nature and culture is expressed. It will examine the role of the museum sector in climate change communication, assessing the extent to which museums are attempting to engage their audiences with the climate change agenda.

## ***Chapter 4 Climate change and museums: a new challenge***

### ***4.1 Introduction: what do we think of climate change?***

This chapter explores the relationship between climate change and museums, in particular in the context of museums as sites for public engagement with climate change issues.

As discussed in the previous chapter, museum audiences bring to their visit a whole raft of pre-conceived ideas, value judgements and knowledge of their own. In considering climate change education and communication it is useful, therefore, to try to de-construct what people actually know about climate change and where their perceptions, understanding, fears and misapprehensions originate.

Archaeologists are accustomed to dealing with the effects of past alterations in the environment. 'Climate change' may be just another influence that explains why any particular facet of the archaeological record is as it is. However, to the non-specialist climate change is likely to be conceptualised with reference to a modern-day framework. It may be linked to politics, scepticism and denial, and to greenhouse gases, global warming and our carbon footprint. We may think of extreme weather events; we reflect on endangered habitats, the loss of biodiversity, rising sea levels and shrinking polar ice. We may think of the positives – of the drive towards a more sustainable society; we may think of the end of civilisation.

Albeit arbitrarily, the images we see both reflect and inform what we know. A brief search of 'climate change images' on Google (January 2019) returns a preponderance of cracked earth and melting ice, along with factory chimneys, polar bears, forest fires and floods. These images both mirror and enhance our fears and concerns. Studies have shown how dramatic and sensational pictures capture people's attention and heighten a sense of urgency about climate change, but at the same time disengage people and make them feel powerless to act. Few images can promote the saliency of climate change while at the same

time inspiring feelings that something positive can be done (O'Neill et al. 2013, 414; 420). Overall there is a growing recognition of need to investigate how climate change is conveyed in visual images and the effects of these images on people's emotions. Visuals can trigger an instant emotional response which may be negative or may, alternatively, induce a willingness to engage positively and take action (Salama and Aboukoura 2018, 142 – 3).

The media is powerful agent in informing how we conceptualise and internalise an issue. It has been asserted that the media constitutes 'the main source through which citizens and publics are informed about climate change issues and controversies', as well as being '*the* determining factor in shaping the degree of awareness and concern – or lack thereof – of the population' (Salazar 2015, 92). People rely on the media to interpret the complexities and consequences of climate change science and governance. The media thus occupies a pivotal position between the construction of climate change knowledge and its dissemination (O'Neill et al. 2013, 413). For all involved in communicating climate change, including museums, it is important that this is acknowledged.

Very occasionally, an archaeological story hits the news. The land now covered by the North Sea – known as Doggerland – has been a popular theme recently, for example. The BBC News science website describes how 'A prehistoric "Atlantis" in the North Sea may have been abandoned after being hit by a 5m tsunami 8,200 years ago' ([www.bbc.co.uk/news/science-environment-27224243](http://www.bbc.co.uk/news/science-environment-27224243), Accessed 19.2.19), while the submergence of Doggerland and the creation of the North Sea and the English Channel were also the subject of two Channel 4 'Time Team Specials': 'Britain's Drowned World' and 'Britain's Stone Age Tsunami'. The Doggerland story is interesting to people, as it has a human element: because of the prehistoric artefacts dredged up from the North Sea, people can relate to it. Also, maybe this particular catastrophic flood event is so remote in time as to feel non-threatening.

This chapter begins with an outline of the discourse surrounding people's understanding of climate change. Following on from this, the greater part of the chapter explores the potential of museums as places for people to engage with climate change in constructive and creative ways. Finally, a series of case studies

of climate change engagement from around the world is presented, including an examination of climate change as portrayed in London's Natural History Museum and Science Museum.

#### **4.2 Perception and understanding of climate change**

The public perception of climate change has been a subject for academic discourse since the 1990s, finding a context within socio-cultural and human ecology fields, as well as in scientific and environmental studies. One study in the US showed that in the absence of more detailed knowledge people tended to apply their understanding of other environmental issues, such as pollution, to climate change; they also drew on their own weather observations in an attempt to form opinions (Kempton 1997, 4). Another study documented visitor responses to a Smithsonian Institution exhibition on global warming, noting a tendency among people to underestimate the impact of human activity on the biosphere, with natural factors being cited as more influential than human ones. A certain catastrophism was also observed, with climate change being perceived as something which will have sudden and dramatic effects rather than gradual ones (Henry 2000, 29).

Risk analysis is another area where people's attitudes towards climate change have been examined. Perception of risk was shown by one US study, for example, to be a key factor in predicting people's behavioural intentions regarding climate change action (O'Connor 1999). However, these intentions were not straightforward; most people neither supported every government proposal on the reduction of greenhouse gas emissions, nor disagreed with such policies. Not unsurprisingly, most people favoured some changes but opposed others (O'Connor 1999, 469).

Taking the example of the flooding episodes in the UK in 2015 and 2016, a study of risk perception highlighted the need for scientists to communicate with journalists, so that information is filtered and presented in ways that promote feelings of safety not fear, and community resilience (Cologna et al. 2018, 284 –

5). Such studies are important, since perception of risk is a significant factor determining people's preparedness and response in the face of climate change impacts.

Perceptions are inevitably related to people's personal stories. When extreme weather events, such as the UK floods, hit the headlines (Fig. 12), anxiety about climate change is inevitably heightened. Those who have experienced adverse effects are more likely to show higher levels of concern (Brulle 2012, 173 – 4). Survey data from across the UK was used in one study to examine the links between direct experience of flooding and how people perceive climate change. It was shown that those who had experienced flooding expressed not only greater concern about climate change but also a greater willingness to reduce energy use to mitigate climate change impacts. They were also more confident that their actions would have some effect (Spence, A. et al. 2011, 48). These results suggest that to highlight the links with localised weather events is a useful strategy for encouraging a belief in climate change action. They also imply that the use of individual stories may be beneficial in effective climate change communication.



*Fig. 12 Extreme weather hits the headlines: the UK floods in 2016. <https://www.independent.co.uk/environment/uk-weather-why-the-recent-devastating-floods-will-become-the-new-normal-a6793291.html>*

On a much broader geographical scale one study of climate change understanding used the theory of 'cultural consensus analysis' to extract and compare 'cultural knowledge' about climate change. Across six diverse countries, cross-cultural patterns in how people conceptualised climate change were identified. Such studies complement local or regional place-based studies, and are important given the worldwide nature of climate change and the need for mitigation at global as well as local levels (Crona et al. 2013, 529).

An interesting dimension to the discourse on 'global versus local' climate change perception is added by the findings of a study in Australia. These indicated that people with a stronger sense of place at a global level, rather than a national level, were more likely to perceive climate change as an opportunity, rather than a threat. They were interested in the potential to build a stronger sense of community worldwide, as well as the positive economic impacts that might arise from climate change adaptation. They also identified social benefits, such as an increased sense of purpose (Devine-Wright et al. 2015, 76).

Such research into people's place attachments has implications for museums, whose remit includes questions of identity and belonging. Investigations of how 'strategic narratives' can be developed are similarly relevant in the context of museums as story-tellers: such narratives can be defined as persuasive stories that seek to explain the problems and solutions of climate change in a compelling way (Bushell et al. 2015, 971).

Other studies have shown how terminology can influence and define people's perceptions. This has obvious implications for climate change communication. The phrase 'global warming' may be, to many people, synonymous with climate change. One UK study used a qualitative approach to reveal participants' conceptions of global warming and climate change; it was found that the former term, being more emotive, and more likely to be used by the media at the time, invoked more concern than the latter (Whitmarsh 2009, 416 – 7). Differences in how these key terms are understood were also identified, with 'global warming' more likely to be related to human causes in people's minds than the more neutral-sounding 'climate change'.



Opinions vary over time, and despite the long-held consensus within the scientific community that human-induced climate change is happening, a broader acceptance has fluctuated over the years. Without effective communication, increased knowledge among scientists has not necessarily led to greater concern among people in general. Public opinion polls that highlight feelings of urgency and negativity tend to be at an environmental level rather than at the level of what individuals can do (Lorenzoni and Pidgeon 2006, 80); similarly, surveys have found that many people incorrectly identify the causes of climate change, confusing these with other issues relating to environmental protection (Henry 2000, 26; Papadimitriou et al. 2004, 305 – 6; Schreiner et al. 2005, 24 – 5; Marquat-Pyatt et al. 2011, 38 – 42). A US study on public opinion found that while concern over climate change increased with greater media coverage it also tended to become polarised around the views of the contesting political elite (Brulle et al. 2012, 185).

Some studies of climate change perception have focused specifically on education and on young people's understanding (see for example Schreiner et al. 2005). Such studies, which examine students' and teachers' knowledge levels and misconceptions about climate change, are vital steps towards ensuring a system whereby 'the students of today are the environmental participants of tomorrow', whose attitudes will influence government policies and future climate-related behaviours (Azeiteiro et al. 2018, 30 – 1). Motivation is a key consideration. For example, one study of teenagers in Canada found that a sense of empowerment and the capacity to 'make a difference' increased when students were given the opportunity to measure, analyse and communicate local environmental phenomena using the same techniques as meteorologists, chemists and ecologists. Through being motivated to see for themselves the effects of climate change locally, the students became better informed about climate change as a global concern (Pruneau et al. 2003, 443 – 4).

Similarly, a US study of college students' understanding of the link between energy use and greenhouse gas emissions concluded that for climate change education to be effective it should emphasise the personal connection between

the student, energy, and climate change (Cordero et al. 2008, 871). Cultivating scientific knowledge among teachers, and providing them with skills and appropriate training, is paramount (Marquat-Pyatt et al. 2011, 38 – 42; Schreiner et al. 2005, 42 – 3). Climate education for empowerment, it is claimed, means fostering in young people an understanding of the many integrated aspects - scientific, ethical, political – of the climate issue, along with hope and the belief that it lies within their power to shape the future (Schreiner et al. 2005, 43).

It is important that research into climate change perception continues to evolve. Such studies are closely connected with questions of how climate change communication, which clarifies and empowers individuals and communities, can most effectively be delivered. Understanding the physical science of climatic variability and global change, and defining strategies for mitigation and adaptation, have arguably attracted far more attention than research into communicating these changes and ideas (Leal Filho 2019, 1 – 2). However, the IPCC has itself recognised the importance of understanding how people perceive and process scientific information; ongoing developments stress the essential need for effective communication of the IPCC's findings. It is acknowledged that practitioners in civil society and scientific institutions, as well as the research community engaging directly with the IPCC, can contribute valuable insights in advancing climate change communication (Lynn 2018, 142). Such practitioners include those working in the museum sector.

For the non-specialist actively seeking to inform themselves about climate change, information and websites abound. To cite just a few examples, the Met Office explains the causes and future impacts of climate change in some detail for the interested non-specialist ([www.metoffice.gov.uk/climate-guide/climate-change](http://www.metoffice.gov.uk/climate-guide/climate-change) Accessed 1.2.19) (Fig. 13); *New Scientist* similarly provides a comprehensive introduction to the related topics of climate change, global warming and greenhouse gases ([www.newscientist.com/topic/climate-change](http://www.newscientist.com/topic/climate-change) Accessed 1.2.19); and the British Geological Society offers information on climate change both natural and human-induced, explaining past climate change and future impacts of current climate change ([www.bgs.ac.uk/discoveringGeology/climateChange/home.html](http://www.bgs.ac.uk/discoveringGeology/climateChange/home.html) Accessed

1.2.19). The BBC science pages offer a brief history of climate change which charts landmark dates and events, beginning with Newcomen’s steam engine and ending with the statement by the Fifth Assessment Report of the IPCC, 2013, that scientists are 95% certain that humans are the ‘dominant cause’ of climate change since the 1950s ([www.bbc.co.uk/news/science-environment-15874560](http://www.bbc.co.uk/news/science-environment-15874560) Accessed 1.2.19).

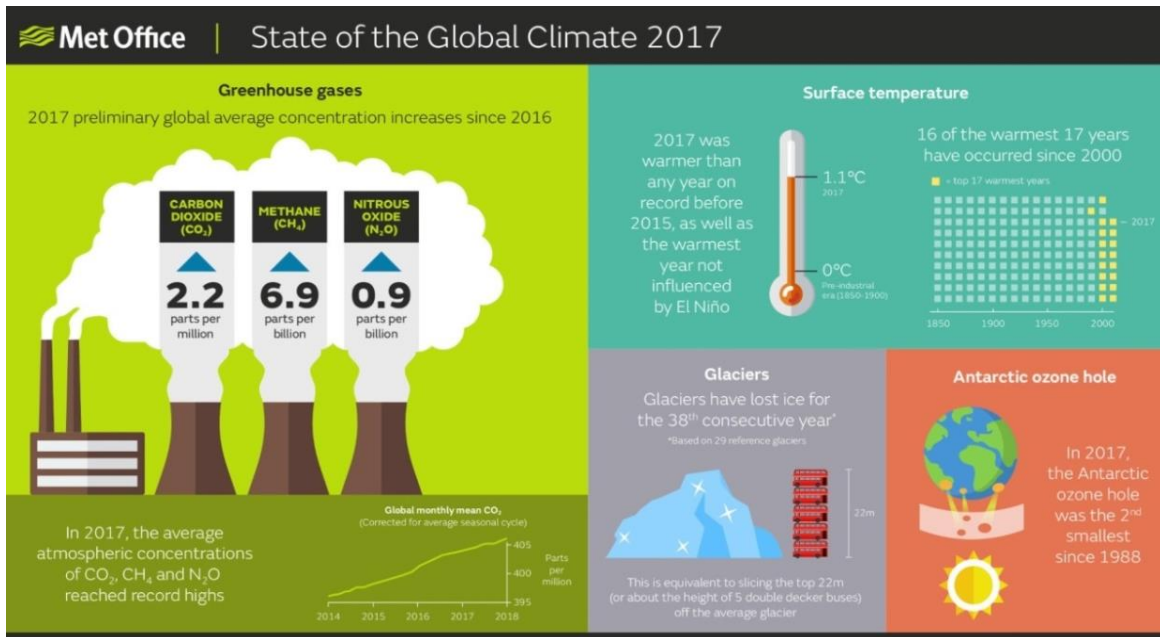


Fig. 13 Explaining the science of climate change: a graphic from the Met Office website ([www.metoffice.gov.uk/climate-guide/climate-change](http://www.metoffice.gov.uk/climate-guide/climate-change)).

Further investigation of the BBC site reveals a number of programmes linked to climate change, such as ‘Climate Change and Me’, broadcast on Radio 4 in 2018, where eminent scientists describe the dramatic changes to the natural world that they have witnessed on the ground and recount how their eyes were opened to global climate change. Broadcast in 2015, an edition of the BBC World Service programme ‘The Inquiry,’ was entitled ‘Are we tired of talking about climate change?’ The programme claimed that due in part to ‘chronic political fatigue’, news coverage of climate change had dropped worldwide had dropped by 36% over the preceding five years ([www.bbc.co.uk/programmes/p02mnn29](http://www.bbc.co.uk/programmes/p02mnn29) Accessed 1.2.19); it could be, as one voice on the programme asserts, ‘time to change the narrative’. This links with the framing of climate change narratives and what

stories need to be told, which is of relevance to all seeking to communicate climate concerns in positive and empowering ways.

Media coverage cannot, of course, be comprehensive. It can be misinformed. The media is not an impartial conveyor of scientific knowledge but is, rather, engaged in 'framing, filtering and interpreting messages about climate change using affective and emotive language and imagery' (Hulme 2009, 219); at the same time an emphasis on reporting climate change impacts in the developing world means that some people in industrialised nations are misled into thinking that climate change is not of direct relevance to them (Leal Filho 2019, 4). It is also the case that scientific knowledge may be recycled by the media, leading to a saturation of information that people cannot easily engage with; it has been asserted that social media and blogs have the potential to be more reflexive, non-linear ways of engaging people than the conventional media, but these methods of communication have so far received little attention in the climate change discourse (Lackner et al. 2018, 226).

In addition, the tendency in news reporting is to focus more on climate change events, less on climate change processes (Salazar 2015, 92); journalists are more likely to pay attention to the dramatic, human-interest aspects than to consider the broader picture (Gavin et al. 2006, 434). Media narratives of climate change also tend to focus on extremes, which in turn influences people's emotional and motivational state and thus the decisions they take (McGhie et al. 2018, 332). An emphasis on disaster and catastrophe can lead to alienation and fear (Leal Filho 2019, 9).

For as long as the media offer multiple and conflicting messages these will inevitably be interpreted in different ways, thus instigating disagreement and controversy (Hulme 2009, 215). Apathy in the face of perceived powerlessness is another danger. The IPCC produce summaries of their reports, specifically to help the media communicate their contents to the public; but it seems there is a growing belief among scientists and science communicators that neither the means of communication nor the facts themselves can adequately address a general sense of inertia around climate change (Rees and Leal Filho 2018, 320). For people wishing to sort out fact from media hype there is a site called Carbon

Brief, which regularly collates and analyses the coverage of climate science and energy policy in the UK media ([www.carbonbrief.org](http://www.carbonbrief.org) Accessed 1.2.19), but awareness of such information sources is contingent on already 'being in the know', and actually wanting to know. For many people the complexities and perceived outcomes of climate change remain so disturbing that the temptation is to switch off.

The web of connections between perception, understanding and action, and between information and misinformation, is evidently a crucial and valid focus for research. To try to understand how people perceive, comprehend and react to what is undoubtedly an emotive issue is relevant to all bodies concerned with public education around climate change. The remainder of this chapter examines the role of museums in climate change communication, as they seek to keep their audiences engaged, informed and inspired.

### **4.3 *Museums as communicators of climate change***

#### **4.3.1 *A climate change role for museums***

Along with other institutions, and other areas of the heritage sector, museums are finding ways of responding to the climate crisis. April 2019 saw the launch of Culture Declares Emergency, a global community dedicated to declaring a climate and ecological emergency and taking action to respond to it (<https://www.culturedeclares.org/> Accessed 1.4.20). A growing number of arts centres and museums worldwide, including Tate, are continuing to declare through the initiative. Similarly, the Climate Heritage Network provides mutual support for arts, culture and heritage organisations committed to helping their communities understand and tackle the climate challenge (<http://climateheritage.org/> Accessed 1.4.20).

There has been, for several years, a belief among sector professionals that museums should be doing more to engage with the public and other stakeholders on all environmental issues, and specifically to address climate change (Kendall 2013b, 28 – 31; Hide et al. 2013, 16; Harris 2015, 11). 'Sustainable and Ethical

Museums in a Globalised World' was the theme of the annual Museums Association Conference and Exhibition held in Brighton in October 2019, while the MA's publication *Museum Practice* for the same month was devoted entirely to exploring how to communicate the climate crisis; a series of case studies looked at how museums can share with their audiences the actions they are taking to become more environmentally sustainable, how collections can be used to highlight the climate crisis, and the role of museum learning programmes in supporting activists

The need for museums to operate in as 'green' as manner as possible has been acknowledged for a long time. The design and construction of exhibitions, and the materials used, is one area where museums can aim to reduce their carbon footprint (Merriman and Houghton 2006, 17), while lighting, heating and cooling the building, and encouraging green transport, are others. The Climate Change Adaptation Plan (CCAP) of the Smithsonian Institution in Washington DC, for example, published in 2013, sought to address climate change impacts on staff, visitors, collections, research and public programmes ([www.si.edu/Content/Pdf/About/Smithsonian-Institution-Climate-Adaptation-Plan.pdf](http://www.si.edu/Content/Pdf/About/Smithsonian-Institution-Climate-Adaptation-Plan.pdf) Accessed 1.2.19). The plan includes risk assessments and response to extreme weather events, and addresses mitigation measures that needed to be implemented to increase sustainability.

Although the initial costs of implementing energy-saving measures may be high, the resulting lower energy bills are seen to make for greater financial resilience in the long term (Stephens 2015b, 4). Indeed, museums are being urged to set an example and lead the way in environmental entrepreneurship, through adopting greener business strategies in all areas of their practice; this is not always straightforward though, and museums face conflict when they have to decide whether to accept funding from organisations whose environmental impact is questionable (Goodger 2019, 585). Importantly, museums need to keep their audiences informed about the measures they are undertaking in their day to day operations to address the impacts of climate change. There is a need for transparency, as creative ways are found to show visitors how the museum is reducing its carbon footprint and supporting the local economy (McKenzie 2019a

<https://www.museumsassociation.org/museum-practice/communicating-the-climate-crisis/15102019-communicating-environmental-impact-and-policies-to-audiences> Accessed 4.3.2020). Museum visitors can thus be encouraged to apply similar measures in their own homes.

A related concern is the effects of climate change on the collections themselves. The short video 'Museums and the Climate Challenge', produced in 2018 by the Alberta Museums Association in partnership with the Coalition of Museums for Climate Justice, and mentioned in Chapter 1, reminds practitioners that museums are not immune to the impact of extreme weather events, such as fires and floods, which in recent years have forced museums across the world to re-evaluate how best to store and care for their collections ([www.museumsassociation.org/video/13042018-museums-climate-challenge](http://www.museumsassociation.org/video/13042018-museums-climate-challenge)). Accessed 19.2.19).

However 'green' a museum strives to be in its day to day workings, the question of how it can engage its audiences with climate change is another aspect entirely, one that has started to receive more attention recently in the discourse on climate change communication. In 2015 Manchester Museum hosted a conference examining the potential for museums to promote environmental awareness and pro-environmental behaviour (Stephens 2015b 4). The Museum of Liverpool is another UK institution committed to addressing topical issues and 'taking a stand', especially with regard to questions of social justice. It is widely acknowledged that some communities across the world will be impacted more rapidly and more adversely than others by altered climatic conditions, with far-reaching economic consequences. Existing imbalances will be accentuated. A commitment to social justice is thus highly relevant to a considered and reflective portrayal of the effects of climate change worldwide. Museums less open to embracing topicality, however, may prefer a more objective and traditional approach when dealing with subjects that may be seen as political and emotive.

Many museums do in fact have a history of using their collections specifically with the intention of engaging audiences with issues relevant to society (Merriman and Houghton 2006, 17). The sector as a whole is both innovative and adaptive.

Several initiatives relating to museums are included in the comprehensive 'Handbook of Climate Change Communication' (Springer, 2018): this three-volume publication provides an overview of the theory and practice of climate change communication, and offers example of projects across the world aiming to promote a better understanding of climate change adaptation. The role of museums as potential sites for climate change engagement also features in a subsequent volume, 'Addressing the Challenges in Communicating Climate Change Across Various Audiences' (Springer, 2019); this was published following the International Symposium on Climate Change and Museums, hosted by Manchester University in 2018.

Increasingly, awareness is growing among museum practitioners of the unique contribution museums can make towards climate change engagement. If the media can seem like harbingers of doom for many people, being in a museum can be a positive and sustaining experience. Museums thus have a very particular role in communicating the complexities of climate change. In 2014 Robert R. Janes, editor of the US journal *Museum Management and Curatorship*, called on museums to become 'intellectual activists', not by creating new knowledge, but by using existing knowledge, and embracing social and emotional dimensions, to make climate change more accessible to everyone. Janes proposed that individual museums should examine carefully what their higher calling might be, and warned against allowing a 'yearning for popularity' to get in the way of a concern for 'the durability and wellbeing of individuals, communities and the natural world' (Janes 2014, [www.museumsassociation.org/video/27082014-museums-and-climate-change](http://www.museumsassociation.org/video/27082014-museums-and-climate-change) Accessed 1.2.19.) By doing so the museum sector could find itself a crucial and respected arbiter of climate change knowledge and its distribution. It could play a significant role in the construction of 'climate change literacies' (Salazar 2011, 125), which include not only climate change science but also climate change justice and climate change action. Given the disturbing and fluctuating nature of so much of the climate change agenda, the very stability of museums gives them an especial advantage as climate communicators.

Museums possess a number of characteristics which make them suitable sites for engagement with climate change:



- Museums hold vast repositories of information
- Museums elicit an emotional response from their visitors
- Museums are multidisciplinary and cross boundaries: they are places where the natural and cultural worlds meet
- Museum are trusted institutions

To look first at museums as possessors of vast storehouses of scientific and cultural information: museum collections have been described as:

‘...constructions of knowledge and experience, repositories of cultural memory, agents for cultural creativity, resources for scientific enquiry and records of ecologies’ (Newell et al. 2016, 5).

They are thus valuable in very many ways. Natural history collections, for example, document the effects of climate change on different organisms, species distribution and the biology of particular species; they also enhance an understanding of the trends that lead to the loss of biological diversity (Suarez and Tsutsui 2004, 70; Hebda 2007, 334). Such research additionally offers glimpses of future impacts. As habitat destruction and other processes induced by climate change continue, the need to transform information into knowledge that is accessible to both science and society becomes ever more acute (Krishtalka and Humphrey 2000, 117; Cameron and Neilson 2015, 2).

Museums have a real expertise in linking scientific discovery with public understanding. They are skilled at using their collections to put across complex scientific ideas (Salazar 2011, 124; Stephens 2013). University museums in particular have direct, two-way links with academic research and academic thinking; but every museum has to a greater or lesser extent the capacity to act as an intermediary, revising and ‘re-purposing’ academic knowledge to make it accessible to wider audiences. In this way museums can provide opportunities for dialogue for their visitors: ‘mixing messages of hope with reality, information with activity, and promoting personal and collective action’ (McGhie et al. 2018, 331).

Secondly, as sites of inspiration and education, museums engage with people's emotions. They are not just about the imparting and digestion of information; they are about providing an enriching experience. Communication research shows that providing people with extensive information about climate change does not necessarily lead to climate change action. A strength of museums is that they can engage people at an affective level, connecting to their emotions and presenting them with opportunities to take part in a range of activities that involve thinking, feeling and doing, as well as taking in facts (Lackner et al. 2018, 236; McGhie et al. 2018, 343). Museums need to acknowledge that what people think and feel about climate change will affect what they decide to do about it. It is important to note, however, that in the potential for eliciting an emotional response there is a fine line to be drawn between inviting reflection and being perceived as manipulating emotions. For people visiting a museum to feel manipulated would compromise their belief, discussed below, that museums are trustworthy places.

Museums also engage the imagination. Climate change as an entity does the same: it is about the present day, but embraces the future; it concerns how the future is imagined and managed in the present (Cameron 2011a, 86). Museums, specifically through their cultural collections, engage with audiences here and now through the medium of past lives and imagined futures. They are story-tellers; they take disembodied information and through imaginative interpretation turn it into conversations. These, in turn, can form a focus for action. As a global challenge, climate change can seem remote and overwhelming; museums, as story-tellers who engage their audiences at a local level, can be instrumental in nurturing the kind of community-based activism that many see as: 'the future hope in the urgent political process of implementing the necessary measures to combat the worst impacts of global warming' (Rees and Leal Filho 2018, 323).

The strength of museums as collectors and guardians of information, and their capacity to use affective methods to engender positive and hopeful dialogue around climate change, both connect with the third characteristic that makes them suitable sites for climate change engagement: their multidisciplinary nature. Museums are places where the natural and cultural worlds meet. Climate change has been described as a cultural phenomenon, with cultural causes and cultural impacts (Newell 2019, 147); to continue to understand it, limit it and deal with it

will require enormous shifts in how people view their personal and group responsibility towards the living world, and towards each other. Sustainability and climate change concern first and foremost people's relationship with the world, and this, fundamentally, is the story which the majority of museums aim to tell (Merriman and Houghton 2006, 17).

Being multi-faceted, museums are illustrative of Cartesian rationalism (see for example the discussion in Cameron 2015a, 17 – 2). To an extent, they have historically reinforced the artificial divide between nature and culture. This is important, in the light of the view that the current ecological crisis, caused by modern industrial and fossil fuel-burning practices, has at its root a mindset based on a nature-culture dualism which makes it seem acceptable to exploit the environment (Cameron 2015b, 51). The existence of the historic divide between nature and culture, in the way museums organise and present their collections, thus links with the very issues of sustainability and the use or abuse of global resources that, as socially responsible institutions, they are engaging with. Once again, as noted at the end of the previous chapter, there is a connection between museums and the human-nature 'entanglements' referenced in Chapter 2. As archaeology seeks to unravel and understand the complex relationships between natural processes and human actions in the past, so museums seek to document, interpret and communicate through their collections the place of human societies in the world they inhabit, and how this has changed through time.

Historic nature-culture dualism, as realised in the layout of many museums, could act as a logistical stumbling block to a comprehensive portrayal of climate change. However, precisely because of their historic adherence to a nature-culture divide, it could equally be said that museums are well-placed to demonstrate the interconnectedness of the human and natural worlds, and possess both the collections and expertise to do so. Attitudes change, galleries re-invent themselves. At Manchester Museum, for example, the natural history display has been re-interpreted and presented within the context of environmental sustainability, taking people and natural heritage as its focus (McGhie et al. 2018, 332). The Horniman Museum in London is another museum looking to re-display its collections in a way that brings nature and culture

together, demonstrating the effects of human action on the natural world; a pop-up exhibition using the museum's aquarium, for example, incorporated waste plastics into the display tanks to raise awareness of pollution damage to the world's oceans (McKay 2019, <https://www.museumsassociation.org/museum-practice/communicating-the-climate-crisis/15102019-climate-change-communication-where-to-start> Accessed 4.3.20).

Many museums possess the capacity for multi- or interdisciplinary engagement over different research areas. Crossing these borders is seen as a prerequisite for addressing the complex nature of climate change as the cultural, ecological and technological challenge that it undoubtedly is (Rees and Leal Filho 2018, 324). The multi-faceted nature of museums means they are skilled at using multiple modes of interpretation: as noted above they are well-placed to explore responses rooted in the imagination, alongside representations of the scientific facts (Hulme 2015, 12). Additionally, they may be in a position to draw from cultural traditions associated with a changing environment: through a re-imagining and re-interpretation of their collections they may act as valuable repositories for indigenous knowledge that belongs to the present as much to the past. The Smithsonian's CCAP (see above) makes reference to its cultural heritage research and preservation projects, acknowledging that communities working closely with the land are often the first to see and respond to environmental changes. It has been pointed out that people in Western, industrialised countries have potentially much to learn from those living in a culture with stronger traditions of sustainable living (Newell 2019, 147). In this context the focus is no longer on museums as storehouses for cultural artefacts but as spaces for dialogue with living communities, at a time when the need for communication and increased understanding is at a premium.

A final characteristic of museums that suggests they have an important role in climate change engagement is that they are trusted institutions. Museums are seen as welcoming and creative places, where people from a wide diversity of backgrounds can broaden their horizons and, ideally, share ideas and become involved in co-producing knowledge (Newell 2019, 144). Research has shown that museums come second only to science organisations as trusted information

sources for climate science; they are way ahead of both the mainstream media and the government (Cameron et al. 2015, 248; Connelly 2019, 519). Seen as trustworthy, 'safe' places, museums are ideal locations for initiating conversation and debate (Heal, 2013). They can thus be regarded as safe areas for communicating controversial, unsettling and 'unsafe' ideas, such as issues surrounding climate change.

As reliable institutions, museums can be instrumental in shaping people's views of the world (Cameron 2011b, 93; Cameron 2015a, 17). In this respect, and in particular as a resource for climate change education, they can be compared with zoos and aquariums; such venues evoke a similar positive response and are seen to be able to communicate climate change in 'a politically neutral environment', using 'a knowledgeable voice that visitors trust' (Grajal et al. 2012, 130).

A survey in 2013 by the Museums Association on public attitudes revealed, along with 'a high level of trust and positivity', a widespread perception that museums have 'a broader role to play in society above appealing to individual visitors' (Kendall 2013a, [www.museumsassociation.org/news/03042013-public-attitudes-research-published](http://www.museumsassociation.org/news/03042013-public-attitudes-research-published) Accessed 30.1.19; the full report – 'Public perceptions of – and attitudes to – the purposes of museums in society' is available to view at [www.museumsassociation.org/download?id=954916](http://www.museumsassociation.org/download?id=954916)). Accessed 30.1.19). The research suggests that people who attend museums have no problem accepting that as institutions they have a function beyond that of a visitor attraction. However, the survey also noted that although the diverse nature of museums was acknowledged, people were reluctant to see them expand too far beyond their core roles; there was a strong belief that any additional objectives should relate to, and not undermine, the essential purposes of museums.

The survey results are being used to inform the MA's 'Museums 2020' initiative, which aims to map out the differences museums can make to 'individuals, communities, society and the environment'. It is interesting that while 'creating knowledge for and about society' was thought of by the visiting public as an 'essential purpose' of museum, providing a forum for debate was, along with

promoting social justice and human rights, a purpose challenged by the survey respondents.

This leads to the question of whether, given that museums are regarded as places of influence and certainty (Cameron and Neilson 2015, 4), and perceived as 'impartial actors in society and guardians of the truth' (Rees and Leal Filho 2018, 324), there is a concurrent expectation that they will remain somehow objective and neutral. Given the urgency of the climate change agenda, it is questionable whether this should be the case. It has been proposed that museums risk their credibility by 'sitting on the fence' (Harris 2015, 11). In view of their connections with issues of social responsibility and social justice, in which climate change is included, for museums to choose not to act on their responsibilities runs the risk that they will: 'at best impede the reduction of inequalities and, at worst, as trusted institutions... give tacit approval for these systems and reinforce them, obstructing constructive change' (McGhie et al. 2018, 345). It has been suggested that the widespread belief within the museum community itself that museums should remain neutral is the most serious obstacle to improving their ability to respond to change (Janes and Grattan 2019, 100). For museums to remain entirely neutral on such a pressing concern effectively reduces their role and status, limiting their capacity to play to their own strengths.

On this issue of impartiality, a project run by the Australian Research Council, 'Hot science: global citizens: the agency of the museum sector in climate change interventions', between 2007 and 2011, is relevant. Research carried out in collaboration with museums and universities in Australia, the US and the UK investigated how the sector can participate more fully in climate change interventions, through the provision of information and in the brokering of discussion around climate change issues both locally and as part of trans-national partnerships (Cameron 2011a, 84; Cameron and Neilson 2015, 7). The challenge to a museum's objectivity posed by a concept which is, ideologically, both complex and nebulous, was acknowledged.

The Australian research conceded that impartiality was indeed seen to be a desirable characteristic of museums, and that being impartial was part of what

made a museum trustworthy (Cameron 2011b, 94; Cameron and Neilson 2015, 7 – 8). Visitors saw museums as significant in ‘providing and weighting the information about climate change and possible government, community and individual responses to it’, whilst allowing them to make up their own minds; museums were important in ‘promoting and generating a sense of individual and collective empowerment to act on the problem/s of climate change’ (Cameron and Deslandes 2011, 138). It may well be the case that people trust museums precisely because they do tend to take a neutral position. In the UK, the Museums Association’s research into public attitudes, referred to above, indicated that there was no wish among those who participated to see museums become spaces for controversial debate (Heal 2013); people were happy for difficult issues to be dealt with, but in a balanced way, with no particular line being followed too persuasively.

There appears, then, to be a tension between the ways in which museum audiences perceive museums as trusted institutions that tend towards the non-political, neutral and non-controversial, and the way museums themselves have increasingly opened up as places of debate in relation to topical subjects. Additionally, museum practitioners may relate to these subjects in a way which may be at odds with the understandings of their audiences. They may thus belong to an unrepresentative group. In 2018 the cultural programme *Panic! It’s an arts emergency* (<https://createlondon.org/event/panic2018/> Accessed 1.4.20), commissioned by the arts organisation Create London, included a report which aimed to analyse and understand the shared culture of people involved in creative occupations. The report found that cultural and creative workers, when compared to all other industrial sectors, position themselves as the most liberal and left wing, and that their sets of ethics and political values are different from those of people in a range of other occupations across society (Brook et al 2018, 27 – 8). It may well be, then, that many in the museum sector hold views which tend towards an interest in and acceptance of the climate crisis, a desire to communicate its urgency and a knowledge of the need for action to mitigate its worst effects; and that these views and values may or may not coincide with those of their visitor audience. In turn, this connects with the question of a museum’s neutrality and the definition of a balanced approach in its presentation of contemporary topics.

Museums possess the ability to assemble and present diverse viewpoints, backed up by scholarship and research; and this is undoubtedly one of their major strengths (Cameron 2011b, 100). Being able to unravel complexities and find creative opportunities for engagement are others. But it may be that the climate emergency is *too* complex and critical a topic to unravel without some kind of a stance being taken, some kind of a story being told: in other words, museums have a responsibility not to be impartial, with regard to the worldwide climate and ecological crisis.

To summarise, museums are safe, trustworthy spaces for the airing of ‘unsafe’ and difficult ideas. They offer the expertise to communicate complex information in understandable ways. They have the resources to educate and inspire, using varied methods of interpretation that appeal at an emotional as well as a cognitive level. As Robert Janes has pointed out, museums are grounded in a sense of place; they are committed to a sense of citizenship and are universally respected as social institutions. Through initiating and hosting climate change dialogue, museums can serve as ‘the vital bridge between science and the public interest’ (Janes 2014).

Most importantly, museums possess the ability to make the connections in people’s minds between human actions and the natural world. They have the potential to show people that these connections can be, in the words of Henry McGhie, ‘about the ways we live our lives, rather than being seen as fixing a series of problems in far-away places’ (Hide et al. 2013, 16). Museums thus have a vital and unique role to play in communicating climate change.

#### *4.3.2 The challenges of climate change engagement*

For museums to take on the responsibility of connecting the public consciousness with climate change is challenging for a number of reasons. Museums operate under a vast array of social, political and commercial influences; they are also of many different kinds, with variations in their educative mission, exhibition practices and funding arrangements (Cameron and Neilson 2015, 2). Constraints on their budgets are practically a given. Even though they might agree in principle



with broadening their historic role to one which embraces contemporary issues of environmental sustainability and social justice, some museums are bound to be less suitable than others for engaging with climate change, due to their subject matter and the nature of their collections.

Formulating the nature of the engagement itself is a challenge. As mentioned above, engagement means more than a simple passing on of information. Traditionally, museums have been collections and research-orientated, with internally focused agendas. As institutions they engage their audiences, but if they are to become effective links in climate change communication they must also engage with external agendas to promote positive social and environmental outcomes (McGhie 2019a 20). This means broadening their role to become more outward-looking. In engaging their visitors, a real challenge is to do more than simply raise awareness about climate change. Ways need to be found to go beyond passive representations of the science involved and engage people in a dialogue with climate change in all its complexities, including its impacts on daily life (Salazar 2015, 90, 93). At its most participatory, a museum would aim to ask questions of visitors, encouraging them to find their own answers to climate change matters (Connelly 2019, 518).

A related concern is overload. The intricacy of people's responses to disquieting information cannot be underestimated, and the delivery of yet more of the same can be counterproductive. If people end up feeling better informed, but still powerless in the face of things they can do nothing about, it is possible that the engagement will inhibit rather than promote climate action (McGhie 2019a, 23). People may feel that what they try to do is inadequate; feelings of guilt, ambivalence and 'compassion fatigue' set in, with climate change seeming just too abstract a topic to deal with (Grajal et al. 2012, 133; Dibley 2015, 43 – 4). It has been pointed out that an awareness of climate change as a worldwide phenomenon does not necessarily lead to a sense of involvement; especially in the West it can be seen as a distant threat, something that is happening far away and to other people (Newell 2019, 146).

Somehow, museums must strike a balance between informing their visitors, acknowledging their concerns and framing these in ways that are both positive and relevant to their own lives. Opportunities need to be sought for engagement that is attractive, rather than inducing feelings of helplessness. For example, for a natural history exhibition to focus on what can be done to prevent extinction has been shown to be more effective than to focus on extinct animals *per se* (Stephens 2013). Likewise, research on visitors' reactions to an exhibition about the threats to the Great Barrier Reef acknowledged the importance of countering feelings of despair, and fears of a catastrophic future, by creating excitement, passion and curiosity about the possibilities of living differently (Cameron and Deslandes 2011, 147 – 8).

Another challenge to effective and empowering engagement may be a museum's own fear of sounding overly didactic. Museums may be anxious about being seen as campaigners, and it is acknowledged that all issues involving conflict and divisiveness are difficult for museums to present (Cameron 2010a, 2). For example, a small climate change exhibition held at the Science Museum in 2009 prior to the opening of the 'Atmosphere' gallery (see below, in 4.4.4), entitled 'Prove It', provoked a negative response from visitors who felt that they were being told what to think rather than being encouraged to draw their own conclusions. The exhibition was held in the run-up to the UN Copenhagen conference on carbon emissions, and aimed to encourage visitors to take positive action by registering support for the UK negotiating team at Copenhagen. The subject became hotly debated and the museum was criticised for being a policy advocate (see comments by Chris Rapley, in Kendall 2013b). However, as noted above, museums can no longer remain neutral; the task now is less about communicating information on climate change, more about communicating the challenges that climate change brings, in ways that move beyond the scientific facts and enable people to feel part of the dialogue.

A final example of the complications museums face is the question of scale. Since climate change is a global issue, climate change research is largely global in focus. However, there are discrepancies between global and local levels of climate change impact and understanding (Salazar 2015, 92). Many a museum

defines itself at a local scale: it aims to be a dynamic and thriving presence at the heart of the community it serves. Still, by following the old environmental adage to 'think globally, act locally', museums can promote both awareness and action, through the medium of community concerns both past and present. Local impacts of climate change can be set within the context of a global story (Rees and Leal Filho 2018, 321), with museums seeking to bridge the communication gap between the two. The climate change adaptations appropriate to one community, in one corner of the world, are not always going to be transferable to another locality where the immediate environmental, cultural and economic contexts may be very different (Salazar 2011, 125); but this in itself is an important point for museums to present to their visitors, as it informs an understanding that climate change action involves a multifarious array of responses by people across the globe.

A case of a museum combining climate change and community participation – while successfully upping the game from a local to national level – is the Wild Center, a small natural history museum in the Adirondacks, New York State. Climate change is at the core of the centre's educative mission. Regular climate conferences engage local people and emphasise local action. As a result of its participatory approach, and its emphasis on human interaction with the natural world, the Wild Center has become something of a national player, despite its small size (Simon 2010, 16; [www.wildcenter.org/about-us](http://www.wildcenter.org/about-us) Accessed 1.2.19). Another case of a museum successfully inspiring local action but within an understanding of the global impacts of climate change is the Varanger Museum, situated on Norway's north east coast, within the Arctic climatic zone. Threats to the Arctic tundra have inspired a project by the museum involving climate researchers, rangers of the Varanger Peninsula National Park, NGOs, philosophers and local inhabitants. The project's aim of encouraging an awareness of the ethical nature of global warming is achieved by presenting visitors with the local impacts of climate change, through dialogue and their experience of nature, as they explore the landscape of the national park (Rees and Leal Filho 2018, 324 – 5).

Global and local are not mutually exclusive. Each approach is embedded inside the other; a museum may inspire local action, but equally it might take as its starting point a planet under pressure, and bring this back to its audience as individuals with their own sense of place. Large museums hold a measure of power: they may be in a position to reverse the timeworn adage, and through their influence muster the courage to act on a global scale, whilst at their core still ‘thinking locally’ of those many communities around the world living day by day with the impacts of climate change.

#### *4.3.3 Museum archaeology and climate change*

It can be seen from the discussion above that the discourse on the role of museums in communicating climate change, and the challenges they face, relates principally to science and natural history museums. Archaeology is not an area where climate change and museums most obviously meet, at least not in the literature. A review published in 2015, ‘Climate Change and Museum Futures’ (eds. Cameron and Neilson), discussed theoretical and pragmatic aspects of climate change and museums, presenting several case studies but with no specific reference to archaeology at all.

The collection of studies that make up ‘Curating the Future: Museums, Communities and Climate Change’ (eds Newell, Robin and Wehner, 2016) presents a diverse selection of initiatives. The collection was based on a workshop held at the American Museum of Natural History, New York, in 2013, which brought together museum curators, historians, scientists, artists and educators to focus on the multifaceted issue of climate change. Again, there is little reference to archaeology as such; however, ‘Curating the Future’ is interesting in that it calls into question what archaeology actually is in the context of a museum’s collections. The studies presented focus mainly on communities living in the Pacific islands and thus at the forefront of the effects of rising sea levels; just because the artworks, craft and artefacts – some indigenous, some from colonial times – are fairly recent or contemporary, they are still ‘archaeological’ in the broadest sense. This connects with a role for museums as curators of the future, not just as preservers of the past. In the case studies

presented, all the artefacts are linked with stories of memory, of place, and of individual and community resilience, all of which are familiar to archaeology.

It is evidently worth revisiting, at this point, what archaeology - specifically museum archaeology - is perceived to be, both by museum practitioners and by their visiting public. In Chapter 2, archaeology was defined very broadly for the purposes of this study: it was to be understood both as a particular theoretical approach, employing its own methodologies, and as a body of evidence, data and constructed knowledge. In the context of museum collections and their display, all cultural artefacts and information can be considered as archaeological 'evidence', capable of being used in various ways in the construction of knowledge. They increase understanding and raise awareness of a common humanity. Archaeological artefacts may have been 'dug up', while ethnographic objects and social history items have not; but all have in common the fact of having been purposefully collected, to be preserved and possibly displayed in a museum setting.

As discussed in Chapter 3, museums as interdisciplinary institutions possess the expertise to bridge the divide between different areas of study. All collections of human objects from the past, from antiquity to recent years, whether they be classified as archaeology, history or ethnography, possess the possibly untapped potential for telling stories which reveal human-nature interactions. They can, for example, expose how some people have exploited others, colonised land, extracted natural materials and converted wild places for profit; additionally, they can tell hopeful stories of possible futures (McKenzie 2019b <https://www.museumsassociation.org/museum-practice/communicating-the-climate-crisis/151020109-using-collections-to-raise-awareness-of-the-climate-crisis> Accessed 4.3.20).

The definition of archaeology is extended still further when the collecting of present-day objects is considered. An exhibition in 2019 at the Pitt Rivers Museum, 'Lande', used objects from the recent past to explore the experiences of people living at the Calais 'Jungle' from 2015 to 2016. The aim was to make visible untold stories, through the lens of 'contemporary archaeology'

(<https://www.prm.ox.ac.uk/event/lande> Accessed 1.4.20). With every artefact or image on display on loan from the displaced people, activists and volunteers who lived and worked at the 'Jungle', the example of this exhibition demonstrates how archaeology can be used to increase an understanding of the contemporary world and is thus highly relevant to this study. It also challenges the historic role of museums, showing how they can become political spaces. The authors of the book accompanying the exhibition discussed how, in the same way that archaeology considers the undocumented past, so contemporary archaeology brings to light the undocumented present; it begins with committing to the belief that 'the more carefully we attend to objects, buildings and landscapes, the more human our account of the world may become' (Hicks and Mallett 2019, 19).

A move towards collecting contemporary material ties in with an interest among some museums in material relating to climate activism. An example is the Museum of Cardiff, which has begun collecting climate protest material, as part of its remit to respond to local stories – a responsibility which arose from consultation about what residents wanted their museum to be (McKenzie 2019b <https://www.museumsassociation.org/museum-practice/communicating-the-climate-crisis/151020109-using-collections-to-raise-awareness-of-the-climate-crisis> Accessed 4.3.20). Other initiatives relating to climate activism are the Museum of Reading's project 'Where's Reading Heading?', which looked at the city's past, present and future to consider how to sustain a growing population and build a low-carbon economy; while Manchester's People's History Museum created a Protest Lab alongside its Peterloo exhibition for individuals and organisations to develop ideas for collective action (Jennings 2019 <https://www.museumsassociation.org/museums-journal/comment/01042019-museums-can-play-key-role-in-climate-activism> Accessed 1.4.20). The Victoria and Albert Museum in London has recently collected and displayed artefacts created for or by the climate activist group Extinction Rebellion (<https://collections.vam.ac.uk/search/?q=Extinction%20Rebellion> Accessed 1.4.20).

It is interesting, in the context of extending the definition of what archaeology is, and what archaeological collections are, that in the recent volume 'Addressing

the Challenges in Communicating Climate Change', mentioned above, the only occurrence of the word 'archaeology' (aside from in the name of a museum – Cambridge's Museum of Archaeology and Anthropology) is a reference not to the past but to the future. Discussing the outcomes of a part-museum, part-art installation project called the Museum of Water, the authors describe the project as having provided 'a reason for gathering, a space for performance, an incitement to action, a museum of public history... an archaeology of the future' (Sharrocks 2019, 495). Again, this raises the notion that archaeology in its broadest sense can encompass more than the study of past communities.

In 1,200 pages of the three-volume 'Handbook of Climate Change Communication' the discipline of archaeology - as a communicator for climate change, as a potential mine of information and experience - is not directly addressed at all. Simplistically, this suggests that those involved at the forefront of climate change communication have not considered the contribution of archaeology; and that archaeologists have not, to date, seen themselves as a part of the narrative.

The communication of climate change is about far more than science. Science lies at its foundation, but ethics, economics, politics, social justice and issues of environmental sustainability are all part of it, as the literature shows. Because modern-day climate change has been induced and accelerated by human action, it is in part a cultural phenomenon, an artefact. It defies the traditional boundaries of 'nature' and 'culture':

'Climate change affects all living creatures on Earth... As such, it demands we re-consider deeply held convictions about human exceptionalism, about the division of "Culture", the realm of people, from "Nature", the world of everything else, and develop new understandings of the inter-weaving and inter-reliance of human and non-human worlds' (Newell 2016, 12)

The inter-reliance of the human with the non-human is an idea already deeply embedded within ecological approaches to archaeology, as discussed in Chapter 2. It also connects with the historic nature-culture division expounded by the first modern museums, and perpetuated in their lay-out and organisation, as

considered earlier in this chapter. Nature-culture involvements, the historic separation of these into discrete areas of knowledge with their own artificial boundaries, and then the dissolving of these boundaries by the very essence of the climate emergency, is central to this study of museum archaeology and climate change engagement.

If the 'natural' environment of today is increasingly viewed as a social issue, so is the reverse true: the conservation of 'cultural' heritage is increasingly being considered in the context of a wider environmental agenda (Harrison 2013, 217). Museums similarly erase borders; as discussed above, one of their strengths is that they have the capacity and expertise to make many kinds of links and associations in the minds of those who visit. Potentially, they could use archaeological artefacts and ideas just as effectively as their science and natural history collections to communicate climate change in ways that are constructive, relatable and of value. Collections of cultural objects illustrate changes in technology through time, for example: they demonstrate how the capacity for humans to transform the landscape has increased, and raise questions about how this can continue in a sustainable way (Hebda 2007, 334). This links directly with how the social and ethical issues of climate change impacts can be explored.

From a more general perspective, archaeology with its long-term take on human affairs is a natural partner to the field of future studies. It has been suggested that the climate emergency has highlighted the need for museums to become more future-facing in their mission; in this way they can be more truly relevant to contemporary needs, and provide safe and inclusive spaces for:

‘...envisaging possible futures, for learning from the past and indigenous cultures and from the capacities of nature, and for helping communities take action for eco-social justice’ (McKenzie 2019c, 455).

Archaeology fits well with this view, as it flags up the role of the humanities in furthering an understanding of the climate change agenda and can complement the contributions of the physical and biological sciences in devising creative responses within a museum setting.



Museums are sites where the past, present and future can be addressed together. As they seek to fulfil their social potential, and further their participation in communicating the climate crisis as one of the challenges facing society today, such encounters between different disciplines may be essential (Priday et al. 2015, 109). Museum archaeology, especially when expanded to include collections of contemporary objects and material from the recent past, may have a very particular role to play in engaging people with the climate challenge and helping them to construct and realise our 'archaeologies of the future' in positive and affirming ways.

The next part of the chapter will examine examples of how museums have responded so far to the challenges of climate change communication. It will include a series of case studies and a reflective commentary on visits to London's Science Museum and Natural History Museum. An assessment will be made of the nature and perceived effectiveness of this engagement.

#### **4.4 Case studies of climate change engagement**

##### *4.4.1 Around the world: museums and climate change initiatives*

Examples of how museums are engaging their audiences with climate change include permanent gallery exhibits, temporary exhibitions, and initiatives of a more informal, fluid or 'pop up' nature. It is acknowledged that engagement goes beyond what is physically on display, and that museum resources are distributed through websites, social media, programmes of events, and school and community-based projects. For the purposes of this study, however, what is available for visitors to view and take part in as they browse the galleries is the main consideration. The interviews with museum practitioners carried out for this study (see Chapter 5) largely concerned the practical considerations of implementing climate-related exhibitions within the museum.

A selection of climate initiatives by museums will be outlined here, followed by examples of climate change-related exhibitions; finally a description and analysis will be offered, based both on the literature and on personal observations, of climate engagement at London's Natural History Museum and Science Museum.

A literature search reveals a variety of climate change projects by museums around the world. Recognising their role as trusted institutions, and their responsibility towards preserving heritage for posterity, museums have the capacity to embrace an exploration of future scenarios in imaginative ways. Some examples of such transformative future-focused initiatives have been described by Bridget Mackenzie (McKenzie 2019c, 454 – 6). They include the Museum of Tomorrow in Rio de Janeiro, a museum of applied science that explores the opportunities and challenges that humanity will face in the coming decades; the museum offers a narrative on how the next fifty years can be shaped, adhering to the ethical values of sustainability and co-existence: ‘Tomorrow is not a calendar date, it’s not a place we’re going to get to. It is a construction in which we all participate, as people, citizens, members of the human species’ (<https://museudoamanha.org.br/pt-br/sobre-o-museu> Accessed 19.2.19). Another museum offering a glimpse into the human future is the Carnegie Museum of Natural History in Pittsburgh, Pennsylvania, which in recent years has appointed a Curator of the Anthropocene. In 2017 to 2018 a year-long exhibition entitled ‘We are Nature: Living in the Anthropocene’ invited visitors to explore the interconnectedness of humanity and nature, and the concept that human activity has had a profound and inescapable impact on the planet. Visitors to the exhibition were able to share their thoughts and thus contribute their own voice to the dialogue on topics such as conservation and animal extinction (<https://carnegiemnh.org/press/nature-opens-carnegie-museum-natural-history/> Accessed 1.2.19).

In Norway, the Klimahuset (Climate House) in Oslo is a project created by the University of Oslo to provide a space for research-based exhibitions, lectures, films, discussion and experiences relating to climate change. The aim is to raise awareness about climate change and to ‘inspire its visitors in their pursuit of sustainable futures’ (<https://mccnetwork.org/climate-museums> Accessed 19.2.19).

The Climate Museum (<https://climatemuseum.org/>), based in New York City, is a recent initiative established to serve as a hub for climate engagement and leadership. It is the first US museum dedicated to climate change and climate solutions. Its mission, adopted by its founding board of trustees in 2016 is: ‘To

employ the sciences, art, and design to inspire dialogue and innovation that address the challenges of climate change'; they aim to move climate solutions to the centre of shared public life and to act as a catalyst for community engagement (<https://climatemuseum.org/vision>). Art installations, photography exhibitions and digital interactives have been used in several exhibitions which imaginatively combine art and science to portray climate change issues and address potential action. An example is a video installation, part of an exhibition called 'In Human Time', which took the viewer two miles down through the Greenland ice sheet, going back 110,000 years in time; this aimed to enhance visitors' understanding the role of ice core science in helping us to understand Earth's past and future climate, and to reflect on the fragility of polar ice: 'The pace and scale of the piece is a gesture towards the immense scale and gravity of climate change' (<https://climatemuseum.org/in-human-time> Accessed 1.2.19). (Fig. 14). The Climate Museum also organises talks, panels and screening events, as well as providing a platform for science education and the arts.



*Fig. 14 Journey through the Greenland ice sheet: photographs of ice cores and a video installation by artist Peggy Weil at the 'In Human Time' exhibition at the Climate Museum, New York City (<https://www.inhumantime.org/about-the-work-1/>).*

Similarly, in Canada, the coalition of Museums for Climate Justice (<https://coalitionofmuseumsforclimatejustice.wordpress.com> Accessed 19.2.19)

aims to build awareness within the museum community of climate change responses, and to empower museums to lead by example and to be both participants and activists in public discourse on climate change.

Climate Museum UK, founded by Bridget McKenzie, offers training workshops to help museums integrate climate action into their sites and programmes (Kendall Adams 2019, 13). The museum describes itself as ‘a ‘mobile museum for the climate emergency’, with projects including a digital museum and a pop-up museum: a selection of props, infographics, games, activities and artworks that can be installed in different ways to suit different host organisations (<https://climatemuseumuk.org/> Accessed 11.2.19).

The UK’s Happy Museum project similarly aims for a creative response to climate change, and is a further example of an environmentally conscious initiative that supports museums and their communities. The project uses research, peer networking and training to explore the role of the museum sector in planetary and social wellbeing in the future, and to re-think how museums can contribute to resilient people and places; one of its core principles exhorts museums to ‘value the environment’ and be ‘a steward of the future as well as the past’ (McKenzie 2019c, 455; <http://happymuseumproject.org/>). The ‘ecomuseum’ concept similarly develops the idea of stewardship. Ecomuseums are a global network of small museums that directly engage local people in taking responsibility for their natural and cultural environment. A main aim of the ecomuseum movement has been to strengthen a sense of place, and to promote a positive and dynamic relationship between communities and their environment; they can thus act as a beacon to the museum sector, in expounding a vision of continuity of place while working with communities to adapt to change (Davis 2005, 365 – 76; Borrelli and Davis 2013, 36; McKenzie 2019c, 456).

Again concerned with stewardship, but in this case the stewardship of memory, is the London-based Museum of Water, referred to above (<http://www.museumofwater.co.uk/> Accessed 3.2.19). The museum defines itself as ‘a live artwork and museum that seeks to prompt people worldwide, individually and collectively, into deeper consideration of water and the world around us’ (Sharrocks 2019, 482). It is a living, growing collection, with visitors

being invited to donate water from different sources that is in some way important to them through memory or association (Fig. 15). It also collects the accompanying stories.



*Fig. 15 Memories in bottles: the Museum of Water collects donations of water and the stories that go with them (Museum of Water, Amy Sharrocks, photo by Ruth Corney <http://www.museumofwater.co.uk/>).*

Since its inception in 2013 the Museum of Water has travelled to fifty sites across the world and has been visited by over 60,000 people. It creates programmes to explore the interconnected questions of water, migration, urbanisation, fear and climate change, using a combination of science, ecology, anthropology, literature, music and play. Although not a climate museum as such, the Museum of Water is an example of a non-traditional and mobile museum ‘space’ that, unusually, allows the visitor to collaborate, to be protagonist and co-creator: ‘Here your journey makes a difference to the museum, here your words will be remembered, your presence counts... This museum wholly relies on the public, so you can influence and shape the collection, which means that it matters whether you come or not’ (Sharrocks 2019, 483). Being mobile, and beyond walls, such pop-up initiatives which bring the organisers into direct conversation with scientists and arts practitioners, and which not only invite but also depend on direct visitor participation, may have a vital contribution to make in the future.

How museums define themselves in relation to contemporary and controversial subjects, as discussed in Chapter 3, and how they view their vocation and purpose, is of relevance here. Just as the boundaries of what constitutes ‘museum archaeology’ can be pushed back in the context of exploring topical

issues, so – given the examples of museum activity quoted above - the same can be said of museums themselves. Hein, writing in 2000, discussed the ways in which museums had reinvented themselves by the end of the twentieth century, with their educative mission changing over the decades from one of ‘dispensing edification’ to one where democratic debate was welcomed and museums placed themselves ‘at the contested centers of cultural interactivity’ (Hein 2000, 143). Initiatives like the Museum of Water, by abandoning the physical space of the traditional ‘indoor’ museum and inviting their visitors to be co-collectors and co-creators of what is on show, reflect this growing inclusivity. Such initiatives echo the ecomuseum model, referred to above, in the way their exhibitions grow, from small beginnings, as different stories are added.

While a museum’s traditional delineation is disempowering and alienating to many, since it enshrines the values of the culture that gave rise to museums in the first place, this alternative form of engagement is non-hierarchical and dialogue-driven, with all members of the community learning from each other and becoming curators of their own stories (Hein 2000, 113 – 4). People’s sense of contributing something valuable increases their sense of ownership, which in turn encourages an interest in the issues raised by the engagement and positive choices and action around their relationship with the natural environment.

In this context, in addition to museum-based activity, it is important to acknowledge the work of organisations involved in climate change communication more generally. One example is Julie’s Bicycle, a London-based charity that supports the creative community to act on climate change and environmental sustainability, by providing free resources, public speaking engagements and programmes of events (<https://www.juliesbicycle.com/> Accessed 19.2.19). A contrasting example is the Climate Outreach Network, set up in 2004, to link scientific research with climate change communication, and to engage people on their own terms. As well as governments, businesses and NGOs, the services provided by the Climate Outreach Network also support grassroots projects, charities and faith organisations to help engage a range of people across the breadth of society (<https://climateoutreach.org/purpose/> Accessed 19.2.19).

A further initiative is Curating Tomorrow (<http://www.curatingtomorrow.co.uk/>), a consultancy aiming to encourage museums to use their curatorial skills and unique resources to address real-world challenges, and thus enhance their 'contribution to society and the natural environment, the Sustainable Development Goals, climate action and nature conservation' (McGhie 2019b, 4). The support provided is aimed specifically at practitioners in museums and in the heritage sector more generally.

Turning to actual museum exhibits, there are challenges to be overcome in designing engagement that is involving, informative and interesting to a diverse audience, and that goes beyond mere 'books on the wall' packed with climate change figures and facts. Some of these challenges were addressed during a recent initiative by the University of Cambridge Museums. In January 2018, UCM brought together teams of climate scientists, collections experts, story-tellers and makers in a three-day 'Climate Hack', with the aim of producing proto-type exhibits inspired by the museums' collections. Climate-related themes such as changes in animal diversity, the history of scientific investigations, polar tourism and climate refugees were addressed through artworks, interactives and story-telling, with feedback from participants and visitors providing useful insights for the development of further exhibits (Connelly 2019, 571).

The exhibit designed by the Climate Hack team working at Cambridge's Museum of Archaeology and Anthropology seems particularly interesting, in that it aimed to form a link for visitors between the global story and local history. Working in the new Pacific gallery, the team decided to focus on the idea of flooding, since many people living on islands in the Pacific region are already suffering the consequences of rising sea levels; it was decided that the exhibit would share stories of flooding and migration from the Pacific island of Kiribati but also from the local Cambridgeshire fens (Connelly 2019, 522). Inspired by artworks made by Pacific islanders from 'ghost nets' – discarded fishing nets that are causing damage to marine wildlife – the team built a life-size 'ghost boat' in the gallery; visitors listened to stories about flooding and spent time choosing what they would save from a flood (Fig. 16). Visitor feedback commented on the story-telling element as a positive experience, and also highlighted as important the focus on

people and the challenges facing many different communities because of climate change impacts (Connelly 2019, 523).



*Fig. 16 The power of storytelling: the 'ghost boat' exhibit by Climate Hack at the Museum of Archaeology and Anthropology, Cambridge. (<https://ngarughostboat.wordpress.com/> Photo by Bridget McKenzie).*

The 'Curating the Future' study referred to above includes perspectives from many parts of the world, celebrating how museums can become spaces that bring diverse peoples together to share stories and focus on the effects, rather than the causes, of climate change. Examples are given of partnerships and collaborations from places as varied as Australia and New Zealand to Sweden and the Arctic, with several contributions, as mentioned above, centring on the experience of Pacific Islanders. Personalised and affective stories of particular museum objects are given. The study acknowledges the multiple viewpoints of 'decolonised' museums, particularly in terms of empowering those who have suffered injustice; in the case of climate justice museums are proposed as potential leaders, giving a voice to people who are already contending with changes that are the result of actions in which they had no say (Newell et al. 2016, 11).



To summarise, in recent years an increased awareness of the urgency of the climate crisis has inspired a number of initiatives which seek to acquaint a range of audiences with the facts, challenges and opportunities of climate change. Such initiatives, some of which have been either organised or hosted by museums, have sought to break the communication barrier between climate science and public understanding by using creative, participatory and story-focused approaches which stress the human element.

#### *4.4.2 Examples of climate exhibitions in museums*

Museum exhibitions are a unique form of engagement. As well as artefacts exhibitions include many elements that make the experience memorable for their audiences: images and text, sound, film footage, interactives, areas of light and shade and of course other visitors. They have been described as spaces that enable embodied learning, a key characteristic in helping people develop a sense of how we are all interconnected with physical environments, while their multi-faceted nature allows them to:

‘...promote new modes of thinking and understanding, emphasizing associational and synthetic approaches that build abilities to consider how our choices, actions and lives are entangled with the other species and forces of the planet’ (Newell et al. 2016, 5).

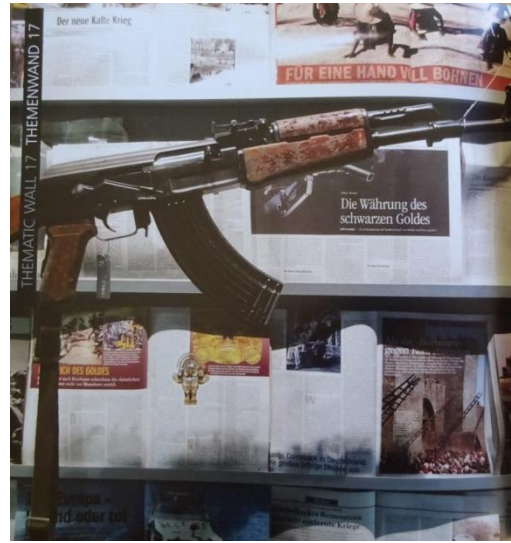
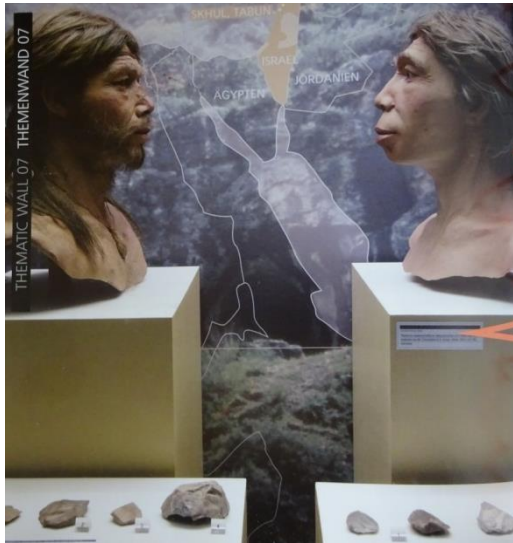
A number of examples of climate change exhibitions from around the world are given here. An exhibition held in 2006 to 2007 at the **Westfälisches Museum für Archäologie** in Herne, Germany ([www.lwl-landesmuseum-herne.de/](http://www.lwl-landesmuseum-herne.de/)), is an interesting case because the emphasis is archaeological rather than natural sciences-based. The exhibition, entitled ‘Klima und Mensch: Leben in Extremen’ (‘Climate and Humans: Living in the Extreme’), explored the impact of climate on early peoples, and aimed to enthuse visitors about ‘the adaptability of our ancestors to changing climate conditions and the necessary behaviour for surviving’ (Exhibition guidebook, page 13). It traced the history of the relationship between climate and humankind, from six million years ago to the present day. The interdependence of human evolution with environmental change was a main theme. The press release for the exhibition can be seen at [www.lwl.org/pressemitteilungen/mitteilung.php?urlID=16067](http://www.lwl.org/pressemitteilungen/mitteilung.php?urlID=16067) (Accessed 3.2.19).

Following an introduction to how climate is measured and reconstructed, visitors undertook an exploratory journey through the various stages of human development and environmental change, taking in the evolution of the first humans on the East African savannah, the onset of the Quaternary Ice Ages with their alternating warm and cold periods, the discovery of fire, Pleistocene animals and plants, the development of tools, the earliest art, the eventual emergence of *Homo sapiens* and the decline of other human species. ‘When the ice retreated – crisis as opportunity’ was one of the themes. Archaeological artefacts such as stone tools and pottery were displayed at various points along the journey.

The story continued with the first farmers and settlement development, and so on through time to modern land use and environmental pollution. ‘Do humans still feel comfortable in the environment they have created?’ visitors were asked (Exhibition guidebook, page 83). The contribution of modern humans to climate change, alternative forms of energy production and questions about what happens when resources run out were explored. The exhibition concluded with an art installation which invited visitors to engage with present-day climate change in ways which involved the senses, imagination and humour.

From a visitor perspective, the feeling generated by this exhibition seems to have been one of concern about change but also wonder at the adaptability of humans. The ethos of the exhibition seems to have been one of sensitising people to the phenomenon of climate change over huge timescales; while taking the long view, of change over many millennia, it also gave attention to modern climate change impacts – for example, land loss through sea level rise – and the potential conflicts over limited resources this will give rise to (Fig. 17).

Also in the 2000s, the **Royal British Columbia Museum** in Canada held an exhibition entitled ‘Climate and Climate Change’. With help from the federal government’s Climate Change Action Fund, the opportunity was taken to update existing galleries and create a display which aimed to enlighten audiences over climate change. Previously climate had been linked to weather, and given little prominence; taking into account the need to become more socially relevant, the museum now made it the core subject of the exhibition:



*Fig.17 Early encounters, future fears: reconstructed humans and depictions of climate conflict to come, from the exhibition 'Living in the Extreme' at the Westfälisches Museum für Archäologie (Exhibition guidebook).*

'A key appeal of a climate change exhibit was an opportunity to link, indeed integrate, the two solitudes (human and natural history) of many large museums in a compelling manner. This challenge is central in the sustainability debate because the progressive separation of humanity and nature is at the core of the problem facing society today' (Hebda 2007, 330).

The RBCM exhibition aimed to communicate the following ideas: climate dominates; climate change occurs and has occurred, affecting the physical and biological world and the people who depend on it; the climate is changing now and changing quickly; and finally, humans have a hand in the changing climate and thus have choices to make (Hebda 2007, 330 – 1). It was recognised that the most difficult aspect of climate change to 'exhibit' was the social dimension, especially the story of the future – since there are, as yet, no relevant artefacts.

The exhibition met with a positive response, with the most powerful element in terms of visitor engagement being a series of maps showing future temperatures, precipitation, the distribution of selected species, and economic elements including heating and cooling costs and the potential for crops. Watching the colours changing on the map of the region, for different points in years to come,

appeared to communicate powerfully to a range of visitors –including political leaders, government bureaucrats, scientists, representatives of community groups and members of the IPCC – just how different the future will be. Visitor feedback confirmed the exhibition’s effectiveness in ‘changing people’s minds and sowing seeds of unease about the future and our role in shaping that future’ (Hebda 2007, 332 – 3). The museum’s website indicates that the exhibition, or an adapted version, remains in its own small gallery as part of the permanent natural history displays: it is described as one of the first galleries ever built that explains how climate is changing as a consequence of global warming (<https://royalbcmuseum.bc.ca/visit/exhibitions/natural-history-gallery> Accessed 3.2.19). It is interesting that visitors appear to approach this gallery immediately following on from a gallery exploring the Ice Age.

Dealing with what is to come was also the theme of an exhibition held at the **Australian Museum** in Sydney in 2009. The exhibition, ‘Climate Change, Our Future, Our Choice’, invited visitors to follow two contrasting paths into two very different futures. One path, ‘Do something’, encouraged the visitor to become an active agent capable of arresting climate change; the other path, ‘Do nothing’, showed how individuals acting irresponsibly with regard to their behaviour and consumption habits will perpetuate the effect of climate change, resulting in catastrophe (Cameron 2010b, 115; Cameron 2011a, 86). Images of environmental destruction and change were deployed: for example people were able to see what Sydney might look like if sea levels continued to rise (Cameron and Deslandes 2011, 147). The themes of food, transport, energy and construction were explored to encourage visitors to assess their own carbon footprint.

The process and thinking behind the scenario-building aspects of the Australian Museum’s exhibition are described by the exhibition project co-ordinator as follows:

‘We had much advice from our scientists... they helped us to recreate an accurate picture of the Great Barrier Reef changing from 2009 to 2020. We wrote the evening news for 2050 and recorded our scientists lamenting over the sulphur that had been pumped into the sky to cool the planet, or awarding Nobel Prizes to colleagues who had developed cheap solar panels. Museum staff volunteered to take on new roles as journalists,

protestors or politicians in 2050 ... we helped our visitors to imagine the future in concrete ways' (Catherine Cooper 2010, quoted in Cameron and Deslandes 2011, 147).

The main thrust of the exhibition seems to have been questions not just of choice, but of conscience, with a quotation from the German theologian and anti-Nazi activist Dietrich Bonhoeffer used purposefully to instil a sense of moral responsibility towards future generations: 'The ultimate test of a moral society is the kind of world that it leaves for its children.' Feedback was solicited through a 'Postcards to the Future' section, where visitors left behind their written pledges on what they would do individually to help tackle climate change. The museum blog offers an insight into the reactions of visitors of different ages to the exhibition, with one group of teenagers considering the main messages of the exhibition to be: climate change is scary; climate change will affect me; and climate change is happening now ([australianmuseum.net.au/blogpost/museullaneous/what-did-visitors-think-about-the-climate-change-exhibition](http://australianmuseum.net.au/blogpost/museullaneous/what-did-visitors-think-about-the-climate-change-exhibition) Accessed 3.2.19).

Another major exhibition, created in partnership with the Rachel Carson Centre, was held at the **Deutsches Museum, Munich**, from 2014 to 2016. The goal of 'Welcome to the Anthropocene: the Earth in Our Hands' was to 'inform visitors about the Anthropocene as a currently debated vision of the role of humans on Earth' (Keogh and Möllers 2015, 85). The Deutsches Museum is the world's largest museum of science and technology, with about 1.5 million visitors per year. Formerly it had a traditional focus, portraying nature as a force to be reckoned with and tamed by technological know-how; today it is broader in scope and has had several exhibitions on environmental issues. The 'Welcome to the Anthropocene' exhibition used both historic and current artefacts from science and industry to engage their audience, along with interactives, digital media and art (Fig. 18); a related programme of events provided further opportunities to share knowledge and provoke debate.

The organisers of 'Welcome to the Anthropocene' sought specifically to give an alternative view to the historic dualism of nature versus culture, explaining the Anthropocene as a concept and showing it to be not simply about environmental decline but 'a complex and often ambivalent story of destruction and shaping'

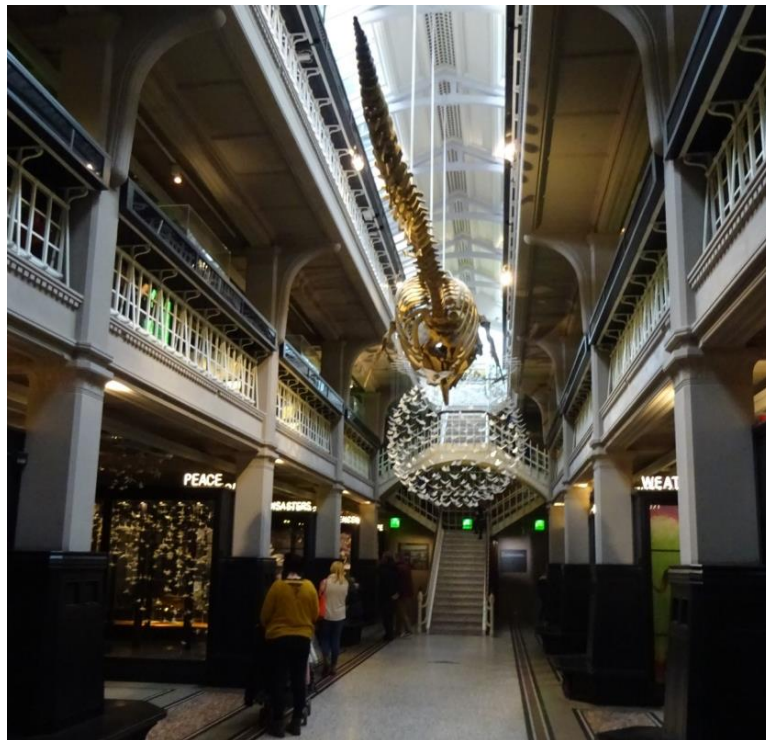
(Keogh and Möllers 2015, 85). Although not solely focused on climate change the exhibition, in presenting the effects of humankind as biological and geological agents, exemplifies how larger, ‘traditional’ museums can engage with issues facing contemporary society.



*Fig. 18 Artistic visions: a crocheted coral reef at the ‘Welcome to the Anthropocene’ exhibition, Deutsches Museum ([www.deutsches-museum.de/en/exhibitions/special-exhibitions/archive/2015/anthropocene](http://www.deutsches-museum.de/en/exhibitions/special-exhibitions/archive/2015/anthropocene) Photo A. Griesch).*

A recent example from the UK, focused entirely on climate change, is the exhibition held at **Manchester Museum** in 2016, entitled ‘Climate Control’. In 2011 the museum’s former mammals gallery was re-developed to become the ‘Living Worlds’ gallery, to bring it up to date and reflect contemporary environmental issues. The exhibition ‘Climate Control’ has been discussed by Henry McGhie, within this context of making the museum and its scientific collections more relevant and accessible to a broad audience (McGhie et al. 2018, 333 – 43). The display cases in the ‘Living Worlds’ gallery have been developed as installations exploring related topics or themes, such as Connect, Symbols, Peace, Disaster, Weather, Resources: each of these can be viewed separately, but complex topics such as climate change, it is suggested, can be explored by reading across the different installations, either on a self-led visit or as part of organised events (Fig. 19). The over-arching aim of the re-development was to: ‘construct a narrative that nature is amazing, the world is full of wonderful things, people can have positive and negative effects on the world around them

and our everyday choices matter... consequently it is important that people connect with the world around them' (McGhie et al. 2018, 334).



*Fig. 19 A traditional gallery updated: themed installations in the Living Worlds gallery at Manchester Museum.*

Potential ways in which the gallery displays can be used to connect with climate change have been summarised (McGhie et al. 2018, 335 – 6). For example, the installation on 'Domination' – the 'control of nature due to fear and admiration' – contains taxidermy trophies and a tiger: links can be made between the interconnected issues of climate change, geopolitics and capitalism, inequalities between nations and social groups, and inequalities in climate change impacts and greenhouse gas emissions. The installation on 'Experience' – 'how people understand the natural world' – includes mounted birds and animals linked to childhood stories, collections of insects and minerals, and glass lantern slides: suggested climate change connections are the links between people's personal experiences of the environment and how these may be changing; while 'Variety of Life' – 'the richness of biodiversity' – could be used to explore the fact of

species' vulnerability to extinction, with many being threatened by climate change and their futures dependent on human action and choices.

In 2015 to 2016 Manchester held the designation of European City of Science. The fact of the city's heritage being intimately linked to the Industrial Revolution, and thus to the origins of climate change, led to the Museum's decision to select climate change as the main topic for exhibitions and programming during this period. The aim was to go beyond 'well-worn stories of disappearing ice-caps, disappearing polar bears and the attribution of particular extreme weather events to climate change,' implementing instead a 'highly creative programme, encouraging people to consider and express their own thoughts and values on the topic, and providing a critical framework for creativity, discussion and dialogue' (McGhie et al. 2018, 337). Both the exhibition and the related programme of public engagement – which included, for example, film screenings, family-focused events and discussions with academics – sought to achieve a balance between providing factual but potentially frightening information about climate change, and asking people to contribute their own ideas and suggestions.

'Climate Control' was divided into two areas: 'Explore the past' and 'Explore the future', with visitors free to choose which to explore first. Exhibits in the 'Explore the past' area linked, for example, 350 million-year-old plant fossils and coal with people's experiences of climate change today; the 'Explore the future' area contained no museum objects but was rather a space for people to read about climate change and share their ideas on a large board. The exhibition thus combined an exploration of objects from the collections with more of an interactive, ideas-based methodology, to create opportunities for visitors to reflect on the topic. In addition, volunteers invited visitors to handle objects, and climate change experts were regularly present in the gallery as part of a two-way 'Climate Exchange' which gave academics the chance to talk about their research. Although a temporary exhibition, elements are now incorporated into the permanent Living Worlds gallery (Fig. 20).

The example of Manchester Museum shows how traditional galleries are being re-imagined in the context of contemporary concerns, to connect their audiences more readily with critical societal/environmental questions like climate change. It demonstrates how familiar museum objects can be used in innovative and



creative ways, enabling visitors not only to see the objects but also to understand them, and what they represent, through stories and dialogue with museum staff, with researchers in the field and with each other.



*Fig. 20 Ways to make a difference: moth sculpture and text panel from the 'Climate Control' exhibition, Manchester Museum. The peppered moth was the motif for the exhibition: at the start of the Industrial Revolution, the moth was white speckled with black, but a black variety appeared in industrial areas of the UK; since the Clean Air Act of 1956 the black moths have declined, to be replaced once again by their white counterparts.*

Another climate-related exhibition in recent years, though not specifically climate change-focused, was an exhibition at the **Royal Albert Memorial Museum, Exeter**, entitled 'Whatever the Weather', which was a major winter exhibition in 2015 – 16 and was visited by the author during the course of this research. The exhibition centred on humanity's relationship to the elements and used the work of contemporary artists along with historical paintings and prints, archives and artefacts: it drew on the museum's own collections and those from the National Trust, Arts Council Collection, Met Office and the Royal Meteorological Society (Fig. 21). The exhibition introduced visitors to ways in which weather has shaped

and influenced culture and beliefs through history, with the fragility of humans in the face of bad weather a reality from ancient times to the present. Storm and shipwreck as an inspiration for art, music, photography, literature and film was portrayed. Flooding as a theme through time, from Genesis and Gilgamesh to modern archives of extreme flooding events was also explored.



*Fig. 21 Winds of change: a weathervane in the shape of a wyvern, used in the exhibition 'Whatever the Weather' at the Royal Albert Memorial Museum, Exeter, on display in the Making History gallery.*

A range of historical and archaeological material was used in the exhibition, such as weather recording instruments and weather diaries; objects included a Roman bust of Jupiter Serapes, god of clouds, rain, thunder and lightning; an early eighteenth century Delftware tile depicting Noah; and an intriguing display of souvenir 'rain gods': clay figures made in the late nineteenth and early twentieth centuries for the tourist market, by people of the Tesuque pueblo region of New Mexico. According to the accompanying text these figures were sold in large numbers and were also given away as a free toy by Chicago confectionary manufacturers, who included a 'rain god' in their boxes of chocolates. Although not sacred items in themselves these figures, it was suggested, represent a distant link to the rain gods of the Aztec and Maya people; they also show the capacity of museum objects to tell very many and varied stories.

To complement the historical material, and as a centrepiece for the exhibition, the RAMM commissioned a new work based on the Devon coast by a leading artist working with digital media; the museum also worked closely with the Nation Trust, marking fifty years of its Neptune Campaign to protect the coasts of Britain.

Climate change was directly referred to in one of the text panels, which seemed to be trying to give a very balanced view:

‘Scientists can now confidently forecast tomorrow’s weather – climate prediction is far more difficult. Even with the aid of supercomputers views differ on what our future holds. Mainstream scientists believe that the Earth is getting hotter, causing the polar ice caps to melt and sea levels to rise. Extreme weather will be more likely, they argue. Others deny human action has changed the climate at all. In between are the ‘lukewarmers’ who suggest scientists are overstating the case.’

*Text panel, ‘Whatever the Weather’ exhibition at RAMM, Exeter, 2016.*

Further down in the same block of text a more definite statement was made, which seemed at odds with this – perhaps overly – neutral view:

‘In December 2015 the UN climate change conference will be held in Paris. World leaders will try to agree a deal on cutting carbon emissions to slow global warming. If they fail the consequences could be devastating.’

*Text panel, ‘Whatever the Weather’ exhibition at RAMM, Exeter, 2016.*

It is questionable how many visitors paid attention to the text panels, with so many interesting exhibits to discover. But this only serves to illustrate the challenges discussed earlier in the chapter: how to go beyond text, and how to use objects and collections in ways which communicate the urgency of climate change without putting people off.

Overall, from a visitor’s point of view, the exhibition was informative and intriguing, with plenty to stimulate and engage the imagination. It was not especially interactive and not the kind of exhibition where a dialogue with visitors was enabled. Its strength lay in bringing together a multiplicity of different media to explore the subject of people’s relationship with weather. It also, perhaps, highlighted the difficulties of identifying relevant human artefacts to ‘tell a story’ in the context of weather, suggesting that the contribution of archaeology to climate-

related exhibitions may be more tangential than that of science and natural history collections.

In summary, the literature reveals a number of examples from across the world of museum exhibitions seeking to engage their visitors with aspects of climate change. Museums have collaborated with external bodies to produce varied and imaginative exhibitions, many of which use objects and expertise beyond their own collections. In the main, the small sample presented here has concerned communicating the science of climate change, albeit in relation to human choices and in the context of society at large.

#### *4.4.3 A different narrative: climate change and contemporary art*

As the above examples of climate change initiatives and exhibitions have indicated, science is not the only focus for effective engagement. Some museums and organisations are able to take a broader view to include art, poetry, performance or music and thus provide a different narrative. Environmental art is an obvious area of connection between the natural world and human responses to nature. The 2019 exhibition 'In Real Life' at the Tate by the Danish-Icelandic contemporary artist Olafur Eliasson was hugely popular, with audiences enjoying artworks composed of shadows, reflections, Icelandic moss, fog and glacial ice, whilst exploring the artist's perceptions of human-nature interactions and deep engagement with issues of climate change (<https://www.tate.org.uk/whatson/tate-modern/exhibition/olafur-eliasson> Accessed 1.4.20).

Museums occupy a unique position in being able to amass artefacts and people with diverse expertise to respond to all the implications of climate change; contemporary artists and other 'well-informed publics' are increasingly recognised for their ability to provide new ways of exploring the topic (Connelly 2019, 520). Perhaps more readily than other museums, art galleries have shown adaptability when it comes to relinquishing notions of control over their own space: they invite and permit artists to work within the gallery, thus lending their authority to external initiatives (Leal and Filho 2018, 326). Increasingly visual and performance artists are establishing partnerships with environmental activists, while environmental campaign groups are becoming adept at staging immersive actions in public spaces such as art galleries and museums (Harris 2019

<https://www.museumsassociation.org/museums-journal/features/02092019-climate-control> Accessed 4.3.20).

An earlier example of a climate change-related art exhibition was held at the Arnolfini in Bristol in 2009, entitled 'C words: Carbon, Climate, Capital, Culture'. The exhibition was created by an artist-activist collective, and included a programme of performance and other events alongside the installations (Payne 2015, 163). Some institutions will be more ready than others to host an exhibition which combines the transformative power of art with an overtly political message: this links with the discussion above on the neutrality of museums, and their mission, which may or may not be perceived to be about being activists and campaigners.

Contemporary art was also used to explore climate change at an exhibition on 'Earth: Art of a Changing World', held at the Royal Academy of Art in 2009 – 10. Works by internationally renowned artists were arranged around different themes, with a loose narrative structure. Climate change was introduced through works on earth, air, sky, nature and carbon. The perceived security of our existence was examined, while a section on the artist's role as explorer displayed work by artists who had travelled to the Arctic and the Andes on expeditions with the Cape Farewell project (see below). A section on destruction was followed by a gallery illustrating how a cultural shift might lead to a world of hope and vision. The exhibition was purposefully non-didactic, with the curator wishing not to 'preach or admonish', aiming instead for an aesthetic response (Payne 2015, 161). The sense of ambiguity found in artworks can be used to positive effect: by detaching from the science, space is created for a more personal and reflective response to the issues portrayed.

The front cover of a guide to an exhibition hosted by the Royal Ontario Museum's (ROM) Centre for Contemporary Culture asks: 'What does culture have to do with climate change?' – before answering: 'Everything.' This exhibition, held over four months in 2013 – 14, was part of a two-year engagement by the Cape Farewell Foundation, entitled 'Carbon 14: Climate is Culture'. The Cape Farewell Foundation is the North American branch of Cape Farewell, a London-based project founded in 2001 by artist David Buckland: the project brings together

scientists, creatives and communicators with the aim of initiating a cultural response to the climate challenge:

‘Climate change is a reality. Caused by us all, it is a cultural, social and economic problem and must move beyond scientific debate. Cape Farewell is committed to the notion that artists can engage the public in this issue, through creative insight and vision’ (David Buckland, 2007, [www.capefarewell.com/about.html](http://www.capefarewell.com/about.html) Accessed 5.2.19).

Central to the ROM’s exhibition was the belief that climate change is a cultural problem as much as an environmental one. The exhibition featured thirteen installations, including sculpture, photography and video, with the artists responding to aspects of climate change in ‘poignant, nuanced, subversive, often humorous and always passionately human ways’ ([www.capefarewell.com/latest/projects/carbon14.html](http://www.capefarewell.com/latest/projects/carbon14.html) Accessed 5.2.19); it covered such subjects as the changing Arctic, biodiversity and extinction, the health of oceans, sustainability and new, clean technologies. Questions of politics, economics and ethics were also explored. As well as the museum exhibition, ‘Carbon 14: Climate is Culture’ included a festival of live theatre, music, public screen-based art projects, and public lectures and discussions. The ethos of this engagement was deliberately to cross the boundaries between the ‘natural’ and the ‘cultural’, and to flag up the artificiality of the distinction between the two. It exemplifies how museums, in their presentation of climate change actions and solutions, can foster a different and more productive understanding of the nature-culture relationship.

These examples illustrate the very particular role of contemporary art in engaging visitors with climate change, offering opportunities for a reflective and emotive response. It is evident that there is a growing awareness of the cultural nature of climate change; collaborative initiatives between scientists and creative practitioners seem to point to a hopeful way forward in climate change communication and understanding.

#### *4.4.4 Climate change engagement at the Natural History Museum and the Science Museum, London*

The Natural History Museum and the Science Museum were both visited during the course of this research (in 2014 and 2015 respectively). This section of the

chapter presents some observations and reflections made at the time, interspersed with references to the literature.

The Natural History Museum's involvement in current climate change research, and the impacts of climate change on wildlife and biodiversity, is easily accessible on its website (<http://www.nhm.ac.uk/discover/climate-change.html> Accessed 5.2.19). But in 2014 climate change past took centre stage in a major exhibition. 'Britain: One Million Years of the Human Story' explored human evolution and adaptation in relation to climate change over a one million year period. Through artefacts, visuals and reconstructions, visitors were introduced to the four different human species who have occupied Britain. Beginning with the discoveries at Happisburgh, Norfolk, where the footprints of a group of people who walked there 900,000 years ago were explained to the visitor, the exhibition traced the coming of the Neanderthals to Britain – their disappearance and return – and their occupation and technological advances over many tens of thousands of years, prior to the arrival of *Homo sapiens* 40,000 years ago. The final gallery presented the human story today, indicating how our Neanderthal ancestry can be traced through DNA. Because of its archaeological element, it seemed especially appropriate to visit this exhibition for the purposes of this study.

A timeline in the first gallery introduced the exhibition, setting human activity alongside a million years of climate fluctuations and warm and cold periods. 'This is a story of survival,' the text informed us, 'where the only way to live was to adapt to environmental change over and over again. Today, we are in the latest phase of occupation, which began about 12,000 years ago. It is unlikely to be the last.' One elderly visitor was overheard to disagree: '*Homo sapiens* will wipe themselves out within the next 500 years', they maintained, 'and a lot of other species along with it.'

From the Happisburgh *Homo antecessor* to the *Homo heidelbergensis* 'rhino butchers' of Boxgrove in Sussex, to the *Homo neanderthalis* site of La Cotte, Jersey – where over 250,000 Neanderthal artefacts were uncovered – the visitor was introduced to palaeoarchaeological techniques, the mapping of Britain's changing coastline over a million years, and how pollen cores are used for dating and for tracking changes in vegetation and climate (Fig. 22). At the 500,000 year

mark a narrow gallery like an icy blue crevasse, where the wind howled, marked the Anglian glaciation.



Fig. 22 Reconstructing the remote past: ancient landscapes explained in the 'Britain: One Million Years of the Human Story' exhibition, Natural History Museum, London.

Animal bones, stone tools and other artefacts such as the 400,000 year old yew spear from Clacton, Essex, offered glimpses of life hundreds of thousands of years ago. The story of the return of the Neanderthals - following a 100,000 year absence when Britain was cut off from continental Europe by rising sea levels - and how they were joined 20,000 years later by *Homo sapiens*, was told through further artefacts, such as the skull cup from Gough's Cave, Somerset, and human remains including the earliest modern human jawbone, from Kents Cavern, Devon. The people were set, in this final gallery, within the context of the great herds they hunted: a digital reconstruction of wandering mammoths formed a video backdrop to displays of mammoth jaw and teeth, reindeer antler and the shoulder blade of a woolly rhinoceros.

The gallery was dominated by two striking life-size human figures – a reconstructed Neanderthal and a *Homo sapiens*: 'a small and stocky, friendly faced Neanderthal man and a taller, leaner, meaner-looking early modern human' ([www.newscientist.com/article/dn25041-britains-earliest-humanity-in-epic-](http://www.newscientist.com/article/dn25041-britains-earliest-humanity-in-epic-)



exhibition Accessed 5.2.19) (Fig. 23). These figures were quite profound to see and evoked a lot of thoughtfulness and comment from visitors. Advances such as decorated antler artwork, and sewing needles, which would have given a survival edge to those who used them, were shown.



*Fig. 23 A face from the past: a reconstructed Neanderthal in the exhibition 'Britain: One Million Years of the Human Story' at the Natural History Museum, London*

Overall the impressions left by the exhibition were of the longevity of human occupation, how people came and went in waves, how Neanderthals adapted again and again through technological responses to changing conditions, how *Homo sapiens* ultimately survived because of a greater capacity to adapt. The final exhibit about DNA drew a lot of interest from visitors, possibly because it linked in a very personal way the deep past with the present day. It was hard to disagree with the New Scientist's reviewer:

'The exhibition succeeds magnificently in pulling together all the strands of Britain's early human history, and in creating a real sense of how our ancestors lived. And despite the thousands of years that separate us, those reconstructed faces hold captivating pre-echoes of the humans we have become'.

(Shaoni Bhattacharya, 2014, [www.newscientist.com/article/dn25041-britains-earliest-humanity-in-epic-exhibition](http://www.newscientist.com/article/dn25041-britains-earliest-humanity-in-epic-exhibition) Accessed 1.2.19).

The exhibition was thoughtful, informative and atmospheric. Genuine artefacts, models, sound and video and especially the reconstructed humans made for compelling viewing (the figures are now on permanent display in the museum's Human Evolution gallery). The atmosphere of the exhibition, much of which was low-lit, was one of calm and thoughtful reflection. The sound effects – of wind blowing, a fire crackling, the strike of flint coming from a video on early flint-knapping – were unobtrusive and evocative.

It is hard to ascertain the extent to which visitors would associate the resourcefulness of our ancestors in adapting to a changing environment with the kinds of behavioural adaptations needed for dealing with climate change impacts today. It is likely that most people were not consciously looking for a connection. This relates to the point made at the start of Chapter 2, about the exceptional nature of modern-day anthropogenic climate change. To avoid misunderstanding it is important that museums acknowledge the potential risks in using archaeological material in climate change engagement. In the minds of visitors, the way that archaeological objects can demonstrate the adaptability of human communities could translate, unintentionally, into thinking that the climate crisis we face today is simply another chapter in the same story, rather than being unique in its anthropogenic origins.

Additionally, an emphasis on the resilience of past societies may suggest to visitors that adapting to a changing world is the only goal; they might miss the fact that the causes of anthropogenic climate change need urgently to be addressed too. Material would need to be used sensitively, as it may be difficult for museum audiences to relate the archaeological past to the present situation.

Leaving the 'One Million Years' exhibition, visitors were routed back towards the main museum galleries, but it was interesting to note that if they had taken a different turning they would have very quickly come across an exhibit called 'Climate Change Wall'. This exhibit, which can now be viewed in the museum's Darwin Centre, is an installation composed of screens of images and words, illustrating some of the aspects of climate change and its impacts on habitat loss. It has the feel of an art work, and to view it was slightly mesmerizing, with images and words slowly appearing and disappearing in a changing, mosaic-like format.

Ocean, polar and tropical environments are the three themes explored. Questions are posed, such as – what would happen if our ocean currents change? – how would you like a tropical Britain? – how hot is it going to get around here? – how fast are we losing our coral reefs? - where did all the woolly mammoths go? – with visitors invited to access further information through interactive touch-screens (Fig. 24).



*Fig. 24 Climate change questions: an interactive in the 'Climate Change Wall' exhibit at the Natural History Museum.*

'Climate Change Wall' seemed an attractive and engaging display, which gave pause for reflection. Being multi-layered, it appeared to be effective on a number of levels. If a visitor wanted to think about the images and their implications, then that was possible; if they wished to research further, then the information was readily available and easy to access. The emphasis seemed to be on habitat loss, rather than on climate change action as such.

At the Science Museum, the permanent exhibition 'Atmosphere: Exploring Climate Science' was heralded as 'the cutting-edge exhibition on the science of climate change in the world' (Cameron 2015b, 56). Plans for the gallery began following the appointment of Chris Rapley, formerly director of the British Antarctic Survey, as the museum's director. Rapley was keen to make sure the

museum stayed relevant and addressed contemporary issues such as climate change:

‘We don’t want to be seen as a place where exhibits from the past gradually gather dust. We want to use our collection to illuminate how we got where we are and help us to figure how we might progress in the best possible way in the future’ (Chris Rapley, quoted in Stephens 2008, 37).

A three-year programme of events, exhibitions and installations on the changing climate was held in connection to the opening of the gallery. A series of contemporary artworks was commissioned in association with the exhibition, and a climate change-related novel by former writer-in-residence Tony White was published. The museum’s website describes the gallery, which opened in 2010, as ‘an exciting place to make sense of the climate – the science of how it works, what it’s doing now and what it might do next’. The visitor is invited to step into ‘a virtual world, with its own oceans, land and atmosphere, and go back in time to discover key moments in the Earth’s multibillion-year climate history’, before being urged to ‘head for the future to wonder at the latest ideas for a low-carbon life’

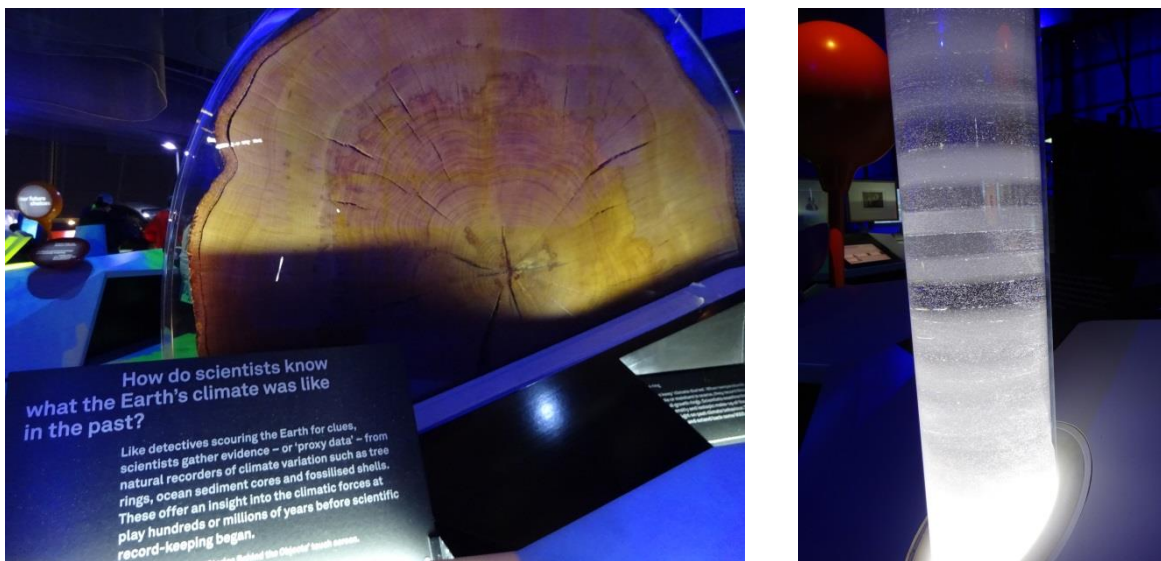
([www.sciencemuseum.org.uk/visitmuseum/Plan\\_your\\_visit/exhibitions/atmosphere](http://www.sciencemuseum.org.uk/visitmuseum/Plan_your_visit/exhibitions/atmosphere) Accessed 5.2.19).

Entering the gallery, the visitor is met with a cavernous, dimly-lit immersive space in which lighting and effects – the inner ‘atmosphere’ of the gallery – change according to the actions of fellow visitors at the gallery’s central interactive display.

Grouped around the central exhibit are five themed exhibits or zones, each presenting aspects of climate science. ‘Exploring the climate system’ explains how the climate works and what causes it to change, while ‘Exploring Earth’s energy balance’ focuses on the nature and importance of greenhouse gases. ‘Exploring the carbon cycle’ tracks carbon’s global pathways, showing how human action has affected these. ‘Exploring what might happen’ shows the role of science in explaining what’s happened and in helping us to imagine what lies ahead. Finally, ‘Exploring our future choices’ presents the options for tomorrow, again with the emphasis on science and technology.

The content of the gallery was developed through extensive research and engagement with scientists, including the Met Office. Within the five zones, objects from the museum's collections, along with some international loans, are used to illustrate the different themes. Visitors have many opportunities for both hands-on and 'hands off' involvement as they move around the gallery; there are plenty of state-of-the-art computer games and simulations but also space to observe and reflect and get to grips with the big ideas.

The objects on display include those illustrating the history of climate research, such as weather instruments and items relating to the pioneers of climate exploration. Tree rings, an authentic ice core and a section of a stalagmite exemplify how climate change is detected (Fig. 25). In the context of adaptation and mitigation, geo-engineering and alternative energy solutions, a hydrogen-powered car forms an eye-catching display.



*Fig. 25 Climate past: tree rings and an Antarctic ice core in the 'Atmosphere' gallery at the Science Museum, London.*

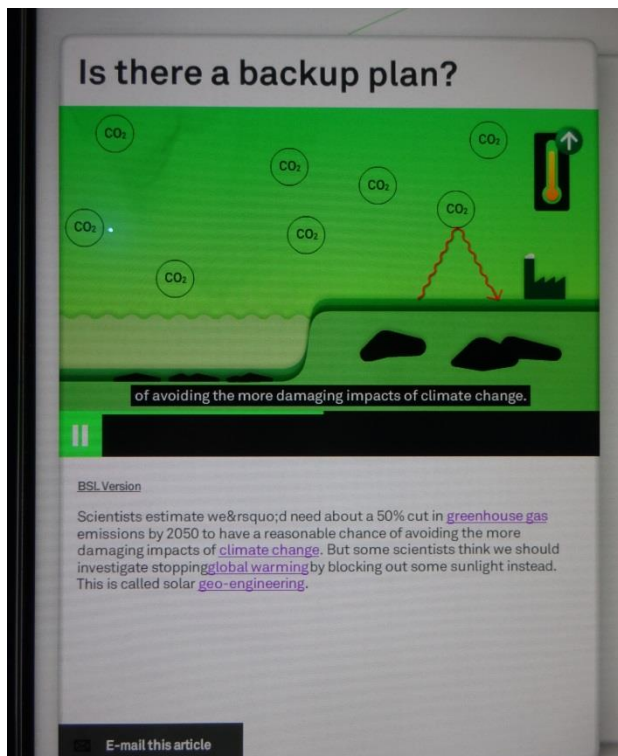
The overall impression of the gallery is that there is a lot to take in, and despite the division into zones it is not necessarily easy for the visitor to find their way around and follow the path they might feel they are 'meant' to be travelling. In one sense this doesn't matter, because each zone is discrete and they can all be looked at in any order; on the other hand a strong narrative thread – a feeling of

a story unfolding - would be a useful guide in negotiating such a complex topic. The beautiful design of the exhibition with its soft, glowing light is both highly attractive but also something of a distraction. As is often the case, the design and lay-out can only be fully appreciated on a quiet day; at busy times it is all too easy to be repelled rather than attracted from one zone to another because, as ever, the most interesting interactives are over-crowded.

One reviewer commented that even the division into zones was easy to miss, as the signage was confusing, and also that the target audience was difficult to identify: the website says the gallery is suitable for educational visits by secondary school-age children, but some of the games are aimed at a younger audience, while others appear to assume a high degree of prior knowledge (McAdam 2011, 45).

It would be interesting to investigate visitor responses to the 'Atmosphere' gallery, to gauge the extent to which people felt their understanding had increased. From an academic viewpoint, the gallery has attracted criticism for being overtly pro-science and pro-technological discovery in its treatment of the 'solutions' to climate change (Cameron 2015b, 56 – 75). The current running through the exhibition is undoubtedly one of scientific know-how providing the answers. 'Science shows us that...' and 'Science can show us how...' are messages often repeated as the visitor walks round (Fig. 26). But it is a museum about science, after all; it is playing to its strengths, and to the expectations of its visitors. A history museum might well talk about 'lessons from the past' in a similarly earnest and slightly didactic way.

It is hard, though, to disagree with Cameron's view that to cast science as the saviour of the threatened human race is over-simplistic and unhelpful, and that to promote the message that science is the only discipline capable of securing the future sustainability of the planet may be seriously misguided (Cameron 2015b, 59). However, Cameron writes as a museum academic. For actual museum users it may be more a question of what we expect science to do, and whether or not those expectations are realistic.



*Fig. 26 Climate future: does science have all the answers? Interactives in the 'Atmosphere' gallery, Science Museum, London*

The cultural geographer Hulme writes of a pervasive belief, across many areas of society, in the authority of science. He cites the example of a charity organisation responding to the human cost of climate change: implicit in their appeal to science as the basis for a lobbying campaign is the belief that science has the power to make 'definitive and universal statements about what is and what is not dangerous for people and societies and, ultimately, for the world'. Science, he continues, is used 'to justify claims not merely about how the world is... but about what is or is not desirable – about how the world should be' (Hulme 2009, 74).

The designers of the 'Atmosphere' gallery must have been faced with a real problem: how to communicate accurate science, and climate predictions and responses, while ensuring that the message they got across was not one of total gloom. It may be that to be a bit too earnest, nestling in the familiarities – at once

thrilling and comforting – of scientific endeavour and achievements, was a better option than to be overly portentous about climate change.

Cameron goes on to note that as well as deferring to the authority of science 'Atmosphere' further hedges the real issue by applying the historic Cartesian divide between science/nature and society/culture, when to break down those barriers would have been more useful and enlightening. Reference is indeed made in the exhibition to human-induced warming, but it is put across as a separate system from natural warming, Cameron observes, rather than the two systems being shown as entangled with each other (Cameron 2015b, 60). This is exemplified in the exhibit about the carbon cycle. Described as an active agent in the climate system, carbon becomes a passive element when climate change and humans are being discussed – something to be controlled through human intervention (Cameron 2015b, 67). The historic divide, in such examples, both informs the narrative of the exhibition and is reinforced by it.

The prevailing values that 'Atmosphere' communicates to visitors would seem to centre on an assertion that science and technology have the answers to the planet's future, and that climate science is factual and apolitical. An alternative, Cameron claims, would be to abandon the idea of 'big Nature' as something to be controlled, along with the notion of 'the atmosphere as an object of intervention' (Cameron 2015b, 71). The 'modern narratives' of climate change embedded within the Science Museum's exhibition could be re-fashioned entirely, if viewed from the perspective that climate change – and, crucially, its governance – comprises instead a vast collection of 'actants' such as economic theory, legislation, lifestyles, energy policy, ideology and beliefs, profit margins and nation states, all of which connect with and operate among earth processes and systems. It is a different vision entirely, one of 'nature-culture hybrids', that moves away from the traditional linear, cause and effect ways of thinking and projecting information:

'The coherence of these actants in climate change governance is predicated upon the assembled networks of human and nonhuman relations in processes of constituted action, rather than as the functional parts of nature that makes up Nature with a big N, and in this case the atmosphere with a big A, to which action is directed in a linear fashion. The atmosphere as a singular entity, as an organising logic in the governance



of climate change... is therefore no longer productive' (Cameron 2015b, 72).

However, the theoretical considerations can seem far removed from the actual museum visitor experience. It could be said that the real issue lies not in the message being conveyed, or that there is a message at all, rather that the experience itself is potentially one of mixed messages and hard-to-follow narrative threads. It caused a jolt, for example, to realise that the exhibition was partly funded by the oil company Shell: as of 2015 the Science Museum decided not to prolong its partnership with the oil giant, but the deal caused a lot of controversy among campaigners, who believed that Shell 'should never have been allowed to sponsor an exhibition on climate science' (Chris Garrard, quoted by Sullivan, 2015). Similarly, the design of the exhibition seems almost to obscure the urgency and potency of what is being conveyed. In this sense, it is not the content that is at fault so much as the packaging: the design is beautiful, but it is omnipresent. In the words of the reviewer mentioned above:

'With a more traditional curatorial deployment of the museum's fabulous collections, and a lighter touch with the design and technology, what a memorable experience 'Atmosphere' could have been' (McAdam 2011, 45).

The design lulls us into a false sense of security. It is hard to know whether this was, in fact, part of the point.

'Atmosphere: Exploring Climate Science', created to the highest standards and backed up by the best research, is an undeniably worthy, exciting, visually and intellectually stimulating climate exhibition. It works well in many ways, falls short in others, and because of this has attracted vigorous academic discourse. The fact that climate change is about so much more than climate science makes it a dauntingly difficult subject for museums to present. 'Atmosphere' demonstrates the many opportunities for museums to use their collections and knowledge to engage their audiences with climate change, but also the many challenges.

## 4.5 Conclusion

This chapter has examined the role of museums in relation to the current climate crisis. The discourse on public perception and understanding of climate change has been explored, and against this background the particular responsibilities and strengths of museums as climate change communicators have been analysed. Museums construct knowledge and hold vast repositories of information over different research areas. They are skilled in linking research with public understanding, and engaging their audiences in ways which are emotive and appeal to the imagination. They are multi-disciplinary; they help to dissolve the borders between nature and culture. They are perceived as trusted institutions. All these characteristics mean that museums have the potential to be safe and creative spaces for climate change engagement.

Some of the obstacles to effective and positive engagement have been identified. These include the challenges of going beyond awareness-raising, and beyond communicating the facts of climate change, to create affirming experiences that can somehow inspire hope in the face of such a complex and frightening topic. Finding museum objects that ‘speak’ of climate change is a challenge in itself. Avoiding overload, and the risk of sounding excessively didactic – ‘telling people what to think’ – are further issues for museums, as is the question of scale and how museums can present the global effects of climate change while remaining relevant to and embedded within the communities they serve.

Museums are adaptable. They possess great capacity for renewal and for re-imagining their role. The case studies presented in this chapter demonstrate a wide range of optimistic, energetic and successful initiatives around climate change engagement, which show that the challenges listed above are not insurmountable. There is a great distance between the high-tech ‘Atmosphere’ gallery at the Science Museum and the quirky, unusual and immensely well-received ‘pop-up’ Museum of Water, for example; but each has its voice, and its place. Even in the small sample presented here there seems to be a distinction between earlier, more science-based engagement in the 2000s, and some of the more recent initiatives of the 2010s which have benefited from and built on a wider public knowledge of climate science, to explore more deeply the effects of climate change and its implications for the future. Museum exhibitions and other

forms of engagement around climate change have gone beyond its 'communication'. They seem increasingly to emphasise personal choice, individual and collective action, sustainability, resilience, and important questions of social and environmental justice.

Museum archaeology is not present in the literature, in the way that, say, contemporary art is, or ethnography – such as Pacific Islands examples mentioned above. Ethnographic objects are archaeology in a broad sense, as indeed historic weather–recording instruments in the Science Museum may be; and it is true that prehistoric archaeology has featured in stories of climate change past, particularly the last Ice Age; but what seems to be absent in the discourse on museums and the current climate crisis, or still quite silent, is a specifically archaeological voice.

In conclusion, several important points can be made about museums and the challenges of climate change:

- There is no doubt that the urgency of climate breakdown has, in recent years, elicited a corresponding sense of urgency among many people in the museum sector. In 2009 Robert Janes commented:

‘With regard to the effects of climate change on human and non-human communities, it is time for museums to examine their priorities, the assumptions they make and their commitment towards the world in which they operate’ (Janes 2009, 13).

It is apparent that in the intervening years a range of museums, and museum-like institutions, have indeed begun to re-evaluate their mission in the context of their relevance to society and their responsibility to connect with real-world contemporary issues.

- Greater urgency has prompted increased energy. The case studies presented here demonstrate that museums are starting to look beyond their own walls to engage in networks, partnerships and collaborative projects, which reflect the fluid kind of approach and the greater level of connectivity that the climate crisis demands. Boundaries are crossed within institutions, with practitioners from different disciplines working

together, while scientists, academics, artists, educators and other external agents are increasingly linked together. Museums do not need to 'go it alone'; they can however be beacons, lighting the way. As Henry McGhie has observed:

'Climate change, and a raft of sustainability issues, present tremendous challenges to society, yet they also present a real-world opportunity for museums to realise their social potential. Combining their memory function with a broad humanism can contribute practically to securing a future that aims to be better for all, and for the natural environment' (McGhie 2019a, 27 – 8).

Creative and experimental thinking is enabling museums to become players in promoting public discourse around climate change.

- Museums are special learning places. Climate change, in the media and beyond, has prompted debate that covers the causes and immediate impacts but not necessarily people's responses in the longer term. Such debate is often contentious and confrontational: it can have a corrosive effect. By contrast, museums can offer a calm and supportive environment, both for practitioners and for visiting audiences of all age groups. In the words of Jennifer Newell, Libby Robin and Kirsten Wehner, in their introduction to 'Curating the Future':

'An alternative approach is to focus on how museums can create new communities over time by enabling people from different cultural and social positions to come more gently into relationship with each other, perhaps through the co-curation of objects, or using objects to stimulate events' (Newell et al. 2016, 3).

Museums invite their audiences to step back and reflect. They can inspire positive action, thus connecting visitors' personal feelings of fulfilment with the wider public benefit (McGhie 2019a, 24). They allow for complex issues like climate change to be addressed across a longer time frame, keeping alight the opportunities for knowledge and understanding when media interest wanes.

- Climate change is a global crisis that calls for new ways of thinking. Climate action will not necessarily be led from the top, at a national level. Museums as trusted institutions have a responsibility to act, and where possible to lead, in all questions relating to a just and sustainable future. They can still be balanced, they can still be a valuable platform for different voices to be heard, they can remain true to themselves and their mission; but they cannot remain indifferent.

Finally, this review has uncovered many climate change initiatives already emerging in museums. It has revealed a real passion among certain members of the sector for engaging with climate change and with each other, sharing expertise and experience across many disciplines to create greater understanding of the current crisis, and of how museum audiences can themselves become players in ensuring a viable future.

However, it may well be the case, as Robert Janes has forewarned, that much of the museum profession continues to operate 'at the margins of authentic engagement in societal issues and aspirations' (Janes 2016, 390). The extent to which the existence of climate change initiatives is apparent to the general museum visitor remains to be seen. In addition, with museum archaeology noticeably absent from the discourse, questions remain as to the efficacy of archaeological ideas and artefacts in communicating messages about climate change past and present. Accordingly, the remainder of this study addresses the potential gap between theory and practice in relation to climate change and museums, and seeks to probe further archaeology's particular role. The next chapter will outline a methodology for assessing the potential for archaeology in helping audiences to engage with climate change in a museum setting.

## *Chapter 5 A methodology for assessing the potential of museum archaeology in climate change initiatives*

### *5.1 Introduction: a two-fold methodology*

The preceding chapters have explored the theoretical considerations and some of the practical complexities of bringing together archaeology, museums and the communication of climate change. How does the discussion so far match up with the situation on the ground? How do museum practitioners view the connections made in this study, and what are the implications of their views and actions for museum audiences? What is the future for climate change within museum practice? Can museums as communicators, and as trusted and adaptable institutions, be regarded as active participants in modern climate change discourse? Specifically, how is the role of archaeology in the context of climate change communication viewed by those working in the museum sector?

In an attempt to answer these questions, a sample of UK museums was visited and interviews carried out with museum practitioners. The choice of museums was largely contingent on practical considerations of time and distance, but an attempt was made to find contrasting locations. The museums chosen were five museums in the South West of England and two national museums. Torquay Museum, the Royal Albert Memorial Museum in Exeter, Plymouth City Museum and Art Gallery, Bristol Museum and Art Gallery and the Museum of Somerset in Taunton were all selected. Visits to the National Museum of Wales in Cardiff and the British Museum, London, lent a wider perspective to the study.

The visits and interviews were carried out mostly during 2014 and 2015, with the Torquay Museum interview taking place in 2017. One additional participant, from Manchester Museum, was interviewed on the phone, also in 2017, with only a portion of the questions being used in this case. The names and short biographies of the participants will be given in the next chapter.

The methodology used to assess the potential for museum archaeology to be used in climate change communication was two-fold:

1. The selected museums were visited, and empirical evidence gathered using an inductive approach. This evidence included observations on the gallery lay-out and content, and on how visitors were engaging with the displays, as well as the general 'feel' of the exhibits; the observations were noted down and later analysed, with a reflective commentary added for each visit. Photographs were taken to support the written record.

An attempt was made to select aspects of the displays that could be re-imagined to suggest a greater concern with issues of environmental sustainability and climate change. Natural history, geology, science and social history galleries were all included, along with archaeology, within this part of the assessment.

2. For each museum, a structured interview was conducted with a member of the curatorial staff. In the majority of cases those interviewed were archaeologists. Careful consideration was given to the choice of questions. The responses were later transcribed and a qualitative analysis undertaken.

The aim was to combine the results of these two parts of the investigation to gain an overview of how museum professionals view the role of museums, and especially the role of their archaeological collections, in climate change communication.

This chapter will make reference to qualitative research methodology, also known as interpretative research, in the social sciences. Particular attention will be given to the interview process. How the interviews were conducted and the thinking behind the choice of questions will be outlined. The chapter will conclude with an explanation of how the results were to be analysed.

## 5.2 *The interview process*

### 5.2.1 *Integrating qualitative research techniques from the social sciences*

Within the context of social sciences research, an interview can be defined as ‘a meeting of two persons to exchange information and ideas through questions and responses, resulting in communication and joint construction of meaning about a particular topic’ (Janesick 2015, 54).

In whatever discipline, and for whatever purpose it is being carried out, an interview has a constructivist element: it is an active and creative exchange, a process whereby the interviewer and interviewee through their relationship produce knowledge in a ‘conversational relation’ – knowledge which is ‘contextual, linguistic, narrative and pragmatic’ (Kvale and Brinkmann 2009, 17 – 8). Each interviewing relationship can be said to be individually crafted according to the personalities, experiences and expectations of those taking part (see for example Holstein and Gubrium 1995, 7 – 19; Seidman 2013, 97). An interview is also a contemplative undertaking (Janesick 2015, 53 – 4), requiring the imagination to envisage beforehand how the exchange will turn out: accordingly, the interview guide – or list of proposed questions – was sent in advance to the museums practitioners who had accepted the invitation to be interviewed; it was hoped that this would enable them to give sufficient thought to their responses and to be more active participants in the event.

Social sciences research acknowledges that in conducting an interview different kinds of questions are relied on for eliciting various responses (Janesick 2015, 54). These different types can include introductory and follow-up questions, big ‘umbrella’ questions to gauge the broader picture, probing questions, direct and indirect questions, those which clarify a point or ask for more in-depth comment on a particular experience, and closing questions where the interviewer might ask if the participant has anything to add that hasn’t been covered (Kvale and Brinkmann 2009, 134 – 5; Janesick 2015, 56).

For this study, it was decided from the start that open-ended questions would be the most appropriate – in other words, questions that left the participant free to respond in whatever way they chose (Magnusson and Maracek 2015, 47). Such



questions work well to produce full, rich responses while at the same time being specific enough to allow for comparison and analysis. In the absence of predetermined categories or scales in which to fit the responses, the data collected would be qualitative by nature (Cresswell and Plano-Clark 2007, 176). The aim was to encourage participants to provide both information and opinions in a controlled but unrestricted way. Qualitative research has been described as 'interpretative research', a term that is at once more precise and more descriptive, focusing as it does on how both the interviewer and interviewee are engaged in making sense of events and experiences (Magnusson and Maracek 2015, 1 – 2 ).

It is part of the process in qualitative or interpretative research to accept that the participant may wish to alter the interview questions as needed (Janesick 2015, 59). When the questions were sent, in advance of the interviews, participants were invited to formulate questions or prepare comments of their own, if they wished. It was felt that any extra insights gained from such questions or comments would enhance the final analysis. It was believed to be important to keep a balance between respecting the viewpoint of the participant and not missing opportunities to ask difficult questions about what could be construed as a controversial topic (Seidman 2013, 99). With this kind of loosely structured interview, it has been suggested that the interviewer should not feel constricted to adhere strictly to the specific order of the original questions, or sequence of topics, since to be adaptable around the order – indeed the nature – of the questions can make the conversation flow more easily from one topic to another (Magnusson and Maracek 2015, 47). However, in the event the participants were happy to stick to the order of questions originally proposed.

Since the aim was to understand the experiences of the participants as seen from their own perspective, and to build on the meaning they constructed from those experiences, the interviews had what could be termed a phenomenological aspect (see Seidman 2013, 14 – 16). An interview also has a 'performative' element (see Berg 2009, 128-146), just as a museum's engagement with its audience can be said to be performative (see Chapter 3). Both reflexivity and a sense of dialogue are acknowledged to be key aspects of an effective interview (Sarantakos 2005, 270), and thus care was taken to develop a rapport with the

participants. It was important to ensure they were comfortable talking around a potentially difficult subject, and it was accepted that lulls in the conversation might be a sign that participants were simply mulling over the question. It was important too to be prepared to gauge the nature of the rapport as the conversation progressed, and not let distraction or distortion enter into the views under discussion (Seidman 2013, 99; Janesick 2015, 62).

Although the dialogue had a structure, the aim was to encourage the participants to talk in their own words without being constrained by messages that were inadvertently being communicated about what they were 'expected' to say: basically the aim for the interview was for it to be conversational and relaxed (Magnusson and Maracek 2015, 46).

The need to avoid leading questions or make leading remarks was acknowledged. An interviewer needs to be aware of the different contexts from which they and their interviewee are speaking. These may be cultural, social or knowledge-based, and are tied up with people's identity and the values they hold (Bednarek-Gilland 2015, 5). In this case it was reasonable to believe that interviewer and interviewee shared a common interest in museums and archaeology, but it was important not just to assume that every participant held the same set of values or thought in the same way (Janesick 2015, 60). This was especially important as climate change is an emotive topic which can provoke impassioned responses from people.

To conclude, it was important to allow participants to extend their responses beyond the formal interview process, thus contributing to a robust and fruitful conversation. Sharing information about projects they were currently engaged in, without getting side-tracked, was helpful in establishing a connection and building trust (Janesick 2015, 60). In turn, this enhanced the enjoyment of the exchange and the eventual outcome of the day.

### *5.2.2 Conducting the interviews*

The interview participants were identified from the museums' websites and through personal contacts. An initial enquiry was followed by a further email with the proposed questions attached; as mentioned above, participants were invited to add further questions of their own, if they wished to do so. Once the interview had been arranged, a phone call was made nearer the time to confirm the date and time.

When beginning each interview, the participant was invited first to say something about their background and their role within the museum. This led quite naturally to the first of the interview questions, which concerned the nature of the museum collections themselves. The questions proceeded from known, familiar ground towards questions that might provoke more concern and the need for deeper reflection.

The priority was to establish clearly the opinions of the participants in relation to museums, archaeology and climate change. The interview process was, therefore, partly about gathering data on the individual museums but mainly about trying to identify whether people had previously thought through issues of climate change and archaeology. The responses would provide a more specific data set than the subjective impressions gathered from first-hand observations in the museum galleries. Each would provide the context for the other.

Even before conducting the interviews, it was important to think how conclusions would be drawn from the data acquired. For a thorough analysis to be undertaken, as much information as possible needed to be gained. A good research design is structured to allow for a high degree of confidence in the solidity of the conclusions drawn from the data (Bechhofer and Paterson 2009, 9); careful consideration was thus given to the kinds of information required, as well as to the order and phrasing of the questions.

How a set of questions is designed will affect the outcome, influencing choices around how the data will be processed (Bechhofer and Paterson 2009, 78). It was important, therefore, to bear in mind the distinction between different kinds of question: factual questions, such as those relating to the organisation of exhibition space within the museum; and questions which aimed to establish the

opinions of the participants. Scales or quantities were deliberately not assigned to any of the questions, as it was felt that this would limit people's responses; a strength of a qualitative approach is that it encourages and enables the participants' stories, worldviews, memories and beliefs to come to the fore (Magnusson and Maracek 2015, 2); and to impose restrictions on what people had to say would not have been helpful. It was important to give participants the freedom to think creatively and laterally around the topic.

The interviews were recorded, using a digital recorder; this allowed for a more natural conversation with the participant. A few brief written notes were made during the interview, which took the pressure off by allowing for a few pauses in the dialogue. The interviews were transcribed as soon as possible after the event, with the intention of including the full transcripts as an appendix to this study.

### *5.2.3 Choice of interview questions*

The interview guide, or list of questions, is essentially a script that provides a structure for the ensuing dialogue. It can consist simply of a list of topics to be covered, or it can be a sequence of carefully worded questions (Kvale and Brinkmann 2009, 130). For this study, the questions were deliberately constructed to form a sequence, and although there were sometimes diversions during the course of the interview, such as when the participant elaborated on a particular theme, an attempt was always made to steer the conversation back to the prepared list.

The interview guide consisted of ten questions, divided into two sections. Questions 1 to 4 concerned the situation as it exists currently within each of the museums under study. These questions aimed to assess the nature and content of the museum's collections, to find out about the engagement that occurs in the form of education and outreach, to understand the decision-making process involved in the planning of exhibitions, and to discover how the museum acquires feedback from its visitors.

Questions 5 to 10 were concerned less with actualities and more with potential. The aim of these questions was to establish what the participants thought of engaging with climate change – both historic and current – in the context of their

museums. Their views on the creative opportunities for such engagement were investigated, as well as the perceived constraints. The final question was a broader enquiry as to the role of museums in relation to climate change.

The questions were as follows:

*Questions on the museum's archaeology collections and displays, the planning of exhibitions, visitor engagement and response*

1. Please could you describe the nature and range of the museum's archaeological collections?
2. Please could you outline the organisation and content of the museum's archaeology displays, exhibitions and other archaeology-related activities, including outreach? Which aspects, in your opinion, work best for visitors?
3. Please could you explain the decision-making process involved in the planning of new exhibitions and engagement, including who is responsible at each stage of the process?
4. Are there ways of gauging the effectiveness of an exhibition, event or activity in terms of how visitors respond? Do you gather feedback from visitors?

*Questions relating to the opportunities for communicating climate change using archaeological collections*

5. What do you see as the opportunities for interpretation of a multi-disciplinary nature - for example an exhibition which combines archaeological or historical artefacts with objects from ethnographic, natural history or art collections?
6. Can you envisage an exhibition about climate change in your museum? How would it look? What would be its main aspects, and how would new technologies be incorporated to enhance visitors' experience of such a display?

7. What do you see as the major challenges and constraints in presenting climate change as a topic?
8. Can you imagine how an exhibition about climate change might link stories of climate and environmental change in the past with people's concerns about climate change today? How do you think visitors would respond to such an exhibition?
9. What opportunities can you envisage for using archaeological objects from your collections in an exhibition about climate change? Can you think of specific examples?

*And finally...*

10. Climate change can be seen as a political issue. In your opinion, do museums have a responsibility to be contentious? Should every museum be addressing climate change?

Some supplementary questions were also devised, to be held in reserve; these were to be used to further develop the conversation when it seemed appropriate, and to stimulate more detailed discussion on especial points of interest. In the event, some or all of these questions were used for each of the interviews: they were either inserted into the dialogue where it seemed to come naturally, or asked at the end. These supplementary questions covered issues such as the flexibility of the exhibition space, how school groups and other visiting groups are organised within the museum, and whether there were opportunities within the education programme for engaging with climate change.

At the conclusion of the interviews the participants were thanked, and a follow-up email thanked them again for their time and interest in the research.

#### *5.2.4 Analysing the results*

Once the interviews were transcribed the intention was that they would become the focus of a discussion on archaeology, museums and climate change engagement. Guided by the nature of the questions, the participants talked mainly about their own museum, basing their responses on their particular experience, which was the idea; but there was the opportunity in the final question to think further about the role and responsibility of museums generally around the topic of climate change.

Rather than a finished entity, transcripts can be thought of as a continuation of the conversation that began in the interview situation (Kvale and Brinkmann 2009, 193); they are part of an unfolding narrative, rather than an end in themselves. Their examination would, it was thought, act as a bridge between the interview process and the eventual conclusions – the story this research aims to tell.

In analysing the transcripts, the aim was, firstly, to compare and contrast the responses of the different participants; secondly, to combine the data gathered through the interview process with personal reflections and literature-based research; and finally to draw relevant conclusions for all museums, on the potential for using archaeology in climate change engagement. To allow for contrasting opinions to surface, the interview responses were to be examined question by question, across the different participants.

As discussed above, the data gathered through the interviews was always going to be qualitative in nature. However, it became apparent during its analysis that a small quantitative element could usefully be included; this would take the form of 'word mining', to be represented graphically through 'word clouds'. So although mainly qualitative, the study can conceivably be defined as a mixed methods research enquiry (Cresswell and Plano-Clark 2007, 2).

### **5.3 Conclusion**

This chapter has presented a simple, two-fold methodology for investigating at grass-roots level the potential for museums to engage with climate change, in particular with reference to their archaeological collections. Observations made

using an inductive approach while visiting a sample of museums were to be integrated into an analysis of a series of structured interviews, carried out on location with museum staff. This was to be a qualitative study, with a minor quantitative element.

Research in the social sciences has produced a wealth of literature relating to the interview process. It was clear that to carry out structured interviews would be to engage in a rewarding and fruitful activity. The creative dialogue which, it was hoped, would ensue was bound to generate plenty of material for analysis.

In planning and carrying out the interviews, the aim was to conduct a controlled conversation that was also not too restricting and not too formal. It was considered important that the participants would have the space to get their own views across in a frank and unrestricted manner, and to feel at ease with what is considered a difficult topic.

The interview guide was structured such that the conversation would proceed from the known to the unknown. Discussion of the situation as it exists now would lead naturally to a consideration of what could be done. The questions were open-ended, in order to elicit as much information as possible from people's responses; the dialogue was intended to be a two-way process, to better assess what creative opportunities might exist. Following transcription of the interviews, the data was to be analysed and combined with the empirical observations made in the museums.

The next two chapters cover the analysis and discussion of the data. Chapter 6 will focus on the museums themselves, presenting observations and reflections; in Chapter 7 data gathered through the interviews will be analysed and discussed. Connections between museum archaeology and climate change communication will be sought.



## *Chapter 6 Analysis and discussion: observations and assessment*

### *6.1 Introduction: from theory to reality*

Following on from an examination, in Chapters 3 and 4, of the academic discourse linking archaeology, museums and the communication of climate change, these next two chapters will address the actual experience of visitors and museum practitioners. An analysis and discussion of the interview responses will be presented in the next chapter, while this current chapter focuses on the character and content of the museums themselves.

As outlined in Chapter 5, observations were made and interviews carried out at five museums in the South West of England, where the author of this study is based; and, to gain an additional perspective, at two national museums. A further museum in the South West was approached, but at the time was unable to take part in the study. The specific criteria for the choice of museums in the South West of England were as follows:

- Museums with a range and diversity of collections
- Museums with significant collections of archaeology
- Accredited museums under the Accreditation Scheme for Museums and Galleries in the UK (<https://www.artscouncil.org.uk/supporting-arts-museums-and-libraries/uk-museum-accreditation-scheme>); established, historic institutions
- A set of museums each with their own character, with contrasting methods for presenting their collections to their visitor audiences

The origins of the museums in the study pre-date the emergence of archaeology as a separate discipline. In each case, their earliest material was collected by natural history or antiquarian societies, or by individual gentleman scholars, whose collections were later donated to the museum. Individual collectors did not necessarily focus on one area of study but embraced many areas of knowledge. The example of the Royal Albert Memorial Museum, Exeter, is typical. Here, the earliest collections were donated by the Devon and Exeter

Institution, founded in 1813, whose members travelled the world amassing natural history specimens, ethnographic objects and antiquities. Their donations were complemented throughout the nineteenth century and the first half of the twentieth by a variety of gifts, bequests to the museum and purchases. The nature of collecting has of course changed considerably since the RAMM's foundation. International treaties forbid the import of protected natural history specimens; and, in relation to archaeology, legislation and changing tastes led the museum to restrict itself, from the middle of the twentieth century, to collecting the archaeology of Devon only (<https://rammuseum.org.uk/collections/collectors/> Accessed 1.4.2020).

Similarly, a substantial proportion of the items held by the Museum of Somerset in Taunton were collected by the Somerset Archaeological and Natural History Society, founded in 1849; while the origins of Bristol Museum and Art Gallery lie in the foundation, in 1823, of the Bristol Institution for the Advancement of Science and Art. Torquay Museum, likewise, was founded by the Torquay Natural History Society; it is unusual in that unlike the other museums it was not taken over by the local authority, and is run to this day by a charitable trust. Like the RAMM for its World Cultures collection, or Plymouth for its Cottonian Collection of art, Torquay Museum has been awarded Designated status by the Arts Council (see <https://www.artscouncil.org.uk/supporting-collections-and-archives/designation-scheme> Accessed 1.4.20) for its Quaternary Cave Collection and Archive. The significance of the Quaternary cave material, investigated in the 1850s and 1860s by William Pengelly and others, links with the discussion in Chapter 3 about the interest in prehistory, and in the development of human society, that emerged in the latter half of the nineteenth century; in turn this connects with how museums began to reconsider the place of prehistoric artefacts within their collections and displays. The cave investigations also contributed to the advancement of scientific methods for archaeological excavation. This new energy and curiosity about the study of prehistory were important factors in the launch of archaeology as an independent academic discipline and profession by the end of the nineteenth century.

As explained in Chapter 5, it was decided that to use an inductive approach to the observation and assessment of the museums was the most appropriate method for this study. Such an approach offered the opportunity to enter more fully into the experience of being a museum visitor. As a result, the descriptions in this chapter are intentionally subjective and impressionistic. An inductive approach provided openings for imaginative thought on how the museums present themselves, and the opportunity to assess the extent to which the theory of museology plays out in real life, from the point of view of museum audiences.

Importantly, to view the galleries from the triple perspectives of interested visitor, observer of visitors and researcher, offered valuable space for thinking how museums could engage their audiences with climate change in positive and affirming ways. In particular, the opportunity to enjoy the galleries subjectively, from a visitor perspective, was a way of bringing to life the debates around the visitor experience discussed in Chapter 3. It created a feeling of empathy with other visitors and an opportunity to become immersed in a relaxed way in whatever impressions presented themselves. A flexible and empirical approach to gathering ideas could then set the agenda for further questioning and reflection, once the visit was over.

This chapter consists of descriptions of the seven museums and observations made for each visit. Extra information from the museums' websites and literature has been included where appropriate. As noted above, the museums are all well-established, historic institutions; with the exception of the British Museum, with its eighteenth century origins, all were founded in the nineteenth or early twentieth centuries. Apart from Torquay Museum, which is a charitable foundation, the South West museums are all publicly funded. A summary is given below (Fig. 27).

Museum	Founding date	Content of collections/galleries	No. of visitors per year
Torquay Museum	1844	Natural history, geology, prehistoric archaeology, social history, literary history	25,497 (2017-18)
Royal Albert Memorial Museum, Exeter	1868	Natural history, geology, archaeology, local history, world cultures, fine art, decorative art	253,847 (2018)
Plymouth City Museum and Art Gallery	1907	Natural history, geology, archaeology, world cultures, maritime and local history, fine art, decorative art	60,065 (2016-17)
Bristol Museum and Art Gallery	1823	Natural history, geology, archaeology, fine art, decorative art	373,797 (2017-18)
Museum of Somerset, Taunton	1874	Natural history, geology, world cultures, archaeology, medieval and local history, military history, decorative art	74,630 (2018)
British Museum	1753	World history and, archaeology, fine art, decorative art	5,823,000 (2017-18)
National Museum of Wales, Cardiff	1905	Natural history, geology, archaeology, fine art, decorative art	524,417 (2017-18)

*Fig. 27 Summary of the museums visited.*

This chapter is structured so that for each museum a descriptive overview is given, followed by a reflective commentary on one or more aspects of the visit. An attempt will be made to assess the particular strengths and qualities of the exhibits viewed, and to suggest links with climate change communication. For purposes of analysis the museums are arranged as follows: firstly, the three Devon museums – Torquay, Exeter and Plymouth - are considered, in order of age; secondly the other two South West museums – Bristol and Taunton – once more in order of age; and finally, again in age order, the two nationals.

## 6.2 Museums in the South West of England

### 6.2.1 Torquay Museum

<http://www.torquaymuseum.org>



#### Overview

Torquay Museum is the oldest museum in Devon. Housed in a grand, late Victorian building, the museum is run by the Torbay Museums Trust, which also manages Torre Abbey and Brixham Heritage Museum. As a registered charity, the museum receives only limited funding, so despite housing collections of national and international importance is heavily dependent on admission charges and donations for its continued existence. Torquay Museum is situated in the English Riviera, a UNESCO Global Geopark.

Founded in 1844 by the Torquay Natural History Society, the original collections were based around those of the geologist and archaeologist William Pengelly. It was Pengelly's excavations at the nearby cave site of Kents Cavern which demonstrated for the first time, using the new technique of stratigraphy, the co-existence of Stone Age humans alongside extinct fauna such as the woolly rhinoceros and cave lion (see above, and Chapter 3).

Pengelly's collections from Kents Cavern and the cave site at Buckfastleigh, Devon, are still housed in the museum, along with later finds of megafauna, human remains and Palaeolithic artefacts from the same sites. The collections remain of international significance. They include a fragment of jawbone of *Homo sapiens*, excavated in 1927 and dated to over 40,000 years of age, the earliest evidence for modern humans in north-west Europe (Fig. 28).



*Fig. 28 The oldest ancestor: the 40,000 year old jawbone from Kents Cavern, on display at Torquay Museum (Photo Philip Collins).*

Along with the cave material the museum houses further collections of geology and natural history, from Torbay and around the world. There are significant social history and literary collections: Pengelly's daughter was a collector of autographs and letters, and these, including some from Jane Austen, remain in the museum. There is an important collection relating to Agatha Christie. A collection of Devon farm furniture was acquired in the 1990s, and there is also an Egyptology collection.

Upstairs from the impressive entrance hall and beyond a new lecture hall and temporary exhibitions space, the visitor reaches the permanent galleries. The Time Ark gallery presents the geology of Devon through time, tracing the changes over 400 million years from the Devonian period right up to the time of the Ice Ages and the occupation of Kents Cavern. Early human artefacts such as Neanderthal tools join the fossils and rocks on display. The story continues into the present era, with an ecology display illustrating various habitats, from beach to estuary, woodland to garden.

In the Ancestors gallery the story of the human occupation of the region, through many millennia of changing climate and landscape, is told. Remains of mammoth, lion, scimitar cat and cave bear are displayed alongside human fossils and artefacts, from the Neanderthals who first occupied Kents Cavern through to modern humans.

On the top floor of the building the Explorers gallery invites the visitor to follow the journeys of Torquay's explorers, from discoveries made in the Antarctic to the rainforests of Brazil, to excavations of ancient Egyptian sites.

### *Reflective commentary*

Given that Torquay Museum is the smallest museum in the study the unique collections it houses are truly amazing. From its scientific origins the museum seems to have developed into a broader, more typical local museum; however there is a sense that it remains true to its origins as principally a collection of geology, palaeontology and prehistoric archaeology. Its emphasis on natural sciences and the remote human past – brought together in the Kents Cavern material - would seem to link it very closely to climate change as a theme.

In the ecology section of the Time Ark gallery, climate change does get a mention: in a set of dioramas there is one on the changing climate and its effect on humans and wildlife, including present-day climate change alongside past changes, and the role of carbon emissions. Perhaps the most 'fun' exhibit in the gallery is an installation designed and built by the multi-media arts company Forkbeard Fantasy - self-styled 'architects of humour and invention'

(<http://www.forkbeardfantasy.co.uk> Accessed 1.2.19). Visitors are able to walk through an abstract representation of a rock arch based on a real feature seen from nearby Torre Abbey Sands, and discover how rocks have influenced the lives of people in Torquay. The sea is projected onto the floor and there are accompanying sound effects. The rocks themselves ‘speak’ to you, telling their stories. It is an entertaining, informative and imaginative interpretation of what could be a remote and difficult subject, and appeals to visitors of all ages.

Another exhibit designed by Forkbeard Fantasy also attracts a lot of attention: a hands-on ‘Forensics CSI table’ in the Ancestors gallery, built to re-display the 40,000 year old human jawbone (Fig. 29). Here, viewing video animations, peering down fake microscopes and listening to oral accounts, visitors can find out how scientists from William Pengelly through to Professor Chris Stringer of the Natural History Museum investigate prehistoric bones and other finds.



*Fig. 29 Investigating ancient bones: the ‘CSI table’ in the Ancestors gallery at Torquay Museum (Photo Philip Collins).*

What makes a visit to Torquay Museum so fascinating is partly, of course, the amazing artefacts and stories, linked as they are to Torquay’s own people and history; but also the way it feels like it remains true – through its imaginative modern presentations of scientific material - to the spirit of Pengelly and other nineteenth century scholars who placed such value on scientific knowledge and scientific techniques. This emphasis on science is a reminder that a museum’s



role is not solely about collecting beautiful and captivating objects, but about using these objects to increase our understanding of how the world works. Museum objects can shed light on the nature-culture interactions that have taken place across many millennia, as human communities responded to a constantly changing environment. Climate change engagement sits very naturally within such a framework, although it is important to reiterate the point made in Chapter 4, in the context of the 'Britain: One Million Years of the Human Story' exhibition, about the risks inherent in using archaeological stories of adaptation in relation to modern climate change, which could lead to mixed messages about the exceptional nature of today's crisis.

Torquay Museum seems to be unusual for a local museum in its global outlook and connections. This can be accounted for partly by its long history of explorers and their journeys worldwide, and partly by its situation in a UNESCO Geopark. The existence of a global outlook highlights the issue faced by museums of identifying from local collections artefacts which can be used to communicate climate change as a worldwide phenomenon.

Nearby Kents Cavern (<http://www.kents-cavern.co.uk> Accessed 1.2.19), although not visited specifically for this research, is worth a mention since it relates directly to one of the major collections of Torquay Museum. Visitors can take a guided tour through the caves to discover their geology and formation, and the longevity of their human occupation from the first traces of *Homo heidelbergensis* through the various glacial and interglacial periods of the Pleistocene up till the arrival of modern humans and on into historic times. The huge timescales involved are indeed hard to visualise but point to a particular contribution that archaeology can make in climate change engagement.

## 6.2.2 *The Royal Albert Memorial Museum, Exeter*

<http://rammuseum.org.uk>



### *Overview*

The Royal Albert Memorial Museum in Exeter was founded in 1868. The museum, built of sandstone in the Gothic Revival style, has undergone several periods of extension and development since its foundation, with a major redevelopment taking place between 2007 and 2011. Costing £24 million, including nearly £10 million from the Heritage Lottery Fund, the redevelopment covered repair to the fabric of the building, an extension, refurbishment and the redisplay of the collections. A purpose-built off-site collections store, known as the Ark, was also built. The museum reopened in December 2011 and has since received several awards; in 2012 it was named UK's Museum of the Year by the Art Fund charity, cited for its 'ambition and imagination'.

The RAMM is owned and funded by Exeter City Council. In partnership with Plymouth City Museum and Art Gallery, the RAMM receives additional funding as a Major Partner Museum (MPM) under the Arts Council England administered programme of strategic investment. It has significant and world-class collections in natural history, geology, archaeology, anthropology and fine art. Altogether over one million objects are held by the museum, a small proportion of which are on permanent display. The museum advertises itself as 'Home to a million thoughts'.

The galleries tell the story of Exeter and Devon from prehistory through to the present day. In the Case Histories and Finders Keepers galleries, the history of collectors and collecting is illustrated. The World Cultures gallery and the various natural history displays are deliberately set within the context of global exploration

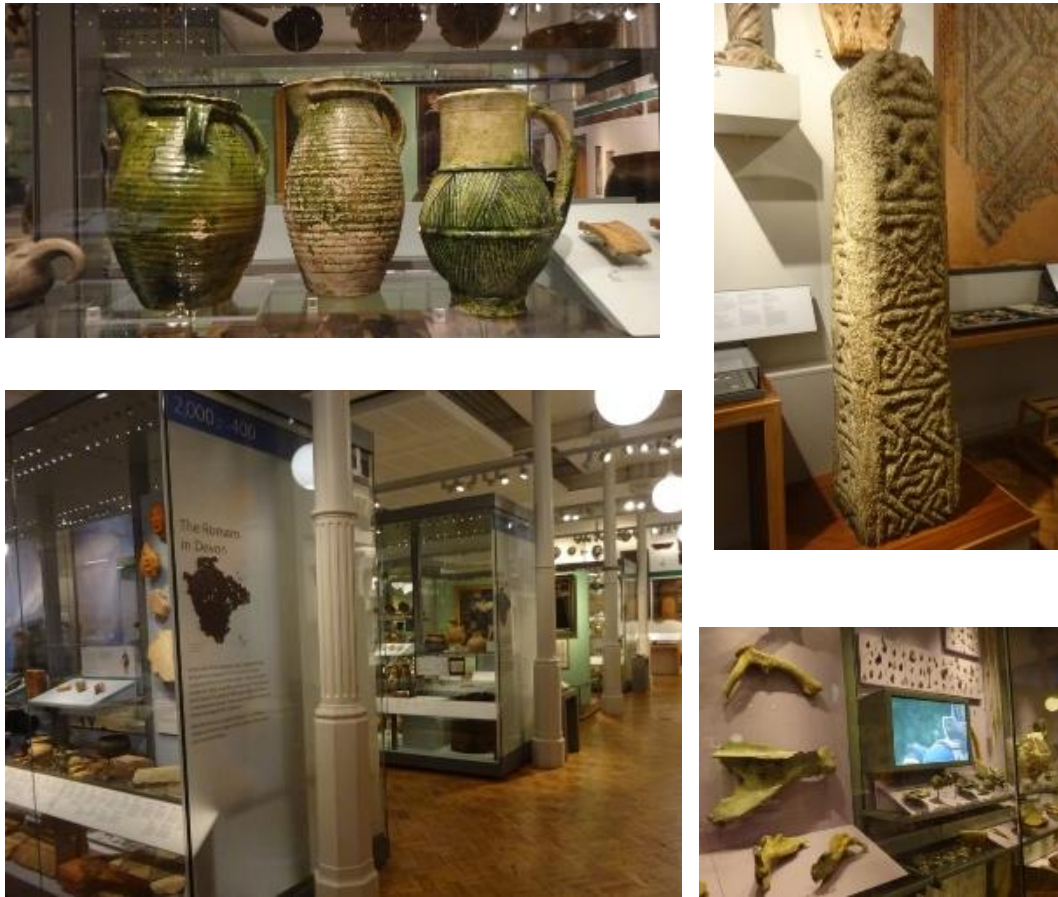
in the eighteenth and nineteenth centuries, so that ethical issues of collecting and acquisition are alluded to. The Down to Earth gallery houses the geology display, taking the story back to 400 million years ago.

Local archaeology can be seen in the Making History gallery, the largest in the museum. Archaeological objects are combined with items from the fine art, decorative art and costumes collections to trace the story from prehistory, through the Roman and medieval eras, to Exeter's 'Golden Age' of the eighteenth century; nineteenth century craft and industry and aspects of contemporary Exeter and Devon are also covered. The appearance of this gallery is fairly traditional, with objects arranged in rows of cases (Fig. 30). There are two ways into the gallery, so visitors can start viewing from either end: entering from the geology gallery, they can start with prehistory and travel through to the modern era; alternatively, beginning at the other end, they 'step into the story' and travel back in time 'to discover how people have left their mark on Devon over the centuries'. The gallery includes screen-based interactives, alongside the cases of objects. Archaeology exhibits can also be found in the Ancient Worlds and Egyptian Tomb galleries.

The museum houses two large temporary exhibition spaces and runs a varied programme of exhibitions and activities, including family events, concerts, lectures and talks.

### *Reflective commentary*

The RAMM is a regional museum with the spirit of adventure and curiosity at its heart. It focuses on Exeter's place in Devon, and Devon's place in the world. It harks back to the age of collecting and in some ways feels very much a museum about museums, a collection of collectors. The way that natural and cultural objects are displayed side by side in some of the galleries illustrates the opportunities museums have for crossing the nature-culture divide and embedding objects more creatively in particular storylines, in this case the story of curiosity and collecting.



*Fig. 30 A traditional approach: archaeology on display in the Making History gallery at RAMM, Exeter.*

Similar to Torquay, but on a larger scale, the impression is of a wonderful array of beautiful and exciting objects and artefacts, each with its own tale to tell. These are displayed both for their own sake but also, of especial relevance here, to illustrate narratives of change. Entering the Making History display from the direction of the Down to Earth gallery, the visitor is already taking in ideas of altered environments over huge timescales. For example, a wide-screen audio-visual presentation on geology captures visitors' attention in an engaging way, providing a contrast to the static displays of rocks and fossils.

Timescales are further illustrated by a display of Palaeolithic handaxes, from Broom, near Axminster, which represents a span of 60,000 years (Fig. 31). Climate change is mentioned in the text of a case of objects showing how people adapted – 'Survival in the woods' – at the end of the Ice Ages. Indirectly, changing

environments are indicated by the 2,400 year old carved wooden figure from Kingsteignton, preserved in waterlogged conditions and thought to be a votive offering, indicative of a belief in the sacredness of rivers, bogs and other watery places (Fig. 32); this shows how an object can represent human-nature 'entanglements' far beyond the merely physical, evoking as it does a whole belief system.

A text panel describing the end of Roman Exeter also evokes change, informing the visitor that 'farmyards and fields' could have been seen within the walls, 'where houses and shops once stood'. Elsewhere, an eighteenth century weathervane in the form of a wyvern is a directly weather-related object. At the far end of the gallery the many rapid changes to society in recent times are described, and climate change is mentioned as a challenge.

The text is informative, but it is always questionable whether too much text detracts from the objects themselves, and also whether people do actually read it. This raises the issue of whether and how objects alone, with minimum labelling or interpretation, could be used to communicate climate change stories. In turn this connects with the challenges of choosing which objects to use, and whether narratives of change in the past are relevant or comparable to the situation today, as people seek to respond to the current climate emergency.

It is worth mentioning the 'soundscape' of the Making History gallery. Standing at the 'modern' end of the gallery the visitor can hear a quiet blend of sounds, from the occasional air raid siren and recordings of the spoken word – people's memories of the Exeter blitz – through a rendition of 'I do like to be beside the seaside' and the tinkle of clock chimes, and from the furthest end of the gallery the chink of stone from a video demonstrating the techniques of flint-knapping. The overall effect is thought-provoking and atmospheric.



*Fig. 31 Across the millennia: a display of Palaeolithic hand axes at the entrance to the Making History gallery at the RAMM, Exeter.*



*Fig. 32 Out of the deep: a 2,400 year old carved wooden figure in the Making History gallery at the RAMM, Exeter.*

### 6.2.3 Plymouth City Museum and Art Gallery

<https://plymhearts.org/thebox/>



#### Overview

Plymouth City Museum and Art Gallery is a regional museum located close to the centre of the city. Built between 1907 and 1910, in Edwardian Baroque style, the museum is owned and funded by Plymouth City Council. With the RAMM in Exeter, it receives additional funding from the Arts Council of England through its Major Partner Museums scheme.

At the time of writing (2017) the museum is closed for redevelopment; it is due to reopen in 2020 as part of a major new development called The Box. During the period of the museum's closure some of the collections have been 'on tour' to other locations including the Museum of Somerset, the Dartmoor National Park Visitor Centre and Francis Drake's home at Buckland Abbey, owned by the National Trust.

The museum owns collections of world cultures, archaeology, ancient Egypt, maritime and local history, along with natural history and fine and decorative arts. Its archaeology collections include many prehistoric artefacts from Dartmoor. In 2009 four new galleries were opened as part of a refurbishment project: these galleries contained the world cultures, ancient Egypt, archaeology and local and maritime history permanent exhibitions.

The proposed new development, The Box (originally titled the Plymouth History Centre), funded in part by the Heritage Lottery Fund and Plymouth City Council, will encompass the present museum building, the Central Library and St Luke's

church, and will include a major new extension. It will bring together collections from the museum, Plymouth and West Devon Record Office, South West Film and TV Archive, South West Image Bank and the Local Studies and Reference collection onto one site. In addition to permanent galleries there will be research facilities and spaces for temporary exhibitions and artistic commissions. At the time of the visit for this study (2014), the archaeology gallery was showcasing artefacts ranging from prehistory to post-medieval times; more recent artefacts were displayed in the adjoining galleries of local and maritime history. In the archaeology gallery visitors could view an exhibit on stratigraphy, part of a section called 'What is archaeology?' In a display case a cut-away artificial section of stratigraphy contained real archaeological objects, displayed in the relevant layer; the objects - from prehistoric axes to items found in bombed homes of the Second World War - are labelled in the way that they might appear on a real dig. As well as browsing this display, visitors could access information about each layer and each object through an interactive touch-screen display.

An exhibition about the First World War was taking place at the time of visiting, while the other main temporary exhibition was a beautiful display of artefacts and material, including a large volume of organic finds, from the Bronze Age burial uncovered at Whitehorse Hill on Dartmoor; some of these can currently be seen at the Dartmoor National Park Visitor Centre (Fig. 33). Material from the Whitehorse Hill excavation will be on show in the new galleries once The Box is opened.

### *Reflective commentary*

The new archaeology galleries in the Box may look very different, but the time of visiting the stratigraphy exhibit was one of the most engaging and interesting displays (Fig. 34). Having such an exhibit showed that the museum understands that visitors are often as interested in finding out about how archaeology works as they are about the past itself. The exhibit was a fairly simple but highly effective way of making a large amount of information available in a small space, with visitors invited to find out as much or as little as they had time for.



The exhibition on the Bronze Age Dartmoor site of Whitehorse Hill, though a temporary exhibition, gave an insight into how organic archaeological material can be displayed; in addition there was a direct connection with climate change past, since the burial was well preserved as a result of bog formation at a time of increasing rainfall.



Fig.33 Life and death in the Bronze Age: artefacts from Whitehorse Hill on tour at the National Park Visitor Centre, Postbridge, Dartmoor. (<http://www.dartmoor.gov.uk/enjoy-dartmoor/planning-your-visit/virtual-visitor-centre/postbridge-visitor-centre> Accessed 1.2.19).



Fig. 34 Communicating how archaeology works: a stratigraphy exhibit at Plymouth City Museum and Art Gallery.

The exhibition had a calm and reflective atmosphere. In the dimly-lit gallery the unique organic finds such as hazel stakes, wooden studs, basketry, nettle fibre and fragments of calfskin and bear pelt were displayed alongside replicas to give the visitor an idea of what the originals might have looked like. The beads, tiny copper items and flints flakes found within the burial were also on view. It is interesting to consider the ways archaeological objects made from such a diversity of materials could be used to inform visitors about past people's interactions with their natural surroundings, and how people long ago must have perceived the relationship between nature and culture in very different ways.

Very sensitively displayed, out of sight from the rest of the gallery, were the human remains: the subdued lighting, and the quiet soundtrack of the gallery – birdsong and the hushing of the wind, which actually came from an interactive game simulating life in a Bronze Age village – made the atmosphere respectful and almost shrine-like.

There was a creative feel to the interpretation. Snatches of poetry were used in the display: there were quotations on the walls from – for example – Ted Hughes' 'The snipe', William Allingham's 'Meadowsweet' and 'The bog queen' by Seamus Heaney. Visitors were invited to write their own thoughts or a poem on slips of paper, which could then be left on a board for others to see, thus adding to the exhibition.

The unique nature of the evidence provided a great opportunity for the exhibitors to explain archaeological techniques such as pollen analysis, and how these can inform us of past environments. But there was nothing overly scientific or impersonal about the exhibition; the use of poetry, and the sensitivity with which the life and death of the Bronze Age woman whose burial it was became the very heart of the exhibition, lent a personal aspect which people could easily relate to: here was a single individual, so long ago, who to judge by the comments of visitors was somebody who became very important to people. Visitors were obviously moved by what they saw, learned and felt.

Communicating changing environments, both in the sense of how we know these changes happened, and how the changes would have impacted on people at the time, would appear crucial in the communication of climate change past and

present. The imaginative use of the arts, in this case poetry, is a further aspect to consider in climate change engagement.

#### [6.2.4 Bristol Museum and Art Gallery](https://www.bristolmuseums.org.uk/bristol-museum-and-art-gallery)

<https://www.bristolmuseums.org.uk/bristol-museum-and-art-gallery>



#### *Overview*

Bristol Museum and Art Gallery is situated in the Clifton area of Bristol, half a mile from the city centre. As mentioned above its origins lie in the foundation of the Bristol Institution for the Advancement of Science in 1823. The present building, in the Edwardian Baroque style, was constructed in the early 20th century. The museum holds collections of paintings, decorative arts, geology and natural history, as well as archaeology collections covering artefacts from the Palaeolithic to the present day.

Run by the City Council, the museum is partner to several other historic sites which together comprise Bristol Museums and Archives. MShed, which opened in 2011, is located on the Prince's Wharf in a dockside shed formerly occupied by the Bristol Industrial Museum. This new museum tells the story of Bristol and its inhabitants from prehistory onwards. The five other historic sites which make up Bristol Museums and Archives are Kings Weston Roman Villa; the Red Lodge, an Elizabethan house; the Georgian House; Blaise Castle Museum and the Record Office.

From the 1960s to 2007 there was an archaeology gallery at Bristol Museum and Art Gallery. Today, Bristol's archaeology is to an extent showcased at MShed, where artefacts from the museum's collections are combined with film and

photographs to explore personal stories and local themes. Issues such as Bristol's role in the slave trade are also addressed.

Entering the front hall of the Bristol Museum and Art Gallery, the visitor is greeted by the sight of a Bristol Box Kite aeroplane hanging overhead. Situated on the ground floor are galleries of Egyptian and Assyrian antiquities, and an exhibition on South West Wildlife. There is a large temporary exhibition space. Finally there is the Curiosity gallery, where the visitor is invited to discover archaeological objects from around the world along with the issues they raise. The first floor covers aspects of natural history, with dinosaurs, birds, rocks and fossils and a beautiful minerals display. There is also an exhibition of historic maps and prints of Bristol. On the second floor are several galleries of paintings from all ages – from European Old Masters through to modern and contemporary works – along with collections of Eastern art, silver, glass and ceramics including Bristol Delftware.

### *Reflective commentary*

Entering the Bristol City Museum and Art Gallery, the feeling is very much of a venerable building with a conventional museum lay-out. However, an exploration of the Curiosity gallery reveals a contemporary and questioning approach.

Curiosity is the nearest there is to a dedicated archaeology gallery in the museum, and presents a very particular take on the past (Fig. 35). There is no one route that the visitor is encouraged to follow; the layout invites browsing and circulating, moving from one section to another and back again. The gallery is fairly small and is easily accessible: family friendly, but with enough stimulating content to occupy all ages. The name 'Curiosity' harks consciously back to the curiosity cabinets of the Enlightenment. Objects take precedence here, reflecting a deliberate decision by the exhibition designers to keep text to a minimum and avoid 'books on the wall'. Supporting information is delivered via interactives. The emphasis is on encouraging the visitor to make connections for themselves about what they are seeing and experiencing.

The approach to the past is thematic rather than chronological. There is no one narrative thread. Just as you can visit each of the several exhibits in any order,

so you can make your own stories out of what you see. Themes such as 'Who do you think you are?', 'Trash or treasure', 'Culture clash', 'Facing the past', 'Keeping the faith', 'For what it's worth' and 'The secret life of things' encourage the visitor to view archaeological objects in a variety of ways and from different angles. Each unit poses a question – What makes something valuable? – Can objects symbolise belief? - Is there more than one way to interpret an object?



*Fig. 35 A questioning approach: objects take precedence in the Curiosity gallery at Bristol Museum and Art Gallery.*

Through this questioning approach controversy is introduced. Visitors are invited via touch-screen interactives to reflect on – for example - the repatriation of sculptures to Benin, or whether human remains should be displayed in a museum. The ethos of the exhibition is very much one of communicating the complexities involved in the retrieval, study and presentation of archaeological

objects and the construction of archaeological knowledge. As visitors we are encouraged to think in wider ways about the past, than we might if the objects were put on display simply to tell a story. The fact that many stories accrue to an object is the message here.

For a visitor seeking a more conventional archaeology display the gallery exhibition could be frustrating. It offers no more than tantalising glimpses into this or that past culture. But it addresses effectively what the role of museums actually is, and doesn't shy away from controversial aspects which may be unfamiliar to visitors. Curiosity challenges as well as excites; it gets us to think beyond the objects to issues of identity, ownership and belonging, both in the past and today.

From a visit to Curiosity it is possible to envisage how an exhibition on climate change, using archaeological objects and ideas, might start to shape up. Challenging and interesting questions are the key here; in addition, a thematic – as opposed to chronological – approach is something to consider. Questions which divert attention from too much emphasis on a 'doomsday' kind of narrative, and encourage the visitor to step back and think in new ways, would be crucial to effective climate change engagement.

With such an emphasis on object-based communication, however, a museum would have to choose artefacts and stories with care, mindful of the potential confusion visitors may have to contend with in relating past climate change to today's world. As observed for Torquay Museum, and in Chapter 4, giving prominence to the resilience of past societies may be misleading, as it might suggest to museum visitors that adaptation is the only concern. Looking at the ways people responded to change in former times could suppress an awareness of the critical need to address the causes and impacts of contemporary climate change.

The rationale behind displays such as the Curiosity gallery - juxtaposing objects from different ages and putting them together around a common question or theme - may point to how such confusion could be avoided. The emphasis would be less on how these objects illustrate a chronology of past lives, and more on how the connections we make between them reveal insights not just about the way we view the world, but about the changes we wish to see.

### 6.2.5 *The Museum of Somerset, Taunton*

<https://museumofsomerset.org.uk>



#### *Overview*

Set in the heart of the town, the Museum of Somerset is housed in the twelfth century Taunton Castle. Run by Somerset County Council, the museum traces the human story of Somerset from prehistory to the present day, as well as presenting the geological past. The museum holds objects initially collected by the Somerset Archaeological and Natural History Society, who bought the castle in 1874 and refitted the great hall to be their chief museum space. The Society still owns the castle. Known as the Somerset County Museum until 2008, the museum was redeveloped with support from the Heritage Lottery Fund. Following a two year closure the refurbished museum reopened in 2011.

The museum houses collections of geology, natural history, archaeology, medieval history, ethnography and decorative arts; it also incorporates the Somerset Military Museum. Notable archaeological objects on display are the Roman mosaic from the villa at Low Ham, and the Frome Hoard, the largest collection of Roman coins discovered in Britain; also on view are the Bronze Age shield from South Cadbury and the dug-out oak canoe from Shapwick in the Somerset Levels. Other highlights include a plesiosaur, on display in an underfloor case in the Foundation Stones gallery.

The Foundation Stones gallery, in the lower part of the castle's great hall, is the first gallery to be approached by the visitor, and covers the earliest record of Somerset through geology, fossils and animal bones (Fig. 36). The gallery is divided into three sections: Bedrock, addressing the basic geology of the county; Underwater World, which explores the time when Somerset was a warm tropical

sea; and The Big Chill, which addresses the Ice Ages. The vast span of time that existed pre- the human story is made apparent, whilst environmental fluctuations over thousands of years are presented in an accessible way.

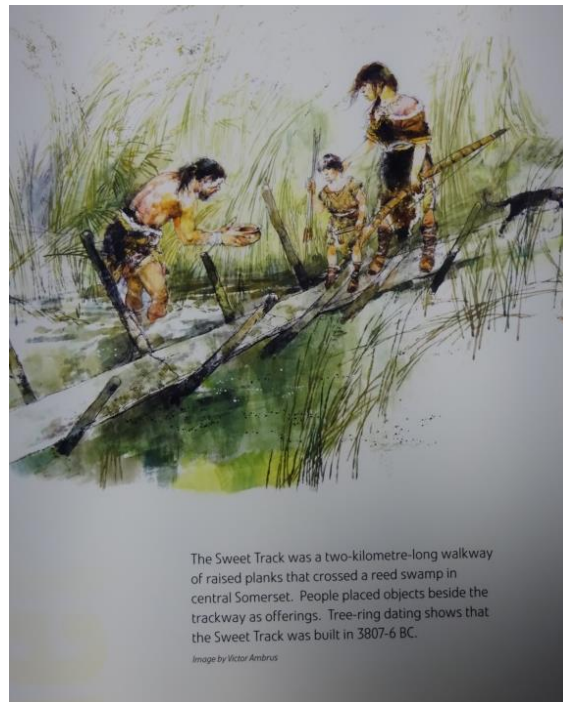


*Fig. 36 Cycles of change: the Foundation Stones gallery at the Museum of Somerset.*

Augmenting the cases of objects is an engaging audio-visual display which acts as an introduction to the gallery and to the museum. The images and commentary encourage visitors to think about the long timescales involved in geological history and how the environment has altered over millennia, with human impact on the landscape being only a recent – and possibly transient – feature.

Upstairs, the Claiming the Land gallery features prehistoric artefacts which trace developments in technology and farming; it explores how people engaged with the land and resources, for example in the Somerset Levels (Fig. 37). Roman artefacts follow on, while The Making of Somerset takes the story into medieval times and beyond. A gallery on the theme of Discovering provides an opportunity to showcase some of the museum’s collections alongside the stories of their collectors. Elsewhere an 1850 beam engine, from a former Taunton silk mill, adds an industrial archaeology element.





*Fig. 37 Prehistory in Somerset: an artist's impression of the Sweet Track in the Somerset Levels, in the Making History gallery at the Museum of Somerset.*

### *Reflective commentary*

The overall impression of The Museum of Somerset is of a museum very much embedded in its local area. Not only does it provide a community focus, with a range of events, but its galleries and exhibits are exclusively about Somerset and its human story through the ages. It has the feel of a museum that knows its own strengths and plays to these.

The sense of chronology is strong, as the visitor is guided on a journey through the ages from the geological beginnings of Somerset up to recent historic events. There is a sense of place too, a pride in and fondness for the county that comes across very vividly. This is reinforced by the sympathetic refurbishment, and the fact that in the galleries the original structure and ceilings of the old castle building are easily glimpsed. This sense of identity with the locality might be diluted if the museum tried to be more than it is, such as taking on wider social or environmental issues.

However, the galleries are spacious and interesting, and in a very physical sense they allow room for thought and reflection. The visitor is not moved through as on a conveyor belt; as with the other museums in this study it is easy to feel a sense

of freedom and for visitors to loop back and re-visit particular galleries if they so desire.

Of special interest is the introductory audio-visual exhibit in the Foundation Stones gallery. As much as the objects on display, this exhibit emphasises the very intricate relationship between the natural world and the ways human societies have engaged with it over many centuries. In doing so, the exhibit encapsulates the story-telling ethos of the entire museum. The tone of the narrative is reflective, providing a thought-provoking stimulus to further exploration of the gallery and the museum as a whole. An evocative depiction of the transience of both the natural and human aspects of the landscape, and the stories which shape it, is offered. The commentary finishes by encouraging the reader to imagine a time when all human traces have been washed away: 'we are no more than a moment in time... the rising sea will draw closer once more... and wash our names from the sand.'

Imaginative interpretation in the form of poetry and art is also present in the form of the Somerset Tree, a sculpture of carved wood, which provides an attractive display close to the entrance to the museum.

A sense of change carries through every gallery. Environmental change over vast timescales is the central theme in Foundation Stones, for example; and throughout the museum the narrative style flags up the idea that nothing stays the same. Once again, though, this raises the question of the risks a museum might face in engaging with contemporary climate change through archaeological and historical objects. A sense of the inevitability of change could, inadvertently, mask the reality that the climate crisis is not simply about accepting and adapting to change, but about acting to reduce the carbon emissions that have caused the changes in the first place. On the other hand, the consistency provided by the strong sense of story at the Museum of Somerset gives an indication of the importance of friendly and accessible narratives when it comes to engaging with 'tricky' topics such as climate change.

## 6.3 National museums: observations and assessment

### 6.3.1 The British Museum

<http://www.britishmuseum.org>



(<https://www.britishmuseum.org/visiting/galleries.aspx>)

#### Overview

The British Museum was included in the survey to provide a contrast in character to the regional museums. In addition, it was thought it would be interesting to see whether such a notable institution would embrace opportunities to engage with climate change, and whether it would face its own unique constraints.

A look at the gallery plan for the British Museum shows that it houses a truly global collection. Exhibits from cultures across the world cover many centuries of human activity, artistic inspiration and inventiveness. Based on the collection of physician and scientist Sir Hans Sloane, the museum was established in 1753, and acquired its permanent collection largely during the era of the British Empire. In recent years it has branched out to embrace works of contemporary art and culture. Today the works held in the collections number around 13 million. The world's first national public museum, visitor numbers to the British Museum have grown from around 5,000 per year in the eighteenth century to about 6 million today.

The museum is a non-departmental public body sponsored by the Department for Digital, Culture, Media and Sport. As with other UK national museums it charges no admission fee, except for entry to temporary exhibitions – which, in addition to commercial sponsorship, provides an important source of additional

funding. About a thousand people are employed at the British Museum. The curatorial departments manage the collections and their interpretation; additionally there are departments with responsibility for exhibitions, and for permanent gallery refurbishment. There is a separate department covering learning, volunteers and audiences.

In the 1990s the relocation of the British Library to new premises opened up the opportunity to develop the central courtyard area of the museum. The glass-roofed Great Court opened in December 2000: with an area of two acres, it is the largest covered public space in Europe. New galleries were also constructed. Beneath the Great Court, the Samsung Digital Discovery Centre, auditoria and an education centre are to be found. The reading room remains at the centre of the Great Court.

The museum's website reveals a plethora of tours, lectures, family activities, courses, digital workshops, gallery talks and other events covering a vast range of subjects. There is a dedicated schools programme, offering taught sessions spanning a variety of world cultures and curriculum subjects at both primary and secondary level.

### *Reflective commentary*

Walking up the steps at the front entrance to the British Museum the feeling of entering into a historical and venerable institution is unavoidable, and in many ways this can be seen as one of its attractions. But as a traditional establishment, with a unique public role, could the British Museum ever be the place for engagement with difficult and contemporary subjects such as climate change? Certainly the collections, spanning the globe and thousands of years of history, could be mined for reference to climate stories. But whether climate change would be seen as an appropriate subject for the British Museum is debatable: to inspire, to communicate new ideas and information based on the latest research, is undoubtedly at the top of the museum's agenda; but with its particular obligations it might not be surprising to find that it is overly hidebound by

convention and public expectation, not to mention the political minefield of sponsorship and funding.

However, a look at the museum's exhibitions programme reveals it to be far more than a traditional showcase and 'storehouse of knowledge'. At the time of writing (towards the end of 2018) at least three of the ongoing exhibitions have a political and contemporary take, with multiculturalism and issues of power, conflict and identity at their heart. One exhibition uses the collections alongside contemporary photography to present ancient and modern attitudes towards the landscapes and territories of the Middle East, and aims to challenge visitors to think about the fragility of man-made borders everywhere. A second exhibition, on 'émigré' medallists, uses the collection of medals to explore how artists from all over the world have added a new element to British art history. A third exhibition looks at the voyages of Captain Cook from the perspective of Pacific Islanders, again using the work of contemporary artists and reflecting on the complex legacy of Cook in the Pacific. So the British Museum is not averse to using its influence and its remarkable collections to address the important questions of the day.

Climate change as a subject area can work its way obliquely into exhibitions on other topics. Two major exhibitions of recent years can be briefly examined to illustrate this. One is the 2013 exhibition 'Ice Age Art: Arrival of the Modern Mind', which provided a rare and wonderful opportunity to see some of the world's oldest known sculptures, drawings and other artefacts, presented alongside modern works by Matisse, Mondrian and Henry Moore (Fig. 38). The timescales involved are enormous: these items were made between ten and forty thousand years ago. It was a fascinating glimpse into the remote past and a chance to reflect on creativity and its expression and how little those aspects of human experience have changed. The exhibition used a subtle soundtrack of dripping water, or melting ice, and the visitor was guided through a model Ice Age cave to view representations of Palaeolithic art.

Though in essence an art exhibition, the extreme changes in the natural climate cycle that have taken place during the course of the human story were also presented. Art and climate change are not mutually exclusive topics. It is worth considering how these beautiful objects from our deep past could be embedded

in an exhibition that more directly addresses our understanding of climate change present and yet to come.



*Fig. 38 A glimpse of deep time: a 13,000 to 14,000 year old antler spear-thrower carved as a mammoth, from the exhibition 'Ice Age Art: the Making of the Modern Mind' at the British Museum. ([https://www.britishmuseum.org/whats\\_on/exhibitions/ice\\_age\\_art.aspx](https://www.britishmuseum.org/whats_on/exhibitions/ice_age_art.aspx) website Accessed 1.12.18).*

The second example is the exhibition in 2015, on 'Indigenous Australia', which used mainly nineteenth century objects to present a history of the 60,000 year old culture of Aboriginal peoples and Torres Strait Islanders. The exhibition emphasised the many diverse environments in which the hundreds of different groups lived and continue to live today, from rainforest to rivers, islands, seas, arid landscapes and urban areas. Images in the form of photographs and videos enhanced the exhibits.

Although the actual objects were of comparatively recent date, they were used to explain cultural traditions that go back many millennia, such as the 40,000 year old tradition of Aboriginal art (Fig. 39). So, in a similar way to the Ice Age Art exhibition, 'Indigenous Australia' was dealing with deep time – what might be termed archaeological time.

References within the exhibition to the resilience of indigenous peoples and their understanding of ecology seemed especially relevant, in view of the adaptations societies today are undergoing as a response to climate change. This resilience

was reinforced throughout the exhibition, with statements such as: ‘...There is no nature without culture. People, land and spirit ancestors are one.’



*Fig. 39 Continuity across the millennia: contemporary artwork in the ‘Indigenous Australia’ exhibition at the British Museum.*  
([https://www.britishmuseum.org/whats\\_on/exhibitions/indigenous\\_australia.aspx](https://www.britishmuseum.org/whats_on/exhibitions/indigenous_australia.aspx)  
Accessed 1.12.18).

Aboriginal people and Torres Strait Islanders use the word ‘country’ to describe their profound connection with place, the exhibition explained:

‘Country embodies the spirit ancestors who made the land, sea and all living creatures, as well as the knowledge, stories and responsibilities tied to those places.’

An explanation of objects made from the pearl shell found along Australia’s north-west coast described how Aboriginal people see the power of the creation ancestors reflected in the shimmer of the shell, linking it with rain, lightning and water, fundamental to life.

This understanding of nature and culture as having no boundaries between them, and of people, ancestors and the land as one, represents an entirely different world view from the ideology of nature-culture dualism, as discussed in Chapter 4 in relation to a climate change role for museums. It links too to the Anthropocene concept, referred to earlier in this study. It could be argued that, historically, the perception of nature and culture as distinct entities underlies, to some extent, the attitudes and actions that have led over the decades to the over-exploitation of global resources and the current ecological and climate emergency. This

alternative ecological viewpoint connects the past with the future, and with the issues of sustainability that are a part of climate change engagement.

'Indigenous Australia' was neither directly about archaeology nor about climate change. But the strong environmental narrative running through the exhibition demonstrates the way that fascinating and beautiful objects - all too easily viewed as 'other' and therefore not 'of us' - have the potential, through the lives and stories they reflect, to speak in new voices. They can remind new audiences of the diversity of human experience, and of the need to continually work out how to create sustainable economies based on an intimate knowledge of the natural world and respect for that world. In this way, such objects and stories can connect us with the issues of today. They help us imagine the impacts of those issues, and how we will deal with those impacts in generations to come.

### *6.3.2 National Museum of Wales, Cardiff*

<https://museum.wales/cardiff>



The National Museum of Wales is located in the civic complex of Cathays Park in the centre of Cardiff. The museum was founded in 1905 and incorporates the collections of the former Cardiff Museum. Construction of the new building for the National Museum of Wales began in 1912, but due to the intervention of the First World War the museum did not open to the public until 1925.

The museum houses collections of archaeology, fine and decorative art, natural history and geology. Permanent exhibitions include the natural history of Wales, and an Evolution of Wales gallery which tells the story from the beginnings of time to the present day – taking in the Big Bang, the various geological eras, dinosaurs, woolly mammoths, Ice Age and first farmers along the way. There are



several art galleries exhibiting five hundred years of paintings, drawings, sculpture, ceramics and silver from Wales and also from around the world. The museum has a programme of major temporary exhibitions, and hosts touring exhibitions.

In 2011 a former gallery was transformed into the Clore Discovery Centre, where visiting groups can engage in hands-on exploration of objects from the museum collections, such as insects, fossils and prehistoric artefacts. The centre is frequented by adult learners as well as school groups of all ages.

The National Museum of Wales as a whole covers eight sites, and elements of the archaeology collections are distributed in various locations. Roman archaeology, for example, is exhibited at the Roman fortress of Caerleon. Until 2014 there was a dedicated archaeology gallery at the Cathays Park site, which traced the story of the Wales; this story now forms the focus of St Fagans National Museum of History, outside Cardiff (see <https://museum.wales/stfagans/>).

In 2012 the St Fagans site, already an open-air history and archaeology museum, was awarded Heritage Lottery Funding to extend and renovate its displays. Visitors to St Fagans can now follow the story from the earliest inhabitants of Wales through to the present day, explained using objects from the national collections displayed in re-designed galleries and exhibition spaces, historic buildings and outdoor archaeological reconstructions (Fig. 40).



*Fig. 40 Experiment and discovery: a reconstructed Iron Age round house at St Fagans National Museum of History. (<https://museum.wales/stfagans/buildings/bryneryr/> Accessed 1.12.18)*

### *Reflective commentary*

The National Museum in Cardiff offers its own journey through time, in its large Evolution of Wales gallery. The gallery has an atmospheric and exciting feel to it. A winding trail through the different geological eras incorporates models as well as actual objects; animations and films, for example of a volcano erupting, add to the sense of being immersed in geological time. A soundtrack – rocks crunching, water flowing, trees blowing - is used effectively and unobtrusively at various points.

With a large model of a mammoth, and skeletal remains of other Pleistocene fauna, the gallery has much to say about the Ice Ages: the climatic variations which caused them, and their effects on the natural landscape (Fig. 41). The animals and reconstructions in the gallery understandably seem to draw more attention from visitors than the text panels where the natural variations in climate are explained. But overall, the idea of change and of how landscapes – and eventually human communities - evolved is central to the interpretation here, and does come across. There is a sense of deep time, the endless progression of events which have culminated in the world as we see it today. The idea that change has happened in the past, and is continuing to happen, connects with how an exhibition taking climate change as its central theme might be envisioned; again, it would be important to flag up for visitors the distinction between the natural cycles of the Ice Ages and the anthropogenic climate change we are experiencing today.

The nature of the St Fagans museum, though not visited specifically for research purposes during this study, suggests a different kind of potential for climate change engagement. Originating as the Welsh Folk Museum, it is largely an open-air site focused on stories of communities through time. As such it would seem to offer possibilities for emphasising the many links between experimental archaeology, material culture, the use of resources, sustainability and the challenges for past peoples when faced with environmental change. Education is the key here, and the drawing together of ‘how we lived then’ with ‘what challenges are our priorities today’: having fun in the past with hands-on activities doesn’t rule out the inclusion of serious messages for the future.



*Fig. 41 Natural climate change explained: an Ice Age interactive, model mammoth and text panel in the Evolution of Wales gallery at the National Museum of Wales, Cardiff.*

As pointed out in the reflective commentaries on other museums, the challenge remains to bring climate change forward from the archaeological past – and to communicate to visitors the urgency of understanding climate change in the here and now, and how best to deal with it. The St Fagans website quotes its founder outlining his vision for the site; the aim of those involved was:

“...not to create a museum which preserved the dead past under glass but one which uses the past to link up with the present to provide a strong foundation and healthy environment for the future of their people.” *Iorwerth C. Peate, 1948*

(<https://museum.wales/stfagans/stfagans-history/> Accessed 1.12.18).

The words remain of relevance today and seem very appropriate in the context of this study.

## **6.4 Conclusion**

Every visit proved to be stimulating and inspirational. The museums in the study were highly contrasting examples, yet all shared certain strengths and similarities.

The range of collections was comparable, especially in the regional museums; but collections were presented in subtly different ways, giving each museum a distinct character or quality. In somewhat simplistic terms it could be said, for example, that Exeter is collectors- and collections-focussed in its presentation, while Bristol seems more provocative and questioning; Taunton concentrates on telling the story of the local area, while Torquay with its UNESCO Geopark links has something of a world outlook.

As well as providing the opportunity to assess the unique character of each museum, and to gauge what they had in common, the visits allowed for reflection on the ways in which climate change could be incorporated into future exhibits and engagement.

Some impressions and ideas gained from visiting the museums are summarised in the points below. Each point is followed by a question: taken together, these questions create an agenda for moving the ideas forward, to enable positive suggestions to be made on how museums could effectively engage their audiences with climate change.

#### *Museum observations: a summary*

- **A celebration of the unique nature of the museum's collections**, the knowledge to be gained from them, and the sense of wonder that they inspire, is at the heart of every museum's mission and the way it presents itself, through its galleries and exhibitions, to its visitor audience. To enhance a sense of discovery and curiosity is key.

#### *How can curiosity be used in climate change communication?*

- **Objects or artefacts take precedence** over lengthy text panels. The focus on how objects are displayed varies from one museum to another, which would seem to depend on its outlook and ethos, and the 'message' it wishes to get across. Objects may illustrate a chronological narrative;

they may be used to tell the stories of their collectors and the wider world, for example at Exeter; they may focus on a sense of place, tapping into the strength and identity of the local community by telling stories of life in the past, for example at Taunton; they may be used to connect the audience to a global narrative of change, for example at Torquay Museum, with its Geopark connections; they may be used in a non-chronological and less traditional way to challenge visitors, sparking ideas around themes that may be controversial, for example in the Curiosity gallery at Bristol.

*What range of objects can be used to introduce climate change?*

- **Interpretation takes many forms.** Interactives invite the visitor to engage in imaginative and creative ways, for example the forensic discovery table and reconstructed geological arch at Torquay; they have the advantage that the visitor can explore and find out as much extra detail as they wish, for example with the touch-screen interactive at Plymouth informing visitors about the workings of archaeology. Audio-visual presentations, for example the introductory video at Taunton, and the one on geology at Exeter, augment the objects on display and provide a window into the history of a place, in a way the objects can't do by themselves. Reconstructions, models, illustrations and dioramas add variety and inspire a different kind of thinking, helping visitors to relate more easily to people in the past.

*What methods of interpretation can be used to communicate climate change?*

- **Sound is important.** An unobtrusive soundtrack enhances the atmosphere and can make the gallery feel more exciting. Examples are the quiet sounds in the Making History gallery at Exeter, the subtle background track to the geology exhibits at Cardiff, and the evocative sound effects in the Ice Age Art exhibition at the British Museum; the windswept effects at Plymouth's Whitehorse Hill exhibition were similarly haunting. Sound can be used to help create a reflective atmosphere, which

potentially can act as an antidote to the frenzy of modern life; this has implications for effective climate change engagement, where a main concern is to counter the fears induced by negative stories and doomsday scenarios portrayed by the media.

*In what ways can sound effects, voices and oral testimony be used to generate opportunities to reflect on climate change?*

- **Touch matters** too, though things to touch were noticeably lacking in most of the galleries visited. Aside from touch-screen interactives, there was little in the way of ‘hands on’ activities. But an open air museum like St Fagans, with its roots in experimental archaeology, can offer opportunities for visitors to engage directly, in tactile ways, with materials and the process of making things, while at the same time giving insights into resource use past and present; this in turn links into issues of sustainability in the modern world.

*In what ways can tangible methods be used to raise awareness of climate change?*

- **Visitors’ experience can be enhanced using the arts.** Incorporating art, music or poetry into an exhibition – for example as seen at Plymouth – brings in another voice, and can give a wider perspective on people’s lives long ago than can be gained from viewing the objects in isolation.

*How can creativity be used to capture and enhance visitor reactions and reflections on climate change?*

- **Timescales are important.** Many of the galleries viewed take change through time as a theme, either explicitly or else in the way objects are presented and arranged. Landscape and environmental changes through both geological and human time are explored, as is people’s adaptation and response to altered conditions, such as during and after the last Ice Age. The vast span of time that humans have existed came across in many

of the exhibits. It is easy to see climate change sitting more comfortably within a natural history/science perspective; but the idea of time itself as a topic links with the potential of an archaeological focus. Timescales are also relevant in considering how visitors can reflect on the rapidity of climate change as it is happening today.

*Climate change is diachronic: how can changes over time be presented to visitors and projected into the future?*

To conclude, by visiting several contrasting museums a broad overview was gained of how museums function and how they engage their visiting audiences. The experience was useful in distilling the ideas which would later be discussed with the interview participants. Museums already deal with stories of change through time, and it seems that climate change stories are inherent in many of their exhibits, if not immediately apparent.

The next chapter will analyse and discuss the responses of the interview participants at each museum, while the concluding chapter of this study will revisit the questions raised here and bring together the evidence gathered to suggest a positive role for museum archaeology in climate change communication.

## **Chapter 7 Analysis and discussion: structured interviews**

### **7.1 Introduction to analysing the interview responses**

Following observations of the museums selected for study, this chapter will focus on the structured interviews with museum practitioners. The transcripts of the interviews will be analysed and discussed by response to each question (for the list of questions, see Chapter 5.2.3), while the full transcripts can be found in Appendix 2. The aim of each question will be explained, and a brief summary made at the end of each discussion.

The interview participants are listed below, in the order in which their museums were described in Chapter 6. A short biography is given for each:

- *Torquay Museum*  
Philip Collins, former Director. Philip was Director of Torquay Museum from 2011 until 2015, having previously been employed by Natural England (formerly English Nature), as an Area Manager and Manager of the Advocacy and Partnership specialist team. Prior to that he ran an environmental consultancy; before that he founded the Hertfordshire Environmental Records Centre, and before that was Keeper of Natural Sciences at St Alban's Museum.
- *Royal Albert Memorial Museum, Exeter*  
Tom Cadbury, Curator (Archaeology). Tom has been at the RAMM since 2005, as a curator with responsibility for the museum's archaeology, local history and numismatics collections. Prior to his arrival at RAMM, Tom had a similar role in Lincolnshire as a Keeper of Collections Management.
- *Plymouth City Museum and Art Gallery*  
Fiona Pitt, Senior Curator (Archaeology). Fiona came to the museum in 1997, initially as Keeper of Human History with responsibility for archaeology, world cultures and social history. Prior to that she worked with social history collections at Northampton Museum; before that she



was working with ethnographic collections at the Horniman Museum, and before that as a field archaeologist with the Museum of London.

- *Bristol Museum and Art Gallery*

Gail Boyle, Senior Collections Officer (Archaeology). Gail first came to the museum in 1987. Over the years she has worked across the whole range of British archaeology and also with the world cultures collection, as the collections were formerly in one department. Gail's responsibilities include care of the archaeology collection, which is the museum's most rapidly growing collection, and managing the archives for archaeology.

- *The Museum of Somerset, Taunton*

Steve Minnitt, Head of Museums for the South West Heritage Trust, and Dennis Parsons, Curator (Natural History).

Steve is Head of Museums for the South West Heritage Trust, with overall responsibility for the Trust's museums' collections at the Museum of Somerset, the Somerset Rural Life Museums and the Somerset Brick and Tile Museum; he is also Curator of Archaeology.

Dennis is Curator of Natural Sciences, with responsibility for all the biological and geological materials.

- *The British Museum*

Jago Cooper, Curator of the Americas. Jago's varied role curating the massive Americas collection covers care and management of the collections and their role in the permanent galleries, in temporary exhibitions within the museum and commercial exhibitions, as loans, and in research. Jago is also actively involved in archaeological fieldwork.

Jago was approached to take part in this study because he has a specialist knowledge of past climate change in the context of the Americas, and an interest in climate change communication.

- *The National Museum of Wales, Cardiff*

Elizabeth Walker, Principal Curator: Collections and Access/Palaeolithic and Mesolithic Archaeology. Elizabeth has worked at the museum for

many years. Part of her role covers Collections and Access, which includes collections management, ensuring all items are fully documented and accessible for display and research purposes; she is also Curator of Palaeolithic and Mesolithic Archaeology.

In addition, the following participant was interviewed on the phone:

- Nick Merriman, Director, Manchester Museum

In conducting and recording the interviews, there were certain logistical issues which should be mentioned. In some locations, for example, the noise level could be a problem, as was the case at a couple of museums where the interview took place in in the museum café. Another consideration is that everyone had their own styles of talking: if the participant engaged less readily in discussion, then more prompts or interjections that contributed to the conversation in a positive and supporting way were required; if a participant had a tendency to take the dialogue in a different direction then the discussion had to be steered carefully back, so as not to become too diluted and unfocused.

As explained in Chapter 5, it was important to keep the process fairly informal, more of a natural conversation, while at the same time necessarily adhering to the interview script.

In this chapter, the responses will be compared and contrasted qualitatively, and the discussion arranged as follows:

1. An analysis of the responses to the first four questions. These relate to the museums themselves, for example the nature and range of the archaeological collections, and the decision-making processes involved in planning exhibitions. For this and the following sections discussing the interview dialogue, direct quotes from the participants will be included.

As outlined in Chapter 5, these first four questions were designed to gather as much information as possible on how the museums function, in

particular in relation to public engagement. The role of museums as research institutions was not specifically addressed, as it was not of especial relevance to this study; however this aspect of a museum's work did crop up from time to time in the responses, for example in relation to the acquisition and origins of the collections and how they are used today. Taken together, the responses to these questions gave a broad picture of the nature of the museums' archaeology collections, how exhibitions are planned and implemented and how audience feedback is collected and analysed. More generally, the varied responses from this small but diverse sample of museums were highly informative in indicating the issues and challenges faced by every UK museum today.

2. An analysis of the responses to the further six questions. These relate broadly to opportunities and the future. Specifically, questions 6 to 10 relate to the creative opportunities for engagement with climate change, as perceived by the participants, and the obstacles to this engagement. For the analysis of each of these questions a main point will be extracted and a question posed, thus augmenting the agenda set at the end of the previous chapter.

Additionally, a quantitative element, in the form of word clouds, will be included for the responses to question 6 to 10, to enhance the analysis and illustrate the ideas in question. The word clouds have been generated using the full text of the responses to each particular question, with every participant's response included. A pair of word clouds is included for each question: in each case, one has been generated from 100 words, the other from 50.

3. A brief analysis of the responses to the supplementary questions, where it is felt that the discussion around the main theme of climate change communication was enhanced by these responses.
4. A summary of the analysis of the interview dialogue, and a drawing together of the main themes of the discussion. This will include a 'word

mining' exercise designed to tease out salient points regarding perceptions of the possible role of archaeology in climate change communication.

To conclude this chapter, a prototype for a climate change exhibition using archaeological objects will be presented.

## **7.2 Questions on the museum's archaeology collections, the planning of exhibitions, visitor engagement and response**

### *7.2.1 The museum's archaeological collections*

*Question 1: Please could you describe the nature and range of the museum's archaeological collections?*

This first question served a useful introductory purpose. It enabled the breadth and variety of the archaeological collections housed by the museums in the study to be gauged, but also allowed the participants to present themselves and their responsibilities within the museum more fully. Understanding the museums' collections was an important foundation for attempting to assess the possibilities for climate change communication.

Philip Collins (Torquay), Tom Cadbury (Exeter), Fiona Pitt (Plymouth), Gail Boyle (Bristol), Steve Minnitt and Dennis Parsons (Taunton), Jago Cooper (British Museum) and Elizabeth Walker (Cardiff) gave a brief overview of their archaeological collections. Not surprisingly the four regional museums in the South West – Exeter, Plymouth, Taunton and Bristol – all hold collections covering a vast timescale, going back to the earliest Palaeolithic and up to post-medieval and modern times.

At Plymouth, for example, two collections are considered to be of particular importance: firstly the prehistory collection, and secondly post-medieval imported ceramics - equivalent in quality and range to many major European collections. Later prehistory, as well as Roman material, is a particular strength of the collection at Taunton; similarly at Bristol the collections for the Bronze Age and

Iron Age are especially strong, though there are good regional collections too of Roman and Anglo-Saxon material. Though a charitable foundation rather than a regional museum, Torquay holds collections of huge significance, also ranging from the Palaeolithic to the nineteenth century. Based around the key original collections of William Pengelly, and crossing the boundary between archaeology and geology, the material from Kents Cavern, Buckfastleigh and other cave sites is considered to be without doubt the museum's most significant collection.

A similar diversity exists at the national museums. Elizabeth Walker at the Cathays Park site of the Museum of Wales in Cardiff described how the collections range over a huge timescale. They include Neanderthal remains and hand axes from Pontnywedd Cave right up to post-medieval material. The Americas collection at the British Museum is one of the foremost in the world, Jago Cooper explained, and is massive: there are about 100,000 objects, from Clovis points dating to the earliest human occupation of the continent to items being added to the collection today.

As well as describing the chronological range of their archaeological collections most of the participants commented on the provenance of the collections and how objects were – and still are - acquired. At Exeter, where archaeology was thought by Tom Cadbury to be probably the museum's biggest collection as well as the one that is growing fastest, only local material is collected nowadays. The material comes mostly from developer archaeology. A selection process has to apply, the criterion being the extent to which an object will add significantly to the community's heritage:

*“The collection's importance lies in the fact that it represents the heritage of a huge number of communities.”* Tom Cadbury, Exeter

At Plymouth, the prehistory collection includes material from the findings of the Dartmoor Excavation Committee in the later 19<sup>th</sup> and early 20<sup>th</sup> century. At both Bristol and Exeter it was pointed out that the earlier collections are not simply focused on the locality, but are from elsewhere too. The collections are long-lived: a hundred years' worth of excavated archaeological material and its archives sits in the collection at Bristol, for example. At Cardiff the predominant collecting area

is Wales, although prior to the 1960s some material was acquired from England as well, and from overseas.

The 'Rescue' archaeology era of the 1970s was referred to by Gail Boyle at Bristol, a time when the museum had its own field archaeologists in post; the archaeology department at Bristol split in the 1980s, with the curatorial section separating out from the archaeology section and devoting itself thereafter to recording and dissemination. This example highlights the political and historic complexities of just who is responsible for acquiring, maintaining and engaging with a museum's collections, which will of course vary from place to place.

Who actually uses the collections was mentioned by Tom Cadbury at Exeter, who described how the museum is aiming to make the collections more accessible to researchers from around the world and also to people engaged in community history. Different websites have been designed with these different research audiences in mind.

### *Summary*

The participants talked about the frequently massive timescales that their archaeology collections represent, from earliest prehistory up to the modern age. They also talked about the provenance of the collections and how their policy of acquisition has altered during the lifetime of the museum. Some reference was made to the significance of the collections for research purposes and their intrinsic value as a community's heritage.

#### *7.2.2 Archaeology exhibits in the museum*

*Question 2: Please could you outline the organisation and content of the museum's archaeology displays, exhibitions and other archaeology-related activities, including outreach? Which aspects, in your opinion, work best for visitors?*

This turned out to be a massive question and elicited a variety of responses on a range of related topics. Many aspects of both the permanent archaeology

galleries and the temporary exhibitions were covered, including: the design and recent refurbishment of the galleries; how archaeology used to be displayed compared to how it is now; the effectiveness of particular temporary exhibitions; funding – or the lack thereof – for education, exhibitions and engagement; how particular objects or exhibits can elicit a response from an audience; community archaeology and outreach; and whether to take a traditional, chronological approach to exhibiting archaeological material or adopt a more thematic, questioned-based one.

Both the RAMM in Exeter and the Museum of Somerset in Taunton have been refurbished within the last decade, both re-opening to visitors in 2011. At Torquay Museum the archaeological material was redisplayed in the 2000s, becoming the focal point for the Ancestors gallery. At Bristol, Gail Boyle commented that a permanent archaeology gallery was in existence until 2007: described as ‘dull’, this former gallery was geared to an academic audience, due to the museum’s close proximity to the University of Bristol. The Curiosity gallery was planned when funds became available from the Arts Council as part of the Renaissance in the Regions initiative. The gallery is not a traditional archaeology display although it incorporates archaeological material; it poses questions, acknowledging that visitors see objects from their own perspective.

The National Museum of Wales, explained Elizabeth Walker at Cardiff, is spread out over eight sites. Archaeology is consequently spread across the different locations: the museum at Caerleon, for example, holds most of the Roman archaeology of the region. Until 2014, however, a permanent archaeology gallery existed at the Cathays Park site, using artefacts to tell the story of people’s past in Wales. When the current period of reorganisation is over much of the archaeology will have transferred to the open-air museum at St Fagan’s which will aim to tell the whole story of human occupation in Wales. St Fagan’s is considered a better location for the archaeological focus of the Museum of Wales, as interpretation can be more varied and imaginative, giving visitors a clearer sense of life as it was lived in the past.

The British Museum, meanwhile, has a whole department devoted to Learning, Volunteers and Audiences, Jago Cooper explained; there are also departments for Exhibitions, and for Permanent Gallery Refurbishment. Curatorial staff must

liaise with many different people when it comes to implementing ideas for exhibitions.

Different overall approaches to exhibiting archaeology appear to be taken, depending on the particular vision of the museum. In Exeter the displays are led by the strengths of the collections: what are the best collections, and what stories do they tell? For example, the museum holds a large collection of Palaeolithic handaxes: correspondingly, many handaxes are on display; this additionally seems to reflect the museum's spirit of being largely about collections and collecting. The aim is to have 'as much of the real thing on display as possible', and to start the interpretation from that: this is in contrast to the more immersive visitor experience at nearby St Nicholas Priory, which is based largely on recreations. The cases are arranged chronologically, although it is important, Tom Cadbury explained, that people exploring the gallery can easily see backwards and forwards through time. The idea underlying the design of the displays is for the visitor to reflect that our basic needs, interests and preoccupations as human beings have remained the same through time.

Whilst at Exeter the displays are collections-focused and collections-led, at Torquay an environmental and landscape approach is adopted. The undoubtedly unique collections of material from the Kents Cavern cave deposits are displayed within the context of a story of climate change, of glacials and interglacials, and of the flux in the human occupation of the area.

At Taunton, the earliest archaeology is similarly displayed within an environmental – specifically late Ice Age - context, following on naturally from the chronologically-arranged geology exhibits which follow a timeline of environmental change over a period of 400 million years.

At Plymouth the decision was taken to include an exhibit on stratigraphy using actual artefacts along with an interactive display, to explain how archaeologists uncover the past:

*“Because you’ve got a designated space for the archaeology, you’ve got the opportunity to do things with interactives, which appeals to a wider range of visitors. You’ve got the opportunity to explain a little bit about the concepts of archaeology as well.”* Fiona Pitt, Plymouth



At Bristol, the questions-based design of the Curiosity gallery is complimented by the displays at MShed which incorporates some archaeological material to tell the story of Bristol: a Roman tombstone, for example, is used to illustrate early diversity, rather than the life of a Roman citizen.

Turning to outreach, this was an important consideration at Exeter during the period when the museum was closed for restoration. At Torquay the belief is that education is under-funded, though themed events are held in the school holidays, and in 2013 a programme called 'Quest' was run for children from harder to reach communities, involving Play Torbay and Forkbeard Fantasy. At Plymouth outreach takes the form of activities relating to the annual Festival of Archaeology; these were at a high point around 2006-7, when the museum had more staff. As a specific example of outreach, the learning team at Plymouth have worked with Plymouth College of Art and Dartmoor National Park to produce leaflets about local sites, with the aim of giving people a better understanding of the archaeology that exists on their doorstep. Community archaeology, for example through an HLF-funded project on 'Roman Roots', is seen as a priority at Bristol:

*"Archaeology isn't just about the process of archaeology, and its interpretation, but to be used as a source of inspiration for a variety of activities... its demystification is important – this makes visitors more comfortable."* Gail Boyle, Bristol

With reference to what seems to attract visitors the most, Tom Cadbury commented that favourable feedback has been received at Exeter from people who love seeing real objects; regular handling sessions and craft activities run by volunteers also go down well. The new interactives in the galleries are popular with visitors to Torquay, Philip Collins mentioned, as is the animation cartoon video about the Geopark. There is an acknowledgement that having people on hand in the galleries to explain complex subjects is a good idea, but not always practicable; the video goes some way towards addressing that need:

*"I think the things that are difficult work best with someone to interpret and tell the stories, otherwise the things don't come alive... The animation cartoon that tells the story of the Geopark packs far, far more information than the museum would be able to do if it redisplayed every single space in it as geology, and does so in a way that is memorable and engaging"*

*and entertaining, far more than some of the hands-on type installations you find in museums. It's very interesting how it does work much better."*  
Philip Collins, Torquay

Similarly at Taunton, the introductory video in the first of the galleries is seen by Steve Minnitt and Dennis Parsons as one of the most powerful elements from a visitor's point of view.

### *Summary*

The participants' responses to this question indicated that the content and organisation of archaeological material in the galleries will differ according to the nature of the collections, and whether the collections themselves are viewed as the springboard for display or occupy a more illustrative role; this second point is dependent upon the approach of the individual museum. In addition, varying attitudes towards visitors and the community were revealed: at Bristol, for example, it is a question of 'visitors choose, rather than we deliver'; while elsewhere visitors might be seen as slightly more passive in their participation.

### *7.2.3 Planning of exhibitions*

*Question 3: Please could you explain the decision-making process involved in the planning of new exhibitions and engagement, including who is responsible at each stage of the process?*

The aim of this question was to gather information about the way exhibitions are planned and produced. The responses highlighted the long timescales involved in taking an exhibition idea from its initial conception through to fruition. To take the national museums first: at the National Museum of Wales in Cardiff, all staff are encouraged to come up with new ideas; an outline with the aims of the exhibition and potential partners is then submitted to a monthly meeting of the exhibitions group, chaired by the Head of Presentation and Interpretation. Some ideas may be selected, others put on hold:

*"There are probably ten times more ideas for exhibitions than slots available."* Elizabeth Walker, Cardiff

Similarly, at the British Museum, ideas from the curatorial staff are pitched to the Keeper of the relevant department, and then presented to the Exhibition Committee run by the Head of Exhibitions. A selection of ideas is presented by the committee to the Directorate Group. The group offers feedback on the ideas – normally not a straight yes or no, Jago Cooper explained, rather an offer of suggestions on how the idea could be improved. Huge amounts of detailed information have to be submitted, for example relating to sponsorship. In all, this is normally a five year planning process:

*“It’s a large scale bureaucratic operation which requires both physical engagement and political engagement in order to foster and grow the idea among the people in the museum.”* Jago Cooper, British Museum

At the RAMM, Exeter, it takes three to four years for an exhibition to be developed. Most exhibitions are partnerships, the aim being to establish strong links with outside institutions that are beneficial both ways. The museum works frequently with the University of Exeter: there is a realisation by the university that museums are a good way of disseminating quite complex information. An exhibition proposal is put to a planning committee: if the project goes ahead then the full team comes into play – curatorial, conservation, marketing, design and digital.

*“An exhibition is about finding something that works for RAMM - plays to its strengths.”* Tom Cadbury, Exeter

At Plymouth, Fiona Pitt explained that the process takes about two years, with a mix of ideas circulating once they have been put forward to the Exhibitions Group: available funding plays a part in what is selected and when. The idea for the Whitehorse Hill exhibition was proposed in 2011; the exhibition took place in 2014. A project leader and steering group were appointed to discuss design, publicity and associated activities. This exhibition was a partnership between the museum (Plymouth City Council) and Dartmoor National Park. At Taunton, Steve Minnitt explained that they were lucky enough to be one of the few provincial museums to have its own design department, including technical skills, so an

exhibition can be produced from concept right through to production and opening day. At Bristol, an exhibitions team looks at both temporary and permanent exhibitions, the inspiration for which comes largely from ideas submitted by the curatorial staff. Once again, a long and detailed process for selection is in place, with many outcomes to consider:

*“The efficacy of ideas submitted needs to be demonstrated against key performance indicator targets, Arts Council targets and community targets... It depends on whether an idea fits into the brand...”* Gail Boyle, Bristol

Torquay, by contrast, has one flagship exhibition every summer, not related to the collections: material is hired in and the exhibition often has a science fiction or other commercial theme, such as Star Wars. At both Torquay and Bristol, though very different museums, the need to generate income through exhibitions was mentioned.

The process for generating permanent gallery displays was described by several of the participants. Re-displaying the permanent galleries has been a priority at Torquay, with funding from various sources, including the HLF, the Esmeé Fairbairn Foundation and other trusts being directed towards reinterpreting material; the designers, Forkbeard Fantasy, were given a choice of topics from a framework which summarised the latest research. Similarly at Taunton, the ideas for permanent displays come from the museum which then works collaboratively with a London-based company for museum communication who provide designers and interpreters.

### *Summary*

The participants talked mainly about producing temporary exhibitions, rather than permanent gallery displays. The development of an exhibition is a complex process and involves partnerships with external organisations. What came out very strongly from this set of responses was how each museum has its own particular identity and set of priorities, linked to how it wishes to present itself; and

these characteristics influence the kinds of ideas which might be put forward in the first place.

Generating ideas is just the beginning: there are many different groups working towards the final outcome. Funding and sponsorship, as well as an exhibition's capacity for income generation once it is running, are universal considerations. The exhibition itself is a continuing process, when associated activities and events are taken into consideration.

#### *7.2.4 Evaluation and visitor feedback*

*Question 4: Are there ways of gauging the effectiveness of an exhibition, event or activity in terms of how visitors respond? Do you gather feedback from visitors?*

This question aimed to find out how museum staff ascertain whether an exhibition has achieved its predicted outcome, and also the extent to which audience feedback is sought, valued and taken on board. A range of fairly subjective and informal but useful methods were described. These included, for example: visitors' comments books in the gallery or foyer; graded 'smiley face' cards; visitors writing in with their opinions; contact points on the museum's website for feedback; and simply observing people in the gallery and getting a sense of how people are using it.

Both Tom Cadbury at Exeter and Fiona Pitt at Plymouth talked about the valuable feedback given by front of house staff and volunteers who can comment on what works best in the gallery and what doesn't work so well. Fiona Pitt also pointed out that staff can gauge the reactions of an audience directly, when giving tours or talks. Philip Collins at Torquay and Dennis Parsons at Taunton mentioned information fed back via Facebook and Twitter, and related media:

*"Trip Advisor is very important to us because of our need to generate income... Although we're a charity, in essence we are very dependent on it, like any visitor attraction in the private sector. If we get bad feedback on Trip Advisor we get in there fast to respond to it."* Philip Collins, Torquay

More formal collection of feedback was also mentioned, such as visitor surveys at regular intervals or evaluation questionnaires completed by visitors to

particular exhibitions. This goes beyond merely collecting visitor numbers or information about the visitor demographic. An example of a comprehensive process of gauging effectiveness was given by Gail Boyle at Bristol, where the museum worked in partnership with the British Museum on a touring exhibition, 'Roman Empire: Power and People'; Bristol was responsible for the development and design of the exhibition, and as part of this process evaluation targets were set. Scale-type questionnaires for visitors enabled a qualitative analysis of – for example – satisfaction value, and value for money. Every exhibition or event is similarly evaluated:

*“We have suggestion boxes and comments boxes dotted just about everywhere around the museum, so we collect a lot of audience intelligence. We do actually have somebody who collates all of that into spreadsheets and then publishes a report for each event.”* Gail Boyle, Bristol

School visits, and learning more generally, were also included in the discussion around feedback. The importance of evaluating museum learning was flagged up by a number of the participants:

*“A lot of the formal and informal learning activities that take place – particularly the informal activities - have rather more specific and rather more consistent gathering of feedback than perhaps the general visitors to the museum.”* Dennis Parsons, Taunton

At Torquay, where there is no permanent funding for an education service *per se*, a volunteer team consisting largely of former teachers provides the service. A teachers' reference group has been recruited to provide support for the museum staff; this group gives advice on collecting feedback from schools, as well as giving their own feedback:

*“When you're using volunteers to deliver, in a way your feedback is more important, and also more effective.”* Philip Collins, Torquay

At Cardiff, Elizabeth Walker described how visitor feedback is sought and valued even at the inception stage of new exhibitions:

*“With the planning of the galleries we do quite a lot of participatory events, where we’ll perhaps bring an item from the collection out and invite the visitors to ask us questions... We usually start off with just having something on the table, and not telling them anything about it. They start by writing down their questions... we answer those questions and then see where the conversation goes. And that’s quite useful in terms of helping us shape what we might do with the information that we present.”* Elizabeth Walker, Cardiff

Visitors’ questions and comments from one such participatory session were influential in informing the content of the new galleries at St Fagan’s, Elizabeth Walker explained, by giving a particular angle on how an item – a Neanderthal jawbone of a child - might best be displayed.

In addition to other ways of seeking feedback and gauging the impact of an exhibition the British Museum has coverage from the national press to consider. The Prime Minister, The Queen, and other high profile public figures will often attend an exhibition:

*“An exhibition has the highest level of political involvement in its delivery. So in terms of impact - that often does it. And often exhibitions set an agenda for a topic, which is then debated among the national press.”* Jago Cooper, British Museum

The idea of an exhibition being a springboard for debate is relevant to any museum. The ‘effectiveness’ of an exhibition, however, in terms of what the museum wishes to achieve, is not easy to define. This was exemplified by Tom Cadbury at Exeter when describing an art exhibition about Dartmoor by a local artist:

*“The artist has a particular vision ... and our challenge is to get that vision across and it’s very important for us to do that... We had a fascinating exhibition by Garry Fabian Miller, who works on Dartmoor with a kind of non-camera photography, with blocks and colour of light... He had a very particular vision of how it should be laid out, and luckily I think we got it. Visitors were absolutely amazed, coming into a Manhattan studio space, which was how a lot of people described it ...completely different from what you would expect from an exhibition about Dartmoor, which you think will be vast landscapes and a bit weather-beaten... Just getting that atmosphere across was quite a challenge... It helped people to step back from what their expectations about Dartmoor would be, and to engage with*

*this particular vision and to think about it, which was good.*” Tom Cadbury, Exeter

Having a team of trained volunteers on hand to talk about the art and respond to visitors' questions contributed greatly, Tom Cadbury added, to the success of this particular exhibition.

### *Summary*

The gathering of feedback from their audiences is a universal consideration despite the discrepancies in size, stature and organisation of the museums under study. Public engagement and visitor satisfaction underpin the mission of each of the museums. Gauging the effectiveness of an exhibition was, it turned out, a very broad question: not only does 'effectiveness' cover audience responses, it also relates to how the team responsible for the exhibition assess how it met their expectations. These two facets are, however, intertwined. Volunteer expertise was acknowledged by several of the participants as an important contribution to the success of an exhibition and to the process of collecting feedback generally about the museum.

### *Discussion and analysis of questions 1 to 4: summary*

In conclusion to this analysis of the first four questions of the interview guide, it can be seen from a comparison of the responses that the museums in the study all share the same desire to be seen as welcoming, user-friendly, exciting and informative places for people to spend time in, and as a valued part of the wider community.

There are, however, interesting and subtle differences in how they view and act out their particular role: it seems this is down to the varying natures and the perceived 'personalities' of each museum, as much as it is due to the differences in outlook and character between the participants.



### **7.3 Questions relating to the future: the potential for communicating climate change issues using archaeological collections**

#### *7.3.1 Opportunities for multi-disciplinary engagement*

*Question 5: What do you see as the opportunities for interpretation of a multi-disciplinary nature - for example an exhibition which combines archaeological or historical artefacts with objects from ethnographic, natural history or art collections?*

This question acted as a bridge between the questions about the museum itself and those focussed on potentialities, creative opportunities and the future. It was a useful lead into thinking more deeply about such a multi-faceted subject as climate change, which by its nature ignores borders, crosses boundaries and touches on so many aspects of the human and natural world.

There was agreement among the interview participants that multi-disciplinary thinking is intrinsic to museums. Everyone felt that to think around a topic for engagement in a multi-disciplinary way – for example by exhibiting material in new and imaginative ways, or using one discipline to clarify another – was advantageous. It was thought that difficult ideas could be communicated more freely by coming at them from another angle:

*“Art, particularly, can be very good at giving a doorway, especially for children, into more complex stories about archaeology and natural sciences.” Philip Collins, Torquay*

*“It is something that we do, and it’s probably something that we should be looking more to do. When the Bristol Museum and Art Gallery was first built, a hundred years ago, there was space for the collections we’ve got to go on show, and now there’s not. So I would imagine that spaces will become more flexible, with guest appearances of objects in particular galleries everywhere.” Gail Boyle, Bristol*

*“Interdisciplinary engagement is essential for dealing with interesting research narratives.” Jago Cooper, British Museum*

At both Exeter and Torquay the leaning towards a multi-disciplinary approach to exhibitions and gallery content is inherent in the museum's own history. At Torquay, telling the story of Torbay as a coastal settlement from a holistic, landscape point of view, rather than taking a purely historical viewpoint, is seen as key. Emphasising the changes in the landscape through time is thought to engage audiences more deeply with a sense of place. Perhaps because of Torquay's unique collections an understanding of the close links between natural sciences and archaeology has long informed the thinking behind what is put on display and how it is interpreted:

*"There's always been a recognition that the environment we see outside is the result of millennia of interaction between people, culture and their environment. Therefore if you're talking about woodland ecology, you cannot possibly not cover the management of those woodlands by people for five thousand years, that's produced that startlingly rich biodiversity."*  
Philip Collins, Torquay

At Exeter, interactivity between the different disciplines has been facilitated by the museum's redevelopment: open-plan offices make it easier for curatorial staff to interact with each other and with other aspects of the museum. Similar to the situation at Torquay, the value placed on multi-disciplinary interpretation and engagement has its origins in the museum's Victorian roots:

*"We see it as going back to our own heritage, in that the Victorians were fascinated in the world, and tried to understand all aspects of it. Our collectors weren't compartmentalised. We have people who were collecting ferns but they would also have some Greek pots, or some who were fascinated in Egypt but would have photographs of Dartmoor..."* Tom Cadbury, Exeter

Fiona Pitt at Plymouth voiced the need to bear in mind the centrality of objects in a multi-disciplinary approach, whether in the planning of an exhibition or the re-design of a gallery. Themes need to be based on the actual artefacts or objects, she believed, or the story becomes more important than the objects themselves; and it is the objects that most people come to a museum to see. Multi-disciplinary exhibitions also need a strong narrative thread; the ones that tend to be most successful are the ones that have a real point to them:

*“They’ve got a specific idea, a specific story which they’re trying to get across and they’re trying to explain. Often, while they’re multidisciplinary in essence, at the core of those exhibitions is a theme that comes from one subject area. And they’ve embellished it, if you like, with objects from different areas.”* Fiona Pitt, Plymouth

Specific examples of multi-disciplinary engagement were given for Taunton, Torquay and Bristol. At Taunton, an Arts Council funded exhibition on artists was about to take place (2015), using objects from the museum’s reserve collections – including archival material, in the form of historic postcards – as inspiration; a painter, poet, sculptor, film-maker and worker in textiles were all participating in the exhibition. At Torquay artists, theatre companies and a children’s book illustrator had led workshops engaging audiences with the natural history collections. At Bristol a proposal for an exhibition on the theme of Death, involving material from different collections including archaeology, had come from the world cultures section; the exhibition itself was seen as a means for promoting interconnectivity among the museum staff.

MShed in Bristol was described by Gail Boyle as a multi-disciplinary museum, with archaeological material being incorporated throughout:

*“The whole museum, display-wise, is people-focussed and story-led across time. So you have contemporary material in the same case as medieval or prehistoric material, if it’s on the right theme. Diverse groups are represented - communities of interest, or communities within neighbourhoods, or cultural communities. So it’s diverse, with contemporary collecting of new objects, and commissioned pieces.”* Gail Boyle, Bristol

At Cardiff, Elizabeth Walker explained that plans for the renovated Cathays Park site were looking at a departure from the traditional, compartmentalised galleries. The refurbished ground floor of the building will be mainly natural history, arranged around themes; one of the themes will be human impact on the environment – including, for example, industrial history and the impact of coal mining - so there will be scope for the inclusion of archaeological artefacts and evidence:

*“We’re looking at more of an interdisciplinary style of exhibition, so increasingly the project team will comprise members of all the various curatorial departments.”* Elizabeth Walker, Cardiff

At St Fagans, it was planned to include art history in the new exhibits, for example using portraits to tell stories and interpret the lives of people in Wales in new ways.

Ethnography was mentioned by a couple of the participants as being an area where multi-disciplinary thinking works well. At Plymouth, Fiona Pitt made the important point that a multi-disciplinary approach to the interpretation of artefacts from the world cultures collection helps to break down barriers between a sense of ‘us’ and a sense of ‘other’. At Torquay, Philip Collins was hopeful that future temporary exhibitions would similarly combine objects from different collections. An example would be to have an exhibition on the Pacific Islands, using elements from both the ethnography and natural sciences collections; communicating issues of modern climate change would work well in that context, with sea level rise and the impact on coral reefs becoming part of the exhibition.

### *Summary*

It was agreed that multi-disciplinary engagement was both desirable and possible. The need for visitors to an exhibition to enjoy informative and imaginative interpretation through exposure to different perspectives was a priority:

*“Normally there’s a question that you’re trying to ask, and answer; and the visitor is trying to learn something from that experience. And that will come through exposure to very many disciplines, as part of that experience.”*  
Jago Cooper, British Museum

Where new galleries were being planned, it was apparent that collections were going to be used in a more connected, thematic, cross-disciplinary way than might have been the case in the past. However, there was also an understanding that although the potential for multi-disciplinary engagement is a real strength, the inherent structure within many museums – such as the way collections are

catalogued, or a museum's division into rigid departments – may be a challenge to effective communication across the different areas.

### *7.3.2 Imagining a climate change exhibition*

*Question 6: Can you envisage an exhibition about climate change in your museum? How would it look? What would be its main aspects, and how would new technologies be incorporated to enhance visitors' experience of such a display?*

This was the first question to address directly the participants' opinions on, and experience of, communicating climate change in a museum setting. It also required them to use imagination and conjecture, and prompted a series of detailed responses. For this question, and the remaining questions in the interview guide, Nick Merriman, Director of Manchester Museum was included in the conversation; thus the views of eight participants are analysed in this and subsequent sections.

As mentioned in the introduction to this chapter, following analysis of the responses to questions 6 to 10, which relate directly to climate change communication, a main point will be raised and a question posed, thus adding weight to the agenda set at the end of Chapter 6.

The responses broadly covered three aspects: firstly, engagement happening in the museums at the present (ie at the time of interview), relating to climate change; secondly, examples of engagement in the past; and thirdly how things could be done in the future, along with the perceived obstacles that stand in the way of climate change communication.

Starting with the engagement that the participants saw as already in place, Tom Cadbury in Exeter outlined the exhibits in the ground floor galleries of the RAMM, where change through time is an inherent - if not explicit – theme. Climate change is considered as a topic very much in the context of prehistory, connecting with people's responses to an altered landscape:

*"You've got very different sorts of cultures happening during the Ice Age and at the end of the Ice Age... We draw upon the pollen evidence for landscape change on Dartmoor, we look at the way people are depositing objects in wetlands and lakes, like the wooden figure, the Bronze Age hoards... We could probably bring it out in later aspects, but we chose not to."* Tom Cadbury, Exeter

Similarly at Taunton, Dennis Parsons talked about the Ice Age component of the palaeontology exhibits in the Great Hall gallery, which tell the story, albeit briefly, of alternating warm and cold periods. He also highlighted the research role of the museum:

*"A lot of work is going on in terms of understanding past climate change using our collection, and indeed excavating and adding to that collection."* Dennis Parsons, Taunton

The museum carries out an annual excavation of cave deposits in Cheddar Gorge: research is therefore ongoing, with faunal evidence continually being added to the collection.

Collection of environmental material was also mentioned by Gail Boyle at Bristol. Material is collected both archaeologically and also by the Bristol and Regional Environmental Records Centre, who collect data relating to the environment as it is now. To join together the historical environmental data with the modern data would be advantageous, Gail Boyle believed; changes in the environment over longer timescales could then be more easily identified.

Moving on to examples of where engagement on a climate theme has taken place in the past, Elizabeth Walker at Cardiff described a panel in the former archaeology gallery, dedicated to climate change past and future:

*"I felt that it was appropriate to place something... It was next to the Mesolithic case where we were talking about clearance of woodland, and the change that that had on the environment. We used the climate curve and some explanation of that. So that's one thing we did. It wasn't a huge amount, but I think there was a mention."* Elizabeth Walker, Cardiff

Gail Boyle at Bristol mentioned that they'd had in the past a small exhibit relating to the Inuit, which incorporated material from the world cultures collection. The display, which included a small polar bear skeleton, illustrated the effects of modern climate change on a group of people today. The opportunities that such collections offer for climate change engagement were acknowledged. In a related context, sustainability and green issues are intrinsic to the Bristol MShed museum, with conservation within the city explored in the themed Place gallery.

Nick Merriman described the recent successful climate change exhibition 'Climate Control' held in 2016 at Manchester Museum (see Chapter 4). The exhibition, which won an international award, focused on contemporary and recent issues, although it did draw on some fossil evidence to show previous climate change. The advantages of incorporating material from the past when designing an exhibition were acknowledged. Audiences like to understand the similarities and differences between ourselves and people in the deep past:

*"I think the way I'd do it is to look at previous climate change events and their impact, particularly in the human past rather than the more geological past, so I'd probably look at the Holocene... What I think often works quite well, and I've used it in prehistoric galleries in the past, is contrast."* Nick Merriman, Manchester

Ideas for potential future climate change engagement took up the greater part of the discussion. To somehow find ways of linking changes in the past with modern climate change was considered to be a useful and interesting idea in itself, but some participants expressed reservations. These took the form of questioning how easy it would be for museum audiences to discern the unique nature of current, human-induced climate change, when past climate change – for example during the last Ice Age – is portrayed as a natural process. Whatever message was given about climate change, it would have to be got across very clearly. There was concern about perpetuating any misunderstandings that some people might have about the causes and extent of modern-day climate change:

*Obviously in prehistory the vast majority of climate change was due to natural occurrence. There are examples where people have cleared areas and changed the local environments, but not on the same scale. I think the danger of confusing those messages would make me quite nervous about*

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*looking at those two things in too close a proximity, because people don't read the small print. People can pick up the shorthand very quickly and remember and retain the shorthand; and it's important that that shorthand gives a very clear message rather than anything which might be confused."*  
Fiona Pitt, Plymouth

*"For people to either use materials or land – it's not a new activity, but it's the scale of the activity and therefore the scale of the consequence."* Gail Boyle, Bristol

The sheer practicalities of putting on a climate change exhibition seemed daunting to some participants. At Taunton, a museum's role in raising awareness of climate change was recognised, but it was felt that there simply wouldn't be sufficient material and information available in-house to engage with climate change beyond what was already on display. A successful climate change exhibition, both from an archaeological and palaeontological point of view, would depend on there being enough research done to tell the story effectively; a book or a film, it was felt, would be a more appropriate medium than a gallery exhibition. Steve Minnitt explained that temporary exhibitions – unless they are bought in - are based on parts of the collections not normally on display; essentially it seems they tell the story of the collections that are not directly publicly accessible:

*"... So it would be very difficult in that context to come up with one that's based around climate change... The only hope and possibility would be if there was a touring exhibition that was available, that dealt with climate change on a bigger basis; but it's quite hard to address the issue of climate change in just the context of Somerset, I think..."* Steve Minnitt, Taunton

However, it was clear that most of the participants could, in fact, in varying detail, envisage some kind of climate change exhibition in their museum. The importance of doing so was recognised, as well as the obstacles to be overcome:

*"To us trying to re-position ourselves as a science-orientated museum that tries to use historic collections to explain and elucidate modern and environmental problems, climate change is probably the biggest and most important theme we should be addressing... The challenge is how do you*



*do that in a way that is engaging and provides people with opportunities to do something as a consequence.*” Philip Collins, Torquay

Fiona Pitt at Plymouth felt that exploring climate change sat most comfortably within the context of natural history collections, especially in terms of animal extinctions and loss of habitat, and the loss of flora and fauna even on a local basis with changes in coastal environments. She suggested a very visual exhibition:

*“I think some of the photographic evidence of climate change is the most powerful.”* Fiona Pitt, Plymouth

Such an exhibition could show, for example, the shrinking of polar ice caps, and the effects of deforestation and massive extraction of raw minerals: this, it was felt, would be a striking way of enabling people to see climate change as a process, within the broader context of human impacts on the environment. At Bristol, Gail Boyle emphasised the importance of industrial history, since the origins of human-induced climate change through increased emissions date back two hundred years. She envisaged an exhibition which could introduce people to the concept of climate variability through the idea of an ice age:

*“It’s a different form of climate change, part of a natural cycle that people have been going through. Then we could put in what’s happening today, into that context... Bristol expanded massively during the Victorian period, like other industrial towns. Pollutants in the atmosphere all weaves into climate change – what have we done in the past, as well as what we’re doing today... It’s part of a much longer time continuum, rather than a specific issue relating to the twentieth and twenty-first centuries.”* Gail Boyle, Bristol

At Torquay, Philip Collins similarly proposed starting with the natural fluctuations of ice ages over vast timescales, and the resultant changes in land and sea level, and how humans adapted. A scenario for a climate change exhibition, involving modern technology and animation, was suggested:

*“Let’s construct a twenty metre by ten metre chunk of landscape of Torbay, and let’s use modern technology to animate that landscape to explain climate change; and let’s use the museum’s collections, both within that*

*technology but also as real items on display, preferably if at all possible handle-able... The moment you've got a situation where you have the Channel terrestrial you can imagine people would understand where they were on a three-dimensional map. So you could tell the story of sea level rise, of sea level fall, of interglacials, of human habitation with Kents Cavern, of transhumance, of the migration of beasts. And climate change is the fundamental underlying driver of that whole story."* Philip Collins, Torquay

Nick Merriman at Manchester similar suggested using changes in sea level through the Holocene, and especially its rapid rise and the creation of the English Channel, as a way of illustrating change in human adaptations by people thousands of years ago who were essentially the same as we are, but operating within a very different landscape.

Turning to the national museums, Elizabeth Walker said that climate change was certainly an area they were looking to incorporate into the re-displayed exhibits, following the museum's reorganisation. The story of human occupation in Wales, she explained, is entirely shaped by natural climate change; and in terms of the present day there are changes in the landscape and coastline to consider. The story of coal and carbon emissions could also feed into the same story.

At the British Museum Jago Cooper was enthusiastically in favour of engagement around climate change. He had previously pitched an idea for an exhibition on climate and civilisation, which would take a global perspective. The exhibition would be structured both thematically and geographically. There would be five core themes, relating to how people have lived with climate variability over time. Each theme would be explored within the context of one of the museum's departments. Firstly, issues of fire and land clearance would be explored through prehistory, from early hominids' discovery of fire right up to the Neolithic; secondly, agriculture would be looked at, through the department of the Middle East; the third theme would be water, dealt with through ancient Egypt and Sudan, including irrigation and water management systems; next would be the development of complex societies, explored through the collections from Asia:

*"And then it would come through into contemporary societies, and how do all of these lessons - from these choices made by humans in different parts*

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*of the world at different times, through this thematic paradigm - play out with lessons that modern-day populations could learn; and that would be through Africa, Oceania and the Americas.”* Jago Cooper, British Museum

Jago Cooper explained this was just one possibility; but it seemed a very comprehensive plan for communicating a global climate change narrative, involving artefacts from all over the world. Close attention had been paid to what visitors to such an exhibition would take home with them:

*“You have to think of the visitor experience - how do the public engage with those themes, as they walk through the exhibition? They walk through chronologically and thematically. And they finish with understanding how those lessons distil into public understanding of what climate change is, and how it has impacted on societies, and what decisions we’ve made and how we might think about other decisions about the way we live our lives.”*  
Jago Cooper, British Museum

At Exeter Tom Cadbury outlined the plan for the proposed exhibition on the theme of Weather; the museum was working with the Met Office to run this exhibition, and with contemporary artists (see Chapter 4 for a description of the Weather exhibition). One of the project leaders for the proposed exhibition was the museum’s digital resources officer, so it was likely that there would be more digital technology than in most exhibitions. The intention was to incorporate some archaeological and historic artefacts, with a focus on how people have coped with instability and change. Tom Cadbury pointed out that Exeter as a city was not divorced from its hinterland, and through the ages the same concerns and insecurities are manifest in the archaeology of the time - managing food and livestock for example, so that there was enough left over for hard times:

*“...There was a huge concern, especially in the Elizabethan and later period with access to the sea, and being able to control the sea and putting your trust in boats laden with goods: if they went to their destination and came back they made your fortune, if they didn’t then that was a big loss. I think we do mention that in talking about the woollen and cloth trade. So there was a fascination with trying to understand the weather, mapping, the way you told the time – and that all ties into the climate.”* Tom Cadbury, Exeter

## Summary

There was agreement among the interview participants that **climate and weather were important to the lives of people in the past, and that archaeological or historical artefacts could be used to illustrate this**. There was an emphasis generally on the Ice Age and adaptations of people in early prehistory to a cold and then a warming world. Links with the palaeontological and geological records were discussed. The role of our industrial heritage – for example coal mining – in communicating modern climate change was acknowledged. The dialogue is summarised visually in the word cloud images below (Fig. 42).

Technology was mentioned, but not touched on very much, perhaps because it was enough of a leap to envision a climate change exhibition, without going into details of how it would be produced. A couple of participants referred to the museum's role as a collector of environmental material and data that could be used for climate change research. There was concern over what aspects of the collections could be usefully included in an exhibition or 'mined' for information. The prevalence of an object-rich and collections-based approach was called into question, and it was debated whether a more didactic, 'message-driven' exhibition might be appropriate, given the serious nature of climate change:

*"To my mind museums fundamentally are about collecting, but they're also about telling stories in the best way possible. And I think you're combining the two. There's been this huge trend to object-rich interpretation, away from didactic science interpretation... If you become so object-rich, it is very difficult to tell those stories that are really important about change."*  
Philip Collins, Torquay

This topic prompted a livelier and more emotive range of responses than the previous questions. There was a consensus that climate change should be urgently addressed. But opinions varied greatly on whether there was scope in their particular museum for a climate change exhibition, ranging from cautious to optimistic, and from lukewarm to passionate:

*"A lot of the toxic words to do with sustainability and climate change switch people off - they'll stop listening."* Gail Boyle, Bristol

*“I absolutely see an exhibition relating to climate change in the museum, and beyond that I think it’s a public obligation of the British Museum to address such important issues as climate change. So yes, I see it as essential.”* Jago Cooper, British Museum

*“It’s a very difficult one, because the archaeological collections per se don’t particularly represent climate change.”* Steve Minnitt, Taunton

*“When the consensus of science is ninety-nine per cent certain that climate change is taking place and is human-driven, then I think museums have an utter duty to interpret and attempt to explain that.”* Philip Collins, Torquay

The ability of the museum to come up with appropriate material from their collections was a matter of concern, as was how to avoid ‘mixed messages’ around the distinction between natural climate change in the past and modern, human-induced change. The risk that climate change might put people off, and leave visitors feeling despondent and disempowered, was flagged up by more than one of the participants. Avoiding this outcome was seen as one of the challenges of creating an effective exhibition.

*How can museums address climate change in effective ways, avoiding ‘mixed messages’ and making the distinction between past climate change (natural) and modern climate change (human-induced), and enabling audiences to understand the difference?*

Fig. 42 Word clouds generated from the responses to Question 6: Can you envisage an exhibition about climate change in your museum? How would it look? What would be its main aspects, and how would new technologies be incorporated to enhance visitors' experience of such a display?



### 7.3.3 Challenges of presenting climate change

*Question 7: What do you see as the major challenges and constraints in presenting climate change as a topic?*

This question provided an opportunity for reservations already expressed by the participants to be examined in more detail. The discussion around the challenges of presenting climate change fell broadly into two categories: firstly, those relating to the nature of climate change itself as a topic; and secondly, those relating to the practicalities of communicating it effectively to museum audiences. There was no specific focus on archaeology at this stage.

To look first at the challenges posed by climate change as a topic, the negativity surrounding it – and its associated terminology, with phrases like ‘carbon emissions’ and ‘carbon footprint’ being seen as ‘toxic words’ – was believed by everyone to be a major hurdle. Climate change can be overwhelming to audiences. Gail Boyle at Bristol commented that people don’t want to be made to feel guilty, and will easily disconnect if there is too much pessimism around. The existence of conflicting research, and how this is reported, is confusing for many audiences:

*“I think the media find it difficult, and I think therefore the public find it difficult.”* Gail Boyle, Bristol

*“Climate change is seen as a negative thing, and exhibitions are about attracting people, primarily, who have to pay money to come... How do you frame the structure of the exhibition to be something that people want to see?”* Jago Cooper, British Museum

Fiona Pitt at Plymouth, and Tom Cadbury at Exeter likewise talked about the media, and the fact that many museum visitors may feel that climate change is a subject they’ve heard too much about; and that it’s too worthy a topic, too serious and depressing for people to want to spend their leisure time engaging with it. People don’t want to be lectured to. Similarly, they will also come with their own preconceptions of climate change:

*“I suspect the phrase will be a turn-off to some people and an attraction to other people, and quite hard to convert them either way.”* Tom Cadbury, Exeter

Nick Merriman from Manchester Museum also expressed concern about how best to communicate an issue that makes people feel so helpless they want to turn away:

*“The topic can seem so overwhelming to the individual that they can often feel powerless. They say – there’s nothing I can do, to stop the ice sheets melting or the temperatures rising... Despondency and resignation can often be the result. So, one of the challenges is actually making it a positive and empowering story.”* Nick Merriman, Manchester

The language surrounding climate change, and the delicacy involved in pitching it as an idea at the planning stage, connects with the question of museums traditionally being seen as being neutral and non-biased:

*“The major constraint is political, in that climate change is seen as being a left-wing, environmentalist issue, and therefore politically it can generate a response among the public which is not about the topic but about the atmosphere of the topic... We’re a public institution therefore we can’t be seen to be political.”* Jago Cooper, British Museum

Turning to the second category of constraints and challenges – the practicalities of exhibiting climate change – some of the perceived limitations centred on how to find appropriate material to use in an exhibition. The consensus was that a museum’s own collections should certainly be used:

*“...You don’t want a book on the wall, and if you’re doing an exhibition in a museum it does need to draw on collections, in my view. Sometimes that can be a bit of a challenge.”* Nick Merriman, Manchester

Concerns were expressed about how an exhibition would achieve a balance between, on the one hand, being realistic and accurate about the science



involved, whilst on the other hand not putting people off with an unattractive message. Funding and budgetary constraints were also mentioned.

At Taunton a main challenge was the nature of the collections themselves, as it was felt there wouldn't be enough material – either archaeological or from the natural sciences collection – to furnish an exhibition:

*“The archaeological and social history collections would be very hard pressed to come up with an exhibition. Our temporary exhibition gallery is medium-sized, but the idea of trying to come up with something on a scale that would represent a fully-fledged temporary exhibition is quite hard....”*  
Steve Minnitt, Taunton

*“We’ve got an excellent collection for helping to understand and interpret climate change in the past, particularly with new forms of research going on, and material; but to bring it up to date would be very difficult. And also you’re dealing with lots of small bone, some big bones but not enough to fill a gallery.”* Dennis Parsons, Taunton

The challenge of how evidence for climate change could be displayed was noted by other participants too. At Torquay, Philip Collins commented that the biggest conceptual challenge is one of scale. Climate change is a planetary process so it's difficult for a normal, non-specialist, regional or local museum to deal with it in all its complexities. Even when looking to portray past climate change there are problems: although it is possible to reconstruct the animal and plant communities of thousands of years ago – how can that be exhibited effectively and imaginatively in a museum setting? And even if it can be done – in the context of an Ice Age exhibition, for example - there remains the difficulty of defining which narrative to pursue:

*“If you can imagine that situation, what are you doing about climate change? All you’d be saying is – there was an ice age, and here’s the evidence.... Which story do you choose? Do you choose the story about the baby mammoth, or do you choose the story about why the climate changed? Or do you choose the story about how we know the climate’s changed, which is very technical? And it’s quite a challenge round that.”*  
Philip Collins, Torquay

Scale was also referred to by Nick Merriman at Manchester, who believed that getting across the global nature of climate change, both geographically and in terms of the time depth it encompasses, is a particular challenge.

An additional task is how to define material from the collections that enables visitors to make the links – and the distinction - between the natural changes of past millennia and the causes and implications of climate change today. Philip Collins pointed out that, for Torquay Museum at least, there is no cultural evidence from the historic collections that reflects the story of the human impact on climate, although fundamentally it is a story that needs to be told.

The participants suggested ways of meeting the challenge of communicating the effect of human action on climate. At Exeter Tom Cadbury felt the best way to avoid the negative connotations of climate change was to come at the topic tangentially, by actually looking at the human response in the past, through the archaeology available, and not ramming the message home too forcefully but simply letting people see for themselves that change has occurred before; this could be done by presenting:

*“...An evidence-based approach to it, rather than saying this is or isn’t evidence for climate change, this is evidence for what happened at a particular time and people’s response to it.”* Tom Cadbury, Exeter

Using an art-related approach, which explored the emotional and aesthetic response to climate change, was also suggested. Philip Collins at Torquay believed that to start from the locality, rather than trying to embrace the huge scale of climate change past, would make the subject more engaging – for example changing sea levels could be illustrated by looking at Torbay’s wave-cut platforms. However, it was acknowledged that to illustrate change using just a few archaeological fragments was indeed a challenge; for Torquay Museum at least, it was believed, there is no cultural evidence from the historic collections that reflects the story of the human impact on climate, even though it is a story that needs to be told.

To help overcome the negativity surrounding climate change Fiona Pitt at Plymouth emphasised the need to find ways of including positive news, as people don't want to be demoralised but do wish to 'do their bit' and make a contribution:

*"...Maybe to help people understand how they can empower themselves, make sure they understand how effective their voices can be in lobbying for change. But again, that is quite a sensitive area to get into, and you can be charged with being too sort of politically overt in that situation. So it's got to be quite subtle."* Fiona Pitt, Plymouth

Likewise stressing the need for a positive message, Jago Cooper at the British Museum suggested that one way to structure a narrative would be to talk about human resilience, and the ingenious ways in which human societies have been resilient to climate variability in the past, and can be in the future, even though climate change is happening at an ever-increasing rate.

So, despite the challenges involved, the participants generally remained confident about the possibilities of engaging their audiences with climate change:

*"I don't really see any constraints as such, because it is pretty widely accepted that this is the situation, and it's a very important topic to raise and make people aware of. And it's very much a museum's role to educate and to present the information about this. So I don't really see there necessarily being any constraints."* Elizabeth Walker, National Museum of Wales, Cardiff

### *Summary*

It was mostly felt that **museums face many constraints and challenges in presenting climate change to their audiences**. The constraints are seen to be related partly to the public perception of climate change, its political overtones and negative associations; and partly to the practicalities of finding appropriate material within a museum's collections to make an engaging, upbeat and successful exhibition. The dialogue around these concerns is summarised visually in the word cloud images below (Fig. 43).

However, the participants all suggested ways in which these limitations could be tackled, and generally held a firm belief in the need for museums to engage with this topical issue. A sense of urgency and responsibility was expressed.

*How can the negative associations of climate change be overcome to create positive engagement in a museum setting? How can museums communicate empowering and affirming climate change stories, in the face of fearful and perplexing narratives in the mass media?*

Fig. 43 Word clouds generated from the responses to Question 7: What do you see as the major challenges and constraints in presenting climate change as a topic?



### *7.3.4 Linking past climate change with climate change today*

*Question 8: Can you imagine how an exhibition about climate change might link stories of climate and environmental change in the past with people's concerns about climate change today? How do you think visitors would respond to such an exhibition?*

This question aimed to extend the dialogue to consider more fully how the connections between climate change in the past and climate change today could be presented effectively to museum audiences.

The participants expressed varying opinions on the difficulties of communicating the distinction between past and present-day climate change. At Exeter Tom Cadbury referred again to the proposed Weather exhibition, commenting that the plan was to use the work of contemporary artists to communicate visually landscapes under stress due to the effects of change, as well as touching on responses to past climate change. At Taunton, Dennis Parsons commented that connections between past and present would have to start with a scientific, research-based approach based on their collections, with a view to communicating how warm and cold cycles have occurred in the past, along with an indication of how quickly the climate can change and the causes of those changes. The huge scale of modern climate change would be an obstacle. An exhibition would ideally encompass the issue of climate change accounting for massive species decline: it was believed that this would be beyond the capacity of the museum to deal with.

Other participants also suggested angles that could be taken on how to link past climate change with current concerns. Sea level change, for example, was seen as a powerful narrative at Torquay and Plymouth. Going back many thousands of years, the Neanderthals were suggested by Nick Merriman as an interesting case study: firstly because many people are not aware that Neanderthal people co-existed with modern humans for many millennia; and secondly from the point of view of adaptation and resilience, with Neanderthals being both supremely well adapted to cold climates and also hugely resilient to temperature fluctuations,

although this resilience lowered at the end of the last Ice Age with the expansion of modern humans.

Fiona Pitt at Plymouth was mindful of the need to emphasise to museum audiences that natural climate change in the past was exactly that – natural; but that it still had an impact on people, compelling them to adapt:

*“In the distant past with the sea level rise, about ten thousand years ago, that cut off Britain from mainland Europe: obviously that would have had a colossal impact... We know from the work done on Dogger Island, from coastal evidence, that people were making the most of the landscape which was available to them. So, obviously those people had to make changes.”* Fiona Pitt, Plymouth

At Torquay, Philip Collins raised the possibility of using geology and archaeology collections together to make the connections around sea level. He reiterated the importance of defining the most appropriate narrative for an exhibition, expressing the opinion that the choice of story – thus the key points an exhibition would aim to communicate - depends to an extent on what audience the museum is trying to reach and why. The Ancestors gallery at the museum, it was mentioned, is in fact very much about climate change, in that it illustrates how different animals inhabited the plain that is now the Channel, as changes through time took place. Taking altered sea levels as a theme was felt to be an imaginative proposition, and especially pertinent given that the museum audience in Torbay consists largely of tourists who have come to enjoy the seaside:

*“We have fossil material, tropical seashells in the geology from the top of Dartmoor, when the sea was on Dartmoor. So you can tell those stories of extreme sea level rise, you can tell the stories of marginal communities... the great thing with the archaeology collections is they go from prehistory right the way through to the medieval period.”* Philip Collins, Torquay

However an important question around using sea levels to illustrate climate change was also raised by Philip Collins: can a museum simply say to its audience – sea level has changed before and it’s changing again, or does it

explore in depth what the scientific community believes are the reasons for this change?

Moving from sea levels, another way to link the stories of how past and present peoples have dealt and are dealing with climate change would be to include contemporary communities:

*“I think that having living communities as part of the exhibition is very powerful, and engages the public immediately, particularly if you start to think about other parts of the world. For example Arctic communities, who rely on the sea ice which is now disappearing: their stories are very powerful...”* Jago Cooper, British Museum

Another way to link present and past, it was suggested, would be to focus on making direct comparisons between people’s experience in the past and today. Elizabeth Walker at Cardiff believed that climate change itself could be portrayed graphically using ice core data and the climate curves that result from it, while the human angle could encompass not only people’s response to alterations in the climate but also the increasing impact of their activities:

*“...The nature of life at the time, in the past compared to life today, and the changed environment, and how the carbon footprint of individuals past and present would differ: those sorts of comparisons could easily be brought out.”* Elizabeth Walker, Cardiff

The potential for using industrial archaeology, whilst exploring the social history of communities, was acknowledged; Elizabeth Walker also commented that exhibits relating to the Industrial Revolution could be incorporated into explaining the history and origins of global warming.

Whilst it would be important to highlight the urgency of climate change today, and not make excuses for the actions that have led to it, Gail Boyle at Bristol also expressed a feeling that, when comparing people’s actions then and now, people in the past should not be condemned for their choices. It would be more helpful, she commented, to point out to audiences that people have always had to find ways to meet their basic needs, which have involved altering and manipulating



their surroundings – from forest clearance long ago through to mineral extraction in the modern era. She believed museum visitors would feel a connection with past communities, even people in the remote past, if they were given that understanding; any proposed engagement with modern climate change would work best if those deep-time connections were indeed made:

*“I think people would be much more interested in seeing an exhibition about climate change if it does go over a long period of time, rather than just focusing on the last fifty years.”* Gail Boyle, Bristol

While looking at how people have both influenced and adapted to their environment through the ages, it would be interesting, Fiona Pitt at Plymouth proposed, to include an element of future into an exhibition. Audiences could be prompted to ask how they will cope with the impacts of climate change, considering strategies at a personal level but also questioning what global strategies need to be in place. Whilst not shying away from the fact that there are negative effects of climate change, that can be seen historically – for example the impacts on local populations of large-scale migrations of peoples – it is nonetheless important, Fiona Pitt argued, to encourage museum audiences to look at the effects of climate change more holistically; this can give audiences a greater knowledge and understanding, which will help them to feel less overwhelmed:

*“...It’s doing it in a way which engages people and asks them to start formulating their own questions and their own ideas. Because I think once people start doing that, it is a way that people can feel more engaged, and more in control... I think the problem is when anybody is faced with a crisis, they’ve got two options: they can ignore it, and hope it goes away, or they can actually engage with it and try to look at solutions at how to get through it.”* Fiona Pitt, Plymouth

However the global scale of climate change was felt by Steve Minnitt and Dennis Parsons at Taunton to put it almost beyond the reach of a regional museum. Although it was acknowledged that climate change was the most important issue facing humanity today, a museum exhibition was not, it was suggested, going to be the most the most effective mouthpiece for telling the story:

*“It’s a world issue rather than a Somerset issue. I mean that’s not to say we should not be involved in contentious and political issues - I don’t see that that’s a problem if it’s achievable and relevant to the locality. Obviously climate change is relevant to everybody, but it’s just not a story that we can easily tell, I think.”* Steve Minnitt, Taunton

*“You’d have to bring in so much from a global sense, that it would be way beyond an exhibition we could put on.”* Dennis Parsons, Taunton

To turn to more precise examples of how past climate change could be linked with the concerns of today, Jago Cooper emphasised the advantages of a time-depth element in an exhibition which would embrace modern-day peoples, such as those living in the Arctic, who are in the ‘front line’ of climate change. An audience would need to pick up on and internalise the significance of change through time as a concept, in order to fully understand the implications of current changes for people in time to come:

*“I do think you need to have a temporal depth to the exhibition. People need to understand the periodicities of climate variability, human society and environmental change, and understand how they change through time. So you need to know how people started living in the sea ice, how those societies developed, how long they’ve lived there, what climate variability they’ve lived with before and what the impact of modern day climate change will really mean for these people... Is there going to be a tipping point for these people you see in the exhibition today? As in the sea ice is going to disappear...”* Jago Cooper, British Museum

Similarly, at Torquay, Philip Collins expanded on the idea of focusing on one geographical location – Kents Cavern - and telling its story through time, as a way of connecting the climate change past with concerns today. Torquay Museum has collections relating to every archaeological period, so a vast time span could be represented:

*“So you can tell the story of the people who lived in Kents Cavern when it was land, in the plain that is now the Channel. You can tell the story of the people who lived in Kents Cavern when it was actually a marginal area with estuary type communities. You can tell the story of Kents Cavern when it was occupied in the medieval period, for example - when the Channel’s definitely there. ...You’ve got material culture... and you’ve got the geology.”* Philip Collins, Torquay

But there remains, it was pointed out, the difficulty of trying to construct a meaningful narrative, using just a few fragmented items from the collections, around the biggest resource of all for witnessing and understanding change through time – the surrounding landscape. However, one way of making the leap from past climate change to a consideration of current concerns would be, it was suggested, to address related environmental issues that are directly affecting people's lives at the moment. For the area local to Torquay a couple of contemporary issues were mentioned, both connected to rising sea levels:

*“...The future of Dawlish Warren and the spit across the Exe estuary... There's been a massive five years of community consultation on what to do. Similarly, just south of Torbay we've got Slapton Ley [a National Nature Reserve in south Devon], where a road has been washed away on a number of occasions and in the long-term future is untenable. And that will have huge economic impacts and is hugely controversial. And I don't think we can avoid telling those stories.” Philip Collins, Torquay*

At Taunton, the Somerset Levels was mentioned as a discrete case study illustrating how environmental change and human activity have interacted over the ages. But it was felt that the pollen and beetle evidence that would be needed to tell that story, which would be difficult anyway to display. The museum has one of the biggest collections of prehistoric wood in the country, from the trackways across the Levels; but it was thought it would be difficult to use this to illustrate climate change as such. Once again it was suggested that a book or audio-visual presentation would be more suitable than a museum gallery for engaging audience with the links between climate change past and climate change today.

### *Summary*

There was agreement that **climate change engagement should encourage audiences to make the connections between past, present and the future; it should help them to realise the unique character of current climate change and the rapidity with which it is taking place.** Opinions varied on whether this could be achieved. The dialogue surrounding the discussion is presented summarised visually in the word clouds below (Fig. 44).

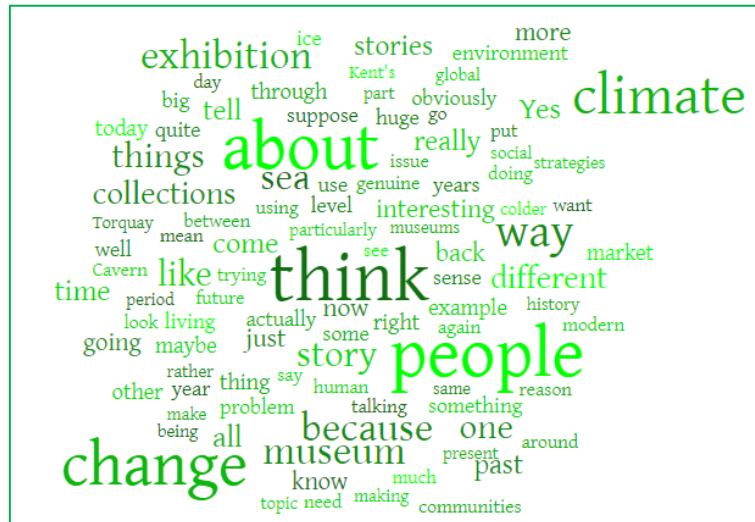
As archaeologists, it feels perhaps natural to envision climate change as something that happened in another age: cave- and tundra-dwelling Ice Age mammoth-hunters, or forest dwellers adjusting to a new range of habitats when the ice began to melt, are archetypically engrained in the archaeological mind. However, it was clear from the participants' responses to this and to previous questions that the opinion was, very firmly, that climate change belongs to the present as much to the past.

Consequently, most of the participants were able to envisage ways to encourage their audiences to make the connections, for example through explaining sea levels through time, or focusing on living communities who are bearing the brunt of climate change. Knowing that people through the ages have had to adapt to survive could indeed be daunting for museum audiences, but if handled sensitively could also make them feel informed and supported.

Realistically, there were nonetheless many obstacles predicted to be in the way of making the connections, not least the limitations imposed by the collections themselves. The nature of the target audience was alluded to by some participants, and also the ways in which visitors might be inspired to think for themselves about future strategies to deal with climate change.

*How can museums tell stories from the past to inform and enhance an understanding of the specific nature of modern climate change? How can past adaptations be made relevant to people today?*

Fig. 44 Word clouds generated from the responses to Question 8: Can you imagine how an exhibition about climate change might link stories of climate and environmental change in the past with people's concerns about climate change today? How do you think visitors would respond to such an exhibition?



### 7.3.5 Using archaeological objects in climate change engagement

*Question 9: What opportunities can you envisage for using archaeological objects from your collections in an exhibition about climate change? Can you think of specific examples?*

This question aimed to narrow the discussion down into a consideration of museum archaeology and its role in communicating climate change. The responses covered ideas about how artefacts can be illustrative of particular themes, or else be a starting point in themselves. The dilemmas faced when trying to find specific objects from the collections were discussed.

As an example of something comparable, Elizabeth Walker at Cardiff described a temporary exhibition that was due to take place (as of 2015) on the changing environment of the Severn estuary. She believed that climate change and also human impact on the fragile estuary environment would be included. The natural science department at the museum was carrying out research into – for example - the effect of higher water temperatures on the ranges occupied by different marine species, and such research would inform the content of the proposed exhibition; but there was room for including excavated archaeological evidence as well:

*“...The fish bones of the Mesolithic sites, the dense oak woodland we know was around the edge of the estuary at the time... I think there are opportunities to bring out those stories and to link them with the artefactual evidence... the axes, the burnt evidence from some of the Mesolithic flint and so on as well.”* Elizabeth Walker, Cardiff

Collections from early prehistory were mentioned at Exeter, Torquay, Plymouth and Bristol. Tom Cadbury was optimistic about using archaeological objects in this context, citing the RAMM's large collection of Lower Palaeolithic handaxes and some of the Mesolithic material: although so little is known about these people, the two contrasting sets of material culture can, it was suggested, offer at least an idea of their different strategies for coping with change. At Torquay the cave material can arguably be used to demonstrate change over two million

years, as well as aspects of human adaptation and ingenuity, and the relationship of people with animals and with the broader environment:

*“...There are bones, there are skulls, there are things that have been used and adopted by people as ornaments; there are tools, there are discarded food products - all of which could be used in the context of exhibitions that explain aspects of climate change.”* Philip Collins, Torquay

Likewise, at Plymouth, Fiona Pitt commented that their collections of handaxes could be used to illustrate a time when there was huge movement and migrations of peoples. At Bristol, Gail Boyle similarly believed that any material from the Ice Age period could be used, although their particular collections were not thought to be in good enough condition; as an alternative, she suggested, images of Ice Art could be employed as a way of trying to link audiences to the experience of people in the remote past. Meanwhile Fiona Pitt pointed out that pre-Bronze Age collections comprise for the most part only stone artefacts; although these can be used to indicate the portability of people's lives, it is perhaps only possible from later prehistory onwards, with more varied evidence, to concentrate in any detail on a localised picture of human activity and response.

Archaeological objects from the later prehistoric periods that potentially tell a climate story were seen by several participants' as offering opportunities for engagement:

*“...Particularly in the late Bronze Age, when there are arguments about an increasingly wet climate causing the uplands to be abandoned...”* Nick Merriman, Manchester

Bronze Age hoards and Iron Age depositions, presumed to have been placed with intention by people at the time, were mentioned by Tom Cadbury at Exeter; whilst Gail Boyle at Bristol added that Bronze Age objects could be illustrative of human-environment interaction generally:

*“...Forest clearance, and looking at Bronze Age axes and the tools that were associated with that... We’ve got one very large antiquarian collection: some of those items will have come from deposition in natural places...”* Gail Boyle, Bristol Museum and Art Gallery

*“I’ve worked over in Lincolnshire... there were really strong deposits in the river valleys there, huge amounts of metalwork being deposited in response to either astronomical events or climate change events...”* Tom Cadbury, Exeter

However, as Gail Boyle pointed out, the interpretation of deposited objects is not straightforward: most of the votive items in the collections at Bristol relate to a specific context, like a Roman temple, rather than representing a general response to some external change.

The changing environment of Dartmoor, and its abandonment in prehistory and later during medieval times, was mentioned by several of the participants as a potential case study to illustrate how people have responded to change. The complexities of presenting the information, discerning the reasons for settlement abandonment – which may or not be climate-related - and dealing with a paucity of material culture from the deserted farmsteads, were all commented on by the participants:

*“...We know the palaeo-ecological information... so we know when the climate deteriorated; we know the impacts that had on the landscape. And whilst we don’t necessarily have collections from Dartmoor, you have material that can help explain and elucidate those significant changes, like the weather becoming much wetter and Dartmoor being abandoned and the blanket bogs starting to develop... those huge major landscape changes that result from climatic change.”* Philip Collins, Torquay

*“We had lions and hyenas here; there were mammoths and woolly rhinos: that’s great, and shows dramatic climate change. But the subtle changes – climate change during the medieval period on Dartmoor: you’ve got just little bits of pottery, you’ve got deserted farmsteads, and they tell a very poignant story. My favourite one is on display in the gallery... a medieval farmstead that had one too many mishaps – the roof caught fire and collapsed; and you suspect that whoever lived there was under severe stress at the time, and so rather than rebuild they abandoned it on that day, with stuff just left as it was, which is a fascinating glimpse into life then.”* Tom Cadbury, Exeter



*“...Dartmoor is potentially a very good example, but it’s not fully understood. I think the ideas put forward in the past about climatic change and people stopping living there are not well understood: drawing out those ideas would be quite good in terms of it not always being a simple black and white picture; there’s a lot more nuance to why people choose to live somewhere and why they suddenly don’t choose to live somewhere. And that can be to do with all sorts of different issues, not just the climate... But to be honest there will always be situations where... you can’t sustain a life in a place because of the climate... Or if that environment has only got so much carrying capacity for a certain number of people.”* Fiona Pitt, Plymouth

For an urban context such as Exeter, Tom Cadbury mentioned how rubbish pits are a good source of data and artefacts that can not only be closely dated but also assigned to individual households: there is thus a mine of information, from everyday objects at a very localised and intimate level, on how people responded to times of change and times of stress. He mentioned an exhibition held jointly with the Elizabethan Heritage Trust:

*“...We had an exhibition on the Elizabethan period, which mostly with the Elizabethan Heritage Trust tends to be the glorious artworks, the impressive explorers; but actually apparently if you dig behind it it’s a time of tremendous uncertainty – economic, political, religious, and also I suspect environmental uncertainty; and that gets picked up in some of the more everyday material culture and you only get that through archaeology. And then you balance that with looking through the records, and you see people questioning all sorts of things.”* Tom Cadbury, Exeter

Turning to more recent history, Gail Boyle could envisage using objects pertaining to Bristol’s mining industry. Artefacts relating to other kinds of local industries, for example soap-making or anything that released pollutants into the atmosphere, would also be appropriate. Such objects could be used to illustrate the effect of the industries whose growth was responsible for the rapid increase in carbon emissions during the Industrial Revolution. Eye-witness accounts and poetry of the time were also mentioned as material that could be used.

Using material that in other museums might be drawn from world cultures collections, Jago Cooper at the British Museum was able to give specific examples of objects for a proposed (as of 2015) exhibition on Arctic culture and

the changing climate: these might include gut parkas from the Arctic, and items connected to deep-sea harpoon fishing for mammals in the Pacific. Use of such artefacts would engage audiences with concepts of human-environment-climate relationships, through time and across geographical areas:

*“...All material culture represents the interface between humans and their environment, and so all those technological aspects of their development are essentially directly linked to climate change. They can be thematically linked through areas like clothing, transportation, food exploitation, and then you categorise them through those themes.”* Jago Cooper, British Museum

The use of sources of information other than actual artefacts was discussed by a couple of the participants. At Taunton, pollen evidence was suggested as a way of engaging audiences with climate change; but this presented problems in a practical sense, and in terms of visitor expectations:

*“You’d need microscopes that children and adults could sit down at and see samples of pollen. You’d have to make it in that way, as a discovery. But again, that would be difficult... because you get a lot of people come to an exhibition, and they come with the expectation that they can all look down microscopes, so you get to need more than one microscope and then the costs multiply. It’s not straightforward.”* Dennis Parsons, Taunton

Experimental archaeology, in the form of reconstructions, was mentioned by Tom Cadbury. The prehistoric dug-out boats recreated at the Maritime Museum in Falmouth were mentioned as an example of the way reconstructions can expand the thinking of the archaeologists who build them and the audiences who view them:

*“The process of creating the object is fascinating – and then you think about how it was used, the technology - moving around a watery landscape - and then how it came to be where it was.”* Tom Cadbury, Exeter

Philip Collins at Torquay mentioned photographs as a form of evidence that could be used to demonstrate the effects of climate change on a local scale, for

example photographs of flooding; however, depending on the interests of collectors in the past and decisions made around acquisitions it seems unlikely that many museums would hold comprehensive photographic collections.

Overall there was a consensus among the participants about the power of archaeological objects to encapsulate past people's stories. There was agreement that artefacts relating to climate change, or environmental change in a broader sense, or people's response to such changes, can indeed be identified from a museum's collections. But there remains the question of which narrative to follow:

*"One object can tell twenty or more stories. It just depends which angle you choose to go for with it... One axe can tell you... about the person who's made it, the process of making it, the axe factory perhaps from which the stone object came from, chopping down trees and the impact on the environment... its history and story of how it came to be in the museum in the first place, which can also be fascinating."* Elizabeth Walker, Cardiff

There was concern too about how to make that cognitive leap from the object itself to the wider issue, and of course how to enable a museum audience to do so:

*"...Trying to capture how an object is climate change is a real challenge."*  
Jago Cooper, British Museum

A similar concern was voiced by Philip Collins at Torquay about the extent to which the 'message' about climate change should take primacy over objects in an exhibition. This, it was commented, has links with the changing role of museums, and whether given the urgency of climate change they need to be more proactive in educating their audiences, now and in the future:

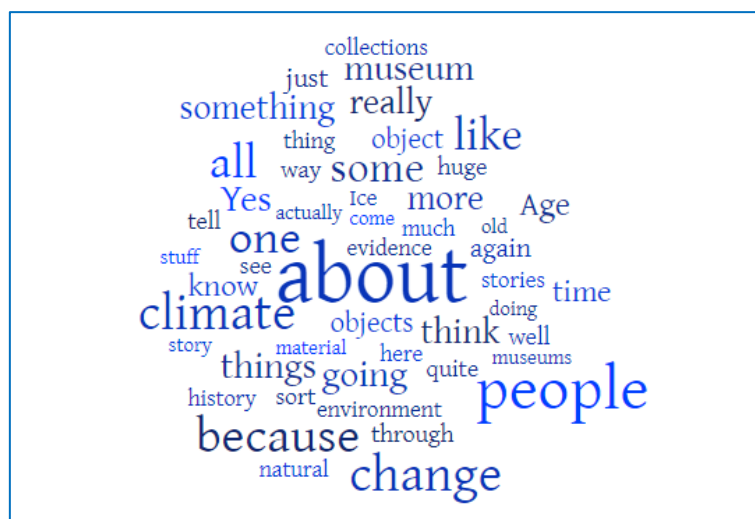
*"You've got to have a very different take on things... a different training to that of most museum professionals, or archaeologists, or natural scientists. If I'm a natural scientist in museums, probably what I'm really interested in is collecting things... and I'd be interested in enthusing people about these objects... you want them to go on collecting. Nowadays it's a little bit more about conserving and engaging with the natural world because it's valuable; but it isn't about telling those messages and the joined up stories between disciplines."* Philip Collins, Torquay

### *Summary*

From this analysis of the responses it is clear that every participant believed, to a greater or lesser extent, that **opportunities exist for using archaeological objects in an exhibition about climate change**. The dialogue is summarised visually in the word clouds below (Fig. 45). Some participants were pessimistic about whether appropriate artefacts from the collections could be found and meaningfully displayed in an exhibition, given that the links with climate change could be tenuous or misleading; others were more confident and enthusiastic. Ice Age artefacts, Bronze Age hoards and votive deposits were suggested, along with urban, industrial and experimental archaeology and ethnographic material. Along with the practicalities of exhibiting and interpreting material, the conversation covered more theoretical aspects of museology and the role and responsibilities of museums.

*How can historic or archaeological objects with a meaningful connection with climate change be identified? How can they be made to tell their stories?*

Fig. 45 Word clouds generated from the responses to Question 9: What opportunities can you envisage for using archaeological objects from your collections in an exhibition about climate change? Can you think of specific examples?



### 7.3.6 A museum's responsibility

*Question 10: Climate change can be seen as a political issue. In your opinion, do museums have a responsibility to be contentious? Should every museum be addressing climate change?*

This final question invited the participants to step back from their particular situation and consider more broadly their thoughts on a museum's obligations to society. Every museum would appear to have its own remit, its own especial ethos or 'brand'; and the distinct character of each museum really showed up in the responses to this question, as did the diverse views of the participants themselves.

It was apparent from the discussion that each museum functioned within its own parameters, its own particular set of expectations, limitations and opportunities. But this didn't necessarily exclude engagement with difficult topics:

*"I think it is a museum's role to present difficult subjects from time to time, and that's what we should and must do really, as these are topics which are so important to people in the future as much as to people today... How we do that is very important."* Elizabeth Walker, Cardiff

*"Every museum is different. And the role of the museum, and its mandate, is often established through a pretty established charter and the trustees' responsibilities."* Jago Cooper, British Museum

*"Obviously museums operate in different environments... We're an organisation funded by the local authority... We do a lot of exhibitions which are not always everybody's cup of tea; they can be challenging to certain people with certain ideas. I suppose on the whole they fit in with the accepted consensus of the day."* Fiona Pitt, Plymouth

Tom Cadbury at Exeter and Philip Collins at Torquay commented on the requirement of museums to be attentive to the impacts of climate change in their day to day running. It was seen as a museum's duty to reduce its carbon footprint, to encourage green travel, and to be sustainable in the way its exhibitions are produced. Visitors can be informed about these aims via, for example, a display

illustrating how much energy is generated in a year by a museum's solar panels. This was an important point to make, since it seems reasonable to assume that every museum, whatever its nature or size, should be able to take steps towards sustainability.

Most of the discussion, however, centred on the political and contentious nature of climate change. The general view of the participants was that climate change is 'political' only in the sense that people argue over its extent and impacts. In itself, climate change as a topic is not contentious, or is no longer as contentious as it was, since the scientific evidence for its happening - and happening as a result of human action - is overwhelming:

*"The science of climate change to my mind is indubitable. So it's not contentious... It's made contentious by some people who don't happen to agree with it, on all sorts of ideological grounds."* Nick Merriman, Manchester

*"It is a gross misrepresentation of climate change to say it's political... Climate change is as real, and anthropogenic climate change is as real, and the science behind it is as real and sound as the science that makes your phone work or your computer work..."* Philip Collins, Torquay

There were concerns about the amount of misinformation about climate change that is still around and that people are exposed to via the media:

*"...Because of the power of the lobbying from people whose vested interest is to deny climate change, then there is a political dimension to it."* Fiona Pitt, Plymouth

A further consideration, mentioned by a couple of the participants, was that in the case of local authority museums especially, politics can enter into the equation in a very real sense. Basically, it was felt, if the political party in power has little interest in funding museums and furthering their reach, then for a museum to consider doing anything that is perceived to be too radical puts it at risk of having its funds cut. A similar situation exists for charity-run museums, bound by the politics of the board that runs them; in fact every museum faces the same restraints. So although the existence of modern-day climate change may no

longer be contested, there is an unavoidable political element to its communication.

Societal change over time can alter what is perceived as contested or controversial. Several of the participants discussed exhibitions which had been held in their museums, or were planned, which covered subjects that would have been difficult in the past but are now considered mainstream:

*“...We did an exhibition Pride in Plymouth a couple of years ago, which was about the LGBT community, and you can imagine that thirty years ago that would have been seen as very contentious, whereas today it’s part of the consensus so it’s not particularly contentious.”* Fiona Pitt, Plymouth

Museums, it was generally felt, do not and should not automatically shy away from exhibiting material which can be topical, challenging and disturbing:

*“...There was a touring exhibition on foot and mouth, shortly after the last outbreak, which reflected on some of the impact of that, which doubtless some would have seen as political..., which worked really well.”* Steve Minnitt, Taunton

Tom Cadbury referred to an exhibition exploring the history of sexuality, carried out in conjunction with the University of Exeter (2014). The exhibition had been referred to in the local press and had stirred up a certain amount of debate through letters and comments; the exhibition, however, was not felt to be controversial in the end and was deliberately not too explicit. Far more difficult, from the point of view of considering an audience’s reactions, was an exhibition on facial injuries in the First World War: in such a situation the need to handle material sensitively has to be at the forefront of people’s minds:

*“...There is a certain amount of self-censorship, but we tend not to go out to shock people... There will be some extremely graphic and challenging images. We really will not go out to shock – we’re aware it’s a very family audience...The images are horrific; they will be sign-posted, so people shouldn’t be shocked.”* Tom Cadbury, Exeter



Whereas a regional museum has the resources to stage exhibitions on a range of contemporary and possibly provocative topics, there was a general feeling that not every museum can exhibit climate change. However 'green' a museum strives to become, however hard it works towards sustainability both behind the scenes and in the way it presents itself, it may be that to engage audiences with a dedicated exhibition is not feasible. Whether or not a museum can meaningfully engage with climate change may just depend on its subject and its location:

*"It's difficult if you're a social history museum... If you are a site museum, if you are the Roman Baths Museum, what validity is there, what point is there in doing anything about climate change? What is there to do? If you are the Sweet Track, or Flag Fen, you can see there is much more validity."*  
Philip Collins, Torquay

*"I don't see that every museum can address it. If you're a museum of surgical instruments you can't really."* Dennis Parsons, Taunton

It seemed to be a question of scale, with a sense among the participants that small, specialist museums do not have a responsibility explicitly to deal with climate change engagement, while larger museums – possibly through the medium of a touring exhibition – definitely do:

*"Certain museums could address it, certainly the national museums... Maybe if a national exhibition was put together that toured then certain regional museums could take it as well, backed up with their own collections. I can envisage something like that."* Dennis Parsons, Taunton

*"If you're a county museum that's dealing with county or wider collections, or a regional museum, then to me you should be telling that story. You should be telling the landscape story, and most of them don't. Several of them don't even do natural sciences at all anymore."* Philip Collins, Torquay

A general view was expressed that a climate change exhibition would have to be apolitical in the sense of being unbiased and considering all points of view. The word 'balance' appeared several times in the discussion, specifically during the conversation at Taunton, Bristol and Cardiff. This links once again with the discourse surrounding the impartiality of museums, which has appeared

historically to contribute towards their being regarded as trustworthy institutions. It was acknowledged that a museum cannot remain indifferent to certain stories, and has to stay true to its principles. There were varying opinions on the extent to which museums should go out of their way to put across a particular set of ideas:

*“I think that museums are not neutral, although they’ve often pretended to be neutral.... A look at museum history shows that they never have been... What museums in my view should be doing is standing up for rational scientific enquiry and the values of liberal humanism, which means there are certain topics that I don’t think museums should be completely neutral on.”* Nick Merriman, Manchester

*“We don’t necessarily go out to be contentious, but then again we don’t shy away from being contentious when that seems the right thing to do. And that response comes out of the planning process.”* Tom Cadbury, Exeter

*“...Museums should be contentious. What that means of course is hugely charged, because you could have a museum of Nazi memorabilia – that’s just as contentious as anything else... I think museums should at least try to reinterpret their collections in the light of current society.”* Philip Collins, Torquay

*“...The British Museum has a role to cover, I think, all aspects of that range between the traditional and the contentious. But I don’t think we’re here... to be contentious. No, we’re here basically - to the best of our curatorial ability - to communicate the information and ideas and new research narratives to the public which will be of interest and inspiration.”* Jago Cooper, British Museum

The idea that museums do actively seek at times to present something provocative was raised by Fiona Pitt at Plymouth; however the view was that an exhibition would need to be well thought out and not just put on for the sake of being provocative. Plymouth has a history of photographic exhibitions, which might be an appropriate medium for climate change communication. She reiterated that one of the difficulties with communicating climate change is in relation to the nature of museum collections:

*“...It’s about something in the here and now, and museums are largely based on collections which relate to the past.”* Fiona Pitt, Plymouth

Plymouth Museum has, however, a tradition of photographic exhibitions, and an exhibition on climate change would fit well into that format, it was suggested.

A slightly different angle on archaeology and its relevance to modern climate change was taken by Elizabeth Walker at Cardiff: archaeology deals with vast timescales, and with what remains; and this has obvious and very real connections with people's fears around global warming and how this will impact on what it preserved. In this sense archaeology is about the future:

*"...It's about what's going to last."* Elizabeth Walker, Cardiff

At Bristol, Gail Boyle commented that at the MShed museum deliberately challenging situations are presented to visitors. When the content of the museum was being planned, she explained, it was a priority that audiences should be able to understand whose voice they are hearing – whose view is being expressed:

*"...We might make a statement which will provoke. It won't necessarily be a political statement governed by any of the 'powers that be' in City Hall. We always make sure that statements are authored... One of the things that we drove for, for MShed, was that visitors would understand whose voice it was. But we would always try to find a balance."* Gail Boyle, Bristol

An example was the multiple perspectives used in an MShed exhibit about the building of the new Bristol dock in the Edwardian period, which uses opinions of people who were either for or against the dock's construction. Similarly, in the Curiosity gallery in Bristol Museum, balanced and contrasting views on the various themes are expressed with visitors being encouraged to formulate their own ideas. Being challenging, and pushing boundaries, was seen as part of Bristol's particular character, historically and today. This point illustrates how divergent one museum can be from its neighbour in the next town, not only in the attitudes of its staff and governing bodies but in its very essence, which is informed by its unique history or setting:

*"...We are contentious... we have Banksy as an exhibition. Bristol is... quite bolshie in its nature, it will always buck the trend... So it does tend to*

*be willing to have a debate, a conversation. It's part of the brand. When we talk about brand it's not just the logo, it's the attitude. We can be edgy and we can be bold... we are not risk averse.*" Gail Boyle, Bristol

What seemed to matter most to the participants was that every exhibition should be thoroughly researched, well rounded and authoritative and not averse to taking different views into account:

*"You don't want to be contentious for the sake of being contentious...I've got no problem with dealing with major issues that might be viewed as contentious, that have to be treated in a balanced way."* Steve Minnitt, Taunton

*"...I think there is that responsibility... to tell both sides of the story where it possibly can be told. We'd never allow ourselves to be hostage to a specific view, so we would always try to maintain that balance and present it in as careful, rational and reasoned way as we possibly could."* Elizabeth Walker, Cardiff

However, climate change was also perceived to be an issue of such urgency that some participants acknowledged the need for a more proselytising approach to be taken, where possible; it was seen as an utter duty of museums to play an active and vital part in its communication, and that this could be done within the context of wider environmental and societal narratives:

*"...I do believe that global change is the biggest societal threat of the next hundred years, and therefore we are under an obligation to explore that in different ways through the museum's collections...That could be an exhibition on urbanism, immigration, migration, and climate change which is obviously essential...I do believe we have that obligation."* Jago Cooper, British Museum

*"Climate change is happening, it's a massive problem. Therefore a museum, particularly one like my museum which deals with both the human past and the natural environment – it seems to me to be part of our role to actually push for greater awareness. It's becoming an emergency."* Nick Merriman, Manchester

*"I think museums fundamentally miss a point if they're not dealing with climate change."* Philip Collins, Torquay

### *Summary*

The question prompted a range of considered and contrasting responses, with strong views being expressed as to the vital importance of a museum's engagement with climate change. It was agreed that **climate change in itself is not contentious, but to talk about it often is**. The key themes in the dialogue are visually in the word clouds below (Fig. 46).

It was clear from the discussion that the parameters within which a museum operates, such as its dependency on the attitudes and political leanings of its funding bodies, have a bearing on whether and how concerns around climate change could be communicated. This is the case whatever the size or nature of the museum, and whether it is a national museum, a local authority museum or a charitable foundation. It was admitted that some smaller or specialist museums could not be expected to deal adequately with climate change as a topic, though it was accepted that every museum had a duty to be sustainable and mindful of its own carbon footprint.

There was an agreement that museums should involve themselves actively in wider society and in the grave issues facing humanity. Depending on a huge number of factors, it seems that some institutions will be more daring and adventurous in their outlook, with others understandably more cautious or staid, or else concentrating their energies on what they know they are already good at. The degree to which museums should set out to be deliberately controversial remained a matter of opinion.

In every case, the participants had no qualms about exhibiting climate change if it could be visualised and achieved in a way that flowed naturally from the museum's established and proven ways of doing things: for example through a photographic exhibition at Plymouth; through combining archaeology with natural sciences at Torquay or through an exploration of topical issues at Bristol.

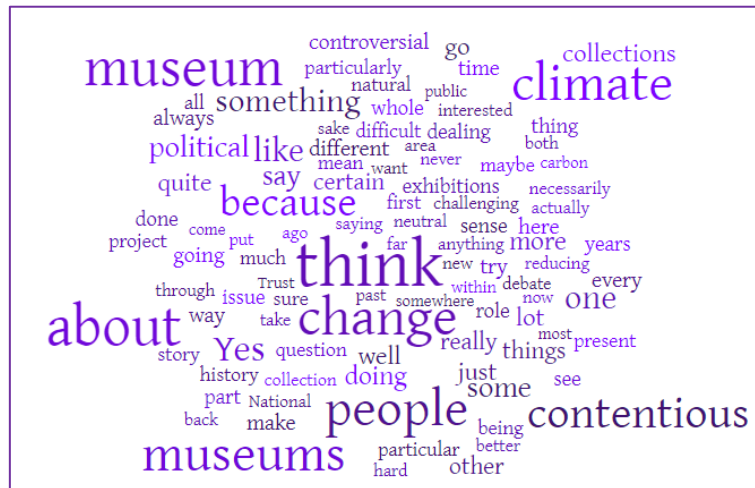
Several participants referred to the strong links with archaeology, since archaeological collections are not only indicative of past adaptations but

represent the fact – pertinent in the light of rapid human-induced climate change - that everything changes and only some things remain. The view was expressed that any engagement around climate change should be exceptionally well researched with different viewpoints expressed and authored.

Some participants felt very strongly that to communicate the urgency of what is at stake was of the utmost importance. Museums had an unquestionable obligation, they believed, to inform their audiences about the future outcomes of climate change, both locally and globally.

*How can museums use different viewpoints and experiences to fulfil their public obligation to enlighten and inform audiences about climate change? How do they decide which stories to tell?*

Fig. 46 Word clouds generated from the responses to Question 10: Climate change can be seen as a political issue. In your opinion, do museums have a responsibility to be contentious? Should every museum be addressing climate change?



## 7.4 *Supplementary questions*

As explained in Chapter 5, the interview guide included several supplementary questions, used to develop or extend the conversation where it seemed appropriate. Not every participant was asked every question; however, in some cases the extra dialogue prompted some pertinent responses which are discussed here.

One question was on how new technology, such as augmented reality, could be used – or is being used - to expand visitors' knowledge and experience of the museum's collections. This is relevant in the context of future engagement with climate change; technology is developing at a rapid rate and as it becomes more reliable, and as the costs decrease, it becomes a more viable option for museums. The general opinion among the participants was that technology should be used discerningly, not just for the sake of having it there.

Phone apps, allowing visitors to collect information as they view the displays, and find out more about the objects they are observing, are one example of the kinds of technology the participants had enjoyed first hand - for example at the British Museum's Ice Age Art exhibition. The audio-visual 360 degree view from inside the stones at the Stonehenge Visitor Centre, where visitors can watch time and the seasons pass, was mentioned as a specific example of the imaginative use of technology. Augmented reality headsets, ambient sound to create an atmosphere, listening posts where oral history can be used to enhance the visitor experience, apps that can merge historic photos with modern ones and visual projections to reconstruct objects and landscapes were all felt to be effective. Interpretation outside was also touched on, with one example being a phone app by the British Geological Society, which shows the geological layers beneath the ground at the point where the user is standing.

A second question was about the flexibility of the exhibition space within the museum. It was apparent that adaptability for temporary exhibitions was a key consideration in the planning of new galleries. Exhibitions were not necessarily confined by physical space, however; at Cardiff, for example, it was the intention



to create temporary exhibition space within all the permanent galleries, to accommodate new discoveries and new ideas.

A third question asked how schools and other visiting groups were organised within the museum, and whether they followed a set pattern of activities. The participants were also asked whether there were opportunities within the education programme for engaging with climate change. This question initiated varied and detailed responses, and there were noticeable differences between the museums in how their learning programmes are organised. Education was seen as a challenge at Exeter, where previously an award-winning education team had been in place; following cuts to the service, there is less provision available although large numbers of schools groups still attend the museum, often organising their own activities though the museum does buy in freelance education expertise as well. Similarly at Torquay, a programme of topics had been funded in the past, but a volunteer education system was now in place: one key topic focuses on early human development and uses the Kents Cavern material, with climate change a significant part of the story.

The work of the learning officers and teams at Plymouth, Taunton and Bristol were described, with outreach programmes, ongoing professional development for teachers and reinforcing links with the National Curriculum being especially mentioned as significant elements of the provision. At Cardiff interdisciplinary opportunities were being explored by making the resources available to schools as multi-faceted as possible: there was funding available for an ongoing project centred on bringing maths into the exhibitions, for example, and it was felt that there was no reason why other areas couldn't be similarly embraced, including climate change and the science behind it.

A variety of opinions was expressed about climate change being offered to schools and other groups as a topic. Comments ranged from a fairly open response, where it was agreed that the museum might be able to come up with something relevant, to an admission that climate change simply couldn't be dealt with adequately in a museum context:

*“If there was a demand for climate change, maybe museums wouldn’t be the first place teachers would think of. They’d probably think of going to the Council re-cycling centre or something like that. If there was a demand, then the museum would try to put something together.”* Fiona Pitt, Plymouth

*“I doubt that we would offer climate change unless we knew there was a market for it, simply because we wouldn’t be able to resource everything and we have to focus on what we can resource.”* Gail Boyle, Bristol

The collections themselves pose a problem, in that there was a feeling in some cases that although engaging school audiences with climate change could be done, it would be easier to offer expertise and activities within a learning space, than to find appropriate objects. The point was raised that a lot depends on the knowledge and interests of the museum staff: many museum professionals are there because they love research and love the collections; their prime concern is not necessarily going to be raising awareness of contemporary issues, and so they will not deliberately go out to look for the potential within the collections:

*“...It’s the same with any science agenda or even history agenda: people have to be aware of the information and depth of opportunity that those collections, or photographs, or whatever else, have to offer. Unless the museum staff or the teachers are aware of the opportunities and the meaning, it’s not going to happen.”* Philip Collins, Torquay

Engagement with climate change can take place in other forms. One example described was an event for teenagers and young people held at Torquay museum and run by the Happy Museum, an organisation that supports the museum sector in responding to the challenges of creating a more sustainable future (and referred to in Chapter 4). A core element of the project was raising awareness among young people about climate change and enabling them to feel empowered about how their actions could make a difference.

A final question invited the participants to discuss the frequency and nature of their museums’ temporary or touring exhibitions, and to reflect whether they knew of any touring exhibitions which addressed the climate change agenda. Temporary exhibitions tended to last for three to four months, though in some

cases the aim was to extend that period, as a better use of resources. At Exeter the art exhibition by Garry Fabian Miller was mentioned as an example of an exhibition which made reference directly to climate change; other exhibitions may have touched on the subject. Art exhibitions, especially Arts Council funded touring exhibitions, were mentioned by several of the participants. There was an agreement that contemporary artists more easily and naturally align themselves with controversy than museums do; for an artist, it was thought, being political is practically a requirement of getting known.

The touring exhibitions run by the British Museum were mentioned: these are designed within the museum and are sent out nationally and internationally. The British Museum also collaborates on exhibitions run by other museums, loaning objects to them. It was pointed out that the audience who visits a national exhibition will be different in nature different from regional audience; regional and local audiences will form a particular relationship with, and interest in, their own museum and what it does, rather than simply going for the sake of the objects on show. The difficult logistics of resourcing touring exhibitions if you are a regional museum was commented on; exhibitions tend to be bought in rather than sent out, though objects will be loaned between museums. The National Museum of Wales, Cardiff, has funding from CyMAL (the Welsh Museums Archives and Libraries Council) for a programme dedicated to working with local museums to develop their exhibitions, and helping them to improve their secure and the quality of their display cases so that items from the national collection can be loaned.

To bring in exhibitions to complement and vary their offer was seen as a positive and desirable aim by all the participants, providing as it does the opportunity to extend their own horizons:

*“We’re not inward-looking entirely. We are telling the story of Somerset and that is inevitably our focus. But to create a stimulating and attractive exhibition programme we have to look beyond that really.”* Steve Minnitt, Taunton

It was acknowledged that there are fewer touring exhibitions available generally than there were. Smaller museums may well have no budget for temporary or

touring exhibitions, and are dependent on accessing those that are free, so the nature of those exhibitions tends to be dictated by the supplier.

*“...There aren’t many temporary exhibitions any longer, because the area museum services that used to supply them were cut... You can buy stuff in, but it all tends to be very commercial.”* Philip Collins, Torquay Museum

For a small museum, bespoke exhibitions, where an individual practitioner is asked to come in and run an event which is then augmented by the collections, are a viable alternative: for example, Torquay Museum ran a successful family event with the children’s illustrator Jackie Morris on the theme of dragons, which used the museum’s fossil collections and small Chinese ceramics collection, along with painting and story-telling, to provide an imaginative and entertaining workshop. This kind of approach, where outside expertise is brought in to supplement what the museum can offer through its collections could be used effectively and creatively in the context of any theme, including the communication of climate change.

Small-scale ‘touring’ engagement might include interpretation boards, and a couple of artefacts or geological specimens, for example, that go out to libraries, shopping centres or other pop-up locations. In Torquay ‘Tea Trails’ about the geology of the Geopark were run successfully in partnership with local cafes, who each staged a mini exhibition; working this way with the commercial sector the museum was able to create a bigger show-room for itself and widen its reach.

Relevant to engagement in the South West is the Centre for Contemporary Arts and the Natural World, an educational charity based at the Dartington Hall Estate. The CCANW has run a programme around art and climate change, with exhibitions using, for example, photographic-type montages to show how the planet might look following sea level rise.

Among the participants there was doubt about not only the efficacy of climate change engagement within their museum but also whether it was possible at all or even appropriate. The conversation turned naturally back to how the participants envisioned climate change as a topic which they could address in a worthwhile way for their audiences:

*“...I think you’ve got to look at it from the angle of what kind of museum would want to put something specifically on climate change on display. Is it actually more appropriate for a science-based centre to do something like that? Is a local, regional, multi-disciplinary museum the place for an exhibition on climate change?”* Gail Boyle, Bristol

*“To make it attractive to people you’d have to have some kind of national funding stream so that the quality was good, so it was memorable, so people felt it was worthwhile and went away to tell their friends to come... It’s quite a difficult subject to get people interested in, even though it’s important to everyone.”* Dennis Parsons, Taunton

### *Summary*

The discussion sparked by the supplementary questions filled in some interesting and important detail regarding museum practice and the participants’ views on the possibilities of climate change engagement. It was admitted that opportunities might be hard to find, but the participants nonetheless came up with positive contributions on ways ahead.

The discussion around the first two questions, on technology and the flexibility of the exhibition spaces and galleries, provided useful additional context for an understanding of how climate change as a subject could be exhibited, interpreted, and explored by visitors, in a gallery setting. The further two questions, on learning in the museum and on temporary and touring exhibitions, were especially helpful in that the responses added in positive ways to the discussion prompted by some of the earlier questions relating specifically to climate change communication.

The question on provision for schools elicited detailed responses on how education and learning for all ages was organised at the museums, and the resources available. Reservations were expressed about the feasibility of including climate change. As a topic, climate change isn’t usually in demand by teachers, who are constricted by time and other pressures to teach only what is included in the national curriculum. In addition, the challenge of finding enough appropriate material within the collections was restated. The point was raised that collections – whether of natural history, geology or archaeological artefacts – may well hold insights into an understanding of climate change, but there is a

concomitant requirement that those who curate them have the knowledge, vision, enthusiasm and opportunity to realise their potential in a climate change context.

The question on temporary and touring exhibitions was also very useful, in that the responses added to the discussion on the viability of climate change engagement whilst also prompting a consideration of some alternatives to a traditional gallery exhibition – for example pop-up exhibitions in various formats, or events about climate change hosted by the museum with objects from the collections augmenting the narrative rather than being the main focus. As with education and learning provision, funding was an issue. Contemporary art was seen as an appropriate medium for engaging audiences with climate change. The importance of quality in an exhibition was highlighted. Questions were raised about whether museums are the most suitable venues for communicating climate change.

## **7.5 Conclusion**

The interviews with museum practitioners proved a stimulating, enjoyable and instructive experience. An informal yet structured approach, applying open-ended questions and using a conversational tone, resulted in a wealth of information and opinions being offered.

The contrasts noticed through the observations made in the galleries were also apparent in the participants' responses. Differences and similarities between the museums were easy to discern, as was the nature of their collections and how these are interpreted and presented to a visiting audience. The unique character and ethos of each museum came across through the different conversations.

A significant objective had been to assess the participants' thoughts on the role of museums in climate change communication: this was also successfully achieved through the discussions that took place. The priorities and sometimes conflicting opinions of the individual participants came across clearly and provided plenty of material for reflection. Their views on how archaeological ideas and artefacts could be used in climate change communication also provoked stimulating discussion.

For the interview questions relating most directly to the potential for climate change engagement, additional points and questions were highlighted. These augment the agenda set at the end of the previous chapter.

To reiterate, these points were:

- **Climate and weather were important to the lives of people in the past and archaeological or historical artefacts could be used to illustrate this**

*How can museums address climate change in effective ways, avoiding 'mixed messages' and making the distinction between past climate change (natural) and modern climate change (human-induced), and enabling audiences to understand the difference?*

- **Museums face many constraints and challenges in presenting climate change to their audiences**

*How can the negative associations of climate change be overcome to create positive engagement in a museum setting? How can museums communicate empowering and affirming climate change stories, in the face of fearful and perplexing narratives in the mass media?*

- **Climate change engagement should encourage audiences to make the connections between past, present and the future; it should help them to realise the unique character of current climate change and the rapidity with which it is taking place**

*How can museums tell stories from the past to inform and enhance an understanding of the specific nature of modern climate change? How can past adaptations be made relevant to people today?*

- **Opportunities exist for using archaeological objects in an exhibition about climate change**

*How can historic or archaeological objects with a meaningful connection with climate change be identified? How can they be made to tell their stories?*

- **Climate change in itself is not contentious, but to talk about it often is**

*How can museums use different viewpoints and experiences to fulfil their public obligation to enlighten and inform audiences about climate change?*

*How do they decide which stories to tell?*

Some further reflections arising from the analysis of the interview responses are summarised below. Firstly, thoughts on the challenges generally of climate change engagement in museums, as discussed with the participants, are addressed; secondly, how the participants viewed archaeology's specific role takes the spotlight. These reflections offer an additional perspective on the agenda for taking the ideas forward.

*Analysing the dialogue on the challenges of climate change engagement in museums: summary and reflection*

There was unanimous agreement among the interview participants about the urgency of modern-day climate change as a complex societal challenge. There was agreement too on the obligation of museums to engage their audiences with climate change, wherever possible, in constructive and creative ways. However, everyone acknowledged the situation to be complicated and the problems of effective climate change communication difficult to resolve.

In the context of the obstacles to effective climate change communication, certain words or phrases cropped up repeatedly during the interviews. Some thoughts on the various concerns are presented in the table below (Fig. 47), with the words/phrases defined as themes, which can either be viewed negatively, as constraints, or positively, as opportunities.



<i>Theme</i>	<i>Negative: constraint</i>	<i>Positive: opportunity</i>
<i>Climate change is political</i>	<p>Visitors are tired of politics and doomsday scenarios, they want escapism and a nice day out</p> <p>Climate change is portrayed as frightening by media, people are put off</p> <p>Funding bodies may have vested interests in climate change denial</p>	<p>Visitors have high expectations of museums and want them to move with the times</p> <p>Museums are 'green' and already committed to sustainability</p> <p>Museums are trusted (more than politicians)</p>
<i>Museums are impartial and balanced</i>	<p>Museums are neutral and non-controversial: climate change is a 'tricky' subject</p> <p>Museums have to give a 'balanced' view, which could be misleading in a climate change context</p>	<p>Museums remain true to their founding principles of scientific enquiry; they promote the values of liberal humanism, social justice and education</p> <p>Museums are good at presenting different aspects of a theme and ideas for positive action</p>
<i>Local v. global outlook</i>	<p>Museums have a community focus, but climate change is a global concern</p>	<p>Local communities all over the world are affected by climate change: museums have the resources to demonstrate this</p>
<i>Didactic approach</i>	<p>Visitors don't want to be told what to think; being didactic is too traditional, a retrograde step</p> <p>Museums don't want exhibitions to be 'books on the wall' with too much information and confusing science</p>	<p>Museums recognise their obligation to address and showcase contemporary issues</p> <p>Museums are well placed to take a stand given the urgency of climate change</p>
<i>Object-based/object-rich approach</i>	<p>Difficult to find objects from the collections that tell climate change stories</p> <p>Objects can be beautiful and interesting but it is hard to see how can they transmit knowledge</p>	<p>Museums have a wealth of collections and expertise across a range of disciplines</p> <p>With imagination, objects can be used in informative and creative ways so that they are not merely illustrative</p>

*Fig. 47 Museums and climate change: constraints and opportunities*

*Analysing the dialogue on the role of archaeology in climate change engagement: summary and reflection*

The analysis here can be seen in the context of the discussion earlier in this study, in Chapter 4, on the definition of archaeology in a museum setting, and how an understanding of what archaeology consists of can be broadened to include material culture generally. Museum 'archaeological' objects for climate change engagement could thus usefully include items of contemporary archaeology, artefacts from the recent past or social history collections, maritime archaeology, ethnographic objects, artworks, and photographs.

The role of museums in learning and communication through objects and story-telling similarly relates back to the discourse in Chapters 3 and 4 of this study, on the particular qualities that 'real' objects can offer in museum engagement. Despite the many tasks museums are expected to perform, their role as keepers of collections of objects from which meaning can be constructed remains an important part of their identity, while objects themselves remain central and enduring, offering to visitors the unique pleasure of looking and reflecting on real things from across time and space (Hein 2000, 54 – 7; Conn 2010, 57).

To distil the ideas discussed in the interviews around the role of archaeology and of archaeological objects, and to gain an overview of how archaeology's place in climate change communication was perceived by the participants in the study, a 'word mining' exercise is presented here.

The responses have been taken from questions 6 to 10, those questions directly addressing climate change in museums. A search of the text has been made for occurrences of 50 selected archaeological words or phrases: the choice of words is necessarily subjective, but all are words that occurred fairly often in the dialogue, or ideas or locations mentioned by more than one respondent.

Words relating both to time (eg 'Mesolithic', 'medieval', 'Victorian') and to archaeological ideas or objects (eg 'mammoth', 'sea level', 'hoard', 'adapt', 'bone', 'landscape') have been included.

The text has been 'mined' for occurrences of each of the 50 words. Frequencies ranged from just one or two occurrences (eg 'resilience', 'trade', 'pits', 'pottery', 'farmstead', 'metalwork', 'hoard', 'Tudor', 'cloth', 'nineteenth century'), up to 24

occurrences for 'landscape', 26 for 'evidence' and 50 occurrences of the word 'story'. The three word clouds presented below illustrate visually the occurrences of the selected words (Fig. 48). The first was generated from those words which appeared at least three times or more in the text (35 words in total), the second from words that appeared at least five times (27 words), and the third from words with a frequency of at least seven (20 words).

Of course, individual participants gave emphasis to different aspects of archaeology, depending on their interests. However, the overall pattern indicated by the word clouds is interesting. It suggests a strong association, in the minds of the participants, between climate change and early prehistory, specifically, the adaptation of past peoples to natural climate changes during and following the last Ice Age. The terms 'prehistory', 'Bronze Age', 'medieval' and 'Victorian' are the archaeological age-related words that occur the most often, with 'Dartmoor' the most frequently occurring site-related word. Some artefact and evidence-based words that predominate are 'wood', 'bone', 'animal' and 'pollen'.

Words like 'sea level' and 'adapt' are also apparent, the inference being that these were mentioned as aspects of all climate and environmental changes, natural or otherwise.

The overall impression gained from this brief exercise is that the museum practitioners in this study see museums, first and foremost, as story-tellers who communicate with their audiences using evidence-based narratives. It may well be that an emphasis on story may be intrinsic to effective and creative climate change communication.

Fig. 48 Word clouds illustrating the frequency of selected 'archaeological words' from the interview dialogue (Questions 6 to 10)

i) Words with a frequency of 3 or more



ii) Words with a frequency of 5 or more



iii) Words with a frequency of 7 or more



*‘Curious about Climate’: a prototype for an exhibition on climate change using museum archaeology*

Just as museums open up archaeology to a visiting public, so archaeology can open up climate change itself to possibility and opportunity. Inspired by the discussions with the study participants, a prototype for an exhibition using museum archaeology in climate change engagement is presented here. ‘Curious about Climate’ harks back to the curiosity cabinets of early museums and the questions-based Curiosity gallery at Bristol Museum and Art Gallery. ‘Curious about Climate’ can be envisioned as a template for a traditional gallery exhibition, arranged around themes, or else as a mobile, low-tech ‘pop-up’ exhibit.

Archaeology in museums has long been about getting audiences to connect with the past through objects. ‘Curious about Climate’ would similarly encourage people to explore objects, but with the aim of connecting the past with the present. The key questions posed at the end of Chapter 6, following the analysis and discussion of the museum observations, can usefully form a starting point for thinking about how the exhibition/pop-up could be developed.

To provide a positive and thought-provoking experience for visitors, ‘Curious about Climate’ would:

- Appeal to people’s innate curiosity
- Use real artefacts or objects
- Use interpretative methods involving sound and touch
- Give space for creativity and reflection
- Tell stories that link past, present and future

Three aspects or underlying themes could be explored. Together these could be said to reflect a specifically archaeological voice:

- Imagination – How do we know what life was like in the past? How do we imagine how life will be in years to come, because of climate change? What values, memories, objects and experiences would you want to save for the future?

- Resilience – What does archaeology tell us about the ways in which people used their ingenuity and resourcefulness to adjust to climate change in the past? What is needed, in the way of cooperation, community and sustainability, to allow us to adapt for the future?
- Timescales – What does archaeology tell us about the longevity of human experience? In what ways does it highlight the rapidity and urgency of the current climate crisis today?

These unifying themes could be embedded within various archaeological stories, based on displays of objects. The objects could be archaeological artefacts entirely; alternatively, they could be a combination of archaeology and objects from natural sciences collections, or artefacts illustrating the effects of climate change today on living communities. Even if quite mundane, each object could connect in some way with ideas of memory, of place, of challenge, journeys or adventure; or with narratives of loss and change, identity and belonging, and of individual and community spirit and endeavour.

Three examples of possible ‘archaeological stories’ are summarised below. For each story suggestions are given for objects which could either inspire the stories or illustrate them:

1. ‘Watery Worlds’. This story would explore people’s relationship with water over the millennia, from the melting of ice at the end of the last Ice Age, to the effects of rising sea levels today. It could introduce the resourcefulness of people living by water, both in the past and today, and the implications of this in terms of food production, shelter, safety and transport. It could look at drainage and land reclamation, and the effects of storm and flood from prehistory to the present day. It could also examine the effects of drought in the modern world, and what this means in term of climate justice.

Examples of objects:

- Palaeolithic hand axes, along with objects relating to melting ice today, or objects relating to polar exploration

- Roman artefacts alluding to the drainage of the Fens and the wealth and status it created for some people, such as pottery, tiles, glass and other domestic items
  - Mesolithic flints from flooded Doggerland along with items illustrating the efforts of communities facing floods today
  - Objects relating to fishing and boats
  - Objects connected to reclaiming land from the sea for farming or other activities
2. 'Make or Break'. This story would essentially be about technology. It would show how people from earliest prehistory onwards have used their ingenuity to make tools and machines and alter their surroundings. It could show how technology both solves and creates problems, and how over-use of resources has led to the environmental crisis we have today. It could also showcase other technologies for more sustainable living.

Examples of objects:

- Bronze Age axes, illustrative of the beginnings of metalworking; any objects which show the skills involved, but also associated impacts on resources and the land
  - Objects which show the minimal carbon footprint of past peoples, for example organic artefacts such as woven baskets, in contrast to plastic items today
  - Objects relating to the Industrial Revolution and mass production, for example coal, a model steam engine, Victorian objects of cast iron
  - Artefacts of differing materials illustrating how extraction and production can lead to destruction of biodiversity and landscapes
  - Weapons, signifying conflict over resources
  - Objects that illustrate the migration of past peoples and climate refugees today
3. 'Reflect and Believe'. This story would explore people's values and beliefs through time, in relation to the changing world around them. It would be a story about stories. It would challenge visitors to reflect on what

archaeology tells us about survival – of cultures, of communities and of the objects people made, possessed and cared about. It would encourage people to think how objects are invested with meaning, and what happens when objects and people are displaced.

Examples of objects:

- Votive objects, such as those from prehistory found deposited in watery places
- Objects which seem to have had a symbolic association or which have a religious significance
- Non-functional objects such as something beautifully decorated, carved or crafted; an artwork, a musical instrument
- Objects associated with ceremony, celebration, remembrance or people coming together for a common purpose
- Any objects which have been deliberately collected or retrieved; souvenirs

These suggestions demonstrate the diversity of stories that could, with imagination, link archaeological objects with narratives of environmental change in the past and the impacts of climate change today. At its most low-tech and flexible, 'Curious about Climate' could be conceived as literally a cabinet of stacked cases or shelves, each housing an object, arranged as a triptych of stories or themes. Ideally the objects would act as props for an on-site interpreter or story-teller, who would engage the audience possibly by asking them which object-story they would like to hear. There could be spaces for audiences to add a creative response or thoughts of their own, thus helping to co-create the display. In addition, to have objects or materials present that could be handled would make the experience of 'Curious about Climate' more tangible, and thus more memorable.

In conclusion to this chapter on the analysis and discussion of the structured interviews, it can be said that the interview process contributed valuable insights into current museum practice and the particular challenges that museums face today. These insights, involving as they did the individual and contrasting views of the participants, could not have been gained by other means.



Combined with the empirical evidence collected through observation of the museum galleries, the gathering of data through structured interviews has flagged up not only the difficulties – logistical, financial and institutional – but also the opportunities for museums to use their collections, skills and experience in communicating climate change. The ‘Curious about Climate’ prototype provides a suggestion on how an archaeological perspective could be brought to climate change engagement in a museum setting.

The concluding chapter of this study will aim to draw the research together and assess the possibility for an ‘archaeological voice’ to be heard in climate change communication.

## ***Chapter 8 Conclusion: facing the future, touching the past***

### ***8.1 Introduction: a way forward for archaeology, museums and climate change communication***

This study has investigated the role of museums in climate change communication. In particular it has sought to assess the potential for museums to use their archaeological collections to engage their audiences with climate change. By combining archaeology, museums and the current climate crisis it is suggested that ways can be found of making archaeology more relevant, museums more socially aware and the crisis less frightening.

Climate change is emerging as the gravest issue facing the world today, one which will impact on all areas of human activity. A consensus is growing that there is little time to wait for governments to lead the way on climate action. The extreme weather events of the past few years, the publication in 2018 of the IPCC's 'Special Report on Global Warming of 1.5°C' - predicting a catastrophic rise in global temperatures unless carbon emissions are drastically reduced – and a heightened public awareness of the impacts of the climate emergency have created a sense of urgency for action at grassroots level (Kendall Adams 2019, 12). The museum sector is waking up to the idea of its role as advocate and initiator of creative responses to climate change.

Archaeology as a discipline sheds a very particular light on the current crisis. In providing the long view, it connects our sense of the future with a perception of time past, and time long past; it offers an alternative to the narrow focus on the present, or the short term future, that is pervasive in so much of the media and generally in modern life. Likewise, museums are places where connections through time and across a multitude of different areas of study are made. In the words of Esme Ward, appointed Director of Manchester Museum in April 2018, and speaking at the International Symposium on Museums and Climate Change that same month, museums are about caring, not just for their collections but for people, ideas and relationships; 'in caring for the past', she commented, 'we're staking a claim on what's going to matter in the future'. Climate change – like archaeology, like museum collections – inhabits centuries and millennia. This

study has sought to place both archaeology and museums within the current discourse on the effective communication of climate change and all its many challenges and possibilities.

Archaeology's long-standing relationship with climate change has been seen to range across a wide area, from its concerns with how people responded to changing environments in the past, to the effects of climate change today on archaeological sites and investigations, to studies of human resilience and adaptability which have echoes in today's world. Similarly, the relationship between archaeology and museums has been explored in this study, from developments in public archaeology to how museums have changed over time to become more participatory and more willing to engage with contemporary issues, and from constructivist approaches to museum learning and the experience of being a museum visitor, to the potential of museum objects and collections to tell a multiplicity of stories.

Museums as 'safe' sites for engaging in climate change conversations have been examined, along with climate change perception and understanding, and an examination of what makes museums – as multidisciplinary, trusted and community-focused institutions – appropriate places for climate change engagement. Some of the challenges to effective engagement have also been addressed. Examples of initiatives by museums and museum-like organisations, and museum exhibitions relating to climate change, have been presented. It has been seen that in the past few years there has been a surge in interest and activity by the sector, as it starts to re-assess its values and purpose in the light of the climate crisis.

A methodology for assessing the potential contribution of museum archaeology has been devised and implemented. Structured interviews have been carried out with curatorial staff at a small but contrasting selection of museums – national, regional, or funded by a charitable trust – to gather views and opinions from those at the forefront of museum practice. The information thus gathered has been enhanced by empirical observations made during visits to the museums. As a result, this qualitative research enquiry has produced an original body of data which is both comprehensive and reflective.

Analysing the data, within the context of the existing discourse on museums and climate change, has led to ideas being crystallised and questions formulated. The questions take slightly different viewpoints: those formulated from an analysis of the empirical observations concern mainly the visitor experience; those questions defined following an analysis of the interview responses are more directly about the opportunities and challenges of climate change communication. It has been seen that perceived constraints can be re-framed as openings into potentially successful engagement. Together, the ideas and questions brought together in this study create an agenda for looking in new ways at the role and function of museum archaeology, and asking how an archaeological voice can be heard in the conversation around museums and climate change.

## **8.2 *Climate change engagement in museums***

In the light of the IPCC reports, and the dissemination of the UN Sustainable Development Goals, it has been seen that museums, along with other cultural institutions, are increasingly mindful of their role in issues of stewardship, environmental sustainability and social justice. Combining this new responsibility with their traditional strengths as educators and places of inspiration, museums can provide a vital link between scientific research and public understanding:

‘Climate change is intimately connected with a wide range of social, economic and environmental issues. Tackling these, both locally and globally, and making the connection between local and global development, is a very real opportunity for museums to act as brokers within and beyond national boundaries’ (McGhie 2019a, 28).

It has been seen that climate change communication means more than a passing on of information. Science matters, of course, and the facts should not be underplayed. But museum narratives are more powerful if they embrace the affective and the personal. The arts and humanities, as has been shown, offer opportunities for approaching climate change more tangentially than purely science-based engagement. It may well be not only desirable but vital that climate change narratives:

‘...move beyond simply expressing measurements of conditions like atmospheric carbon dioxide and more variable weather patterns, to grapple with what these might mean for communities... The narratives we share help people cope with the experience of climate change, and its conflicted emotions of loss, grief, disorientation, confusion, resolutions, opportunity, hope and care’ (Newell et al. 2016, 15 – 16).

Initiatives which are essentially arts-based have been explored. The Happy Museum project and Climate Museum UK, for example, offer support to museums wishing to find creative ways of addressing climate change; while projects like Museum of Water and the theatre company Forkbeard Fantasy engage directly with audiences in building narratives around sustainability and the future. These initiatives benefit from being more mobile, flexible and fluid than the traditional museum exhibition. As Miranda Massie, Director of the Climate Museum, New York, explained at the International Symposium on Museums and Climate Change in Manchester in 2018, ‘start up’ initiatives face challenges but also possess distinct advantages: they have none of the historic, institutional ‘baggage’ that may be a burden for some traditional museums; they carry no ‘accrued barnacles’. A particular characteristic of such initiatives, as has been seen, is that they are interdependent with their audience. Visitors are co-creators: their presence counts, they make a difference. These initiatives thus represent an important channel for collective action in tackling climate change.

Addressing potential concerns by museums, and following the success of the well-received ‘Climate Control’ exhibition at Manchester Museum (see Chapter 4), Henry McGhie, Sarah Mander and Ralph Underhill have offered some key points for museums wishing to move forward with climate change engagement. These points include being clear on what the engagement is trying to achieve, and on what assumptions are being made about the audience. Giving visitors agency is encouraged, as is a focus on critical thinking skills and the use of creative experiences to allow audiences to find their own ideas, words and symbols to help promote climate action. Importantly, it is suggested that engagement should be approached with the aim of disrupting ‘narratives of hopelessness and inevitability’, by telling a different story (McGhie et al. 2018, 345 – 6).

By definition, this study has sought out examples of successful engagement around climate change in, and by, museums. During the research journey individuals and institutions have been encountered, either in person or through the literature, who are already active in and passionate about promoting the urgency of the climate crisis and museums' role in it. What is difficult to assess is the extent to which their views are representative of the sector as a whole. This is why it has been of benefit to engage in direct dialogue with a selection of practitioners who are working day to day at 'the chalk face'. It may well be true that in the face of political apathy and intransigence museums occupy a very important space in the public dialogue around climate change; it may also be true that museums have an obligation to revisit and revitalise their original mission and vision, and to ask themselves, as Robert Janes has put it:

'Why does your museum exist? What changes are you trying to effect? What solutions will you generate? What are your non-negotiable values?' (Janes 2018, speaking on 'Museums and the Climate Challenge' <https://www.museumsassociation.org/video/13042018-museums-climate-challenge> Accessed 14.2.19).

But this study has indicated that responding with bravery and empathy to the climate challenge is not a straightforward process for many museums. There is a perceived gap between theory and practice. The unpredictability of climate change outcomes, and the accelerating pace of climate change, has meant that many museums are liable to feel incapable of keeping up and are generally out of their comfort zone:

'In many ways it is the change in climate change that most deserves our attention, and the dynamism and uncertainty are the challenge to a museum' (Newell et al. 2016, 15).

In reality, as has been shown by the interview responses presented in this study, museums have to deal with many challenges anyway, and a range of constraints day to day. To engage its audience with climate change may be a museum's dream, but is also contingent on questions of funding and the interests of a museum's governing body, and may be tied up with a lack of confidence, a feeling that climate change is not 'marketable', a perceived dearth of knowledge and appropriate expertise, or any combination of these and other factors. The

contribution of this research has been to investigate the very real potential of museums as climate change communicators. In doing so it has raised further questions about the authority and agency of museums themselves.

### **8.3** *A voice for archaeology*

Museums and climate change both dissolve the divide between nature and culture. Archaeology, both as a discipline and in the sense of a museum's archaeological collections, does the same. It has been proposed in this study that archaeology has a distinct contribution to make towards the communication of climate change in museums, but that it is a contribution yet to be fully realised. Archaeology, it is suggested, has a unique role to play by emphasising the human element in climate narratives and by linking the past with present and future stories. An archaeological perspective may help to alleviate some of the fears around climate change as a subject for engagement, and make the challenges for museums seem less daunting.

From collating and analysing the interview responses, and reflecting on the visits made during the course of this research, several conclusions can be drawn about the advantages of seeking an archaeological voice in climate change narratives:

1. Archaeology provides a way in. Working with people's innate curiosity about old things and past lives is a way of getting them engaged in the first place with ideas around climate change, its origins and its effects. Archaeology can act as a friendly introduction to difficult questions. A Palaeolithic hand axe is arguably a more exciting way in to the concept of an ice age than a temperature graph on the wall might be, or even an ice core: an ice core is fascinating and beautiful in its way, but is essentially a modern construct, not a thing made with intent thousands of years ago. Narratives of climate change past, present and yet to come can be linked through archaeological objects and information.
2. Archaeological stories demonstrate the capacity of human communities to survive and adapt to environmental changes and fluctuations, natural or otherwise. People have been living for millennia with melting ice, rising

seas, altered vegetation, diminishing or increasing resources, extreme weather events and changes in the pattern of the seasons. Archaeology provides the evidence of survival and can also inform us of failure to survive.

3. Archaeology gives us the long view. It shows how communities have adjusted in different and contrasting ways over truly vast timescales. The early *Homo sapiens* jawbone from Kents Cavern, referred to earlier, was dated to over 40,000 years old; archaeology informs us that 20,000 years later there were people living there still, still in the Upper Palaeolithic. Kents Cavern today is on the English Channel coast: at the time of these early occupations it was on the edge of a vast plain. Stories like these can be used to remind people that we have been around for a very long time indeed; crucially, they also highlight the unique rapidity with which human-induced climate change is happening today. Archaeology can thus encourage people to think ahead, to the future they wish to make.
4. Archaeological objects, ideas, investigations and reconstructions inform our understanding of sustainable living practices. Seeing examples of how past communities lived and worked in a better balance with the natural world than we have today gives us glimpses into other ways of doing things. Importantly, this should not be conflated with pessimistic narratives that warn of the effects of the climate crisis taking us 'back to the Stone Age'; this is not about going 'back' at all, rather a suggestion that an increased empathy with the past can encourage people to think of ways in which humanity can move forward into a more just and sustainable future.

As discussed in the previous chapter the practitioners interviewed in this study – who were mostly archaeologists – expressed some reservations about archaeology's role and relevance in communicating climate change. The connections between archaeology and climate futures are not necessarily obvious or apparent: as has been seen, much of climate change engagement in museums to date has understandably been initiated from a natural sciences



viewpoint. But two of the main concerns that surfaced in the interviews can equally be framed as opportunities. These are, in essence:

- What climate change stories can you use archaeology to tell?
- What archaeological objects can you use to tell those stories?

Museums are story-tellers in many different ways. In their galleries and exhibitions they create narratives to communicate the diversity and wonder of the natural world and also a wealth of human experience and aspiration. They know that people instinctively need stories to help make sense of themselves and the world around them:

‘Stories encode concepts about personhood, action and direction. They express ideas about value, authority and possibility about the character of the past and its implications for the present and the future’ (Newell et al. 2016, 4).

In addition to creating conversation through their collections and objects museums are natural homes for community dialogue in the form of story-telling and listening. Thus it could be said that:

‘...museums at a local level offer an arena that can accommodate and nurture the community based activism that many see as the future hope in the urgent political process of implementing the necessary measures to combat the worst impacts of global warming’ (Rees and Leal Filho 2018, 323).

Linked with the potential of inviting actual story-tellers into the museum is a further point, one that has emerged both from the literature and the interview process – the advantage of having educators, enablers or explainers on site to engage in dialogue with visitors. This may not always be practicable, but in the case of engagement which seeks to embed archaeology within climate-based stories it could be a really important element.

An additional point to make in connection with museum archaeology and story-telling is to raise the question: are museums recording and collating the archaeology of now? Climate stories of today – flooding events, sea walls washed away, marches for climate action and climate strikes by school-children – are all

part of the future archive of human responses to the current climate threat. This consideration flags up once again the value of museums acting as hubs for their communities and offering themselves as venues for events on contemporary discourse and debate.

Like museums, archaeological objects tell a multiplicity of stories. Perhaps the trickiest issue of all, and one voiced by all the participants in this study, has been the question of how to identify actual objects which 'speak' of climate change. Are objects best used to illustrate pre-prepared narratives, or is there a way of unpacking objects so that they themselves are the narrators with the stories developing around them? Objects accrue stories. Even seemingly mundane artefacts from the past may once have been of significance to those who made, held or owned them. Such objects can operate as 'lodestones':

'...magnetic things, pulling in people, stories around them, connecting and creating new stories and relationships that then radiate influences outwards' (Newell 2016, 34).

Just because an object is placed in a museum it does not mean its story is over. It can still exert influence, as a lodestone for communities, for learning, for engagement. The definition of archaeological objects is fairly elastic: a bicycle or a bus in a transport museum, for example, is arguably archaeology, and can be presented in such a way that questions are asked about carbon emissions, sustainability and the choices people have made through time relating to how they move around. Collections of photographs and maps are likewise not the most obvious of archaeological objects, but can be used to tell stories of change. Monuments, industrial sites and entire landscapes can similarly be presented.

But there is something about the archaeological artefact in a museum case or collection – the axe, tool, necklace, shield, cup, figurine or Victorian flat-iron – that elicits a particular response. This is to do with its portability. It has been carried in the past, carried through time, and remains a bearer of stories. Objects hold memories, whether or not these have been recorded; in a museum context they can create new memories and associations too. Importantly both objects and memories contribute to feelings of wellbeing (Janes 2016, 391).

In the end it may not matter so much whether objects are illustrative of climate stories, or are themselves the source of those stories. What matters most perhaps is simply their presence. The very materiality of objects, and the curiosity and questioning they inspire, can help people to slow down and think. In an age of agitation, packed with climate change narratives which are both frightening and frenetic, for museums to provide spaces and present objects which elicit feelings of calm and thoughtfulness is one of the best things they can do.

In whatever way climate change is communicated, it is important that imaginative approaches are used to combine the scientific background with inventive and original contributions from the humanities and arts. Climate change largely concerns imagining what lies ahead. Archaeology, as yet, has nothing to show from the future, but perhaps this is the point: archaeology is about what remains, and in this sense concerns the future of us all, as much as it does the past.

#### **8.4** *Ideas for further study*

This study has highlighted the very real contributions that museums could make, and in some cases are already making, as sites for climate change communication. It has been seen that museum archaeology presents opportunities for climate change engagement but that its potential has yet to be developed. Further research could usefully include:

- Going beyond the museum walls to investigate how climate change engagement could be developed at open-air archaeological museums. The experience of being outdoors and active enhances people's wellbeing, while to experience the natural world first-hand has been described as the only way we can rediscover its value, and thus change our behaviours to create more sustainable futures (Rees and Leal Filho 2018, 325).

Experimental archaeology and archaeological reconstructions involve museum visitors in tangible, hands-on ways with the materials that people have used and worked with for thousands of years, an experience that cannot easily be arranged in the traditional gallery or exhibition setting.

This sense of connecting with the past through touch helps develop a sense of our place in time and of the future, while an appreciation of the slow pace of change through most of the human story highlights the rapidity of climate change today and the urgent need for climate action.

- Investigations into devising a place for archaeology in climate change ventures such as Climate Museum UK. New initiatives could showcase archaeological stories, with the aim of using those stories to inform and connect with climate stories of today, and to project into the future.
- Studies which assess the experience and expertise of museum educators, to explore further how audiences gain understanding and inspiration from museum exhibits and events. In particular, interpretative strategies for presenting archaeological objects in imaginative and original ways – ways that can enlighten, entertain and incentivise people in relation to action around climate change – could be further investigated.

## **8.5 Conclusion**

Faced with the current climate emergency the world is still waking up too slowly to the need for action. Top-down action from governments busy with other agendas cannot be relied on, and grassroots and community-based initiatives may be the ones to take the lead.

As experienced communicators, collectors and creators of knowledge, sites where the global and local can be brought together, and as trusted institutions with a community focus, museums have both a role and responsibility in climate change engagement. The constraints on museums in providing effective and worthwhile engagement are acknowledged, but many projects already in place have been seen to be making positive contributions to people's understanding of the causes and impacts of modern, human-induced climate change, and the implications for the years ahead. Museums can be an authoritative voice in taking the lead:

'Museums do not need anyone's permission to start with climate action and in supporting the SDGs [Sustainable Development Goals], and their

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participation could help move this agenda forward, within their own sector and with others. Museums can be accelerators, not brakes, in the transformation towards a better future' (McGhie 2019a, 28).

Climate change, for all its challenges, can be seen as an opportunity. For museums it represents a chance to re-assess their priorities and values in relation to the provision of stimulating learning experiences and the promotion of social and environmental justice. The climate crisis can seem overwhelming in its implications. But through involvement with others and networking between organisations a more optimistic approach is possible:

'It's a tough time, but what we focus on is celebrating what we have, on our connection with nature and the environment... There are so many amazing things happening. We could wallow or we could just get on and do it, in the knowledge that there is a movement – and it's coming' (Claire Buckley, environmental and energy director at Julie's Bicycle, quoted in Kendall Adams 2019, 13).

Museum archaeology needs to find a role in the energetic climate change initiatives that are starting to be put into place. Not only is archaeology important in bringing a human voice to impersonal science, it also provides a wealth of artefacts, ideas and knowledge to inspire creative responses to tackling the climate emergency. The archaeological voice needs to be heard in climate change engagement in museums, to help audiences touch the past, attend to the present and face the future with compassion and hope.

**Appendix 1: Search results for 'Journal of Archaeological Science' and 'Antiquity'**

Search results for the *Journal of Archaeological Science*, 1974 - 2018

Year	Research articles containing the search term "climate" OR "climatic"		Research articles containing the search term "climate change" OR "climatic change"	
	<i>Total no. of occurrences of search term</i>	<i>No. of occurrences of search term in article title/key words/abstract</i>	<i>Total no. of occurrences of search term</i>	<i>No. of occurrences of search term in article title/key words/abstract</i>
1974	11	2	5	0
1975	10	0	2	0
1976	9	1	1	1
1977	6	0	4	0
1978	7	1	3	0
1979	9	1	2	0
1980	7	1	1	0
1981	9	5	3	1
1982	9	3	2	0
1983	11	1	5	0
1984	9	2	3	0
1985	9	1	4	1
1986	12	2	3	1
1987	12	3	2	1
1988	13	1	3	0
1989	15	3	6	1
1990	9	1	0	0
1991	17	3	7	1
1992	10	1	2	1
1993	2	2	1	1
1994	5	5	2	2

1995	18	6	5	0
1996	4	4	1	1
1997	5	5	0	0
1998	6	6	1	0
1999	4	3	2	2
2000	8	7	1	1
2001	9	9	4	4
2002	1	1	0	0
2003	34	5	8	1
2004	47	7	11	2
2005	56	10	16	3
2006	53	11	17	4
2007	64	11	23	7
2008	100	22	25	8
2009	98	22	40	9
2010	109	20	27	5
2011	109	24	19	3
2012	117	24	32	6
2013	138	25	40	8
2014	151	25	47	8
2015	94	14	28	2
2016	39	7	11	2
2017	47	13	13	5
2018	48	8	22	4
Total	1,560	328	456	97

Search results for Antiquity, 1974 - 2018

*NB Nos. in brackets indicate no. of book reviews included in 'articles'*

Year	Research articles containing the search term "climate" OR "climatic"	Research articles containing the search term "climate change" OR "climatic change"
1974	0	0
1975	0	0
1976	0	0
1977	0	0
1978	1	0
1979	0	0
1980	0	0
1981	0	0
1982	0	0
1983	1	0
1984	0	0
1985	0	0
1986	0	0
1987	0	0
1988	0	0
1989	1	0
1990	2	0
1991	0	0
1992	0	0
1993	1	1
1994	1	0
1995	1	0
1996	0	0
1997	1	0
1998	2	0



1999	4	0
2000	1	1
2001	2	0
2002	4	1
2003	1	0
2004	1	0
2005	3	1
2006	2	0
2007	6 (4)	3 (2)
2008	4 (1)	2 (1)
2009	1	1
2010	5 (1)	4 (1)
2011	6 (1)	1
2012	3 (1)	1 (1)
2013	2	1
2014	4 (1)	2 (1)
2015	3	1
2016	2	1
2017	5 (1)	1
2018	4	3
Total	74	30

## **Appendix 2: Interview transcripts**

*NB Dialogue in italics is the author's words in the interview*

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### *Interview 1 Philip Collins, Torquay Museum*

Interview date 4.10.17

#### *Question 1 Please could you describe the nature and range of the museum's archaeological collections?*

The museum is an early to mid-nineteenth century foundation, based on the fundamental collections of William Pengelly, who was perhaps the person who invented archaeological stratigraphy and excavation techniques; and like many museums of the date it originated as a natural history society that then set up its own museum.

The key central original collections were those of Pengelly, and came from his and other people's excavations of the prehistoric sites at Kents Cavern and Buckfastleigh; and those collections remain of international importance, and include the jawbone of the oldest known *Homo sapiens* in western Europe from about 40,000 years ago.

And then there are subsequent collections that are the usual mixture of human remains and megafauna primarily; so, lots of things from the cave sites at Buckfastleigh and other such caves, and cross-overs into the natural sciences collections which of course were very strong originally.

It's diversified into a much more normal, broader local museum; but even within that the social history is nationally important. Pengelly's daughter was an early collector of autographs: she collected lots of letters, so there are things from Jane Austen, et cetera.

The natural sciences collections still form a fundamental part of the interpretation of the galleries – one gallery is dedicated to that; and then various donations resulted in a collection relating to Agatha Christie, though it is not all primary information, more documentation. In the 1990s we were given a collection of Devon farm furniture as well, which was adopted for display purposes.

*So the archaeology really goes from thousands and thousands of years ago right up to the nineteenth century.*

Yes. What the museum *isn't* is your standard local history museum: although it's been diluted it is still fundamentally an archaeology and natural sciences museum at its core, with rather more diverse collections now.

*Question 2: Please could you outline the organisation and content of the museum's archaeology displays, exhibitions and other archaeology-related activities, including outreach? Which aspects, in your opinion, work best for visitors?*

One gallery was redisplayed in the 2000s as the Ancestors gallery, which primarily focuses on the prehistoric period, and uses the prime collections from Kents Cavern and the other cave deposits around the area. It tries to adopt what you could say is something of an environmental landscape approach, so that it does portray and explain climate change, glaciation, interglacials - the flux, if you like, in human occupation in this area; and particularly looking at the fact that Kents Cavern is presently located in the cliff above the sea; at the time it was occupied, the Channel was not in existence whatsoever, but was a rich plain full of megafauna and other such things you could hunt. It's very difficult in the relatively small scale and in the tradition of a 'cased' museum environment to explain that landscape scale approach.

Recently, we've been rather more adventurous: previously we didn't have the jawbone on display, but we made the decision that we would display it. We've had a moderately interactive CSI laboratory table built, that focuses on the history of the bone and the techniques for dating it. So it attempts to explain radio-carbon and potassium and argon dating; and also to explain the three-dimensional stratigraphic survey methodology that Pengelly invented.

The bone itself is contained in a representation of a cube of the size that Pengelly adopted as his fundamental archaeological unit, which enables you to place an object in three dimensions within the deposit. And we've done this on a table which has a series of interactive mini videos triggered by the user, and fake microscopes that people can look down. It's particularly geared for the primary school age range. The table has a video playing on its underside, that you can only see by lying on the floor; and you'd be amazed by the number of adults you find crawling underneath the table!

The cased exhibition originated as a temporary exhibition that was intended to move about, but it hasn't really done that. We loaned the jawbone to the Natural History Museum for their exhibition in 2014, on the understanding that they return the compliment at some point.

*Does it go beyond prehistory?*

It makes parallels to other current indigenous cultures but the focus is on prehistory. The other thing I forgot of course is the huge ethnography gallery upstairs. So there's international ethnography. The significant thing about the natural sciences collection is the geology, actually, more than anything else – the geology is internationally important, the ecology isn't. And obviously there are close ties between archaeology and geology, and in some respects they're inseparable.

*Especially when you're looking so many thousands of years ago.*

Yes, you could say that the geology displays make that link through to the Ancestors gallery and the relationship between historic climate change and geological processes and the history of Torbay; and therefore it's not geographical determinism but it sort of is. The ecological displays date from the eighties – classic habitat dioramas in many respects – but they also, again relatively early for museums, explain climate change. So you have a link between three galleries all the way through, that is a climate change statement, I suppose, more than a theme.

Then in terms of outreach, the educational side of the museum has been very under-resourced; there's been very little ability to do much. We previously had funding from the council for an education officer who did lots of work, particularly with archaeology, with primary school audiences, as part of a wider programme with natural sciences, Agatha Christie, local history, story-telling – all those sorts of things; but he died, and the council subsequently cut the funding.

Currently, there has been funding for a shared post with Torre Abbey, and that education person is really an artist by training; so if archaeology is dealt with, it's dealt with more as – let's look at this lovely object and draw it and understand it and make models of it. We run education events in the museum in school holidays: they tend to be themed topics, so you will get – Rock-buster, or an archaeological theme. We had one which ranged from dressing up in bearskins to flint-knapping demonstrations, all of which grab the public better than most things.

Then we've had a whole programme of funding from the Arts Council and the National Lottery to create an education and outreach team. That's primarily focused on geology; it was a three year programme that did things like pop-up museums on the beach and in the shopping centre, where people could handle objects; and that included geological objects but also because of the very close tie between geology and prehistory, it included hand tools and things like that on occasion.

And then we've done co-designed events with children and teenagers, particularly using partnerships with an organisation called Play Torbay, funded by Play England and Sport England; our primary contractor involved in that has been a wonderful theatre company called Forkbeard Fantasy who are very, very good at engaging the public, particularly children, around science topics. They actually were responsible for the geology and CSI table design in the installation in the museum.

We've done co-designed things where you get children engaged and ask them what they want to do. They decided on a theme recently, 'Big Little', which was all about how you use microscopes to explore the world about you, including fossils, microliths, archaeological tools, and pollen; and also outdoor sessions on the beach collecting materials.

This was all part of a programme called Quest, where children from the deprived and harder-to-reach communities of Torquay and Torbay were given different days of activity. They were given three days in the museum, three days at Cockington Court or somewhere else; and the Torquay Museum stuff culminated in a performance which took over the entire museum for an evening, and involved them performing their findings about the small-large investigations; and they dressed up in white lab coats, and had something like 45 microscopes on site; they did shows and there was a fake 15 metre tall microscope flood-lit on the outside of the building, with projections of dinosaurs on the front of it. This was in 2013. And Forkbeard Fantasy were the key people who did that.

The museum is located in Torbay UNESCO Geopark, the original Geopark in England. It's one of the very few that's actually in an urban area. Most of them tend to be remote dramatic landscapes like volcanoes in Hungary. But fortunately the council have decided that the Geopark is potentially an economic advantage – and so we've been trying to link up and explain the importance of Geoparks; because Geoparks are not just about geology, they are about human culture and the modern economy, far more so than World Heritage Sites. The international Geopark conference in 2016 was hosted by Torquay, and explored further that relationship between geology and prehistory, the Kents Cavern material and things like that. There was a whole programme of outreach activities round that.

*Going back to the actual museum, what aspects work best in terms of visitors?*

It's hugely variable. We get a range of feedback from the very disappointed to the enthralled, which is based on people's expectations primarily, I think, of local museums. So some people come expecting to find the history of Torbay, and find nothing on it at all; other people come just for Agatha Christie, and some of those are delighted by what they find and some are disappointed because it's a small area.

We have found that the new CSI table and the geology displays - which involve a 12 foot high imitation coastal arch with the sea crashing on the gravels of it, and talking rocks, and an animated video which tells the story of the geology of the Geopark through to human occupation - certainly are very successful with the younger audiences, to the extent that you find them running through the projected sea on the floor pretending to try and avoid getting their feet wet!

I think the things that are difficult work best with someone to interpret and tell the stories, otherwise the things don't come alive. And certainly the things like the animation cartoon that tells the story of the Geopark packs far, far more information than the museum would be able to do if it redisplayed every single space in it as geology; and it does so in a way that's memorable and engaging and entertaining, far more than some of the hands-on type installations you find in museums. It's very interesting how it does work much better. It's unusual because it is a hand-drawn cartoon, with a very amusing but scientifically

accurate - within reason – commentary that tells the story of geological processes. Coastal processes, essentially.

*There seems to be quite an emphasis on process – on how things are done, like how archaeology works.*

Yes, very much so. It's fairly unusual in a small museum, to have the quality of collections that demands that you apply and can justify researching the origins and the make-up of those objects with modern techniques. So, for example, there is a very small Egyptological collection, and we've actually been working with five or six institutions round the world on the origins of this child's mummy. And it's been dated and analysed and is regularly re-surveyed.

The jawbone of *Homo sapiens* similarly has been through various dating processes. We work very closely with the British Museum of Natural History, with Chris Stringer, and with four or five other institutions in this country and America. And as knowledge continues to expand around how you date materials we still – because of the quality of those early Victorian collections – remain, surprisingly, a place where research and scientific process does carry on.

And certainly in trying to position the museum, and go back to its roots rather more, the concept is: why be just another social history museum really, or a 'story of Torquay' museum, when there is a social history-oriented museum just up the road, which is private sector, which gives a series of shops, reconstructions, and all sorts of things about Victorians – that's at Babbacombe. Torre Abbey, a large medieval site, covers all Torbay's history from the medieval period right the way through to the twentieth century; there's a museum in Brixham that covers the fishing industry and railways.

So we're trying to focus on the science agenda that was more at the core of the museum's origins. It was at the forefront: Pengelly – he was the son of a ship's captain – became one of the key parts of the social whirl in nineteenth century Torquay. Essentially Torquay was the place where you came. Baroness Angela Burdett-Couts held court here and regular visitors to these salons ranged from Dickens to Darwin and included Babbage: all the great scientist and literary figures of the 1860s came to Torquay. So at that time Torquay's collections were hugely significant. It was the first museum in Devon, hugely significant. RAMM [Exeter] partly houses Pengelly's collections because there wasn't enough room in Torbay, or they would've stayed.

So, we're trying to re-focus on the science agenda, we're trying to re-focus on a way of explaining both what you find and see – whether that's an archaeological specimen or geology – and explaining how, and trying to enthuse people about how you get that knowledge, and what are the processes. You can still find things out that are immensely revealing, about things that are thirty thousand years old.

*The construction of knowledge hasn't stopped.*

Yes. And in the way that many social history museums regard themselves as centres of the community, we're sort of thinking of ourselves as being a centre of science and sustainability for the community.

So, recently we won funding for our Happy Museum project, which is all about engaging teenagers in their views, if you like, of sustainability. It's very much a

co-created thing. So it's not us saying – come and see how you can recycle your garbage; this is about them and what they perceive as important to their lives in terms of the green agenda. They came up with the idea of doing a festival, at the core of which was a court case, charging Torbay Council with ecocide. And Torbay Council agreed to play with that; and so a whole court case was held, led by young teenage people, with witnesses.

So again, it's about trying to make the collections relevant, to make them alive and make them contribute to explaining the continuing issues we have and the changes and processes that take place in our environment.

*That's just fantastic.*

But the biggest issue is you're trying to change something that is a charity that relies on admission fees, because it's a charging museum. You're trying to balance that ambition with a membership organisation who are the controlling authority around what the museum does, and at the same time you have to generate enough income to survive.

The difference between Torquay and a local authority museum is fundamentally we're a charity. We get thirty percent of our minimum base line income from Torbay authority and everything else has to come from trading, whether that's visitors or café or shop, or on-line sales. And it means that it is even harder than for a local authority museum to put the ideas into practice.

And there's a huge dilemma between having this very diversified offer – which means that anyone who pays to come in is disappointed because they wanted to see Agatha Christie and she doesn't occupy the whole building; and the other approach which is saying – well, why aren't we a science centre, or a geology centre, or an archaeology centre?

We did talk to the Science Centre '@Bristol' about being a satellite, and they were keen on that; and we did talk to the Natural History Museum, and they were keen on us being a satellite; but unfortunately the funding was pulled. So that would have been fantastic.

*Whereas RAMM, Bristol – they're all funded by the local authority.*

Yes. The big difference is that other museums were taken over, many of them, when they faced calamity in the 1930s or 1950s. Torbay didn't do that.

*Question 3 Please could you explain the decision-making process involved in the planning of new exhibitions and engagement, including who is responsible at each stage of the process?*

Essentially, there is a five-year plan for what the museum does. The plan originated with me as the director and with the curator, who is an archaeologist by training, along with input from a number of other members of the temporary staff team, funded by the Lottery. And then that is presented to the Board, who have previously set the direction, which is the agreed direction of going back to

our roots and concentrating on the archaeology and geology, without losing the Agatha Christie and the ethnography.

The content of that plan was primarily written by me. And then, when one progresses elements of it, the priority is working to get the funding and see what's available at the time. We've had a period of having money from the Lottery for conserving particularly the geology and archaeological collections, and from the Esmeé Fairbairn Foundation and a number of other trusts. And therefore the next stage seemed obvious - to concentrate on reinterpreting and displaying that material, that had been properly conserved and invested in. So the focus on geology and archaeology came from that.

With the geology I provided a framework of a brief and very extensive summarised research from which the designers, Forkbeard, then chose particular topics. Then that was agreed, and the outlines were consulted on with the staff and with a number of other people internally and externally, and honed down by an officer appointed and funded by the Lottery, who's been on long term staff, a volunteer, who's an archaeologist by training; and she worked with Forkbeard to hone down to the one-line messages, or the text of the video – the animation.

*So that's a good example of an exhibition that's happened recently.*

Yes, that's the new geology, the new CSI table and the rock arch.

*Question 4 Are there ways of gauging the effectiveness of an exhibition, event or activity in terms of how visitors respond? Do you gather feedback from visitors?*

So, there's a whole range of different ways of doing that which we invested in and tried. The simplest and actually the most effective, I think, is the smiley card: it's really simple, you've got four options at the most, or three – it's sad, neutral, smiley. And then comment cards have been very successful in collecting information about what children really like. And it's very interesting how when you run that across the museum it does categorise into age groups: you'll find that the under-eights love the stuffed animals and despite all the protests and endless view that they should go because they're old and stuffy – actually that age group, despite all the programmes on TV, continues to love them, even though they're behind glass.

And then we've done visitor surveys at regular intervals; we have Facebook and Twitter accounts which we get feedback from regularly. Trip Advisor is very important to us, on the museum as a whole and on the café and on the shop, because of our need to generate income. It's interesting because we are a private sector business really: although we're a charity, in essence we are very dependent on Trip Advisor, like any visitor attraction in the private sector. If we get bad feedback on Trip Advisor we get in there fast to respond to it. And we do things like offer free meals, if it's really bad, in compensation and things like that.

So, in terms of effectiveness, say, around learning – you can do it, but it is quite difficult. We do it with educational stuff to an extent. For example, the exhibitions



were part co-written with a teachers' reference group: we recruited a set of interested teachers, who provide us both with support and with their opinion. They also give us advice on feedback and collecting from schools, when they come to the schools programme activities; and they also give feedback themselves, and we do ask for feedback.

One of things we've had to do is we recognise that we're never going to get permanent funding for an education service *per se*; so the thing to do was to build a volunteer team of largely former teachers who then provide the education service, and link to all of those in the reference group. And so again, when you're using volunteers to deliver, actually in a way your feedback is more important, and also more effective.

*Question 5 What do you see as the opportunities for interpretation of a multi-disciplinary nature - for example an exhibition which combines archaeological or historical artefacts with objects from ethnographic, natural history or art collections?*

I think we've always found that art, for example, can really be very good at giving a doorway in, particularly for children, into more complex stories about archaeology and natural sciences. So for example in science – we use art both in a very conventional way – draw a picture; but we also have professionals to do art and drama. We've done this thing in conjunction with Play Torbay that involves three theatre companies and four artists. We've had a well-known artist who illustrates children's stories most beautifully, Jackie Morris, who's come to do workshops about how to engage with the natural history collection. And we've had another artist who specialises in what you might call modern art taxidermy, and she does strange workshops about how you use art to engage people in understanding, you know, the temperament of crows, for example - ! - and things of that nature.

I think if you look at the relatively old natural sciences things, there's always been a recognition that the environment we see outside is the result of millennia of interaction between people, culture and their environment. Therefore if you're talking about woodland ecology, you cannot possibly *not* cover the management of those woodlands by people for thousands of years, that's produced that startlingly rich biodiversity.

Similarly, if you look at the landscape – it's very obvious in places like Dartmoor – but it's also obvious in places like Torbay, where you can see the coastal settlement: in somewhere like Bury Head you've got everything from prehistory through to Napoleonic forts and Second World War fortifications, so actually telling those stories about place... and I think place is one of the key things about it.

And for the older age range, one of the things that's been really helpful is looking at historic maps. So, there's a fantastic estate map for Torbay before it was developed as a nineteenth century settlement, which we're having conserved with a small grant. But actually if you get people involved with that – we've had a

U3A project researching it – you engage people with understanding how their landscapes change. And some people will be really interested in the street patterns that were laid down, some people have been interested in the woods that were there before, but quite a lot of people are interested in those historic landscape features that really are landscape archaeology. And it's a way in.

And I've done that in other places: in Branscombe in East Devon we did something similar with tithe maps, facilitating workshops which were looking at the tithe map. We ended up with three active projects, one of which identified that there were medieval field allotments on the cliff side; and as a result of that there were working parties who restored and surveyed them.

There was another project that identified that lime kilns had been an important feature of the rural economy and were fantastic historic structures: they also discovered that the limekilns were full of horseshoe bats, and therefore that became a historic project. And then they found that in the landscape there had been a huge network of medieval dew ponds; and eventually they went out and surveyed the two remaining ones, and found a nationally important species of fairy shrimp in them. And so then, working with farmers, they installed a whole restoration programme of pond systems.

So that way you can go from – not just engaging people through multidisciplinary stuff – not just about them understanding museum collections but actually using the museum's collection to engender actual, real involvement.

*To take a historic map out of the collection and make something happen –*

Yes. Taking it out and ending up with people engaging and understanding better, but also valuing and contributing. So they end up conserving their heritage directly through physical activity, as a result of a starting point with a map from the collection.

*So that was from your job here?*

The Branscombe thing isn't, but that's an example of how it can work. In that context, the map was held by the parish council and Devon County Records Office rather than RAMM, say; it just happened to be there rather than in a museum. But it could just as well have been in Sidmouth Museum. There's no consistency – collections are held in all sorts of places. One of the greatest collections that I know about is a mixture of historic documentation and actually Victorian mounted heads and mammals, which is held by the Clinton Devon estate. They have a huge archive. And an archivist. And that is just as much a museum as anywhere else in a sense.

*Has anything happened in this museum, in Torquay, where there's been that sort of exhibition, actually in the galleries? It sounds like the galleries are fairly multi-disciplinary anyway.*

So, the basic issue is the museum was all re-displayed in anything dating from the 1950s upwards. All the main galleries have been done in conventional ways, with some little bits of multi-disciplinary-ness in the natural sciences and in the Ancestors gallery, but in reality there's no money. And till very recently we've not had any temporary exhibition space at all. So it's been impossible to do anything.

And the new bit of geology and the CSI table are the first part of hopefully a longer term re-display that will enable us to do that.

Similarly, going forward we'll try to do temporary exhibitions that *do do* mixtures. You can imagine something about, for example, Pacific islands, that uses the ethnography collection and then some of the more outer elements of the natural sciences collections: there are shells from around the world, one or two international birds rather than British ones which will never see the light of day otherwise. So we might do that. And then, actually, we could talk about current climate change and the effects taking place, as part of that agenda.

So it would be quite interesting to do - mixing ethnography and sea level rise, impacts on coral reefs and what that's doing to the things that we have in the collection. We have got natural science stuff that tells you – this animal lives in this ecotome which is that depth of water, so it's going to be extinct shortly; or it lives in a coral reef that's going to be drowned out by sea level rise. So there are some interesting stories to tell.

*Question 6 Can you envisage an exhibition about climate change in your museum? How would it look? What would be its main aspects, and how would new technologies be incorporated to enhance visitors' experience of such a display?*

I think there's an interesting dilemma, in the sense that climate change has become such an off-putting message for a lot of the population that one's got to find a way of not thrusting it down their throats; and yet to us trying to re-position ourselves as a science-orientated museum that tries to use historic collections to explain and elucidate modern and environmental problems, climate change is probably the biggest and most important theme we should be addressing.

The challenge is how do you do that in a way that is engaging, and provides people with opportunities to do something as a consequence, and not feel completely scuppered. And also something that one would have to get through the Board of Trustees which is challenging because many are probably climate change deniers.

But I would certainly like to see the museum in a position to do that. Obviously we have the archaeological collections, we have the geology, we can tell the story of repeated global climate and geological change: our earliest collections are pre-Cambrian, so we've got a fair old timescale to cover.

The challenge is how do you do that in a different way? How do you do it, particularly around the climate change agenda, that doesn't make people go – oh well, climate's always changed, because it's been hot here in the past and there've been tigers and lions wandering around.

And I think how we would approach is – this is hypothetical obviously – let's construct a twenty metre by ten metre chunk of landscape of Torbay, and let's use modern technology to animate that landscape to explain climate change; and

let's use the museum's collections, both within that technology but also as real items on display, preferably if at all possible handle-able.

Torbay's got this fantastic history in geological, landscape and archaeological terms, so if you imagine going right back in time – it's rather like a three-dimensional version of the animation that we've had done for the geology; we'd probably only be able to go back to three or four million years ago, I suspect, because before that it all becomes too difficult, because Torbay was somewhere else completely different and wasn't a recognisable place. But the moment you've got a situation where you have the Channel terrestrial – we're into the interglacials, Ice Ages forwards or probably Eocene forwards, you can imagine people would understand where they were on a three-dimensional map. So you could tell the story of sea level rise, of sea level fall, of interglacials, of human habitation with Kents Cavern, of transhumance, of the migration of beasts. And climate change is the fundamental underlying driver, if you like, of that whole story.

And you could take that right the way through, with things like our nineteenth century tithe map - there's absolutely no reason why you couldn't project this tithe map. The danger with it, in a sense, is it becomes a very different thing to a conventional museum: but is that wrong?

To my mind museums fundamentally *are* about collecting, but they're also about telling stories in the best way possible. And I think you're combining the two. There's been this huge trend to object-rich interpretation, away from didactic science interpretation; in my mind, if you become so object-rich it is very difficult to tell those stories that are really important about change. It becomes, if you're not careful - oh look at this nice shiny rock, while actually I think museums should be about confronting the issues today. And unfortunately yes, that can be viewed as political; but when the consensus of science is ninety-nine per cent certain that climate change is taking place and is human-driven, then I think museums have an utter duty to interpret and attempt to explain that.

If you look at some of the technologies now around virtual reality without glasses – they are stunning. And there's no reason why you couldn't use this. And then the other side to it, I think, which is really important again, is how do you co-author something like that with your community, and your interest groups? And who are they?

And then again, you have to focus on younger people really. Museums do capture younger people, actually, despite all the computer games. And certainly we've found that if you engage teenagers, with them providing their viewpoint – not just having an influence but having a role in how you interpret, explain and tell those stories - you get far better understanding, far better commitment, and you're far more effective as an organisation if you believe you should be a learning organisation.

And round the climate change agenda you make people focused on what they can actually do, how they can get other people to do things. So the Vital Spark festival, the thing with the court case – that was all about the young people of Torbay saying to people in positions of power: why haven't you addressed carbon

emissions? – why haven't you addressed pollution? – why haven't you addressed air quality? – why haven't you addressed environmental degradation due to housing development? And it is a good thing. And then if you can spin that into actual action - and that has happened in that context, in that you've now got some schools who are doing simple things like giving everybody an energy-use meter to take home for three weeks to see what their consumption is at home.

And that's miles from a museum's agenda. But is it? Fundamentally, if you're about the community, and you're about the key environmental issues of the day – and in a way you're reinterpreting a mission that people had in the nineteenth century, which was to understand their environment by looking and studying: they were trying to find out – how did life tick, and how did we get there, and we weren't put here by God in seven days, so how did it happen? We've done that. And now it's more about how are we going to survive, what can we learn from the past and how can we use it. Those collections can be still of fundamental importance to understanding the opportunities and the options we have in the future. You understand what happened in the past, so you can potentially find ways through to a future.

One of the other proposals that was around – nothing to do with our museum - was for a huge, colossal weather interpretation centre on the outskirts of Exeter, part funded by the Met Office, which was going to tell the story of weather and then about how the climate system is being perturbed by climate change and human emissions. And it would have no collections, and I think what my concept has always been is how do you do something like that, but still use collections and still value collections to underpin that. And collections can be the two hundred years of meteorological recordings – they're just as much as a collection – it's about information: just because it's a science archive doesn't mean it's less valuable than letters to Agatha Christie. It's often not even considered as important.

But actually how you interpret 20,000 sets of data like that, how do you do something that is engaging and inspiring. It's quite interesting really.

*Question 7 What do you see as the major challenges and constraints in presenting climate change as a topic?*

You're dealing with a pan-dimensional planetary system, so from a normal museum's viewpoint that is hugely difficult. If you're coming down to archaeology – what does archaeology tell us – archaeology in combination with geology and other sciences can tell us the environment has changed. It can give us a record of how people have adapted and how the landscape has changed as a consequence, and the impacts that change has had.

What archaeology doesn't necessarily do is tell us why. You're in that grey fuzzy area I think, between geosciences and archaeology: is an ice core from 10,000 years ago archaeology, or is it palaeo-geology? I think there's an artificial divide, isn't there. If you look at pollen – is that archaeology? It's all very difficult.

It's a huge ambition, to explain and engage people around climate change *per se*, because of the scale. How do you looking at a flint shard and go – it's a climate change story? I think the only way you can do it is by making it place-centric really, and that depends on the scale you're operating at. If you look at Torquay Museum, the operation is, at the very most, Devon-scale. You can say where Torbay was in the Carboniferous, on a global scale, but in reality if you want to talk about climate change you want to talk about it really close to home – so it's back to: there are six wave cut platforms, there have been these sea levels, we were under the sea but then we weren't, but then we were again – and that's hugely difficult to explain when all you've got is a skull and fifteen ice picks.

We've got evidence – we can reconstruct the entire plant communities and the animal communities, as far as we know, of the river valley as it was seven or eight thousand – years ago. But how do you do that in a museum? How do you exhibit it, how do you engage people with it. It's a struggle this museum faces: it's so bitsy and diverse, that I've often thought actually you'd be better off gutting the entire museum and putting four mammoths in it. And then you have this huge impact, walking in. It's a bit like what they've done with the blue whale in the Natural History Museum, where you walk into this space, you have this mega impact of this is what it was like, and it's fake, but then you have the actual evidence that tells you those stories, *and* you try and explain the processes.

If you can imagine that situation, then what are you doing about climate change? All you'd be saying is – there was an ice age, and here's the evidence for there being mammoths, and this is how they used to live. Which story do you choose? Do you choose the story about the baby mammoth, or do you choose the story about why the climate changed? Or do you choose the story about how we know the climate's changed, which is very technical? And it's quite a challenge round that.

And then there's this other huge challenge in the agenda, stepping into the human impact on climate, and fundamentally we should be doing that, I think. But you don't have any what you'd call cultural evidence from the historic collections that enables you to do that. At the extreme end, you could say – look, here's a melanic moth that changed its colour due to the soot emissions from Victorian factories: that demonstrates how we *can* impact the environment. In fact they all returned to normal colours after we got rid of pollution!

So, there are means of doing it. With the natural sciences side of things, you could show changes in the distribution of collections – but you're back to deliberately picking a theme, and then finding the evidence to support it. And I have absolutely no problem with that. But to a degree museum have moved away from that, more into a concept of – isn't collecting great, you should still be doing it. That's what RAMM's about, it's about saying – people collected things, isn't it wonderful, wasn't it good, shouldn't they still be collecting them.

Other museums do different things, where they try and explain. If you take, for example, a load of tanks: what are you doing with them, what are you explaining? And you can do your Imperial War Museum bit with your reconstructed trench, but what's the message it's giving? Is it about – it was a horrible experience, this is what people experienced, understand that; or is it a message that says war's

dreadful, we shouldn't be doing it. And I don't think that museums do the latter. And I think the climate change agenda is a parallel, in a way, where I think we should. It's hugely politically controversial to do that, and it means you're not stemming what you do from your collections, *per se*.

*It's finding objects to illustrate -*

Yes, it's finding objects to illustrate a story. But what you are doing, in our case in Torquay - would be being truthful to the original intentions of the people who founded the museum, in their Victorian way. Maybe not quite so explicitly.

*Maybe it's time to be slightly didactic again.*

Yes. I think so. It was there in the seventies and early eighties, and it all went out the window. And part of that then instilled, for example, the complete demise of natural sciences in museums; so a large number of local museums have lost their natural sciences galleries, and their collections have been abandoned or destroyed, or mothballed without any collection care, as a consequence of the rise of that object-based view, and the rise of social history as a dominant feature of the generation.

*That's part of the whole heritage industry thing.*

Yes. And the idea that you must engage your community drove, to my mind, an overwhelming view that that's about social history and that's what people are interested in. The reality is that's not true. You only have to look at the membership of the RSPB, and the Wildlife Trust – which is around four and a half million now – to realise that actually museums have missed a substantial area of operating. And you can understand that, when what they have is drawers full of pinned Victorian butterflies. But you cannot use science collections, and archaeology collections I would say, in the same way as you would take social history material culture things where you're almost saying – here's an object, isn't it quaint, weren't our old relations quaint.

In science you *have* to take a thesis and you have to explain it. You can knock it down, and that's the whole principle of science. And actually one of the *really* critical things for museums to do, science museums to do, is to explain that process of scientific exploration. Because there is this dreadful concept in the media that science *proves* things. That's not the principle of science at all.

And that is one of the dilemmas with something like the climate change agenda. Because the consensus is ninety-nine per cent that climate change is human-driven. There is probably a ninety-nine point nine per cent consensus that climate change is taking place, and is still happening; but the problem facing any museum, I think probably in any discipline, but particularly in science, is what do you take as writ? How far back do you have to go to start explaining to people, in science, where you have such a fundamental lack of understanding of the basic principles of science? Do you have to start with that? Or do you plunge in with the 'climate change is man-made' as your storyline? It's very, very difficult.

*Question 8 Can you imagine how an exhibition about climate change might link stories of climate and environmental change in the past with people's concerns about climate change today? How do you think visitors would respond to such an exhibition?*

One of the problems is there are so many things you could do. Like with everything, there are so many different stories. How do you choose the good ones and what are the critical things? I think to a degree that depends on your market, who your audience is, why you're trying to reach them and what you're trying to do.

So, if you were taking Torquay – well, our market is primarily tourists, and children with families both from the tourism market and the local market. And the tourists are in Torbay for the seaside. So perhaps the simplest way of making the connection is around sea level. The most obvious thing you do is with the Kents Cavern material, because basically you have a cavern overlooking what wasn't sea, which is now sea, with the coastline being heavily eroded. The challenge is how you actually display that.

We have fossil material, tropical sea shells in the geology from the top of Dartmoor when the sea was on Dartmoor. So you can tell those stories of extreme sea level rise. You can tell the stories of marginal communities; we have fish harpoons – the great thing with the archaeology collections is they go from prehistory right the way through to the medieval period.

So, unusually for Britain, we have collections that relate to every major archaeological time period. So you can tell the story of the people who lived in Kents Cavern when it was land, in the plain that is now the Channel. You can tell the story of the people who lived in Kents Cavern when it was actually a marginal area with estuary type communities. You can tell the story of Kents Cavern when it was occupied in the medieval period, for example, when the Channel's definitely there. So you've got material culture, you've got everything from axes, shards; and you've got the geology. And then you've got the thing that museums find so hard to interpret, because it's so big, which is landscape and landscape change. And how do you do that, within the context of the museum; and we're back to that didactic approach of not using collections, or having a few items from the collections to back up something.

And I think what we've achieved, with the balance between, for example, a few geological specimens, and an animated video that tells the complexity of the scientific story, in a very entertaining and different way from your usual stories - I think we've got that mixture right. And I think that's part of the thing you can do. So, there's all sorts of other ways you can do.

*That's just one story, using sea level because you're by the sea.*

That's just one story. There's gold in Hope's Nose, which is an eroded sea cut platform, so you've got a story of gold extraction right the way through, both from prehistory and right the way through to thieves today. But again, linked to wave



cut platforms and change in sea levels. You can go right forward, you can use social history stories of Torbay, how did it grow from a small abbey, nothing more, to the second largest conurbation in Devon. So there's interesting medieval, and later, stories to tell.

*Do you think you could make the connections with concerns about present day climate change?*

I think we would. One would want to do the modern stories, particularly when we've got hugely controversial goings-on, very close by: so we've got the argument about the future of Dawlish Warren and the spit across the Exe estuary, and how to manage that for the future. There's been a massive five years of community consultation on what to do. Similarly, just south of Torbay we've got Slapton, where a road has been washed away on a number of occasions and in the long-term future is untenable. And that will have huge economic impacts and is hugely controversial. And I don't think we can avoid telling those stories.

There's that other thing again which is – do you talk about what the scientific community thinks is the reason, or do you simply say – sea level has changed before, it's changing again? The reality in science is climate change and its man-made origins is not controversial: that is a completely wrong assumption. Climate change as a consequence of human action is, for all intents and purposes, as scientifically valid as the reason why your mobile phone works. It's not controversy. That's the problem really. And for museums to ignore it is utterly disgraceful.

*I think museums are perceived as trusted institutions. And I think that visitors don't mind being challenged. I think they like balance.*

Yes. I do think it's difficult to define what a museum is these days. And in reality there is a huge difference between the nationals right the way down to tiny little cupboard sized museums run by an old chap. Or the little local history group museum. And in between you have all sorts of different things, and if you look at it analytically – in somewhere like Torquay you've got a set of different markets, different segments. And because we're dependent on entry fees, you have to reflect those different markets. In reality that means the function of the museum is different to those different people simultaneously.

So, to a tourist, the main reason they come to Torquay Museum and the only way the museum survives financially is because it runs a science fiction exhibition about Daleks, where the children can come and dress up and it is about having fun and something that appeals to ten year olds. And you can do it on a rainy day. The main reason people will come is not as a planned visit: they will come because it was sunny at eleven and then it started raining and they were on the beach. They come back year after year to their caravan in Torquay and they know the museum does a summer exhibition that's engaging and is usually about science fiction, or samurai swords and armour. So the reality is that the reason the museum survives financially is because it acts as a visitor attraction. There is virtually no content derived from the museum collections in those exhibitions whatsoever.

*So every year there's a big summer exhibition geared mainly towards holidaying families.*

Totally towards the holiday and family market. And what the museum has decided to do is not go down the line of having fibre glass dinosaurs, like the Dinosaur Centre does down the road, which has no real collections at all; but we've taken the view that if you're going to show stuff, if you're going to show an exhibition about Star Wars, then what you do is - the museology in it is - you use genuine costumes that were actually used in the films, and you source from commercial companies who rent them; and you use genuine ephemera – social history material of the 1970s and 80s, almost like modern collecting - in the exhibition. So it's not ours, we don't own it, it's lent or hired; but it isn't reproductions. So it will be genuine 1970s toys.

But at the same time as you're doing that, you've also got other markets going on. So the museum has this odd thing in that it has its membership which is mainly retired – they are now an independent society, no longer controlling the museum; they're not quite Friends of the museum, they don't support the museum quite in that way, but they will run lecture programmes about whatever they fancy. Generally, in the winter that will be loosely based around the topics that the museum covers. So we'll run a smaller exhibition on, say, Percy Fawcett the explorer, whose genuine collections we have: they will do lectures about him or other explorers including modern ones.

And at the same time we're running schools learning. It's now a set of topics that you can choose from, and it runs across the whole of the collections suite. And the one on the Ancestors gallery, explicitly about prehistory - fifty per cent of it is explicitly about climate change. So it is about telling the story, in simple terms because this is Key Stage 1 and 2, about how there were hyenas and then cave bears and how there were mammoths later; and then how you've got evidence of people living and it being a hot plain. So that is being run at the same time as these commercial visitor attraction type things.

There has also been – though we can no longer afford it – a programme for children, Monster Saturdays, which had a topic theme. This goes back to some of your earlier questions: so they always use things like art, different media, around a topic like ancestors or climate change. So we've had animation workshops, or video making workshops for teenagers; but you choose a topic related to your collections. Generally you choose a topic that is trying to be a little bit mind-stretching, so instead of – oh let's look at how people used to live, it *will be* let's look at climate change and what does the archaeology tell us, so it's trying to do that.

*So basically your big flagship exhibition in the year is this summer one.*

Yes, Star Wars or whatever. It's not a huge space so it can't be enormous. But it's got to have mass market appeal – it's the main money earner. The visitors pay the normal fee, but more of them come. The fee works because there are different tax breaks on gift aid. If the visitors gift aid it, then they have an annual pass: they can come back whenever they want to. And that's financially, from a tax point of view, the best and most efficient way to operate as a charity.

*Question 9 What opportunities can you envisage for using archaeological objects from your collections in an exhibition about climate change? Can you think of specific examples?*

Again it depends where you draw the line. So, the prime and most important collections we have are the cave collections from Torbay. They are mainly fossil animals, some fossil humans, some fossil human waste products, fishing hooks, discarded mollusc shells. So the cross-over with geology is total. To some those are palaeontological collections, to some they are archaeological collections.

And therefore basically you have that opportunity, in that you have a whole suite of animals covering – what, two million years? - where you can see the changes. And there are bones, there are skulls, there are things that have been used and adopted by people as ornaments; there are tools, there are discarded food products - all of which could be used in the context of exhibitions that explain aspects of climate change.

*And also aspects of human adaptation and ingenuity*

Human adaptation, and ingenuity, and culture, and relationship with animals –

*And relationship with the environment –*

Relationship with the environment, and the changing environment. Then on top of that you've got huge things close by like Dartmoor, which you can see from Torbay, where we know the palaeo-ecological information because it's wet and soggy, so we know when the climate deteriorated; we know the impacts that had on the landscape. And whilst we don't necessarily have collections from Dartmoor, you have material that can help explain and elucidate those major significant changes, like the weather becoming much wetter and Dartmoor being abandoned and the blanket bogs starting to develop, and those huge major landscape changes that result from climatic change.

So you've got this dilemma in a way, again, of – the stuff is really big that's going on, and yet we've got some really intimate human material if you like, from bits of individuals to their ornaments. And you're going to be making assumptions, if on the one hand you've got a necklace with seal's teeth in it, and on the other hand you've got one from three thousand, four thousand years earlier that is mammoth bone. I'm not saying there is one, but let's say there is: is it valid to make that assumption that that is telling a climate change story, or is it just telling a story that they decided it was prettier. But you can certainly use it in that way.

Timescales are hard to get across, other than as a small graph in a graphic, that no-one's ever going to read. And also, even if you're not giving any messages, just trying to explain those concepts to somebody is hard. It's a bit like doing a lecture – really in a lecture you've got three messages and that's it. In a gallery how can you get three key messages across? And to me in that context, if you are being didactic about climate change you are saying: climate has always changed – and you could then say here's some evidence of it. And then you're saying: for long periods of time - yes, it's fluctuated, but it's been relatively stable. And then you obviously need to say – we're in exponential climate change, global warming, at the moment. Those are the three messages. And the fourth

message, which is the 'controversial' one, though it shouldn't be, is it's man-made. And to me it's not controversy, and saying it's controversial and chickening out is a complete abnegation of duty. Plenty of museums do, and plenty of museum governing bodies would say that.

The first thing I did at St Albans City Museum was on the Ice Age. We tried to do climate change – how the climate has swung, so we had glacials and interglacials. We had a cartoon drawing, eight feet high, of a mammoth, with a tail on the end of it that you could swing to the left or to the right. When it swung it to the left it revealed a window onto a very small model of a glacial landscape, or photo I think it was; and when it swung to the right it revealed a photo of a desert, or somewhere with zebras. And children, and the adults, got that message. Swing the tail to see how the climate has changed.

*Back in the 70s, and the early 80s, we were all predicting an ice.*

It's interesting. Certainly by 1983, when I was doing lectures, I was doing lectures about global warming. But it's like everything, isn't it. This is what people don't get, is that scientific research produces more evidence. And sometimes when people's concepts are proven to be – when the weight of evidence says they are wrong, that doesn't mean they did something wrong, it means science has worked. And views and information change; and the idea that what was right in science in the 1970s is still right now is ludicrous. And the idea that that is a problem, and therefore science is wrong, is ludicrous. Science moves on. We've got decades of further experience of exponential growth in scientific research.

*Going back to archaeological objects, do you have a photograph collection?*

No. That's one of the other great difficulties, is that you don't have the more modern information, because people wouldn't have perceived that as something you would collect. If they were going to collect, they would do so because they happened to like a particular thing. They wouldn't collect photos of floods.

But having said that, if you are a local history museum you may well have collected information about what has happened.

*Then you've got old maps, that might show something, but they're quite difficult to exhibit.*

It's a bit like RAMM. If you look at all the historic photos of Exeter that are produced in books, they were offered to RAMM, who turned them down. Peter Thomas's collection of all the photographs of old Exeter: they were turned down when he collected them in the 1970s – he bought them at auction – because they were not of interest to the museum, because they were photographs - glass plates; that wasn't something the museum collected. So it missed that opportunity. And again – so often, what happens is people are very conventionally interested in a particular aspect. He is interested in old buildings and photographs of old Exeter; he wouldn't think of it as collections of the floods in St Thomas in the thirties and forties, fifties and sixties.

*It would need somebody else to come in and look through.*

You've got to have a very different take on things, and actually to be honest a different training to that of most museum professionals, or archaeologists, or natural scientists. If I'm a natural scientist in museums, probably what I'm really interested in is collecting things. And I might be interested in going out and surveying it, and then collecting the item and storing it for the future, and possibly the information might be interesting but I'm not sure; and I'd be interested in enthusing people about these objects, because you like collecting, and you want them to go on collecting.

Nowadays it is a little bit more about conserving and engaging with the natural world because it's valuable; but it isn't about telling those messages and the joined up stories between disciplines. I think the big problem is that museums are physically small, and in a way the join-ups around these sort of things occur at a landscape scale. How on earth do you interpret and tell stories of that scale within a building?

*Question 10 Climate change can be seen as a political issue. In your opinion, do museums have a responsibility to be contentious? Should every museum be addressing climate change?*

I think you have to separate those out. So, museums should be contentious. What that means of course is hugely charged, because you could have a museum of Nazi memorabilia – that's just as contentious as anything else, so what does it mean – contentious? I think museums should at least try to reinterpret their collections in the light of current society. It's a bit like the way history's reinterpreted every generation, isn't it – so you wouldn't expect to go into a museum now and have one extolling imperial values and how we should go and trash the natives and send in gunboats, would you? That's contentious, but you wouldn't do it.

Then the issue to me is – it is a gross misrepresentation of climate change to say it's political. As I said before, climate change is as real, and anthropogenic climate change is as real, and the science behind it is as real and sound as the science that makes your phone work, or your computer work, which relies on quantum physics.

*But it is political in the sense that people argue about it.*

Yes. But I think that's a cop-out for museums to say it's political. I think it is a fundamental part – it's just like evolution.

*It's just like the dinosaurs.*

It's like the dinosaurs. If you are going to do a creationist museum, that is far more controversial, if you like. What I'm trying to say is climate change is not controversial, full stop. It is portrayed by the right wing media as controversial,

and certain people in government, but that's part of the problem, because it's about funding. Museums are run by local authorities, who are run by political masters; so if you have a party in power who isn't very interested in funding museums, and you start doing things that are perceived to be political, then you're liable to be cut. And in charitable museums it's about the politics of the board that runs you.

But I think museums fundamentally miss a point if they're not dealing with climate change – yes, it's difficult if you're a social history museum. Or an art museum, although I've done lots of art and climate change. It's interesting: if you are a site museum: if you are the Roman Baths Museum, what validity is there in doing anything about climate change? What is there to do? If you are the Sweet Track, or Flag Fen, you can see there is much more validity. And if you're somewhere like us, like Torquay, where you've got this collection that is very explicitly in a situation where you can tell climate change stories...

*But if it was something like Jane Austen's house –*

Yes, why would you do it? You would have to pay regard to it, because a) you should be reducing your carbon emissions, but b) you should also be worried about the deterioration of your collections because it's going to be warmer and wetter. So it's another way. When museums talk about climate adaptation, often they're talking about how to reduce our contribution. All the papers have been about that. So that's where I think the obligation is for museums. As far as is possible every museum should be reducing its carbon footprint, it should be encouraging green travel, and it should be proselytising that.

*So every museum should be addressing climate change in the sense that it's adapting itself, and reducing its footprint.*

It's adapting and it's reducing its contribution. And it should be telling that story in the simplest way as possible – saying, for example, we've got solar panels here, you can see how much energy we've generated in the last year.

*I've seen that done in National Trust places.*

The National Trust has got better at it. Simple things – the Trust does do it occasionally – like saying we're having to move the collections into better storage, because of x, y and z, related to climate change. So I think in that sense, yes they do.

I do think it's hard for, say, an archaeological collection, if your collection is very narrow. It doesn't have to be a museum *per se*, but a collection in a museum or somewhere else. How do you make Verulamium, in St Albans, say, a climate change museum? You can do in a sense, because you could say – the Romans grew wine here: the climate has deteriorated. But it would have worked far better when there was a natural sciences department as well. It would have been far better to do a joint archaeology landscape history thing, because you had the mammoths and you had the glacial stuff from three hundred thousand years ago. But it is hard, I think.

But somewhere like RAMM should be doing it, because they are a county-based museum. Again, it's the scale of operation you're at. If you're a county museum that's dealing with county or wider collections, or a regional museum, then to me you should be telling that story. You should be telling the landscape story, and most of them don't. Several of them don't even do natural sciences at all anymore.

### *Supplementary questions*

*How is/could new technology, such as augmented reality, used/be used to expand visitors' knowledge and experience of the museum's collections?*

So, I think we're at the dawn of an opportunity to do something much more dynamic. One or two places are starting to do it but it's still quite a challenge. You can envisage the situation where you can look at an object, and in very simplest terms you download more information about it; in more complex terms you can potentially bring it to life: if you think of those nice projections in the Roman museum in Bath – you could do that, specifically triggered by an individual object, for example.

So you take the skull bone from Kents Cavern, and that could be projected. So you could project a reconstructed human onto a space; you can animate that person, you could then pan out to the landscape; so there's huge amounts of things you could do. And the technology is getting easier and cheaper all the time. So you can do that.

There are fantastic things you can do in the outside environment. The simplest that's available at the moment is the British Geological Survey's phone app, where you can point your phone at the landscape and it will show you the geological layers and tell you vast amounts of information about it, should you want to, on the screen of your phone as you hold it up to look at the landscape. So there's absolutely no reason why you shouldn't turn that into an archaeological type thing.

There are apps that people have done, that will fade historic photos into modern photos, so you could do that with reconstructions, as much as you could do it with actual photographic evidence.

And we miss things like sound: although we cannot be sure what sound was like in Kents Cavern cave, it probably consisted of crackling fire, wind and people talking, for example. So there's no reason why you couldn't create that sort of atmosphere, that's much more engaging, really, than throwing people loads of text.

*That could almost be created in Kents Cavern itself.*

It is, to a degree. But it's interesting trying to do something in a museum where you haven't got the original structure, or the original landscape or the original site.

*How flexible is the exhibition space?*

There was no temporary exhibition gallery until 2012. And the 2012 gallery is a third of the main auditorium. So there's an auditorium that can be divided into two thirds and one third, and it has raked seating which can be removed. So the agreement with the Board is the one third is in permanent use as a temporary exhibition; and it's what – sixty feet by twenty, something like that. And that's the only really exhibition space available.

It's flexible in the sense that you can hang things on the walls, it has a hanging system, you can put cases in it – what you can't do is put major permanent structures in it.

*How are school groups and other visiting groups organised within the museum? Do they follow a set pattern of activities? Are there opportunities within the education programme for addressing climate change?*

So, the education service was relatively new, as I talked to you about previously, and the funding we got was focused particularly on geology initially; and that included the palaeontology and the early fossil human collection, so again back to this link-up with archaeology in that sense. And what was offered was a programme of particular topics which could be altered and made bespoke if really required; so there would be things on ancestors, and on large beasts, and on fossils, that type of thing; so that was the offer at that time, plus things being done on local history.

Subsequently to that, at the end of *that* funding, a volunteer education system has been set up, where the offer is rather more broad, but less; so particularly in archaeology the key one really is about ancestors, which is talking about early human development and using the Kents Cavern material, and has a definite third about climate change in it already, as part of that programme.

Then occasionally when you get funding for things. When we had funding for the Happy Museum project, a core element of that, which was about engaging with teenagers and young people, was all about climate change; because the whole thing was aimed at raising awareness of climate change. And therefore that programme did that, with some limited reference to the historic collections, and historic climate change.

*So if a teacher came along and said I would like to do something about climate change with my class, would there be that flexibility for the education people to say yes, we'll work together to come up with something?*

Yes, absolutely. And I think with all these things the challenge is - do the education staff have the knowledge, both of the agenda and of the collections, to make use of the collections? It's much simpler just to do something on climate change, without trying to use the collections.

It's the same with any science agenda or even history agenda: people have to be aware of the information and depth of opportunity that those collections or photographs, or whatever else, have to offer. Unless the museum staff or the



teachers are aware of the opportunities and the meaning, then it's not going to happen. They don't know the resource that's available.

Just a really simple parallel: if you look at natural sciences things, there's a classic little story which catches children's attention, all about the shape of guillemots' eggs, which are pear-shaped, and they've evolved that shape so they don't fall off ledges on cliffs. But there are a limited number of people who would make that observation or know that fact; therefore often, it's never used when talking about adaptation or sea birds. You have to have that depth of expertise.

Often, particularly in the smaller museums like Torquay, you've got one curator who deals with all disciplines, and almost ninety per cent of the time those people tend to come from social history backgrounds, or art backgrounds. Torquay's exceptional in that the curator for the last twenty years has come from an archaeological background and has got a very broad interest in all sorts of areas of subjects, and is very good in that sense.

*Children love quirky facts. You can do a lot with quirky facts.*

Yes. Let's say we're seeing an implement made from the bone of a marine animal, from Kents Cavern: you've got to have the knowledge to make the leap from that to a story about climate change. And our archaeologists would want to be sure that the story they were telling was not about a bone that had been imported from the Mediterranean but was about a bone that had been found and used in close proximity to Kents Cavern, which tells us that at that point in time it was a marine environment.

*It all comes down to the enablers and educators and communicators. It really is as much about the people as it is about the ideas or the collections.*

It always is. Because in any museum, there are vast reams of stories and vast reams of disciplines, and you can't deliver it all. In a museum like Torquay where in a sense we're more commercial than many, if you're going to do an educational service you have to tailor it to the national curriculum. If the national curriculum doesn't have anything about climate change in it, then you won't get people coming to want to learn about climate change, therefore there's no point in running those courses. And when the government changed the curriculum to re-address how history was taught, that had a huge impact, because suddenly you didn't do nineteenth century history with primary school children, for which the museum had social history collections that were relevant. And there's suddenly an end of market for us.

*Then suddenly primary school teachers have to learn about prehistory, and then it changes again.*

When it does become prehistory we're in a position to know about it. But many museums of this sort of size, that sort of scale, you're not aware of the changes because you haven't got the staff resource – you've got one member of staff – how can they be aware of the national curriculum changes and that sort of impact? So it's very difficult. It's all about the people, the employers, the staff of the schools as much as anything else.

*It would take a very particular kind of teacher to go off the national curriculum and say this is important.*

Absolutely, yes.

*What is the frequency and nature of the museum's temporary or touring exhibitions? Can you describe any which have taken place recently or are proposed for the near future? Are you aware of any temporary exhibitions available which address the climate change agenda?*

We are very much dependent on getting exhibitions that are free. So we have no budget for temporary exhibitions, other than the summer blockbuster exhibition. So the nature and the length of those exhibitions tends to be dictated by the supplier.

What we've tried to do is to have a mixture of exhibitions that on the one hand follow the idea that we should be more of a science museum than we have been, but on the other hand they are the only opportunity for showcasing other elements of either our collections or our interests. So they can be quite broad. And they tend to be a mixture. We'll run specifically more focused on the children's market during school holidays, and less focused, more adult and academic in the non-school holidays. And we've tried to be fairly challenging with them; so we had one exhibition that was an artist who works with mounted natural sciences collections to reinterpret them in art, particularly to show the impacts of humans on the environment, and how our driving climate change is causing sea level rise that is reducing the abundance of sea bird species. She did an exhibition which incorporated all sorts of strange artistic creations, using material from birds, to tell this story; we ran a series of workshops for children around it.

The interesting thing with the museums' world in a way now is there aren't many temporary exhibitions any longer, because the area museums services that used to supply them were cut and removed. You can buy in stuff, but again it all tends to be very commercial. What tends to happen is these are bespoke exhibitions: we've asked someone to come and do it. They've supplied the materials, and then we augment.

For example, we had Jackie Morris the children's illustrator, who did drawings, beautiful paintings of dragons at that time, which is what we asked her to do; and we augmented that with parts of our relatively small Chinese ceramics collection, so that you had dragons. And we told stories. We had some fossil lizards and reptile material to say these aren't dragons really, but this is where the story might have come from. That type of approach. So we tend to do that.

We do very simplistic touring exhibitions, in the sense of we will do four boards that go out to a library with a couple of specimens – that type of approach. So we've done that with geology for example, and interestingly we've done some trails round the town, co-sponsored with cafes. So they're called Tea Trails. And basically each of the cafes that's signed up to be on the route gets a small exhibition about the geology of the Geopark, so it's a way of working with the commercial sector: it drives business to those cafes, but also enables us to have a bigger show room. And we did a pop-up shop museum in the middle of the nearly empty shopping centre in town. So it's that type of approach.

And then we've done things like take items from the collections and use them to inspire children's art workshops, and they take the artworks out: there's a

Geopark festival with a Geopark parade every year, so several years ago working with an artist there'd be eight-foot high ammonites, three dimensional, which they then paraded as part of that.

*So the museum's very embedded in the Geopark agenda.*

Very much so, that was part of the point was to do that. And the Geopark itself is embedded into the international Geopark organisation, and we've tried to develop relationships with other Geoparks around the world, particularly round the 2016 conference. One of the things we've done is to host a series of Geopark engagement lectures with the Hong Kong and Mongolian Geopark, where we have a live link-up because we have very good intranet; so we can do – for example – a teenage geologists' mini conferences, with Hong Kong and with Mongolia.

*It's interesting to think that Torquay and Mongolia are kind of linked up.*

Again, it shows the quality of the collections and the quality of the Geopark, which is unusual for many museums of this size.

*Going back to that art exhibition with the birds: so that was a way of incorporating art into the whole science and climate change agenda. The science is the hard thing to get across because it's so complicated. It seems good to have art and the humanities involved.*

Yes. Another interesting one which is completely different, and not a museum in that context, was the Centre for Contemporary Art and the Natural World when it was at Haldon Forest, near Exeter. It ran a whole programme around art and climate change, and had a big installation from some American artists, which basically was showing how the planet would look with sea level rise. And there've been a couple of others – a really good one was done three or four years ago – it had rice paddies outside Parliament in photographic real image type montages.

*I think photographs are very powerful.*

Yes. So we have done that sort of supposition. And the sort of virtual reality stuff, where you show London filling up with water; and there is a complete accurate Lidar model of the entirety of the UK, which you can graphically display: you can do it as a projection on a big table, and literally you can flood it to whatever level of sea level you want, in whatever level of detail you want, which is phenomenal. It's looking for that sort of opportunity.

*So as technology becomes more accessible and less expensive, museums can incorporate it more readily.*

The challenge with it always, for museums, is that's the sort of thing that would regularly be shown on a TV programme. If you're going to have it in a museum you're going to spend twenty - thirty thousand, and that's probably your investment for ten years. So how do you keep pace?

*And how do you make an offer which is different.*

That's partly why museums have gone back to the collections items, I think. Because that's the unique thing that they have, in comparison to TV. Or whatever you can look at on YouTube. And you're then thinking – what's happening to the

information that's on YouTube? Are you actually curating information off YouTube? There's a museum of the intranet, that's theoretically downloaded every single intranet site that's ever existed.

*Somebody must be archiving all this, another kind of museum altogether.*

It's an interesting one. We did collect YouTube videos about Torbay and its geology, just as we collected scientific papers relating to it. We got funding to be a Geohub of information. The idea was to collect stuff the museum wouldn't normally do, they wouldn't collect scientific papers on Torbay, and they wouldn't collect Open University presentation videos about Torbay for geology.

Southampton University did a huge, fantastic video about the geology of Torbay with all the sites. So we collected that. It's a YouTube video. It's out there, you can still get it publicly, but the point was to have all this information in one place. You could use it in the galleries, if you've got the facilities where you have computer screens in the galleries: why just stick to having the same particular thing, why not have something that regularly changes, using your collection of YouTube videos, for example?

*You don't usually think of YouTube videos as artefacts or collections.*

But they are, because they've been researched. There are sometimes copyright issues, but they still are part of a modern collection...

*NB A long conversation followed about: the Geopark; the differences between Torquay, Plymouth, Exeter, Taunton and Dorchester Museums in terms of their agenda/offer, funding and history; an imaginary/hypothetical idea for redeveloping the Roman museum in bath taking water as its central theme; a CCANW art exhibition on water; photographs from the London Futures climate change exhibition (Museum of London, 2011) and how something similar could be linked with a museums' collections to present an exhibition; the problem of the climate change agenda going dead since 2011, and the government's role in this; issues around communicating science generally; the BBC and 'balance'; issues around museums being trusted – are they trusted because they steer away from being controversial?*

...The Centre for Contemporary Arts and the Natural World was all about being confrontational. Recently, in the last few years, they've been doing a thing about soil culture. So taking a topic that to most people is an anathema and really boring – how are you going to tell people about soil – and then they've done all this art stuff around it, with the core underlying message that we're trashing our soils all over the world and we depend on them for our food, and our water. And I think that's incredibly brave.

But you could quite easily see how if that was a public sector organisation it would've been cut, because it's delivering a pseudo-political message: that you can't have farming, big interests and industry trashing our soils any more. That's the message, and that's political, to the perception of the neo-liberal right wing.

But CCANW's done some really good, thought-provoking art about science.

*I do think the arts generally and the humanities generally have an enormous amount to contribute to climate change.*

A great example was Forkbeard's 'Carbon Weevils'. Forkbeard were commissioned by DEFRA to do an animation to explain how humanity was driving climate change, with the aim really of making people aware that they should be reducing their carbon emissions.

Forkbeard did this lovely animation in which the key characters are called Carbon Weevils, and they are people with cooling towers on their heads that belch carbon, and their entire life cycle is designed to belch carbon into the atmosphere; and they emerge from carbon and they return to carbon when they die. And they do things like invent internal combustion engines in order to belch carbon; and it's just so amusing, and wonderful and funny and entertaining – but the message – it isn't explicitly said at the end – you're one; but it is so obvious, it's not hidden away in a way that's difficult to comprehend.

I think it's the best thing I've ever seen to engage people with climate change.

Interview date 17.6.14

*Question 1 Please could you describe the nature and range of the museum's archaeological collections?*

They are probably the museum's biggest collection, and the one that's growing at the greatest rate. So there are well over a million objects within it. It consists primarily of local archaeology – we only collect local archaeology now. We collect from District Council of Exeter, mid Devon, Teignbridge, east Devon, parts of Dartmoor and parts of the South Hams, so quite a large part of Devon. Historically RAMM has collected from all over Devon, so our older collections are from all over, but now we primarily collect in the centre, east and south of the county. Plymouth, Torquay and Barnstaple are the other museums.

So, that represents the heritage of a huge number of communities, and that's where its real importance lies. And I can't carry on just collecting everything that results from 'planning' archaeology anymore, so I'm going to have to be very selective. The criteria I use to judge whether we collect something is whether it will add significantly to our community's heritage.

The vast majority of material is the result of developer local archaeology. We're accessed all the time by people doing community history and by researchers from all round the world, so our aim is to make our collections more accessible to those people really. So we've got websites to state what we've got – the nature of our collection: some are more oriented to the community side, some more to the research side.

*Question 2 Please could you outline the organisation and content of the museum's archaeology displays, exhibitions and other archaeology-related activities, including outreach? Which aspects, in your opinion, work best for visitors?*

Most of our collections are local archaeology. When we were redoing the displays we were very conscious of the decision that we would be led by the strengths of the collection. We wouldn't try to map out the story and then see what fitted into it; we asked what are the best collections, and what stories do they tell and then we kind of orientated it. The first floor of the museum is Exeter's place in the world, the ground floor is Exeter's place in Devon.

So the local archaeology fits very well into that ground floor story. It starts off in kind of deep geological time and moves right the way through to the present day, and the archaeology collections are part of those stories wherever they fit in – we don't have an archaeology gallery; likewise we don't have a decorative arts gallery, a silver gallery, a clocks gallery anymore, so we try and mix the collections to tell the best stories.

So inevitably there are parts of the displays that are very heavily archaeological. Prehistory through to the Tudor period – the vast majority of what's on display is local archaeology. And we try to pick up the evidence from some of the major Devon sites, especially for prehistory, and some of the major Exeter sites when we get to the Roman period and the Tudor period.

We've arranged the cases chronologically, so there's a bank of cases that represent, say, prehistory, another bank that represents the Roman period and so on - which is obviously a very artificial construct; to mitigate that slightly we try to make the displays as transparent as possible, so you can actually see backwards and forwards through time to blur those boundaries and to try to say that human culture is remarkably resilient and similar throughout history.

So people will be able to see that there are pottery vessels for most periods and broadly there is similar function and shape – they just change slightly in style. People have been interested in appearance, having shelter, having food and drink, and those interests have remained throughout history.

*Looking at the interpretation it's very much linking it with you, the visitor. Also I noticed, looking at the gallery, you could visit it from either end.*

Absolutely, yes.

*You're either going back in time, or you're going through from the Ice Age.*

Yes, it has to work both ways. And broadly we try and display things to represent the collections as a whole. So where we have lots of things we try and put lots on display. Where the stuff is unique, very special, it will be there on its own. So we have huge numbers of Palaeolithic hand-axes, we put huge numbers on display; we've got lots of prehistoric flint, there's lots on display; there's lots of Roman pottery, whereas there's probably only one bit of Roman bronze-work. So we'll try to highlight particular objects.

But it goes back again to trying to get as much of the real thing on display as possible and start our interpretation from that. It's always problematical, because to a trained eye it's very easy to interpret bits of broken pottery. It's not always easy for other people, so we recognise that it can be challenging; but we prefer to try and put as much of the real stuff on display as possible rather than recreating the room sets. We have other ways of doing it – we have St Nicholas Priory, which we manage, which is completely the other way of doing things: it is almost all re-creation – you immerse yourself in what is really quite a close approximation to what we think an Elizabethan kitchen would have been, but it's mostly replica.

*I remember going on a school visit there with my son's primary school and it's very much 'living history'.*

Yes, we just try not to go there in the museum, whereas it works fantastically there at St Nicholas Priory. We've done a lot of outreach and events but it kind of comes and goes: when we were closed, that's almost all I was doing – I was doing huge amounts of temporary exhibitions and day events; we were visiting

festivals and had pop-ups in shopping centres, and all sorts of things, which was great; we engaged with lots of visitors. At the moment I've had to retreat from that a bit. I do far less of the summer festivals – I try to do some, but it's just my priorities are elsewhere. Hopefully we'll re-visit it, because I know how well it works.

Again, it's being able to engage people with some of the real stuff - to be able to take some of the stuff out, maybe to where it came from. We did a lot of work on Dartmoor, and it's great to be able to take stuff that was found on Dartmoor back there, to wherever; or Woodbury, the east Devon coast: we could take stuff out there, which is really good, but it's very time-intensive and so at the moment I'm not doing so much of this.

But I think a lot of it was – we were preaching to the converted, because people who saw the name RAMM thought we'll go along to that event because we can engage with our lovely museum that we can't engage with at the moment because it's closed. It was very good; I think we got a lot of new people from going to some of the festivals, some of the music festivals in particular. We had a very fine tent that looked a bit like the museum building, and we would have lots of family activities, and making and playing with things activities, and we found that lots of people really engaged with that. We were almost the kind of childcare tent for the music festivals, which is fine.

*Which aspects do you think work best for visitors? Do people talk to you about what they've seen in the galleries?*

It really depends. There are so many different sorts of visitors. So we've had a lot of very, very favourable feedback from people looking at the displays who just love to see the real objects. On one level it's just the fact that all the displays look fantastic and have a real quality: people love the fact that they can do that in Exeter, they don't have to travel to London to do it.

And then there are other people who engage even more deeply with the display and just like to see the real objects being presented in that way. And then even more deeply we have a lot of researchers who find it very useful that they can see a lot of real stuff, and they will then come to us with further requests to see the store collection.

But there are a lot of visitors who really appreciate something other than just lines of objects behind glass and they really want to talk to somebody or they want to be able to handle something or make something – a kind of craft activity: it would be lovely to do those all the time but we can't, so we have a regular handling session at weekends, with all real objects that people can handle – we really try not to use replicas.

*There is something magical about the real thing.*

Yes, absolutely. Volunteers give loads of time and do so much. Likewise with craft activities – that tends to happen at half terms and school holidays, and masses of families come in to do stuff and make things; again we have some brilliant people who are very adept at coming up with activities. So people can go



to the collection, and make something that is satisfying – there's no point in engaging with the collection and then making something that's too ambitious, you can't finish it and it isn't very satisfying as an activity. So it's about trying to find a balance.

So, different visitors engage in different ways. And there are lots of people who find it quite difficult to go into fairly dimly-lit galleries and just see lots and lots of objects without masses of interpretation. And some people say – I just need more information, I want books on the wall, but you can't do that kind of thing for everybody.

And so we are piloting more information on f hand-held devices, so you could bring your phone in or your iPad in and draw down more information on things; because we had to be very, very selective with what went on display, so selective with the information: we just didn't want to clutter it with too many words.

And yet there is some magical stuff – letters from the original collector, drawings from the original collector; there are some wonderful Victorian drawings and sketchbooks, and to be able to draw that stuff down would be great. We're trying it, and it works – we got it to work really well outside, it's really hard to make it work inside the building.

Other than that – things like QR tags next to the displays, which we've resisted doing – that would be the simplest and most effective way of doing it and it would work very well, but suddenly we would get this mass of little kind of chequerboards – but I'm quite in favour of doing it because I'm just conscious of the amount of information that we've got that we don't give to people. It's all very well to say go to our website, but if you can't do that during your visit and you haven't got the real thing in front of you, it's not quite the same. I suppose that's one of the reasons we're doing less outreach: it's that we're trying to get the digital access improved, and it's taking much longer than any of us thought actually. It's a real learning process.

We're working very closely with the University of Exeter on most of that, or the Met Office, or the National Parks. We've been very successful at doing pilot projects, but there's never the funding there to kind of finally tie it in to make a really useable product. It's frustrating with the funding streams which are very good at supporting new ideas but really bad about actually fully developing. So, we've gone through so many start-ups, then research and development phases, and it's very difficult to actually get these tied in to a final product. But that's what I'm hoping to do.

*Question 3 Please could you explain the decision-making process involved in the planning of new exhibitions and engagement, including who is responsible at each stage of the process?*

So, if we take a temporary exhibition as an example – we have a full programme of these, this process is happening all the time. It takes between three and four

years to develop usually, so we're planning at least three years ahead. Some of the big exhibitions take longer than that.

Each exhibition will have a project team led by a project leader, and that can be anything – it can even be a curator. So the team will try to make sure that the partnerships that we develop with outside institutions - and almost all of our exhibitions are partnerships with other institutions – are strong and develop both institutions. We work a lot with the University and that is really helpful; and the University has realised that the museum is a good way of disseminating quite complex information.

So it starts off by developing an exhibition proposal – sketching something out, getting a rough idea of budget, and then that goes towards our exhibition planning committee that has far more proposals presented to it than we can ever use. It's a real editing process – you have to put forward a very strong proposal, and it really helps if you can bring money to the table.

And then the project's given the green light. There's usually a period of developing ideas and sketching out content, and then the full team comes in to play, and that will bring in all aspects of the museum team, whether it's our front of house staff, whether it's the curatorial resources, whether it's conservation, marketing, design, the digital side.

So an exhibition is kind of developed in the round, and things will often change quite markedly during that process; and it's about finding something that works for RAMM. I think we feel that this is quite a unique institution and we have that sort of spin on it.

*Question 4 Are there ways of gauging the effectiveness of an exhibition, event or activity in terms of how visitors respond? Do you gather feedback from visitors?*

In one way the best way to do it is just to sit in the gallery and have a look. I think that's always worth doing. It's never wasted time. And you really get a sense of how people are using the gallery, which is inevitably different to the way you think about it. And sometimes you get a sense of what we're worth. It's very gratifying when it does work. Sometimes, something you think will work just doesn't, and then you really have to re-visit it. And it's much easier with a temporary exhibition – you can learn lessons and apply them more quickly than with the permanent galleries.

We've got a load of tweaks that we've developed, and some of them we've implemented, but some we're thinking - do we do this piecemeal or do we do a whole lot? So for most of those tweaks we are just listening to people and talking to visitors and you get some sense of what works and what doesn't work. We've got comments books, and the same sorts of comments turn up again and again. And the people who are there in the galleries all the time, the front of house staff and volunteers, are the best people to see what works and what doesn't work.

It's important to us and our funders that we *do* evaluate, so we've done that over the years, with visitor cards and comments books. We try to learn from them. For

a temporary exhibition it tends to be comments cards or a digital version of the comments cards; but a lot of it is talking to people who are in the galleries all the time.

*It must be difficult to decide are you doing it just for what people like or is there some message or ethos behind the display.*

Yes, especially with some art exhibitions. The artist has a particular vision and that's the way it is, and our challenge is to get that vision across and it's very important for us to do that. So, we had a fascinating exhibition in 2012 by Garry Fabian Miller, who works on Dartmoor with kind of non-camera photography, with blocks and colour of light – and he had a very particular vision of how it should be laid out, and luckily I think we got it. Visitors were absolutely amazed, coming in to - a Manhattan studio space, was how a lot of people described it, which is completely different from what you would expect from an exhibition about Dartmoor, which you think will be kind of vast landscapes and a bit weather-beaten and things like that. Just getting that atmosphere across was quite a challenge.

*To accommodate the artist's feelings about it*

Yes, but I think it also helped people to step back from what their expectations about Dartmoor National Park would be and to engage with this particular vision and to think about it, which was good. But it also helped that we had lots of trained volunteers who were keen to talk to people about it and respond to people's questions. It was really, really good, and very relevant to your subject as well because it was all about climate change. It was about change over time. In a way it was a sort of conversation between him and me, because I went to his studio and saw how he worked, and he came to one of my store-rooms to see how I worked. It was largely a retrospective. There was a section where he was responding to our archaeology collections and looking at some of the stuff that shows probably climate change on Dartmoor, and I was also commenting on his pieces which to me looked like he was talking about time and changes. It was very good.

*Question 5 What do you see as the opportunities for interpretation of a multi-disciplinary nature - for example an exhibition which combines archaeological or historical artefacts with objects from ethnographic, natural history or art collections?*

It's our absolute kind of basic value. We see it as going back to our own heritage, in that the Victorians were fascinated in the world, and tried to understand all aspects of it. Certainly with our collectors they weren't compartmentalised. We have people who were collecting ferns but they would also have some Greek pots, or some who were fascinated in Egypt but they would have photographs of Dartmoor or something.

So they were just enquiring minds – they were amazing. They had the technology to enquire further afield than had been possible before - the camera, the

microscope, the steam boat to go travelling in, the telegraph - all these things meant their reach was wider than before. They had more access to the world.

So that's why we try and engage with all aspects of the collection, but we also find it just works better. I'm really interested in what you said about your son's memories of the former clocks gallery, and being fascinated by that.

*It's an experiential thing – the sounds and the rarefied atmosphere combined with the fact that there were moving parts as well – obviously he couldn't touch anything but there was that feeling of – something's happening, something's moving, time is passing.*

Yes, so there are obviously places that do that, like the V and A has great galleries of stuff devoted to particular subjects; but we really like the inter-activity between the different disciplines.

That is actually also a product of the redevelopment of this building, because previously all the offices were small things for individual people dotted around the building, so it was quite difficult to see one's colleagues, and some you would just never see. And now we're all in big open-plan offices and it's very easy for us, so the interaction between curators, and between curators and other aspects of the museum, happens all the time. And so we can't fail to mix our collections together and mix our activities together. So that's why it happens as well. It's an intellectual principle but it's also practical.

*Question 6 Can you envisage an exhibition about climate change in your museum? How would it look? What would be its main aspects, and how would new technologies be incorporated to enhance visitors' experience of such a display?*

We didn't explicitly engage with climate change in the displays, but it's there. In prehistory we talk about the change in the landscape, change in climate, so basically in the prehistory section the fact that you've got very different sorts of cultures happening during the Ice Age and at the end of the Ice Age. We draw upon the pollen evidence for landscape change on Dartmoor, we look at the way people are depositing objects in wetlands and lakes, like the wooden figure, the Bronze Age hoards and things. We could probably bring it out in later aspects, but we chose not to. And then we are kind of explicitly revisiting this in a temporary exhibition in 2015 on Weather, working with the Met Office and a number of contemporary artists, looking at the whole idea of instability and change and how people cope with that.

I suppose the artists are dealing with particular sorts of weather rather than causes. My involvement at the moment is limited to suggesting how archaeology shows this, and there's a lot both in the archaeology and historical collections that when you look at it is all about climate change and dealing with it.

*What things in particular do you see at this stage?*

At the moment it is the prehistory collections, the bit I've just mentioned, the Roman collections as well: many of the votive offerings seem to be about fertility of the land as well as people, and worries about that. But you see it running through people's lives in Exeter – it's not completely divorced from the countryside around, so people were accessing wildfowl, shooting deer; there were large herds of animals - so Exeter's hinterland was very important, and access by river to the ports was very important.

So there were concerns with the way that water was managed, concerns with the way livestock and foodstuffs were managed, to make sure that you could store stuff in times of plenty and in hard times there was stuff left over.

And there was a huge concern, especially in the Elizabethan and later period with access to the sea, and being able to control the sea and putting your trust in boats – vessels – laden with goods: if they went to their destination and came back they made your fortune, if they didn't then that was a big loss. I think we do mention that in talking about the woollen and cloth trade. So there was a fascination with trying to understand the weather, mapping, the way you told the time – and I suppose that all ties into the climate.

*It dominated everything, every aspect of life really. It's like the clock in the cathedral that's all to do with harvest. You could use that weather-vane in the gallery in the exhibition. How would the Weather exhibition look, what would be its main aspects?*

It's not at that stage really. At the moment it's a matter of talking to a number of contemporary artists. So we have a contemporary art panel who work with the University, so they're there just to make sure we're not missing a trick – there are some amazing contemporary artists out there who will enhance the way we create exhibitions, and especially this one, which will be heavily art-orientated. They advise us on people we might like to talk to. At the moment it's a process of going and talking to a number of contemporary artists, bringing them to the museum, talking to them, getting them to present their ideas to us.

*Will the Met Office have a scientific display or content to it, or is it very much art and human response?*

Initially the Met Office were going to bring a lot of resources like that, but in a way it's still fluid so I really don't know – so it's one of those things we will need to start to draw together.

One of the project leaders of the exhibition is actually our digital resource officer so the likelihood is there will be more digital technology than in most exhibitions. But for the past exhibitions few we've done things like trails around other parts of the museum and around Exeter that lead off from the exhibition: those have been done through mobile technologies. So there isn't a kind of prescribed content – it's developed for each one. But a digital trail is a very easy one to do, so that quite often happens. It helps the general tourism of the city and the county if we can lead people away from the museum.

*Question 7 What do you see as the major challenges and constraints in presenting climate change as a topic?*

I think more generally it's a topic that is so much debated, and there are strong voices on both sides which I suspect have tended to dominate, and certainly are dominating the media, and so it's almost got to the stage where it's very hard to have a debate. The views are quite heavily entrenched, and so people come with a lot of preconceptions and I suspect the phrase will be a turn-off to some people and an attraction to other people, and quite hard to convert them either way.

So I suspect the best way to do it is to come slightly tangentially to it, and as much as you can, with the distant past and archaeology, present an evidence-based approach to it, rather than saying this is or isn't evidence for climate change, this is evidence for what happened at a particular time and people's response to it.

And then the other side will be art-related – the emotional, aesthetic response. So it will be really interesting to see how that works. But certainly with the archaeology it was great to be able to say, well you know, there's always limited information in the distant past, but this is what we have and we think it says this and this is why we think that. And it really helps to be able to draw upon some of the environmental archaeology, such as the pollen columns from Dartmoor, or the fluvial sediments in the Exe valley.

*Elephant tusks from Sidmouth.*

Yes, and so we can say that things have definitely changed, and especially in late prehistory there is a cultural response to that. We think. Dartmoor shows that there were really quite rapid and quite marked changes in climate and landscape, and that there is a human response to that. So, where you get something as marked as that, that's a fascinating topic to investigate, and the whole idea of what we now see as almost like a romantic wilderness – what we're seeing is the result of climate change.

*Question 8 Can you imagine how an exhibition about climate change might link stories of climate and environmental change in the past with people's concerns about climate change today? How do you think visitors would respond to such an exhibition?*

I don't know, but I suspect it will be. Responses to climate change in the past will be there in the Weather exhibition, and I suppose it looks like the role of the artist is to elicit a response to that. The final artist hasn't been selected but the ones I've seen do talk about it – they're not explicitly talking about climate change, some of them are very much talking about weather; others are talking about climate change in particular parts of the world that are classically associated with climate change – Greenland and places like that. And I don't think the message will be strong either way or anything – it will be presenting an artistic view of landscape that is maybe under stress. It will be really interesting to see how the various strands of this exhibition tie together and I don't get a sense of that yet.

*Question 9 What opportunities can you envisage for using archaeological objects from your collections in an exhibition about climate change? Can you think of specific examples?*

I think there are a lot. It goes from Lower Palaeolithic hand-axes –its all we know about these people, but it tells us something about the way they coped with the world; some of the Mesolithic material – again we don't know a huge amount about these people, but their culture suggests a particular approach to the world. So it's nice to be able to compare and contrast those two sets of cultures, separated by a vast timescale but still in that very deep distant past. Then really, the Bronze Age hoards, the Iron Age depositions and things like that. And I've worked over in Lincolnshire before and there were really strong deposits in the river valleys there, huge amounts of metalwork being deposited, in response to either astronomical events or climate change events or something like that. And the sections of society that are able to command wealth, or command people with wealth to do a certain thing to effect a certain change. I think there's a huge amount you can do with that. And there are techniques to recover stuff from along the coast, only you've got no real information or objects to work with.

*Flag Fen is a very interesting place.*

Amazing, isn't it. And the Maritime Museum in Falmouth recreated the dug-out boats. The process of creating the object is fascinating: you think about how it was used, the technology - moving around a watery landscape - and then how it came to be where it was.

You're certainly quite easily able to show we had lions and hyenas here; there were mammoths and woolly rhinos: that's great, and shows dramatic climate change. But the subtle changes – climate change during the medieval period on Dartmoor: you've got just little bits of pottery, you've got deserted farmsteads, and they tell a very poignant story. My favourite one is on display in the gallery is a medieval farmstead that had one too many mishaps – the roof caught fire and collapsed; and you suspect that whoever lived there was under severe stress at the time, and so rather than rebuild they abandoned it on that day, with stuff just left as it was, which is a fascinating glimpse into life then.

I'm sure one could do more. The thing we really lack is research into the animal bone collections here – it's one of the commonest things to be found on archaeological sites, and yet it's really hardly been looked at. So we could be looking at what was happening to the Elizabethan, Tudor, Georgian populations of Exeter. The great thing about Exeter you've got quite often a close focus because you've got rubbish pits, toilet pits related to particular households; and they can be quite closely dated, so one almost knows who one's talking about, one can see individual household's responses to times of stress - good times and bad times. So there's a huge amount of potential there.

And we had an exhibition on the Elizabethan period, which mostly with the Elizabethan Heritage Trust tends to be the glorious artworks, the impressive explorers; but actually apparently if you dig behind it it's a time of tremendous

uncertainty – economic, political, religious, and also I suspect environmental uncertainty; and that gets picked up in some of the more everyday material culture, and you only get that through archaeology.

And then you balance that with looking through the records, and you see people questioning all sorts of things. And so it's not just the archaeology, although that's a really fertile source of evidence, but there are some fantastic written records too.

*Question 10 Climate change can be seen as a political issue. In your opinion, do museums have a responsibility to be contentious? Should every museum be addressing climate change?*

It's a very good question. We don't necessarily go out to be contentious, but then again we don't shy away from being contentious when that seems the right thing to do. And that response comes out of the planning process.

So we won't go into a project saying – this project is going to be a contentious one, and this one won't be, we'll be safe with this one – that will come out of the whole discussion process, so it is partly about the whole project partnership. Where you get members of a partnership that want to present that particular viewpoint and argue strongly for it, then that will happen in the finished result. Where you get a project partnership that isn't so interested, the idea will probably get edited out.

So we worked with the University on our sexual history project, and I suspect that the University wanted to make that more controversial, more in your face about the fact that this is an exhibition about sexuality. I think the result isn't particularly challenging, and yet in the media we've had quite a few comments. I think just from a journalist saying – here, you're doing this – they tend to be answered in their comments pages of their newspapers, and comments are from everybody: most people certainly are not thrown by that controversial exhibition, although it was always highlighted as something that could be. Likewise the Gilbert and George exhibition - they come with the tag 'controversial artists': I'm not sure that they are. The fact that those two exhibitions came together at the same time meant that I think our director did take a view that we won't go the extreme, we won't present too explicitly.

So there is a certain amount of self-censorship, but we tend not to go out to shock people. But sometimes there will be exhibitions that are shocking. We're dealing with the First World War as well; there will be an exhibition next year on facial injury in the First World War and there will be some extremely graphic and challenging images. We really will not go out to shock – we're aware it's a very family audience – we don't want people to turn the corner and see something horrific. The images are horrific, they will be sign-posted, so people shouldn't be shocked.

It's obviously different when you're dealing with something that's maybe politically contentious. Climate change is an issue that kind of spurs heated debate, and I



don't know what we will do, but maybe we will have an area for debate, or an area that tries to show both sides of the debate. I am sure we will tackle the issue but I'm really not sure we'll do it as a stark pro/con issue.

The other thing you can do is to have events, which are debates: we're having one on the Victorians and Us – okay, that's not particularly contentious, but there's a lot of people who love Victoriana and people who hate it.

*So do you think every museum should be addressing climate change?*

Yes. And not just in our displays. We have a duty to try and be sustainable and the way we produce things should be sustainable and the way we run the museum should be sustainable. And it's one of those issues that certainly is in the back of our minds when we're producing stuff, especially about archaeology, because we're dealing with time; and it helps that archaeologists are interested in the environment and the process of environmental change. So the evidence is there to be drawn upon and a lot of current research is about the subject, so it helps.

### *Supplementary questions*

*How is/could new technology, such as augmented reality, used/be used to expand visitors' knowledge and experience of the museum's collections?*

We talked a lot about AR, and then decided we wouldn't do it at the moment. We talked with a couple of companies who wanted to use us as case studies or to trial their products, and we just didn't think it would work very well.

So the idea was, okay, you've got an Elizabethan pot on display, maybe you could scan it with your phone and it would then bring up an Elizabethan room set; however, you've got to create that Elizabethan room set somehow, and it's got to be good. So there wasn't anything there that really convinced me that it would be a huge advantage. We then steered away into finding ways of presenting information that we've got, using digital platforms. So that's just what we're doing at the moment. But we've got half an eye on it - we're always interested in working with people who come up with these things.

Likewise with things 3-D scanners – we've had a number of people who've wanted to 3-D scan our objects, and we ask the question why, and some of it is just - because you can, but with other ones I think it genuinely adds something to our knowledge of the objects. If you do a scan that lets you see parts of the object that you can't see without microscopic handling it's great, or if it's a very delicate object you can then use the scanner on the object. So, there will be things we do. But one thing we've learnt from our simple digital objects is just how much time it takes.

*How flexible is the exhibition space?*

We tried to design it to be very flexible. In terms of the exhibition galleries there are three main boxes, so we can use them individually, we can have them in groups of two and one – and then within those spaces we can build up temporary walls, we can adjust the lighting – so I think they're about as flexible as three gallery boxes can be. And that was always designed in from the start.

We went to places like the Tate, the V and A; we got their advice on what you need. And they're all built to what's called government indemnity standards, which is basically to do with insurance: that means the government pays the insurance on us having high value art works in it, and to get that you need to have a certain quality in terms of the fixtures and fittings and a certain security level. So all of that kind of comes down to having really good facilities, and that tends to mean they're quite flexible, so we can respond to most things. That was the idea.

And some things have been challenging, in terms of objects that have been big and heavy, and things that have been very small and high value and detailed. We're very lucky in that we have technical staff who are immensely experienced and really like a challenge. So I think having those people within house means it's very cost effective; we don't have to spend huge amounts of money hiring in technicians to achieve the same effects. So that's just a pragmatic thing but it actually has made a massive, massive difference. We will make this happen and have got the facilities to do that in house, rather than to hire in.

*How are school groups and other visiting groups organised within the museum? Do they follow a set pattern of activities? Are there opportunities within the education programme for addressing climate change?*

That is probably our biggest challenge, because in the old RAMM we had an award-winning education team and we did work with a lot of school groups. In effect we were subsidising them; our bills were paid by Exeter City Council and the City Council was subsidising them. The City Council basically said we can't carry on doing that - sadly schools will have to pay for the cost of this. So at the moment the programme in terms of what we will directly do with the schools is quite severely reduced. But we have huge amounts of groups that come in and use the galleries.

*So teachers organise their own visits.*

Yes, so that's the way we're looking at it, so it's better than nothing - but it is a shame because when we were directly engaging them, you're able to really inspire generations of people to come and use museums, and we're still feeling the benefit of that years down the line. With the changes in the curriculum we're just putting together some new programmes, and one is looking at prehistory which we've never done before; so we have a freelancer who has a programme on prehistory, so that inevitably looks at climate and cultural change.

*I think having a person who will engage enhances a visit hugely.*

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That is still available, but you have to pay more for it. So there are fewer schools taking that up, more schools coming with their own facilities and bringing their own staff. And a lot of them are using our websites and things for resources. So they often come armed with iPads and we have Wi-Fi in the museum so they can download facilities while they're here.

*What is the frequency and nature of the museum's temporary or touring exhibitions? Can you describe any which have taken place recently or are proposed for the near future? Are you aware of any temporary exhibitions available which address the climate change agenda?*

A typical exhibition will last about three months. But the bigger ones we're now stretching to more like six months. There's such a lot of resources it's a shame if they're not seen. Some of those will be developed in partnership with other organisations, and will then tour to those organisations.

Very often we will tap in to, say, an Arts Council exhibition, such as Gilbert and George; we will help to promote it and it will be run specifically here, but it will be part of a touring programme. But typically exhibitions won't tour, because we try to put as many really great objects in them as possible, and it's quite hard to get those on tour.

### *Interview 3 Fiona Pitt, Plymouth City Museum and Art Gallery*

Interview date 13.11.14

*Question 1 Please could you describe the nature and range of the museum's archaeological collections?*

Well it's got two major collections which are very important. The first one is the prehistory collection, because we've got a lot of the archaeology which the Dartmoor Exploration Committee excavated in the late 1800s early 1900s; so Dartmoor artefacts from those excavations, which are quite important.

And the second major collection we've got, which is of international importance, is the post-medieval imported ceramics collection. That's ranked as the best collection in Britain, and it ranks equivalent to European collections as well: there's one in Holland which it's similar to, but it's really important in [illustrating] the imported ceramics and what's actually coming to Britain at that time.

There are lots of other collections, not seen as so massively important as those two.

*Question 2 Please could you outline the organisation and content of the museum's archaeology displays, exhibitions and other archaeology-related activities, including outreach? Which aspects, in your opinion, work best for visitors?*

We've got a permanent archaeology gallery at the minute, called Uncovered, and that's been there since the end of 2008; that was part of a major HLF fund at the time. I think in terms of its successes with visitors, the great thing is that prior to that there wasn't an area where all the archaeology was congregated: there were little bits scattered around the museum in different places, which is fine for looking at those few artefacts and learning a little bit about them; but seeing them all in context, and having the opportunity to explain a little bit about archaeology wasn't there, and actually linking up those artefacts wasn't really possible. So that's the real plus within those displays.

I think the other thing is because you've got a designated space for the archaeology you've got the opportunity to do things with interactives, which appeals to a wider range of visitors. You've got the opportunity to explain a little bit about the concepts of archaeology as well; one of the things we've got is a stratigraphy interactive, that enables visitors to maybe get a little bit of a better grasp of stratigraphy, because I think it is one of those things that people struggle with: if you're an archaeologist you get it - you forget that other people don't necessarily get it.

*People don't know how things get hidden in the first place.*

That's it. So the idea with this interactive is that – it's an idealised part of stratigraphy and you get the opportunity to see the context of the objects.

The other exhibition we've got at the minute is a temporary exhibition, and this is the Whitehorse Hill prehistoric Dartmoor discovery exhibition, and this has been a great opportunity to show the finds which again are of international importance – organic, prehistoric early Bronze Age finds. That exhibition has actually been in discussion since the end of 2011, so the incubation period for an exhibition of that nature has been almost three years, because we're working with partners in the Dartmoor National Park Authority. So there's a lot involved within that, to actually bring the exhibition to fruition – and then it's up for three months.

In terms of other activities and outreach, most years since about 2000 the museum has done activities related to the Festival of British Archaeology, or the Festival of Archaeology as it's now known. And it's varied from year to year in terms of how many activities, how many people have been involved. I suppose the high point was probably when there were more staff, so around 2006, 2007; then we had about seven or eight hundred visitors to activities across sites: it was a real occasion.

Other activities – the learning team do have boxes which are specifically about particular periods. So there's a Bronze Age box which currently mostly consists of Bronze Age axes not local to the area. So as part of the Whitehorse Hill project what we're doing is a new Bronze Age box which looks at other artefacts, particularly those from Whitehorse Hill, in terms of what we can say about different artefacts, what we know.

We've also worked with the Art College to produce a leaflet to go with the box, and we're also hoping to distribute this more broadly to schools. We've also given copies to Dartmoor National Park Authority as well. And these leaflets look particularly at prehistoric sites, mostly Bronze Age, in the area local to Plymouth. We particularly have links to sites where we've got finds from those sites. So it's trying to give local people a much better understanding of what local archaeology is on their doorstep and how they can actually access that - places where it's not too difficult to get to.

*There's such a contrast, because you've got urban archaeology, the whole historic period and the maritime history, but ancient Dartmoor as well.*

Yes. Dartmoor's obviously such a fantastic Bronze Age landscape, and with the Whitehorse Hill finds as well it's really been a catalyst for creative work. Certainly while the exhibition's been on it's been fully booked in terms of school groups coming - it's been absolutely packed with school groups, mainly primary school groups but there have been some older groups as well. I don't know if it's still there in the national curriculum but when Michael Gove introduced prehistory into it – primary schools are always desperate to know anything about what the Bronze Age is, or what any of these periods of prehistory are. So it's fitted in quite nicely with that as well. I'm trying to think of other activities... We do gallery talks as well.

*It feels like a real focus on community engagement. The whole museum feels very friendly and welcoming.*

Yes, it's got a lot of groups that use it on a regular basis really.

*Question 3 Please could you explain the decision-making process involved in the planning of new exhibitions and engagement, including who is responsible at each stage of the process?*

Okay, if I do Whitehorse Hill as an example that would be easiest. Basically, what has happened so far is that a member of staff has an idea for an exhibition. It could be anybody on the staff; it doesn't have to be the curator. Then they put that forward to the Exhibitions Group. Then there's a decision as to whether that idea is possible to progress. So the idea is put into the mix of ideas which is circulating. And then as the programme gets confirmed, as it gets nearer to the dates – usually it's about two years, once that idea has been accepted – that's often done on the basis of funding as well, if funding is available.

So for example with Whitehorse Hill - that proposal was put forward towards the end of 2011, and was accepted as a future exhibition for 2013, 2014. And then it's a case of there being a project leader. There's a process of having meetings. For that exhibition, because it was a partnership exhibition, there were both internal group meetings and external steering group meetings as well. And they discuss everything and anything to do with the exhibition; so it's not just the nuts and bolts of what will go in that exhibition and what will be said about those objects, it's about the design, it's about the learning activities associated with it, the advertising, publicity, who's opening it, what people will be there at the opening – all those sorts of issues get discussed and progressed through time.

*It's beautifully done - it's interesting to listen to people walking around, everyone's quite reflective and quiet in there. Because it was focusing on one individual's life and death, I think people related to that.*

Yes, it's got an interesting approach. That's one of the discussions we had at the outset – is it just going to be the objects from the site or is it going to incorporate other Bronze Age objects. And the more we thought about it, because of the importance of those objects we wanted to really concentrate and focus – give those objects the real focus and not sort of dilute it with other artefacts, particularly as we've got the other archaeology gallery downstairs. If people want to find out more they can go to the main archaeology gallery. Plus we've got a small display case in the foyer area, so that's got the add-on extras in there as well.

*Question 4 Are there ways of gauging the effectiveness of an exhibition, event or activity in terms of how visitors respond? Do you gather feedback from visitors?*

Obviously some people write in if they've got a particularly strong opinion about something – it's usually when they've got a negative opinion about something, unfortunately. But sometimes it's when they've got a really positive reaction. Because we've got a lot of visiting groups, then obviously we can ask the groups what they think – but often they're giving you feedback anyway. All the groups I've taken round – a range of groups, it's not just interested groups, archaeological societies, things like that; we do lunchtime talks, which anybody

can actually book in to - so you're gauging people's reactions through that. With the Whitehorse Hill it's been overwhelmingly positive.

The other way we've done it for that particular exhibition is through the cards within the actual exhibition area. The original idea was that people would write a little bit of poetry or respond – I think it's probably turned much more into a sort of general comments board, which is to be expected. There are a few little snippets and poems in there, which is nice. We do gather up those comments as well. There's also the comments book in the main foyer, but some people might want to leave comments in the exhibition area so there's a comments book there as well; some people just respond by talking to the front of house staff as they're going round. The front of house staff can gauge such things.

In terms of more formal evaluation, museums do sometimes do proper evaluations of exhibitions through a questionnaire or something like that. We haven't actually done that for this exhibition. I suppose because we've got so much feedback from other directions – through the comments cards – it's not something that we really felt we needed to do. Plus there's some expense attached to that. Perhaps I suppose because it's a temporary exhibition – there's sometimes less pressure on you to do that: because we've got funding from HLF we can demonstrate to them through various mechanisms that we have got positive feedback anyway.

One area of work which I know Linda Hurcombe was keen to get feedback on was the touch element. Because I can't remember any cards which specifically touch on the 'touch' aspects; and I think she was thinking that maybe she could come down at some point and do some evaluation. It would be good to know what people think about that. And I've asked groups – we had a curatorial meeting, and gauged their reactions to it as well. And it's interesting what people have to say.

*Question 5 What do you see as the opportunities for interpretation of a multi-disciplinary nature - for example an exhibition which combines archaeological or historical artefacts with objects from ethnographic, natural history or art collections?*

It's an interesting subject actually. I suspect if you've been to the MShed up at Bristol you've seen the multi-disciplinary approach there. And if you've been to RAMM you've seen the more traditional approach, although they do have one room which is a bit more of a mixed interpretation there.

A lot of what we've done here with the 2008 redevelopment was we did go through discussions regarding a multi-disciplinary approach. Basically the thing is the themes that you choose, and how you approach those, and how you populate those – the thing in a museum is that unless you're actually basing those themes and ideas on actual objects, you very quickly get into a situation where what you're proposing becomes quite thin – the story becomes more important than the artefacts. And the thing is that most people come to museums to look at

artefacts. You can get stories in all sorts of different formats so you're going to be quite careful when you do something like that.

We are at the start of a process for a major redevelopment with the history centre in Plymouth. And we're going to have to see how it goes with that, in terms of whether it becomes a thematic one or if it retains the core subject areas.

I think personally from my point of view there are some multidisciplinary exhibitions which I've really liked and I've really enjoyed. But the ones that I think tend to be most successful are the ones that have got a real point to them. And they've got a specific idea, they've got a specific story which they're trying to get across and they're trying to explain. And often those exhibitions - while they're multidisciplinary in essence, at the core of them is a theme that probably comes from one subject area. And they've sort of embellished, if you like, with objects from different areas. Personally, I think that's where I've seen that work most successfully.

I think it can work very well, particularly with interpreting world cultures objects, and actually mixing up objects so that people can feel that sense of real engagement and understanding with objects which they might otherwise just think are a bit curious and a bit strange and 'other' - it's trying to break down those barriers between a sense of us and a sense of other.

Similarly with social history exhibitions: a lot of archaeology is social history which has basically been buried, it just happens to be underground. I think where those archaeological items have got very powerful resonance they can work quite well in a social history context. This is especially the case with artefacts we've got from the basements of bombed out buildings from the Second World War, which were excavated in the 1990s. So these are fire-damaged objects which aren't that old, all within living memory, but are still archaeological. And there are things like souvenirs people have collected - somebody's holiday souvenirs, which is very poignant. Because of that they're very powerful objects, and I think they work just as well within a social history context as within an archaeological context. But also using them in an archaeological context helps to make people think about the rest of the archaeological objects that they're seeing and maybe understand them more in terms of the people - to realise that the objects have human stories.

*Question 6 Can you envisage an exhibition about climate change in your museum? How would it look? What would be its main aspects, and how would new technologies be incorporated to enhance visitors' experience of such a display?*

Just off the top of my head - I'd maybe see an exhibition about climate change as very much as a visual exhibition. I think some of the photographic evidence of climate change is the most powerful. For example, the shrinking of the ice caps, or deforestation, particularly in South America; or the massive extraction of raw materials through open-cast mining. Because I think the landscape, and the alteration of the landscape, is so vast that's it actually is something that people



can see very clearly, very immediately, what it actually means and what the impact is.

I think in terms of exploring the issues of climate change, in a way I suppose I'd see them as more naturally sitting with natural history collections, particularly in terms of continuing extinctions of animals and the loss of flora and fauna even on a local basis - sort of monitoring that, particularly in our coastal environments; and how local areas have been affected and how in some cases it is possible to reverse impacts of climate change. I suppose it's getting a little bit broader than immediate climate change but there are links in terms of what animals are living in what particular area, and changes in that.

*How threatened landscapes affect the populations of animals.*

Yes. I suppose the reservations I would have in terms of linking modern climate change to climate change in the might be in terms of perpetuating any misunderstandings that people might have with regard to whether or not the current levels of climate change are actually due to human impacts, rather than just a natural process that is ongoing.

Obviously in prehistory the vast majority, as far as we know, of climate change was due to natural occurrence. There are examples where people have cleared areas and changed the local environments, but not on the same scale. I think the danger of confusing those messages would make me quite nervous about maybe looking at those two things in too close a proximity, because people don't read the small print, people can pick up the shorthand very quickly and remember the shorthand and retain the shorthand; and it's important that that shorthand gives a very clear message rather than anything which might be confused.

*Question 7 What do you see as the major challenges and constraints in presenting climate change as a topic?*

I suppose possibly one of the challenges would be that because climate change is an issue which is very much at the forefront – or has been at the forefront - of the media and the general conversation of life, that people think - oh, I know everything about it, it's a bit boring, do I really want to go and see that, it sounds a bit worthy and a little bit serious, and is it something I want to do with my leisure time. I think within that, the challenge is to make it something that people want to go and see, rather than go, oh you know, it sounds a bit depressing –

*They don't want to be lectured to.*

Yes – trying to look at the positive ways, other positive news within that, what people can do, because I think people can get easily demoralised by what they as individuals can actually achieve, to help. And I think as well because life isn't kind of structured always in ways which do help people to contribute or make their bit, then it's a very demoralising process for people because although they'd like to be as helpful as possible, so many things aren't set up for them to actually do that. And I think it's sort of trying to change those ideas.

But also - maybe to help people understand how they can empower themselves - make sure they understand how effective their voices can be in lobbying for change. But again, that is quite a sensitive area to get into, and you can be charged with being too sort of politically overt in that situation. So it's got to be quite subtle.

*Question 8 Can you imagine how an exhibition about climate change might link stories of climate and environmental change in the past with people's concerns about climate change today? How do you think visitors would respond to such an exhibition?*

I think that's a really interesting one. I think one of the main things that it would be interesting to explore today is to emphasise that in the past natural climate change was exactly that: natural climate change, but it still had an impact on people. And maybe, sort of, through the ages, how people have adapted to climate change. And maybe again trying to emphasise the positive ways, how people have adapted and changed their local environment – there are positives; or the negative impacts of climate change, such as more large-scale migrations, all those sorts of things, which have obviously had huge and not always positive impacts on local populations.

I suppose people might imagine that in the distant past - for example with the sea level rise, about ten thousand years ago, that cut off Britain from mainland Europe: obviously that would have had a colossal impact. Now it's hard to gauge to what extent that was gradual, there must have been a tipping point – and we know from the work done on Dogger Island, from coastal evidence, that people were making the most of the landscape which was available to them. So, obviously those people had to make changes.

The temptation might be to think – well, okay, there was plenty of land around, was it such a problem; but we don't know that, and we don't know because people probably operated in groups, and the changes in what was regarded as territorial areas may have had a huge impact. I think it's interesting in terms of the ideas around that, just the general coping strategies people might have had.

And maybe what would be good about doing an exhibition is to get people to think about how they would cope, what their strategies would be, and what people's strategies should be now; and what global strategies there should be for looking at the problem in a more holistic way, rather than just thinking – well, I'm okay at the minute, I don't have to move today, but maybe in a hundred years it won't be such a good idea to live in this particular place.

It's doing it in a way which engages people and asks them to start formulating their own questions and their own ideas. Because I think once people start doing that, it is a way that people can feel more engaged, and more in control. Because I think the problem is when anybody is faced with a crisis, they've got two options: they can either ignore it and hope it goes away, or they can actually engage with it and try to look at solutions at how to get through it.

*Question 9 What opportunities can you envisage for using archaeological objects from your collections in an exhibition about climate change? Can you think of specific examples?*

Obviously we've got artefacts, we've got handaxes which could be as old as 250,000 years old, so obviously the people who – the hominids who owned or made those handaxes lived in a time when there was huge movement and migration – those could be used as artefacts which try and illustrate that.

It's interesting in terms of the archaeological collections, I suppose, because up until the Bronze Age it is mostly stone artefacts. I suppose in a way those are useful in looking at the portability of people's lives, which might be quite interesting. Maybe later on it's to look at the local picture and really understand it.

I suppose Dartmoor is potentially a very good example, but it's not fully understood. I think the ideas put forward in the past about climatic change and people stopping living there are not well understood: drawing out those ideas would be quite good in terms of it not always being a simple black and white picture; there's a lot more nuance to why people choose to live somewhere and why they suddenly don't choose to live somewhere. And that can be to do with all sorts of different issues, not just the climate. Although climate – if push comes to shove and you can't actually live there because it's inundated with water - I know when I was doing my degree there was almost a school of thought which was to minimise the importance of natural reasons for doing something; but to be honest there will always be situations where if you can't sustain a life in a place because of the climate - well, it's a pretty strong argument. Or if that environment has only got so much carrying capacity for a certain number of people.

*Question 10 Climate change can be seen as a political issue. In your opinion, do museums have a responsibility to be contentious? Should every museum be addressing climate change?*

It would be nice if they were. Obviously museums operate in different environments and we're an organisation funded by the local authority. And I think we do a lot of exhibitions which are not always everybody's cup of tea; they can be challenging to certain people with certain ideas. I suppose on the whole they fit in with the accepted consensus of the day. For example we did an exhibition Pride in Plymouth a couple of years ago, which was about the gay/lesbian/LGBT community, and you can imagine that thirty years ago that would have been seen as very contentious, whereas today it's part of the consensus so it's not particularly contentious.

I think in addressing something like climate change, it has become more of a consensus. I mean, the scientific evidence is overwhelming that climate change is a result of human activity. I think the only people who try to reassure us that it isn't are basically completely discredited now. Unfortunately there's still a lot of misinformation out there. And because of the power of the lobbying from people whose vested interest is to deny climate change, then there is a political

dimension to it. However I think it is such a big issue that hopefully that aspect is minimised.

I think with museums – there is a certain aspect of museums where they quite like doing things which are a little bit provocative, yes - it's something that a lot of museums around the country have done. I think they need to be doing it for well thought out reasons. If they're doing something, they can't just be doing it for the sake of being provocative; it needs to be a well thought through exhibition. To be honest it's about something in the here and now, and museums are largely based on collections which relate to the past. I think I previously said something about a photographic exhibition – that's because we do a lot of photographic exhibitions; and in a sense an exhibition on climate change would fit into an existing format of exhibitions.

### *Supplementary questions*

*How is/could new technology, such as augmented reality, used/be used to expand visitors' knowledge and experience of the museum's collections?*

I think it is being used increasingly. There are two schools of thought in museums. One is that whenever you've got an exhibition, the thing that will go wrong with it is the interactives. And whenever you're doing something it's got to have that sort of longevity.

We've all been to exhibitions where the interactive isn't working and it's frustrating; they're expensive, they use up a lot of space, so you've got to use them, use them specifically for something that you want to do, rather than it just being – oh we need another interactive, or we need something for them to have their hands-on. I saw an awful one recently, absolutely awful, I thought what a waste of space, how much money did that cost?

It's interesting with the augmented reality. We did the computer game upstairs in the Whitehorse Hill exhibition, and that sort of evolved in interesting ways which I wasn't completely expecting, but I'm quite pleased with the results. One of the things they were suggesting as they were doing it was that you could don one of those helmets where you could actually see things in front of you. They were saying you could do that, and I think that's an interesting idea. I've seen some really good uses of technology as well.

The one that I really liked was the Ice Age exhibition at the British Museum. You had the phone app that you collected as you went into the exhibition, and you could actually look at the objects and find out more information on them, and look at them in more detail. I thought that was very good, particularly as it was such a crowded exhibition. It was a good opportunity to maybe stand away from the case and read about the objects, then go to the case and actually look at the object, because in that situation that worked really well.

*I liked the sound effects at that exhibition – you could hear ice dripping.*

It was in the little cave next to it.

*I think that was very effective. Similarly in your Whitehorse Hill exhibition there's birdsong, and the wind, coming from the computer game.*

That's what we asked them to do. What we wanted was an ambient sound which created atmosphere but wasn't too intrusive. Because there's nothing worse than a repetition of sound when you've been in somewhere half an hour - it starts to irritate you. I spent so long in the Ice Age exhibition that the drip-drip-drip started to get to me – that's because I was in the cave bit: I wanted to get the most out of it so I sat there for probably longer than most other people.

The other one I saw which I really liked was the Stonehenge Visitor Centre. It's got this surround area, which is the first thing you go into – it's like this big circle with an entrance and an exit, so basically you're surrounded by the landscape, and it changes over time, you get updates. I just think it's a very, very effective way – and it's quite mesmerising; again it's something that gives you that sense of atmosphere, and connects you into the place. I think that's maybe more how technology can be really used, in sort of emphasising the experience that you're actually getting, and where appropriate – but not always, I don't think you need something always there. But I think with archaeology, sometimes if you're trying to do a particular thing, like with Whitehorse Hill we're trying to create a particular type of atmosphere. A sort of respectful, quiet, thoughtful sort of atmosphere for what's essentially somebody's grave, so that's what we're trying to do there.

I think it works very well in particular situations. I was at Colchester Museum a few weeks ago and they've done something almost like a film show that comes on every so often, that recreates the castle through time; one of the things with the museum is although it's in a castle it's not a traditional castle setting to a museum. So what they really wanted to do was make sure the visitors understood the castle context, and I thought that worked quite successfully.

The thing is - it's using technology appropriately in particular places.

*If it can help to slow people down and create a sense of stillness rather than agitation, because it's actually very good at that.*

Yes, and I think that's possibly increasingly important when we're so busy and every minute is always – everything is sort of scheduled now, we're always doing something.

*How flexible is the exhibition space?*

Downstairs are the permanent galleries where we do different displays, and these relate to whatever is particularly going on. Then upstairs there are three main galleries which are temporary exhibition spaces if you like: they've been adapted to do all sorts of things over time.

The great thing about them is the two large galleries are such big spaces that you can fit a lot in them. They work extremely well with big art works. We did the British Art Show a few years ago, and that was amazing because we have the

space and those galleries have got real gravitas, if you like, the wow factor for people coming in. I think that they've got a grandeur to them, which augments any experience that you've got. The setting for a display can be very important, and it's part of the museum experience, part of the historic museum experience. Whether that continues into the future I'm not sure. But it works quite well.

Obviously, the gallery where the Whitehorse Hill exhibition is is quite a small one, but that works well for similar exhibitions.

*How are school groups and other visiting groups organised within the museum? Do they follow a set pattern of activities? Are there opportunities within the education programme for addressing climate change?*

There's two main methods of engaging with schools. First there's incoming school groups, and there's a whole booking system for them. There's set topics which they can have; there's a Learning Officer who's dedicated to visiting schools, and he tends to introduce them and take them into the galleries, all that side of things. There's a learning box with them sometimes.

And there's a very big programme of outreach as well, but that's not as active as it was, because of staff leaving and changes. But we did have a very active Museum in Transit, which was where an Outreach Officer went to schools and actually set up an exhibition for a week; they helped the students set up the exhibition and did activities around it. And that was very popular.

*If a teacher came to you and said I'm really interested in climate change, could you do something for us?*

Probably not, is the honest answer. I think if there was a demand for that, I think – maybe museums wouldn't be the first place that they'd think of. I think maybe they'd probably think of going to the Council re-cycling or something like that. I think if there was a demand for it then the museum would probably try and put something together.

I think it brings out the issues we were discussing before. At some level it needs to be connected to the museum, what the museum collections are, and how they can be interpreted. So I suppose again if you wanted to bring it up to date it would have to be through local flora and fauna which has disappeared over recent years. And we do have a Wild about Plymouth programme: I'm not that *au fait* with all the different activities they've done, but maybe climate change does get touched on within that programme already.

*What is the frequency and nature of the museum's temporary or touring exhibitions? Can you describe any which have taken place recently or are proposed for the near future? Are you aware of any temporary exhibitions available which address the climate change agenda?*

Every three months. But some of the exhibitions are on for longer. For example, the World War One exhibition – that's on for six months, because of the centenary.

*Do you have any touring exhibitions? Do you send anything out, does anything come here?*

We do a lot of loans out in terms of individual items. Touring exhibitions less so, although we did do an archaeology touring exhibition a few years ago, called Treasures from the Earth, which was a joint touring exhibition between Plymouth, the Royal Cornwall Museum and the Royal Albert Memorial Museum. This went across the South West for three years. It was one case of objects and panels about archaeology in the South West. It was targeted to small voluntary groups – or museums with not many members of staff, so not specialist archaeological members of staff. And the idea was that the museums augmented the exhibition with a separate case of objects from their own area, their own collections, and did activities around it. That worked very well actually. That was HLF supported.

*Are you aware of any temporary exhibitions available which address the climate change agenda?*

No, I've not heard of any. I think if somebody maybe wanted to do one they might find it interesting. I mean the thing is with the touring exhibitions that we've had – a lot of them tend to be art, there's not so many social history touring exhibitions, and very few archaeology ones: I think there's a British Museum Romans one, and that got snapped up. And we did a surfing one a few years ago, that went to a few places. They are quite hungry in terms of staff time and resources.

Interview date 26.6.14

*Question 1 Please could you describe the nature and range of the museum's archaeological collections?*

Everything from the Palaeolithic to the present day. The museum has been making archaeological collections since about 1825, so it's a very long-lived collection. That means that the early collections aren't just focussed on Bristol and its immediate region; because there was no other museum service, we have early material being deposited here. For example, we have the Deverill Rimbury urns from Dorset. The first excavated archive, done on behalf of the city, was a Roman villa site, in 1899. So we have over a hundred years' worth of excavated material, and clearly the excavated material and the archives that go with them have developed quite considerably.

We had field archaeologists in post within the department from the 1970s, coinciding with the Recue excavation era. Then the department was split into two, in 1985, so we had a very definite field archaeology section and a very definite curatorial section which has meant that we've devoted the curatorial side to recording and dissemination.

The collections themselves span all of those archaeological periods. Our prehistoric collection is the smaller element of the entire collection - but we're talking about several million groups of objects. So, we have prehistoric material from all periods, and particularly from the Bronze Age and Iron Age. We've got some fairly major sites. Roman collections – we have a good representative regional collection, representing all different types of sites from villas to temples; some of those are on the outskirts of this city. We actually do curate a Roman villa site in the middle of a council housing estate. And then masses and masses of medieval material because that is from the Anglo-Saxon period which is the point in time when Bristol becomes a settlement in its own right. So we have a huge Roman town on the outskirts of Bristol, but not in the centre of Bristol. And then post-medieval collections that fit into all of that. So we have the whole range.

*Question 2 Please could you outline the organisation and content of the museum's archaeology displays, exhibitions and other archaeology-related activities, including outreach? Which aspects, in your opinion, work best for visitors?*

Between the 1960s and 2007 we had a permanent archaeological gallery in here, which was called South-West British Archaeology. I'll talk about that a little bit because it pays reference to what's happened since. When that was conceived it was with an academic audience in mind, because we literally sit next door to the University of Bristol. And so it was put together by someone who was quite academic, it didn't really relate to people, and was chronological in its approach. Lots of black and white distribution maps – it was state of the art when it was built – hessian – dark brown, dark green – and actually the only people that you could



see images of were – a little image of a curator, a man pretending to be a Neolithic/Bronze Age warrior – and that was about it. So you've got actually no images of people at all, and no kind of reference to people, so quite academic, and very boring. And over the 40-year period that it was on display, falling gently into its own dust. It literally was falling apart. So because we are a big institution, our resources have to be shared. The Egypt gallery that we've got downstairs was meant to be a pilot for looking at resourcing the re-display of all the galleries: and the archaeology gallery was going to be second on that list.

Now, clearly we get overtaken by other agendas – funding issues: being a City Council-funded museum - although 62% of our funding now comes from other sources - means we need to meet the needs of other people's agendas. When Renaissance in the Regions - Arts Council funded grants - was first mooted, that was the way of putting extra resources back into regional museums to bring them up to standard. We became the lead hub museum for the South West and a pathfinder hub. There were chunks of money available, one of which was for looking at museum collections in other ways; and the space that was designated for us to start doing that was where the archaeology gallery used to be; the space is now occupied by a gallery called Curiosity. So that is where you'll find archaeological material on display, but not in any great depth, and certainly not in the sense of - we're telling the story of this region from the Palaeolithic to the present day.

What the Curiosity gallery does is pose questions such as – what does it mean to you, what's valuable, ethical questions – so, the Tormarton skeleton is on display there [*Bronze Age skeletons discovered in the village of Tormarton, South Gloucestershire, in 1968*], and we talk about the ethics of displaying human remains; and there's more interactivity in the gallery, in that people can respond to questions on a screen.

It was an experimental space; it started off as a brief that I wrote for the use of the space called 'Different ways of seeing', which acknowledged that people see objects and experience objects from their own perspective and they have a different point of view. Some of that thinking fed into what we were doing at MShed – so we have a brand new museum down at MShed.

So we have archaeological material within the Curiosity gallery, displayed alongside other artefacts – and also community interventions in there as well. We also have about 350 objects incorporated into the displays at MShed, which is the museum which opened three years ago about what makes Bristol Bristol. We have a very small amount of archaeological material dotted around in other galleries – for instance we have a medieval jug in the applied arts and ceramics gallery; we've also got some material that's come from a drain on an archaeological site – post-medieval material; and we've got various coins and things in the applied silver section. So there are pieces within other galleries, but there's no one focus for archaeology.

*It's almost the opposite from where Exeter is: they have a story.*

They have a story of Exeter, yes. So, MShed is thematic, it's not chronological. The chronology in MShed is actually provided by something called Expanding

Bristol, which is a series of maps that you can interrogate - they are tactile maps. But I think the thing to point out is that all of the information displayed along these five screens is based directly on the historic environment record.

So we did actually use the historic environment record to illustrate the growth of the city. And that's also illustrated with a range of archaeological artefacts, so within virtually every theme in MShed you will find some form of archaeology.

If you're talking about, for instance, the Bristol gallery – so what it's like to be with your neighbours, in the home, and so on – one of our key objects on display in there would be the Roman tombstone, found at Sea Mills, because there's a whole section about immigration and emigration – so, joining and leaving. So that's got the name carved into it of the first person that we know lived in this area, somebody called Gaius Sentius; but actually we don't know who he was, whether he came here as a trader, whether he was a settler, whether he was a descendant. So instead of telling the story of a Roman person living in a Roman settlement we've actually used it as a way of talking about early diversity, if you like – it's being able to understand that you can do that with the archaeological material. So there is archaeology on display.

In terms of what we do, we have a community archaeology trainee, currently funded by the CBA; but since we lost the gallery, clearly our priority has been to make sure that archaeology is still in everybody's minds – it's at the forefront, that we find the opportunity to use it wherever we can. We've managed to fit it quite successfully into lots of other agendas.

*So what could have felt like disaster was actually a huge opportunity for rejuvenating.*

At the time it was quite disastrous, you felt like you'd dropped the ball because you didn't have the permanent presence. But on reflection I've always said it did us a favour, because if you think about where we are now as an organisation, and the kinds of things we do, and the way that we're expected to use material, we were sort of at the beginning of experimenting with how we can use it and my mantra has always been – archaeology is not just about archaeology, it's not just about process, the digging things up and explaining something about that particular aspect of the landscape or human history: it's about using archaeological material as a source of inspiration for a wide variety of activities.

We did a project called Roman Roots, funded by HLF, which was to engage the local community with the site that literally is in the middle of a council housing estate. Now, we did a wide variety of things, which included people learning how to use video cameras, digital recording, making documentaries, understanding the process of interpretation, guiding – so there are whole ranges of skill sets that people are acquiring; and if that person has gone away with understanding more about the Roman period but actually with skill sets or enough interest to be inspired to do something else that's fine.

So the unexpected outcomes, for example - there was a group of teenagers from a relatively deprived area of Bristol, who'd never been into a restaurant where a waitress had served them, and we took them for lunch in a Pizza Hut – and that

was quite – and the tasting of different foodstuffs – and understanding what an olive is, for instance. Whether they've gone away inspired – some of them told us it changed their lives in terms of aspirations. So we used archaeology as a focus. Some of them said – 'I live, sleep, breathe, eat Roman now' - that's great, they're really interested in it. But if they've just made that point of contact, and then gone on to do something else – that's fine too. So archaeology's been a focus for a lot of projects like that since then.

And this year, certainly with a community archaeology trainee – my assistant's currently on maternity leave - we've got something happening virtually every month. We plot that. We've got day schools for people who want to come and learn about particular objects, we've got a festival of archaeology coming up; Sam's co-ordinating all the Bristol offer for that, which is quite wide-ranging, so it's allowed us to work with other groups, because our focus has been bringing archaeology to the fore, in a public way that doesn't involve being in a particular space defined within a gallery.

*With archaeology you're not just collecting things for some vague posterity in the future: it's all about now.*

It's about now. And I think the other thing is the de-mystification of it as well, so particularly – in the Curiosity gallery my favourite display is titled 'What's it to you?' and it's the levelling aspect of understanding that – yes, archaeology is a very long word, yes there are experts, yes we do need to know a lot of stuff; but we haven't got all the answers and some of your answers will be as good as ours. So that's a leveller, and that actually makes it more comfortable for the visitor to be in the museum, and be able to engage with objects. The point of engagement – they choose, rather than we are delivering.

*Question 3 Please could you explain the decision-making process involved in the planning of new exhibitions and engagement, including who is responsible at each stage of the process?*

So, relatively recently we've got an exhibitions team and we have a person who is public profile manager. And within that team we have someone who is responsible for looking at our public programme strategically. That takes a number of forms - so it could be permanent exhibition work, it could be a temporary exhibition programme. It could also be the associated events that happen with a programme. Clearly there's a huge variety across all of that.

A lot of the inspiration for the exhibitions will come directly from the curatorial staff. There is a process now for submitting ideas; we have a stage one, we have a stage two. It also depends on what's been offered by other people as well, and whether it fits in to the brand, if you like, of MShed; or if it fits into the brand of Bristol Museum and Art Gallery. So MShed is very much about making Bristol connections and things like that - that doesn't mean you can't have an art exhibition down there, but there might be a Bristol twist to it, or a Bristol addition to it.

So the decision-making process is technically now through an exhibitions team, which is comprised of a number of people – some from the public programmes side: we have a collections manager who speaks on behalf of the curatorial team. But it's the curatorial team that will submit the ideas, and then we need to demonstrate the efficacy of those ideas against key performance indicator targets, and Arts Council targets, and community targets.

In terms of what we do with events, and public activity and outreach – some of those are driven by the need to generate income: so with the day schools we've been running we target what we call the 'leisure learner market', because there is now no department of continuing education, there's no external extra-mural courses offered on Saturdays for example by the University, so there is a gap there. We decided that we would try to fill that, see where we went to. So we make things accessible that way, and really we decide when that might fit in.

There are other things that will drive it as well. So there are the national festivals - the Festival of Archaeology for instance, that we want to participate in, and also local events; but to a certain extent a lot of it does come from curators and if it's bought in externally then we will make comments. It is very rare that there are external things that will come in: it's happened a couple of times recently, and obviously we are all competing for the same spaces.

MShed is all part of the same organisation. So Bristol Museums and Archives comprises seven sites: the two flagship sites – Bristol Museum and Art Gallery and MShed; but we also curate or have the Red Lodge, which is Elizabethan; the Georgian House, which is a Georgian house; Blaise Castle Museum, also a Georgian house set within parkland – that's where a lot of the social history collections are stored and put on display; Kings Weston Roman villa; and we are also partnered with the Record Office, so all the archives – we're all part of the same organisation.

In terms of heritage offers in the city, SS Great Britain is the only other one which you might class as a museum. But we've also got Arnolfini which is a contemporary arts centre, and the Royal West of England Academy of Arts which is an art gallery. They're all relatively close, but most of the cultural provision if you like in terms of museums is Bristol City Council.

*Question 4 Are there ways of gauging the effectiveness of an exhibition, event or activity in terms of how visitors respond? Do you gather feedback from visitors?*

I evaluate everything in a number of different ways. I can give you a specific example. Last year we worked in partnership with the British Museum and Bristol was responsible for the development, concept design, et cetera, of Roman Empire: Power and People, a touring exhibition – its first run was here from September last year, and it's gone on to five other venues around the country. So it's been to Norwich, Coventry, Newcastle, Leeds and Dundee as part of its run.

In terms of evaluation, we set ourselves targets. We're targeting a particular number of visitors and so on, but have qualitative analysis as well. So there's always a visitor evaluation sheet that gets put together. We can measure performances against targets in terms of numbers; but we can also measure satisfaction values, value for money. There's a whole series of questions with scale-type questions. And we do it for every event as well. So for example – a few weeks ago, I did some continuing professional development for teachers who need to learn how to teach Stone Age to Iron Age, so the session was evaluated.

So virtually everything we do is evaluated. The other thing we do is we use our website for delivering quite a lot of stuff: there are contact points through there. We've got suggestions boxes and comments boxes dotted just about everywhere around the museum, so we collect a lot of audience intelligence. And it's collated, so we do actually have somebody who collates all of that into spreadsheets and then publishes a report for each event. So I've got an evaluation report for Roman Empire: Power and People, so I can tell you we had 86% satisfaction value – with questions like - was it what you expected, was it value for money, what was your favourite thing – all that kind of stuff. We collect the lot.

*Question 5 What do you see as the opportunities for interpretation of a multi-disciplinary nature - for example an exhibition which combines archaeological or historical artefacts with objects from ethnographic, natural history or art collections?*

We're working on an exhibition at the moment called Death - a proposal that came from two collections officers in the world cultures section. We've all offered multi-disciplinary ideas - so I offered one that was just called Blue – because it stops us working in silos, and promotes interconnectivity. It's quite good for some of the other curators to understand what we do, and vice versa, and find those connections. The opportunities always exist, but the Death exhibition is combining material from virtually every collection, including archaeological – because clearly there's a lot of material to do with dead people and treatment of the dead and things like that.

At MShed they have a whole museum which is multidisciplinary: archaeological material as I've said before is incorporated into virtually every single section of that museum. So the focus for that whole museum, display-wise, is people-focussed and story-led across time, so you have contemporary material in the same case as medieval or prehistoric material if it's on the right theme. Diverse groups are represented - communities of interest, or communities within neighbourhoods, or cultural communities. So it's diverse, with contemporary collecting of new objects, commissioned pieces et cetera.

So, yes, it is something that we do, and it's probably something that we should be looking more to do. When the Bristol Museum and Art Gallery was first built, a hundred years ago, there was space for the collections we've got to go on show, and now there's not. So I would imagine that spaces will become more flexible, with guest appearances of objects in particular galleries everywhere.

*Question 6 Can you envisage an exhibition about climate change in your museum? How would it look? What would be its main aspects, and how would new technologies be incorporated to enhance visitors' experience of such a display?*

Okay, so, briefly, we have had one small display relating specifically to climate change relevant to the Inuit, which incorporated a small amount of material from the world cultures collection. So it was showing the effect of climate change on a particular group of people today, and included a small polar bear skeleton, so that was kind of bringing climate change to the fore. So there are opportunities within those collections.

Now, down at MShed the themed galleries all had an element of what was called Bristol 2020 planning, and this was all about sustainability and green issues. Bristol's also going to be European green capital next year. So we'll be the first city in the country to do that. So there's lots of opportunity to think about climate change.

In the Bristol Place gallery we have a whole thing to do with city conservation, so it's about how to promote people to think about particular issues. The sustainability strand was used to underpin a lot of that interactivity with members of the public: it could be in a section that's dealt with places we've lived in over time, and how they've changed - so a piece about a Roman villa as opposed to something like a concrete tower block. One of the questions on the kiosk down there might be to do with - should it be a requirement that solar glass panels are incorporated into the roof of every house? One of the interactives we've wanted down there was to show a range of different roofing materials, which would have included archaeological materials. So, we are open to all of that. It is part of the theme, if you like, of the museum, but it's also part of a city-wide strategy.

In terms of our input into it, we collect lots of environmental material, in two ways. We collect it archaeologically, and we also have as part of our organisation the Bristol and Regional Environmental Records Centre, so they collect lots of material about the environment as it is now. We have a huge database of all the Sites of Special Scientific Interest and they do searches for housing development. So there's lots of environmental data just there.

What I've been pushing for is to have the historical environmental data joined together with the modern environmental data, so that you can look at environments and changes in the environment over time. And clearly the other thing which is interesting now is that prehistory has hit the national curriculum for the first time in its lifetime, and so for every teacher understanding what an ice age is becomes important. So we shouldn't be just talking about climate change from a modern perspective; we need to be to articulate something about climate change from a prehistoric and more ancient perspective, and see that as a continuum rather than as a separate thing.

So I think if you said to people – we're going to do an exhibition about climate change – if you think about 'toxic words' – climate change, carbon emissions *et cetera* – they will switch people off. There was a whole article I listened to once

when I was doing stuff for MShed. I was Place gallery lead for MShed – so the sustainability thing was always key; and I was listening to an article on Radio 4 about ‘toxic words’, and a lot of the toxic words to do with sustainability and climate change switch people off, they’ll stop listening.

So understanding what terminology you use is important. Now if I turned round and said – we’re going to look at an ice age – the Ice Age exhibition on art and stuff that they had at the British Museum, they won’t even think about that being about – what’s an ice age? But actually it’s a different form of climate change, it’s part of a natural cycle that people have been going through; and then we could put in what’s happening today into that context.

And I think from an MShed perspective – this is why I asked you where your archaeological description is - Bristol expanded massively during the Victorian period, like lots of other industrial towns. Pollutants and things like that in the atmosphere all weaves into climate change – what have we done in the past as well as what we’re doing today, how have things improved from past activity, in comparison to what we do today, and what else can we do. Do you see what I mean? So it’s part of a much longer time continuum, rather than it being a specific issue relating to the twentieth and twenty-first centuries.

If you think about carbon 14 dating, allowing for the fossil fuel effect for the calibration, it’s suddenly when everyone starts to use all these fossil fuels and it screws up all our dating because, although it’s recognised now, even thinking about from an archaeological perspective – we use this method to date objects – but look, human beings did this – so it’s always been happening.

And if we think about a modern-day global perspective – forest clearance, for people to either use materials or land – it’s not a new activity, it’s the scale of the activity and therefore the scale of the consequence.

So, yes, there’s a massive potential for it.

*I think embedding climate change in the past does take the fear out of it slightly, and it means people are intrigued rather than frightened or put off.*

I suppose it’s the foreshortening of the amount of time – it’s the effect over a small period of time, and getting to the critical point, and understanding how that’s happened over a long period of time in the past and how people coped with things being different.

*Question 7 What do you see as the major challenges and constraints in presenting climate change as a topic?*

Toxic words. That’s it – it’s the terminology. And I think the other thing is - people like to have the answer to the question – which scientists are right, because there are so many conflicting pieces of research that come out, for example all the estimates of what’s going to happen in terms of temperature, and global warming, and which elements are responsible for global warming.

I think the media find it difficult, and I think therefore the public find it difficult.

So it's finding the right balance between validated research and what's reported. And also that response to one hundred years of climate change and taking personal responsibility – people don't like to be made to feel guilty.

And that was one of the things that, particularly with MShed – there's a game down there which involves a random spin – so it's what can you do, in a small way, to make a larger change. And we call it a sustainability wheel but it might be [linked to] food, [or taking] a bus journey instead of getting into your car, and understanding [how] one small change individually makes a very big collective change.

But not being made to feel guilty – with talk about carbon emissions, and your carbon footprint, and measuring people's carbon footprint – we just switch off, I think.

*Question 8 Can you imagine how an exhibition about climate change might link stories of climate and environmental change in the past with people's concerns about climate change today? How do you think visitors would respond to such an exhibition?*

In one sense I think I've articulated that already. You can make comparisons of the forest clearance, for example; and – not making excuses for some of the things that we do now - but some of those people in the past - they want to make a living, they need to put a roof over their head, this is the way that they've found the way to do it – so finding that balance I think between the present and past.

I think people would be much more interested in seeing an exhibition about climate change if it does go over a long period of time, rather than just focusing on the last fifty years.

*Question 9 What opportunities can you envisage for using archaeological objects from your collections in an exhibition about climate change? Can you think of specific examples?*

Well, clearly anything that comes from an Ice Age period. So, Palaeolithic material, but most of our material is not terribly good to look at, because it's abraded, pieces of chert – you have to use a lot of imagination. But if you think about all those wonderful pieces of Ice Age art, so [helping people to] understand that people were alive at this time, and stuff like that. I think really we've got to come up to the Bronze Age period – forest clearance, and looking at Bronze Age axes and the tools that were associated with that.



And maybe the dating – rather than an object, looking at the dating of particular things. So, it might be an organic artefact that you've used carbon 14 dating on, so using that as a focus and bringing the fossil fuel effect into that as an aspect.

We do have lots of votive items, but they're usually related to specific things, so votives at Roman temples and things like that.

*But not particularly deposited in watery places.*

Yes, again, bronzes and things like that. We've got one very large antiquarian collection: some of those items will have come from deposition in natural places, but there's not a huge amount of that kind of thing.

Anything that comes from our mining industry would fit into it, and Bristol has a huge mining past - we've got coal mines running under the whole of the city; but also other objects that relate to any of the other kind of industries, for example soap-making - anything that releases pollutants into the atmosphere. So, we're not producing salt-glazed wares, but we do have German salt-glazed materials that are imported; and they're always on the outskirts of a city because of the foul atmosphere – thinking about anything to do with the leather, the tanning, the dyeing industry – all of the disgusting stench and any other kind of 'chemical' pollutants – those industries are always on the external parts of a medieval city. So you could look at those particular kinds of industries.

And then there are some lovely quotes from some poets, about Bristol's atmosphere during the Industrial Revolution; so everything from glasshouses through to pottery-making, and sugar, and also coal. So it all comes together and there's a great quote – and it might be Alexander Pope actually, and we used it down at MShed, about how disgusting the atmosphere was.

*Question 10 Climate change can be seen as a political issue. In your opinion, do museums have a responsibility to be contentious? Should every museum be addressing climate change?*

MShed's ethos is to provoke, and so we might make a statement which will provoke. It won't necessarily be a political statement governed by any of the 'powers that be' in City Hall. We always make sure that statements are authored, so it's important. One of the things that we drove for, for MShed, was that visitors would understand whose voice it was. But we would always try to find a balance, it would never be in one direction. So, interestingly, the whole thing about the port of Bristol – using voices both for and against building a new dock during the Edwardian period – and the stench, not wanting to live on the windward side of it – so we'll try to find the balanced voice if we can. So presenting things from multiple perspectives was one of the elements of the vision for MShed.

And that's why we've done it within the Curiosity gallery – so it's more balanced – some people think this, some people think that: what do you think? So more of that will happen, particularly with relevance to climate change. Going into Green Capital 2015, one of the things I've suggested to the woman that's co-ordinating

the museums approach to that is that we try to incorporate an element of that with every display. We've got kiosks and we've got computer terminals.

You asked me a question about how we might use new technology for that. So, we have a digital manager who sits in the office next door, and we have experimented with a variety of different types of digital technology – everything from touch screens to interactive questions that deliver the answers, so that you get some instant feedback from what other people are saying about things: so for instance we asked a question – do you think more goods ought to be transported along our waterways rather than by road or by rail or in aeroplanes; and instantly you can see what your response is in comparison to everybody else's, because there's a feedback mechanism for that as well.

We've got a bid into Nesta [*innovation foundation*] for the Digital Research and Development Fund, for experimenting with locational-based iBeacons, which means we can deliver specific bits of information within a display, to reveal hidden items; if we get the funding for that we'll be working with Ardman to reveal other stories.

So it's something that we're very open to, and I can't imagine now any exhibition that would be put together without incorporating some element of new technology. Because it meets the needs of a particular audience set - younger people will go for that more than anything else.

But the contentious bit is something which is – we are contentious, you know, we have Banksy as an exhibition. Bristol is quite – there's a whole section in MShed about challenging, because it's quite bolshie in its nature, it will always buck the trend. We voted for a mayor - an elected mayor when 15 other councils didn't. So it does tend to be willing to have a debate, a conversation. It's part of the brand. When we talk about brand it's not just the logo, it's the attitude. We can be edgy and we can be bold, and we can take risks. Clearly though we balance that with what the outcomes might be; but we are not risk averse.

### *Supplementary questions*

*How is/could new technology, such as augmented reality, used/be used to expand visitors' knowledge and experience of the museum's collections?*

Actually we hosted the BBC's polar bear thing, where people could put themselves into a scene which involved polar bears and it was a massive draw for people. I've done some stuff researching augmented reality and suggesting ways that we might incorporate it in our displays.

There's some fantastic work that's being done by the Stedelijk Museum in Amsterdam, where people use it – for example to create their own art gallery in a field and then leave it behind in digital cyberspace for other people to come along. I think – certainly with augmented reality for archaeological periods – you

don't always get the three-dimensional quality of a building: but if we can use it that way I'm really into the idea of doing that.

We're very lucky that we've got a contact who has access to and has been working with an Oculus Rift. So, an Oculus Rift is a headset that you can wear – the whole system's just been bought out by Google; and you can explore places – sites in three dimensions, and look round them, which we did. And we've been talking about doing an augmented reality version of, say, the Roman villa and the interior where people can actually physically feel like they're immersed in that space. We could do that for earlier periods as well.

And the other thing that we've been looking at is drones. So we flew a drone above a hillfort – and we're going to look to building up three-dimensional representations on a screen, using the same system.

### *How flexible is the exhibition space?*

We've got several exhibition spaces. We've got a temporary exhibition gallery in this building, and we've also got a state-of-the-art temporary exhibition gallery down at MShed, and various other display spaces. We can reduce it, we can enlarge it. The current temporary art exhibition - Jeremy Deller – has also taken over gallery spaces upstairs.

So when we have large blockbuster-type exhibitions, we have taken permanent material off display to accommodate that. We had something recently that was a contemporary art collection, mainly coming from places like China, so we had an Ai Weiwei, we've got Ton of Tea – that's an Ai Weiwei piece – and three art galleries were given over to that exhibition.

So in a certain sense yes, we are restricted within volume – cubic capacity – of the temporary exhibition gallery, but we're not averse to going to other spaces as well. For the Roman exhibition, we worked on the basis that the Romans were going to conquer the entire building. You've got problems, particularly if you're borrowing material from national museums because of security, government indemnities and things like that, so there are some places that you really need to neatly define and have locked down from a security perspective. That was a 'pay to enter' the exhibition, which meant some people didn't want to pay to enter; so we did two supplementary exhibitions and used two other spaces to put other material on display. I found fifteen points of contact in fifteen galleries with the Romans; and you'll see one of them still in the case outside and the information that goes with it, marked by a Lego Roman soldier. So we're not confined by the space.

*How are school groups and other visiting groups organised within the museum? Do they follow a set pattern of activities? Are there opportunities within the education programme for addressing climate change?*

So, the learning teams lost quite a lot of capacity recently. Once upon a time the education department was the County Council's responsibility. The county used to be Avon; we had four people, who were permanent members of staff, but they were funded by the county and we're a City Council provision. When Avon became unitary authorities, the schools provision then became the responsibility of the City Council. The other unitary authorities didn't really want to pay for our staff, so we did lose capacity then. Then it got built up again. The model with Renaissance in the Regions was that we've got the capacity and resources, and learning and community engagement go together. Learning doesn't just relate to schools - it's lifelong learning, so it's all aspects.

In order to work in a more strategic way, our permanent members of staff worked the programmes that related particularly to the collections, and we bought in freelancers to deliver things like handling sessions or gallery talks or things like that. So that's how it was working.

Now we're a major partner, funded by Arts Council England. And we've reduced capacity through natural wastage: in an economic downturn the Council has to save money, so we haven't been re-appointing. Methods of delivery, and the whole of the learning provision, are just being re-modelled. A lot of that is going to be based on access to experts, such as myself or any other member of staff who deals with particular areas.

So what we're doing is providing more continuing professional development opportunities for teachers, enabling teachers and schools to be able to use us as a resource; and providing those resources in a variety of different ways, so for example, a Stone Age to Iron Age CPD [*Continuing Professional Development*] session, in which you're provided with an overview of the period, a whole series of resources, examples of how you might use that within the classroom, and also access to other possibilities.

So the menu might consist of a class going out with me to a local site, so I come with the school; it might be access to a member of staff by Skype, so you can be Skyped into a classroom rather than a class coming to visit; or it could be something that's bespoke, with a handling session and a gallery visit. So we do the traditional things where we provide according to the curriculum – and of course the curriculum's being re-modelled as well. And so we try to provide that.

Then the other thing we've got as well is we run something called ABC - A Bristol Curriculum. So we find the point of connection locally, with what the schools want to teach. And so the Bristol Curriculum elements for Stone Age to Iron Age will focus particularly on the Clifton Down camp by the suspension bridge, because it's an Iron Age hillfort in the middle of the city.

So, the way that it's provided could be – we'll still be doing the freelancers, who will be doing particular sessions that relate to specified areas, so we have a very specific trans-Atlantic slave trade, Empire and Commonwealth collection: the

Empire and Commonwealth Museum's collections were bought into our collections a couple of years ago. These are all elements of the curriculum that schools are looking to expand upon.

So should climate change fit into that, and we've got material to do it, then we would put together a package of possibilities. It teachers started coming to ask us for that – yes. It was interesting because when you talked about being contentious - with the Death exhibition, certainly one of the most contentious suggestions is that we re-create a Dignitas room, and what we're being told within the GCSE curriculum, all about ethical consideration, fits into it. I'm not saying that we will do it, we need to balance – but you have to address these kinds of things. So to a certain extent, if there's a market for it, then we will be able to provide.

But no, I doubt that we would offer climate change unless we knew there was a market for it, simply because we wouldn't be able to resource everything and we have to focus on what we can resource.

*What is the frequency and nature of the museum's temporary or touring exhibitions? Can you describe any which have taken place recently or are proposed for the near future? Are you aware of any temporary exhibitions available which address the climate change agenda?*

The latest touring exhibition was the one that we did with the British Museum. Since the demise of the Area Museum Councils – the Area Museum Council used to do – they had a whole touring exhibition kit, a modular kit that you could design things for. We did one on the temples of Mexico in the late 1980s. And then that all disappeared.

We tend to buy things in rather than send things out, because of the logistics of it. The British Museum touring exhibition – the transport of all of that has all been met by the British Museum; the costs have been met by a Trust foundation, and the administration of where it's going from and to has all been sorted out by them. And we've worked with the British Museum on a number of different partnerships. So we've done Pharaohs, Roman Empire: Power and People, and also China: Journey to the East as part of our programme.

We have looked at looking at touring exhibitions on a bigger scale, but the resourcing of those is enormous; and it's also a question of what the market for it is, because of the costs to the venue at the other end.

We do have other smaller things that will go on loan, or they might be spotlight things. So we will contribute material to other people's exhibitions rather than touring a whole exhibition. The logistics of it are a nightmare; the insurance part of it is a nightmare – the packaging of it, the cost, is just enormous. So it has to be really a big project to do it.

Turn-around in here – we're looking between twelve and sixteen weeks generally for an exhibition, but it really depends on the nature of the exhibition and the period of time that it's going to go over. So Jeremy Deller is over a longer period

of time than normal; the 'Wallace and Gromit' exhibition that we've got down at MShed at the moment is probably going to be over the whole summer, because it caters to a family audience; whereas before we might have only had something between eight to ten weeks before there's a turn-around. And I think the length of time that we have material on display is likely to become longer, because you waste less resources. So the more that you do, the more that it costs.

*Are you aware of any exhibitions available that address climate change?*

No. And I think you've got to look at it from the angle of - what kind of museum would want to put something specifically on climate change on display? Is it actually more appropriate for a science-based centre to do something like that, or is it a local museum? And with the Romans experience - the British Museum has a ready-made, largely tourist audience – they can put anything on display and people will come and see it because it's the British Museum, and I personally think sometimes that affects the quality of things that come out. Whereas we have a completely different relationship with our audiences, because we have lots of repeat visits from local people, and lots of interest in the locality. A national museum like the British Museum doesn't necessarily have that. They've all the shiny, kind of nationally important things, and general themes, and that kind of stuff; whereas with us, it is a completely different kettle of fish. A regional audience is different to a national audience.

And then it's also making use of the collections that we've already got, in a really useful way. That's why I'm saying you wonder whether, to pose a question – is a local, regional, multi-disciplinary museum the place for an exhibition on climate change? Or would it be somewhere like the Create Centre? We have something called the Create Centre which is down on the dockside, based on one of the bonded warehouses, where there is an eco-home, and where there are lots of organisations that rent the space in there, that deal with sustainability, you know – Sustrans, the Soil Association – all of those kinds of people. What's the best place for it.

Making that link with archaeology and the past – it doesn't mean the archaeology can't go out of the museum, it's just where the venue is, and the audience that you can achieve for it.

Interview date 15.7.15

*Question 1 Please could you describe the nature and range of the museum's archaeological collections?*

They span the last half million years, from the Palaeolithic through to much more recent material. The particular strengths of the collection lie in the later prehistoric period – the Bronze Age, the Iron Age – also Roman. They are then a bit of a mixed bag once you get into the post-Roman, Saxon, medieval – it's not the strength of the collection. It gets mixed up with social history later on; there's no clear division – there is for much of it, but then they kind of come together and get a bit confused.

*Question 2 Please could you outline the organisation and content of the museum's archaeology displays, exhibitions and other archaeology-related activities, including outreach? Which aspects, in your opinion, work best for visitors?*

(Steve) The displays really are fairly traditional. The museum was refurbished, and re-opened on 29<sup>th</sup> September 2011. The approach taken throughout most of it was a chronological one. I know that's traditional but we felt quite strongly that that's something that people understand: you can be clever and do things in different ways, but actually the danger then is it becomes very confusing and half the people can't understand. So we've gone for a traditional approach.

The main gallery, the Great Hall, deals with Somerset's geological story from quite a long time ago through to the end of the Roman period. So the ground floor is predominantly geology, with some of the earlier archaeology at the end of that; and then the mezzanine tells the story from the Neolithic to the end of the Roman period.

*Which aspects in your opinion work best for visitors in the archaeology galleries?*

It's hard to break it down really. In many ways the two things that I think are perhaps among the most powerful, excluding the geology, and there are prehistoric elements to that - are that introductory film you were watching.

*It has a serious tone, but it's kind of proud of Somerset.*

Yes, it is. Which is an underlying theme, really, for the whole of the museum. If we weren't proud of its history we wouldn't do it.

(Dennis) I think it captures Somerset in about four and a half minutes, doesn't it? The entire landscape – it mentions geology, archaeology, towns, buildings, architecture – it brings it all together.

(Steve) What it doesn't cover is the cost of producing it! I think it was two days the helicopter went up: there was a helicopter and a camera-man – his camera cost more than the helicopter! And the end result was eight hours or thereabouts of aerial footage of the county which had been reduced down into that short film, so there's a huge amount of extra material which we haven't got round to going through.

*It's just right, a lovely pace, we're so used to things being frantic and fast.*

(Steve) Yes, it's quite a gentle approach, isn't it, but actually it covers a huge range. Including finishing off with a question about climate change. So I think that is a very important component.

Then there's the Low Ham Roman mosaic, which happens to be my favourite object in the building. Beyond that it's quite difficult to break it down because it is a chronological story. Whilst each case is similar, it's different.

*Thank you. Dennis, maybe you could briefly say something about the natural history/geology collections and the displays?*

(Dennis) The display which is most pertinent to climate change – obviously the entire 400 million years story-line in the Great Hall is one of environmental change. It's one obviously influenced by the development of the planet rather than human occupation; but the last period, the late Ice Age, you've got evidence of human occupation – bones, tools – and you've got a rapidly changing, fluctuating faunal component directly related to warm/cold changes of the climate.

And I think it is that area that has the most potential, from the palaeontological viewpoint of helping to understand how rapidly climate can change, because effectively we're still in the tail end of the last Ice Age, or part of the last Ice Age, just a warm phase; so I think that's the most important collection from the point of view of research, and understanding how climate has changed in the past perhaps, making that more predictive for the future.

*Question 3 Please could you explain the decision-making process involved in the planning of new exhibitions and engagement, including who is responsible at each stage of the process?*

(Dennis) So we went through a big process didn't we, to pick the new exhibition out. As you said it was a chronological thing, which took quite a few months to develop, but the temporary exhibitions are different.

(Steve) So far as the permanent displays here are concerned we work with a company for museum communication, based in London. Besides having designers they have interpreters as well, who we worked with. So, the ideas came from us but in terms of the final displays we worked very much collaboratively with them.



Whereas normally that whole process would happen in-house: that's precisely what's happening with the Rural Life Museum: we've got architects and builders doing the building work, but we'll be doing the exhibition story-line development to design, and the actual fit-out itself, which would be the case on a smaller scale with temporary exhibitions here.

There'd be a lead curator for whatever the temporary exhibition is, who'd work with our design department – we're lucky that we're one of the relatively few provincial museums to have a design department, including technical skills, so that we can produce an exhibition from concept right through to production and opening day.

*Question 4 Are there ways of gauging the effectiveness of an exhibition, event or activity in terms of how visitors respond? Do you gather feedback from visitors?*

*(Steve)* Yes – visitor survey, whatever surveys are put into place for a particular exhibition, and obviously visitor numbers, and just general comments.

*(Dennis)* Yes, there's a visitors' book that people are encouraged to write in. There isn't a permanent survey form: they come and go, depending on what the need is at any one time. There's supposed to be one at the moment but it hasn't quite arrived – because we've got this 'Lego' exhibition and we're expecting quite a lot of visitors as a consequence of that. But yes, there are survey forms, we gather feedback; there's a certain amount of information comes back via Facebook, Twitter. A lot of the formal and informal learning activities that take place – particularly the informal activities - have rather more specific and rather more consistent gathering of feedback than perhaps the general visitors to the museum.

*(Steve)* I mean in terms of archaeology-related activities, the lead on that is to a large extent taken by the Historic Environment service, and it's not based on this site particularly. As the archaeology department - I don't have an awful lot of time to do any archaeology, so I will initiate very specific focused things. Earlier in the year we had the Alfred Jewel on loan from the Ashmolean, and so there were various events around that, which fell to me to organise. And we've recently acquired a Saxon sculpture of St Peter: again, because we're partly funded by HLF, you have your activity plan and you have to engage with the public, and so that fell to me as well. But the main programme really falls to the Historic Environment Service, and much of that is off-site at the Avalon Marshes Centre at Westhay, and other locations. So we should be doing more but we're not. We don't have the capacity to do it.

The Historic Environment Service is very much involved in the Avalon Marshes Centre, and at the present time they're doing a number of archaeological reconstructions. They're rebuilding the Iron Age houses, that fell to bits. I think there's another roundhouse going up; there's a Roman villa on a reduced scale, an Anglo-Saxon hall based on Cheddar Palace.

*(Dennis)* So actually it is growing.

(Steve) It's a bit of a mystery out there in the bogs and the moors of Somerset! But things are happening. I haven't been for a while so I don't know quite what there is there.

*Question 5 What do you see as the opportunities for interpretation of a multi-disciplinary nature - for example an exhibition which combines archaeological or historical artefacts with objects from ethnographic, natural history or art collections?*

(Dennis) I suppose we're just about to do one of those, aren't we, with The Artists – it's involving quite a lot of the collections, it's very much multi-disciplinary, we don't know quite what's going to turn up but it's a group of artists, various skills.

(Steve) It's an Arts Council funded project, involving five artists. So there's a poet – who else -

(Dennis) A sculptor -

(Steve) Working in papier maché. There's a painter, a textile one and film –

(Dennis) Film-audio –

(Steve) And the poet. Essentially the idea behind it is that they're using objects that are in the store, down at the heritage centre in Norton Fitzwarren, as the inspiration for their various works. So it's largely the museum collection, some archival stuff; so the postcards fall within the archival collection primarily, so the poet is using that collection as inspiration.

*Are the archaeological collections kept at the heritage centre?*

The reserve collections are. All of the museum reserve collections and the archive collections are all on site down there. So I'm not sure there's much in the way of archaeology being used in this exhibition –

(Dennis) They're using natural history and social history –

(Steve) Yes, it's almost entirely that, isn't it.

(Dennis) And the archives, the parchments, that type of thing, the documents. So there's a whole range of activity going on.

(Steve) So the exhibition will be a mix of their art works, along with a significant number of the objects that have provided the inspiration for what it is they've produced.

Another one that's also collections-inspired, although the end result is not going to be quite the same, is happening later this year. The South West Textiles Group is producing funnily enough a textile exhibition, which is entirely based upon

works inspired by objects that are on display. So theirs will be a stand-alone exhibition, but the objects that inspired them will be where they sit anyway. So it's a slightly different approach, but nevertheless there is a linkage in that way in that the collections are being used.

*Question 6 Can you envisage an exhibition about climate change in your museum? How would it look? What would be its main aspects, and how would new technologies be incorporated to enhance visitors' experience of such a display?*

(Steve) It's a very difficult one, because the archaeological collections *per se* don't particularly represent climate change – okay, you can use them to a degree to tell the story: we've got a small collection of flints – actually it's only three pieces – from Gough's Cave in Cheddar from the later part of the last Ice Age; so we can talk about people resorting to living in caves as being warmer, a better place to be than out in the open. But beyond that, I think it's quite difficult with the archaeological collections to do that.

(Dennis) It's just as difficult in a way with the palaeontological collection, because it depends on current research and having enough research done to tell a story. But if you've had a chance to look in the Great Hall, the Ice Age component there does tell a story of climate change, warm and cold periods, albeit briefly. And if we were to put on an exhibition in the future, we would have to rely on some of those objects which are not actually on display, as well as the wealth of things behind the scenes.

But a lot of work is going on in terms of understanding past climate change using our collection, and indeed excavating and adding to that collection. Next week we start our annual excavation: we're digging in a cave at Cheddar Gorge – we're slowly working our way back through time! We're about 20,000 years back at the moment. So the research is ongoing, constantly, but whether we'd have enough information, even between us, to put on a specific climate change exhibition – we'd have to bring in information from other museums, other institutions probably, and that would be probably quite expensive.

(Steve) Yes, it would be difficult. I mean, the approach we take with the temporary exhibition programme that we run here is that under normal circumstances we have four exhibitions a year, and up to now – although it's not strictly specified as such, but it's the way it's worked out up till now – two have been internally generated and two have been hired in, like the current Lego one.

Now, when it comes to the internally generated ones, ones initiated by us rather than these artist ones, we'll be involved to a degree in putting those exhibitions together, but they're not our exhibitions *per se*. So the in-house generated ones are exhibitions that really are based upon our collections that are not on display, stories we want to tell of the collections that are not directly publicly accessible; and I think it would be very difficult in that context to come up with one that's based around climate change. I mean the only hope and possibility would be if there was a touring exhibition that was available, that dealt with climate change

on a bigger basis – but it's quite hard to address the issue of climate change in just the context of Somerset, I think.

We have a role in raising awareness with the right exhibition – but to tell the story of climate change in Somerset beyond the geological collection would be tremendously difficult.

*(Dennis)* Once you come to the present day, and start looking towards the future – how you do that, using our collection – we can't, I don't think we have anything that would support that, and I think it would be very difficult to fill a gallery.

*(Steve)* I think so. It's more the subject of a paper or a book, or a film – I mean, the potential to do a film I guess, in more detail, but even then it would be quite difficult to home in on Somerset.

*Question 7 What do you see as the major challenges and constraints in presenting climate change as a topic?*

*(Steve)* The collections. Yes, it is the collections fundamentally. The archaeological and social history collections would be very hard pressed to come up with an exhibition. Our temporary exhibition gallery is medium-sized, where the Lego exhibition is, but the idea of trying to come up with something on a scale that would represent a fully-fledged temporary exhibition relating to climate change is quite hard.

*(Dennis)* I'm just thinking of what we've got – we've got an excellent collection for helping to understand and interpret climate change in the past, particularly with new forms of research going on, and material; but to bring it up to date would be very difficult. And also you're dealing with lots of small bone, some big bones but not enough to fill a gallery. So you'd have to go out to having some sort of modelling, or big structures, which then – it goes beyond a temporary exhibition, I think, for us.

*(Steve)* Yes, I mean our annual budget for temporary exhibitions throughout the year is ten thousand pounds.

*(Dennis)* It goes nowhere –

*(Steve)* Which is why we're charging for Lego – it's the first time since we opened we've charged for anything.

*(Dennis)* It's hard, isn't it, to continuously put on new exhibitions and make them worthwhile, without it costing the earth.

*(Steve)* Climate change. Costing the Earth - !

*Question 8 Can you imagine how an exhibition about climate change might link stories of climate and environmental change in the past with people's concerns about climate change today? How do you think visitors would respond to such an exhibition?*

(Dennis) For me, it would have to be research-based on our collections in terms of looking at the past, and understanding warm/cold cycles and how quickly the climate can change, and what might cause those changes.

And then moving forward to the present and to the future – you look at that influence, obviously natural cycles are going on but then you've got the influence of man the last two hundred years. But it goes way beyond Somerset. If you've got the cutting down of forests on such a massive scale as is occurring, and if you've got, for example, the report on the Today programme this week - about 50% of the animal life on the planet disappearing in the last forty years, you know, there's some very, very serious things happening. I'm not sure it's possible to stop it, to be quite honest. The political will isn't there. With China and Russia developing at such a rapid rate and using up resources... That would be the kind of path that I would be looking at, but it's not a pleasant story.

*It's difficult because people come to a museum on the whole maybe to escape their worries, and you don't want to be just doom and gloom about it. It's finding the creative opportunities –*

It's actually the most important issue that's facing humanity and the planet. Quite apart from ISIS and all the other things round the world, it's using up these resources in this way – it's changing everything very, very quickly. That would be the line I would be looking at. But it's not a pleasant story.

(Steve) And not one that we could put together.

(Dennis) No, because it goes way, way beyond our remit.

(Steve) It's a world issue rather than a Somerset issue. I mean that's not to say we should not be involved in contentious and political issues – I don't see that that's a problem if it's achievable and relevant to the locality. Obviously climate change is relevant to everybody, but it's just not a story that we can easily tell, I think.

(Dennis) You'd have to bring in so much from a global sense, that it would be way beyond an exhibition we could put on.

*The Somerset Levels are quite a discrete sort of case study of how environmental change has happened and interacted with human activity.*

(Steve) But even with that it would be difficult in exhibition terms to illustrate it. Yes, we've got one of the biggest collections of preserved prehistoric archaeological wood in the country, but I mean that doesn't tell the story – other than the fact that it was a bit wet out there and people built trackways.

(Dennis) And when you've seen one big piece of wood you've seen them all - !

(Steve) Absolutely. So again it's the pollen and the beetles and the plants and so on that actually tell that story, and we don't have anything on that. So you're back to that problem – I mean, I do think it's either something written – a book or whatever – or an AV.

(Dennis) Draining the Levels – that really is the story, isn't it, about colonisation and what have you. It's changing the environment but it's not necessarily changing the climate. It's a different story.

*There's a distinction between them.*

(Steve) Yes. There's a definite distinction. Whereas the Neolithic and Bronze Age – that was climate change, rather than drainage or man affecting the environment – it was a natural occurrence.

*Question 9 What opportunities can you envisage for using archaeological objects from your collections in an exhibition about climate change? Can you think of specific examples?*

*You've mentioned documentary evidence, pollen, and wood possibly.*

(Steve) We don't have the pollen –

(Dennis) And of course people can't see it, so you're going to have to rely on photographs, and mock-ups of microscopes and people working on that type of thing.

*It's difficult to make it exciting, looking at a picture of someone with a microscope.*

(Dennis) Yes, you'd need microscopes that children and adults could sit down at and see samples of pollen. You'd have to make it in that way, as a discovery.

*Like at the Natural History Museum.*

(Dennis) That's right, just like that. But again, that would be difficult in a way, because you get a lot of people come to an exhibition, and they come with the expectation that they can all look down microscopes, so you get to need more than one microscope and then the costs multiply – it's not straightforward.

And in terms of using technology, again, we started off here when we were doing the refurbishment – planning to have quite a lot of technology: a) it was expensive and b) it became quite difficult to actually see how it would work in the museum, a lot of it. And we scaled that back. And even with the technology we've got – when it goes wrong the costs of maintaining it are actually probably quite high. So again for a temporary exhibition that would be a pretty expensive component I would imagine. I've never costed that sort of thing.

(Steve) No, but it is - the maintenance.

*Thinking more of the social history and the big engine downstairs – kind of linking that to the Industrial Revolution, carbon emissions and so on. Maybe there are possibilities.*

(Dennis) Yes –

(Steve) Could be.

*Question 10 Climate change can be seen as a political issue. In your opinion, do museums have a responsibility to be contentious? Should every museum be addressing climate change?*

(Dennis) I don't see that every museum can address it. If you're a museum of surgical instruments you can't really – so it cuts out a whole group of museums. Certain museums could address it, certainly the national museums, and maybe if a national exhibition was put together that toured then certain regional museums could take it as well, backed up with their own collections. I can envisage something like that. But there'd have to be quite a lot of people working in co-operation and partnership to make it work – to make it interesting and actually relevant, and drilled out the key political arguments.

*Do you think museums have a responsibility to be contentious?*

(Steve) It depends what you mean by have a responsibility to be contentious. I mean, you don't want to be contentious for the sake of being contentious. But as I say, I've got no problem with dealing with major issues that might be viewed as contentious, that have to be treated in a balanced way. I think you couldn't necessarily present one side or the other. I mean – we haven't done anything, but there was a touring exhibition on foot and mouth, shortly after the last outbreak, which reflected on some of the impact of that, which doubtless some would have seen as political or whatever – which worked really well.

I would have no qualms about doing something – not for the sake of it, but I don't quite see how we would cover this particular subject. Other than in an AV – I think you could make a really powerful AV – if you've got the money... But otherwise when it comes down to it, a museum of this size, with the collections we've got, it's quite hard to envisage how we could generate something that covered the subject.

### *Supplementary questions*

*How flexible is the exhibition space?*

(Steve) We've got two temporary exhibition spaces now. When we did up the museum as a whole, the wish was for flexibility within the display cases so changes could be made relatively easily. That didn't happen, but actually it was a wish that was unachievable because if you're going to have fairly dramatic

displays with objects laid out in imaginative ways, they are fixed, however you feel about it – it's very difficult to change.

We've got two temporary exhibition galleries – the one where Lego is, which is a very flexible space: we've got a panelling system that is fixed on two of the walls, but one wall, the one on the right hand side, is entirely removable so you get the views open if you want to and if it's appropriate – into the castle and hotel gardens. And then there is internal panelling, which can be laid out in a whole variety of configurations.

(Dennis) It changes completely - it's a completely different feel.

(Steve) For every exhibition you don't go in there and find this rectangular box. It's a total re-configuration and a different space. The other space we've got is over there – it was the gallery that told the story of contemporary Somerset through paintings, that never really worked very well, so we've abandoned that and converted it into a second but smaller temporary exhibition gallery.

*How are school groups and other visiting groups organised within the museum? Do they follow a set pattern of activities? Are there opportunities within the education programme for addressing climate change?*

(Dennis) A lot of activities. We have a purpose-designed schools room completely separate from the museum. It's self-contained, it's got its own toilet, kitchen facilities, and it's all secure. And there's a running programme with our own learning team of activities – and various activities which are hired in – is that right? The learning team book people who come in and run things?

(Steve) Yes, that's right. As far as possible Lizzie the formal learning officer deals with school groups but – it was a fairly slow start, because while the museum was closed, for three and a half years, the learning was done by going out into schools. So when we re-opened we wanted them to come here, and it was a bit of a struggle initially to persuade them, but now we're overwhelmed, and so Lizzie - occasionally with the help of freelancers – runs a whole series of activities based on the national curriculum.

*I know it's a bit unusual because they're so constrained by the curriculum but if a teacher decided that she or he wanted to do something with their pupils about climate change, and they approached you, do you think the education team would be able to put something together like that?*

(Dennis) I think they would consider it but I think they would struggle, again because it comes back to what we have in the collections and what they have. We've got a loans service, and they have a collection of material there, and I don't think it lends itself particularly well to activities around climate change. But I'm not saying that they wouldn't consider it. They're quite adaptable.

(Steve) They would help –

(Dennis) They would do so, to make an activity.



(Steve) And if the demand was sufficient – a one-off is more difficult to organise because it's a lot of work for a one-off, but if there was the demand on a larger scale then clearly they would consider adding that to the offer that we already have.

(Dennis) I think if it became part of the national curriculum then we might consider investing in the right kind of teaching aids so that we could run courses.

(Steve) Absolutely, yes. Because the service is only going to survive on that level if it responds to what the demands are. It's all very well coming up with your own ideas and creating things, but actually if that's not what's wanted then it's not going to work.

It's a bit of a treadmill, but it could be different – I mean, new sessions are being added – for example as a result of the St Peter sculpture that we've got there's now an Anglo-Saxon session that is on offer soon. But no climate change.

*I used to teach in a farm museum near Ely. I just started making sessions about science, and forces and materials, and it was great fun.*

(Dennis) We run a number of sessions over the year on fossils – it was billed as Dino Day - I don't like that title! But we had a lot of palaeontology out that day, and climate change in the past is obviously a major feature of that, because it is changing environments over time. But that's not necessarily the topic that you're looking at.

(Steve) No, the human impact on the environment is a difficult one.

*What is the frequency and nature of the museum's temporary or touring exhibitions? Can you describe any which have taken place recently or are proposed for the near future? Are you aware of any temporary exhibitions available which address the climate change agenda?*

(Steve) Four temporary exhibitions a year, plus whatever we're going to do with the smaller gallery – that's going to be a bit more random, I think.

We used to be involved in running a touring exhibition in the South West, but the funding for that disappeared, so we don't send many exhibitions out at the present time. Besides the Rural Life Museum, we're also involved with Weston-Super-Mare Museum which is currently closed, also for refurbishment; both of those are due to re-open in 2017, and both those museums have temporary exhibition galleries which we have the responsibility for filling. So the probability is that exhibitions produced here will be re-located either in whole or in part to the Rural Like Museum and Weston, but we've got no plans to go beyond that into actually touring.

But as I say we do hire in exhibitions to ensure a varied programme, because what we don't want is the programme to always be about Somerset – so we've currently got Lego, but there's a range of other things that have happened in the past, and other plans for the future.

*That's really interesting. So it's about Somerset but giving people a glimpse out as well.*

Absolutely. I think we do have a role – it sort of touches on what you're talking about. We're not inward-looking entirely. We are telling the story of Somerset and that is inevitably our focus, but on the other hand to create a stimulating and attractive exhibition programme it has to look beyond that really.

*And as far as you know you don't know of any touring exhibitions which address climate change?*

Not that I've heard. We wouldn't be averse to the idea – we're not saying that – it's just that we can't do it and we're not aware of anybody else doing it.

*(Dennis)* As I mentioned, if say the nationals got together with some of the regionals and created an exhibition which would tour round, then that would be something that we could be a partner to.

*Maybe that is the key to it, really.*

*(Steve)* Maybe that is.

*Not so much digging out from one's own collection – it's more communicating with the rest of the museum world.*

I think it is. It's not specifically a Somerset issue – it's so much bigger than that.

*(Dennis)* But to make it attractive to people you'd have to have some kind of national funding stream so that the quality was good, so it was memorable, so people felt it was worthwhile and went away and told their friends that you should come and see this exhibition – because it's quite a difficult subject to get people interested in. Even though it's so important to everyone.

Interview date 24.6.15

*Question 1 Please could you describe the nature and range of the museum's archaeological collections?*

So we have one of the foremost Americas collections in the world – it's massive – probably about 100,000 objects. Huge archaeology, earliest Clovis points from earliest human colonisation of the Americas, right through to a very active acquisition policy that we have now. So, phenomenal collections, 39 sovereign countries represented in the Americas, 14,000 years, big collection.

*Question 2 Please could you outline the organisation and content of the museum's archaeology displays, exhibitions and other archaeology-related activities, including outreach? Which aspects, in your opinion, work best for visitors?*

It's a massive question. Well a quick answer would be – LVA - Learning, Volunteers and Audiences is a separate department, Exhibitions is a separate department, Permanent Gallery Refurbishment is a separate department. So we are a curatorial department. So I have responsibility for the collections and their interpretation, but I have to liaise with many different people in order to do anything on any subject ever in the museum. About a thousand employees here? – something like that.

*Question 3 Please could you explain the decision-making process involved in the planning of new exhibitions and engagement, including who is responsible at each stage of the process?*

Okay, I'll give you the quick version. So – I come up with ideas, I pitch them to my Keeper – who is the Keeper of my Department, of which there are seven – seven Departments. The Head of Exhibitions is responsible for the temporary exhibition schedule. So, they have an exhibition committee which she runs.

So my Keeper pitches the exhibition idea to the exhibition committee; they then filter; if it gets past that filter then normally I would present the idea directly to that committee; that committee would then present a selection of those ideas to the Directorate. The Directorate Group would likely include the Director, Assistant Director, Deputy Director of Public Relations – there are four deputy directors – and then that Directorate group would feed back, and normally it's not a yes or no but a – yes, but how about this?

This is all done through a pro-forma template of how the exhibition would be done, which includes huge amounts of information beyond the idea – including sponsorship, risks, lots of different things. And then it comes back. And this process is big, normally a five year planning process. So it's a large scale bureaucratic operation which requires both physical engagement and political engagement in order to foster and grow the idea amongst people in the museum.

*Question 4 Are there ways of gauging the effectiveness of an exhibition, event or activity in terms of how visitors respond? Do you gather feedback from visitors?*

Yes, we do. We also have national press. So all national press is audited every year for mention of any exhibition in the British Museum; it is published on the intranet; we have major political access, normally the Prime Minister, Deputy Prime Minister of the British Isles, The Queen; they will normally come to one of the exhibitions – and they have, like, Angela Merkel – it has the highest level of political involvement in its delivery. So in terms of impact – that often does it.

And often they'll set an agenda. Often exhibitions set an agenda for a topic, which is then debated among national press, and commentators, and editorials.

Then there are obviously schools – massive schools involvement, massive education involvement, massive outreach, massive international exposure. We have departments who run the monitoring of that sort of thing.

*Do you find teachers stick very much to what's required of the national curriculum or do you find there's demand for using the museum for other, different topics that aren't necessarily central to the national curriculum?*

My experience – there's an entire department which deals with schools, but my exposure to it is my experience, and my experience is that - yes, the national curriculum sets the agenda for which each student/school visit does, and that's a disaster for the Americas because the only things in the national curriculum for the Americas are the Aztecs or Maya, which is just about to change, as in one option as a GCSE course; and then a very early World Cultures component which essentially rules out most of the Americas.

*That's not right.*

It's not right. It's going to change.

*Question 5 What do you see as the opportunities for interpretation of a multi-disciplinary nature - for example an exhibition which combines archaeological or historical artefacts with objects from ethnographic, natural history or art collections?*

Yes, absolutely essential. Exhibitions have to be driven by a narrative, which is research-led for me.

So it's normally a question that you're trying to ask, and answer, and the visitor is trying to learn something from that experience – and therefore that will normally come through the exposure to very many disciplines, as part of that experience. So yes, I'd say that interdisciplinary engagement is essential for dealing with interesting research narratives.

*Question 6 Can you envisage an exhibition about climate change in your museum? How would it look? What would be its main aspects, and how would new technologies be incorporated to enhance visitors' experience of such a display?*

Yes, I absolutely see an exhibition relating to climate change in the museum, and beyond that I think it's a public obligation of the British Museum to address such important issues as climate change. So yes, I see it as essential.

How it's structured is a complex beast. And it takes a lot of thought. I have thought about how to structure a climate change exhibition in the past, and I believe that there are a number of different ways you can do it. I previously pitched the idea of climate and civilisation to the British Museum, and that would be from a global perspective, and then taking it thematically and geographically.

So there are five core themes – relating to how peoples have lived with climate variability and environmental change through time, and the impact that's had on the development of complex societies around the world in different areas. And then it has a number of different themes which play [out] chronologically, thematically and geographically.

So, our museum is split into seven different departments, and so the thought was that each department would take on one theme, and then reflect that theme through their department's collection.

So it would look at issues of fire and land clearance in prehistory – so that would be very early hominid ideas of fire and land clearance, and then take that right up to the Neolithic.

Then you would look at agriculture, and issues of plant relationships, which would happen through the Department of the Middle East. And look at very early agriculture and take it right through, and explore what implications that had for societies.

Then you would deal with water, which would be in Ancient Egypt and Sudan, looking at water management systems and the impact of water and hydrological [aspects] – irrigation, the Sahara, the greening of the Sahara - all those sort of things.

Then you would move on to complex societies and urbanisation: that I was thinking about doing in Asia, the Department of Asia.

And then it would come through into contemporary societies, and how do all of these lessons - from these choices made by humans in different parts of the world at different times, through this thematic paradigm - play out with lessons that modern-day populations could learn; and that would be [done] through Africa, Oceania and the Americas.

So in answer to your question of how we would structure it, and how would we do it – that is one take on it, from a large global scale. But I think that it's a very important thing to do. And then you have to think of the visitor experience – how do the public engage with those themes as they walk through the exhibition? And so they walk through chronologically and thematically. And finish with understanding how those lessons distil into public understanding of what climate change is, and how it has impacted on societies and what decisions we've made, and how we might think about other decisions about the way we live our lives.

*Would new technologies be incorporated to enhance their experience, or would it be more of a traditional display?*

Yes, I think that for me technology is not necessarily about the actual exhibition, which would be object-led and there would be humans walking past objects. The technology comes with off-site content and the linked nature of off-site and on-site delivery – by that I mean that the exhibition has a whole series of content beyond the exhibition labels, targeted to specific audiences of specific educational backgrounds. That forms on the website, and on apps, and then can be interacted with as you walk through the gallery, and also interacted with off-site – so with people in classrooms, or all around the world.

And so having a multimedia digital platform for any exhibition now I think is pretty essential. And the physical exhibition space has the core objects walk, which is central to it, but is only one part of multiple ways of delivering information.

*Is that how the major exhibitions at the moment are organised? I'm thinking back to the Vikings one and the Ice Age art one: I seem to remember there was that digital resource available.*

Yes, I think it will be a big part of the future of the museum. The museum currently has 6.8 million visitors a year and we're at capacity. There's only a certain number of people you can fit through the doors and physically have in the museum, and we're basically almost over capacity. But I think the reach of digital – we would currently reach about 10 million people through our website, but I imagine they'll expand to a 100 million people within the next ten years.

And so that digital output of the museum, I think, will be a big area of future expansion. And when the new Director starts later this year I'm sure that that will be a big focus. And so – past exhibitions have not always been strong with digital platforms, but there's a new digital director now: I think that will be a strong part of the future.

*Question 7 What do you see as the major challenges and constraints in presenting climate change as a topic?*

The major constraint is political. Climate change is seen as being a left-wing, environmentalist issue, and therefore politically it can generate a response among the public which is not about the topic but about the atmosphere of the topic. So that's a major issue. That's a political issue – we're a public institution, therefore we can't be seen to be political.

The second is sponsorship – putting on an exhibition costs a lot of money. And so – who's going to provide half a million pounds' worth of sponsorship money for a climate change exhibition? BP are one of our major donors. And so how that is managed as well is a key issue.

And then the third constraint is the concept of negativity – that climate change is seen as a negative thing, and exhibitions are about attracting people, primarily, who have to pay money to come to these temporary exhibitions; and therefore how you persuade people - again, half a million pounds' worth of ticket sales on a topic – branding is the wrong word, but how do you frame the structure of the exhibition to be something that people want to see?

*I suppose if it's framed as – climate change presents opportunities; but to get that across to people is extremely difficult, I think.*

Sure. And also, politically, 'opportunities' is often seen through a business paradigm – like geotech, like big industry – and it's really interesting. It's a huge debate that's very interesting. But I think that my narrative - how I would spin it - is about human resilience; it's about how humans are resilient, and the ingenious ways in which human societies have been resilient to climate variability in the past, and can be in the future, even though it's at an ever-accelerating rate. And asking people to think themselves about how would – how can – societies be resilient.

*Question 8 Can you imagine how an exhibition about climate change might link stories of climate and environmental change in the past with people's concerns about climate change today? How do you think visitors would respond to such an exhibition?*

*NB Before the more formal interview Jago Cooper had mentioned a proposed exhibition that was in its earliest planning stages, on the vanishing world of the Arctic.*

Yes, I think that having living communities as part of the [proposed] exhibition is very powerful, and engages the public immediately, particularly if you start to think about other parts of the world. So for example Arctic communities who rely on the sea ice which is now disappearing: their stories are very powerful stories which engage the public.

However, I do think you need to have a temporal depth to the exhibition. People need to understand the periodicities of climate variability, human society and environmental change, and understand how they change through time. So you need to know how people started living in the sea ice, how those societies developed, how long they've lived there, what climate variability they've lived with before and what the impact of modern day climate change will really mean for these people. And essentially – that idea of tipping points - is there going to be a tipping point for these people you see in the exhibition today? As in the sea ice is going to disappear.

So yes, it has to be a combination of time depth, and the contextual information and understanding, with modern day peoples who are in the front line of climate change.

*Question 9 What opportunities can you envisage for using archaeological objects from your collections in an exhibition about climate change? Can you think of specific examples?*

Yes, I can. I've thought about this and looked at particular objects, and it's a problem. Star object – if you start to think about what star object is going to go on the poster of a climate change exhibition – like what is it, is it like a god of rain, you know, is it some sort of technological innovation that allowed people to carry water – is it a piece of an aqueduct? So, trying to capture how an object *is* climate change is a real challenge.

And so the picture I had on that is that all material culture represents the interface between humans and their environment, and so all those technological aspects of their development are essentially directly linked to climate change. They can be thematically linked through areas like clothing, transportation, food exploitation – and then you categorise them through those themes.

And then that is how you then get to the objects. So they're actually linked to something. So you have something like the gut parkas from the Arctic, you have deep-sea harpoon fishing – for mammals in the Pacific – thinking about how those objects tell a story about human-environment-climate relationships, and seasonal migration patterns. So that's how I will do it - coming up with that thematic idea through the paradigm of the interface, and then trying to explore that as the object categories.

But you're still left with that key point of what is the star object. Because every exhibition here as something on the poster.



*Question 10 Climate change can be seen as a political issue. In your opinion, do museums have a responsibility to be contentious? Should every museum be addressing climate change?*

Every museum is different. And the role of the museum, and its mandate, is often established through a pretty established charter and the trustees' responsibilities. The British Museum is quite unique in its role – its public role, it's one of the first public museums in the world, and we have a very strict charter. We're a quango funded by the Ministry of Culture, Media and Sport; and therefore we are in this nexus of a publicly-funded organisation with strong ministry links, and yet we have some degree of autonomy.

So, specifically in answer to your question, the British Museum has a role to cover, I think, all aspects of that range between the traditional and the contentious. But I don't think we're here to – I don't know. Are we here to be contentious? No, we're here basically - to the best of our curatorial ability - to communicate the information and ideas and new research narratives to the public which will be of interest and inspiration.

But I do believe that global change is the biggest societal threat of the next hundred years, and therefore we are under an obligation to explore that in different ways through the museum's collections. So that could be an exhibition on urbanism, immigration, migration, and climate change which is obviously essential. So I do believe we have that obligation.

### *Supplementary questions*

*How is/could new technology, such as augmented reality, used/be used to expand visitors' knowledge and experience of the museum's collections?*

We don't use augmented reality. So those concepts of technological development are something interesting, but the infrastructure of the BM does not move at a quick rate.

*How flexible is the exhibition space?*

So, we have six temporary exhibition spaces, which range in size from Room 3, which is for one object, up to the WCEC, which is massive. And so each exhibition space is particular to the space in the context of where it is. So the WCEC is very flexible – it's basically a massive rectangle with huge amounts you can do with it. Whereas Room 3 is Room 3, and 91's hard to get to, 35 is like in a curve, so each one has its own biography.

*And what's the frequency and nature of the temporary exhibitions?*

Well, there are six spaces. They all have their own periodicities. There are normally two big exhibitions on, in 35 and WCEC – or it used to be the round reading room – and they happen every six months - there's one in May – so they're every four to five months' turnovers.

*Do you have any touring exhibitions?*

Yes, we have big ones. Lots of them. So we've got History of the World going, Treasures is going, Birds – yes, we do. We have a lot of touring exhibitions which are designed internally within the museum and then sent internationally; and then we also participate and collaborate on other people's exhibitions, loaning our objects to them – and sometimes helping with the narratives.

*Are you aware of any temporary exhibitions which exist, which address the climate change agenda?*

I've done that research reasonably thoroughly, and there's hardly any which have done it. The Smithsonian tried one, on the Arctic, which had a strong climate change agenda – but my understanding of it is that it went pear-shaped at the last minute, and something happened with sponsorship, or politics or – something happened, and it was down-played and that it didn't go well. I don't know if it even happened. I think it probably did happen at the Smithsonian, but the thing was changed and transformed. But there's very few. Contemporary art – much more; but in terms of museums – no.

*So contemporary art and climate change – there's a bit more of a positive reaction.*

Well, it's a different medium. Contemporary art is very current theme.

*You can do something political in contemporary art.*

Yes, it's a requirement of getting known. Different spheres. But no, my limited research has shown there's very few directly on the issue of climate change. In the Caribbean where I work you get lots of environmental exhibitions, but they're more about public education – about recycling or waste management or sea turtle conservation, so it's slightly different.

Interview date 26.6.15

*Question 1 Please could you describe the nature and range of the museum's archaeological collections?*

The archaeological collections go back to the hand axes and fossil Neanderthal remains from Pontnywedd Cave, up to the post-medieval period. So it's quite a broad span. The area of collecting is predominantly Wales. However, prior to about the 1960s the museum did acquire some items from England and from overseas as well.

A lot of the post-medieval tends to fall into a bit of a grey area with some of our other departments' collecting, so some of it ends up in social history, some of it's in art, some of it's in industrial archaeology as well, because we do have industrial archaeology collections.

*So it's not just one archaeological department?*

It's recently become one. We've all been brought together in the past two years, and now we're just teasing out some of these overlaps, working more together.

*Question 2 Please could you outline the organisation and content of the museum's archaeology displays, exhibitions and other archaeology-related activities, including outreach? Which aspects, in your opinion, work best for visitors?*

*You did say nothing's on display right now, as the museum is in the process of being reorganised, but is it possible to say what's been done in the past and what the plans are for the future?*

Yes, up until February of last year there has always been an archaeology gallery in Cathays Park, in this particular museum site. The National Museum of Wales as a whole has eight sites, so we do have archaeology on display, but that is in the context of our Roman museum at Caerleon. So that's a gallery solely dedicated to archaeology. On this site we used this building to tell the broader story of the archaeology of Wales. Whereas Caerleon very specifically focuses just on the Roman fortress of Caerleon, so it's a site-based museum.

So up until last year we had one large gallery which was devoted to telling the story of people's past in Wales through one gallery, using the artefacts as props to tell the story.

You mentioned outreach and other things like that – we've also continued with a big programme of activities, and that's partly what's led to the changes we've got in the pipeline, in that over the past ten to fifteen years we've been experimenting with doing some constructions of different sites. And for that we've got a big open-

air museum on the outskirts of Cardiff called St Fagans; and there we had an experimental Iron Age village for many years. There's a timber circle out in the woodland and a number of medieval buildings as well in the grounds there. So the focus of archaeology has started to shift out to there, because you're able to do more with the interpretation, really, if you're in a building or in a place and can give a sense of what life was like at that time. So that's become the focus for a lot of the activities we've been doing.

*Which aspects do you work best – do you feel people like very much being in the reconstructions?*

They do. And I think our challenge, especially out at St Fagans, which is an open-air museum, has been to try to get the objects and finds, and to get visitors to appreciate that the gold torcs or the flint handaxes shouldn't be seen in isolation from the site from which they came.

*There's a permanent exhibition there, isn't there -?*

There was – we've got Lottery funding to do a big redevelopment there. So we've demolished all of the galleries; we've also demolished the Iron Age village, and the site where the Iron Age village was is also going to be a brand new gallery. We're building a new Iron Age village up in a more suitable spot, not in amongst the woodland, which caused a lot of problems - so it's on top of one of the hills on the edge of the site, and that's under construction as we speak.

And then the main building – we're going to have a massive new extension built there for new galleries which will again tell the whole story of human in Wales.

*So there won't be any permanent archaeology exhibitions here?*

Not on this site, no, that's the big change. There were archaeology galleries here up until two years ago. When I first came to the museum the galleries we had then had been set up in the 1970s, and they were a bit chronological – sequence of the objects, really - greyish, yellowish, strange, wooden-framed cases. We then closed that gallery down, to our relief, and re-located it to a ground floor suite of galleries. And that was an opportunity really for us to experiment, because we knew it was only going to be there for about five to seven years, and then it would be dismantled and would be ready for St Fagans development. So that was intended as a stop-gap. And that gave us a bit more scope to experiment a little bit more, in terms of what we were doing in that space. So after lots of debates we chose to maintain the chronology, but we chose to tell stories in slightly different ways and brought in quite a lot more about context. I can't remember exactly what the three main themes were – society was one, place, and context. So that's how we are going to do it at St Fagans. It will go right through from the Palaeolithic up to the present day.

*Question 3 Please could you explain the decision-making process involved in the planning of new exhibitions and engagement, including who is responsible at each stage of the process?*

For a temporary exhibition, all staff are encouraged to come up with new ideas for new exhibitions. And if they have an idea there's a standard document which gives the opportunity to give a sketchy outline of what it is we're proposing and what the aims of that exhibition might be, the different partners we might work with, and different organisations that might be involved.

So we start with that, and then every month there is a meeting of the exhibitions delivery group, which is chaired by the Head of Presentation and Interpretation. And all the ideas are put out on the table and considered against each other. And some get through, and then they go further into a business case, and others are rejected or some are kept on hold pending a suitable opportunity. There are always probably ten times more ideas than there are slots available!

*Question 4 Are there ways of gauging the effectiveness of an exhibition, event or activity in terms of how visitors respond? Do you gather feedback from visitors?*

We do, we do a lot of visitor feedback. And also with the planning of the galleries we do quite a lot of participatory events, where we'll perhaps bring an item from the collection out and invite the visitors to ask us questions and to see where that goes. We usually start off with just having something on the table, and not telling them anything about it. They start by writing down their questions, we see how many of those are duplicated, answer those questions and then see where the conversation goes really. And that's quite useful in terms of helping us shape what we might do with the information that we present.

*That's very interesting, it's quite an integral way of involving people –*

It is, yes. And sometimes you can get quite a surprising reaction. I was working with a group from a Muslim community from the docklands of Cardiff and I presented a Neanderthal jaw fragment, and as the usual questions came out about how old is it, where is it from, is that a male or female, it got to the point where I said it's a nine year old young girl. And one of the women said – I've got a nine year old girl – how different is it from her? So we started looking at the comparisons between the Neanderthal physiology and the nine year old child.

So that conversation led us to think – that's the way we'll interpret in the new gallery, we'll compare, get the visitors to compare themselves against the Neanderthal – perhaps have a reconstruction of the head, and an outline – a silhouette of the Neanderthal on the wall, at the right sort of height, so a nine year old can compare – stand side by side and see how different they look to it. So things like that can come out of these sessions that can just help feed in an angle on interpretation.

*Question 5 What do you see as the opportunities for interpretation of a multi-disciplinary nature - for example an exhibition which combines archaeological or historical artefacts with objects from ethnographic, natural history or art collections?*

Up until fairly recently, it's been quite compartmentalised. So natural history has just been drawn from the natural history collections, art has just been drawn from the art collections. But I think as we plan for the future, and planning changes, particularly to this site - Cathays Park – we're looking at more of an interdisciplinary style of exhibition, so increasingly the project team will comprise members of all the various curatorial departments.

Once the St Fagans redevelopment project is completed, we'll also be moving towards refurbishment of the entire ground floor of this building as well. And with that the dominant theme there will be natural history. But the current intention is to have different areas focussed on different themes, one of which is likely to be human impact on the environment, so there's a huge amount of scope there for the inclusion of a lot of archaeological evidence and artefacts as well. So we're starting the process with that.

Likewise out at St Fagans, with the development there we're working with – I had hoped we'd perhaps do a bit more with the natural history element, but that has been dropped, largely due to the amount of space we've got available. So we haven't really been able to include that in the exhibitions we're proposing, but we're certainly bringing in quite a lot of the art history, and using some of the portraits from the art department to tell new stories, and to interpret the lives of different Welsh people in new ways. So the portraits will be displayed perhaps side by side with a case of costume or artefacts that are used in the portrait – that the person's wearing or holding - or relating to the context of the painting.

*So although the ground floor here will have natural history is its main thing, it will include archaeology?*

I think it will include more archaeology. And industry in history as well, because of course in Wales the coal mines have had a huge impact on the environment. So all those sorts of stories we'll be able to tell for the first time, rather than being a sort of taxonomic display as it currently is.

*Question 6 Can you envisage an exhibition about climate change in your museum? How would it look? What would be its main aspects, and how would new technologies be incorporated to enhance visitors' experience of such a display?*

Yes, I think that's certainly one of the areas that we're going to be looking to incorporate. From my point of view the story we have in Wales, about the human habitats of Wales, is entirely shaped by natural climate change. So we would use that as a means to draw that sort of story out. And then in terms of the modern/present day/future, there's the changes in the landscape, the coastline as well – so yes. I think that's certainly something we will be exploring.

And the coal and the carbon emissions – that would all feed in to that story. In our old exhibition we did have one graphic that was dedicated to climate change past and future, in the old archaeology gallery, because I felt that it was appropriate to place something – it was placed right next to the Mesolithic case where we were talking about clearance of woodland, and the change that that had on the environment. And we used the climate curve and some explanation of that. So that's one thing we did. It wasn't a huge amount, but I think there was a mention.

*To sow the seed really, for people to make the connections.*

That's right. And at the very end of our permanent geological exhibition that's currently here, there's a bit of information there as well. It's more on the physical impact on the environment perhaps than climate, but it does get a mention.

*Question 7 What do you see as the major challenges and constraints in presenting climate change as a topic?*

I don't really see any constraints as such, because it is pretty widely accepted that this is the situation, and it's a very important topic to raise and make people aware of. And it's very much a museum's role to educate and to present the information about this. So I don't really see there necessarily being any constraints.

*Question 8 Can you imagine how an exhibition about climate change might link stories of climate and environmental change in the past with people's concerns about climate change today? How do you think visitors would respond to such an exhibition?*

I think the connection can be made, and it can be done visually, with things like the ice core data, the climate curves that come from that. And then the human angle really, about the nature of life at the time, in the past compared to life today, and the changed environment, and how the carbon footprint of individuals past and present would differ: those sorts of comparisons could easily be brought out.

*I suppose how the environment has changed and how people have adjusted.*

That's right, yes – to then us cocooned in centrally-heated houses, as opposed to living in our caves and our bearskins.

*I suppose there must be the potential for using industrial archaeology?*

Very much, yes, so there must be certain ways of presenting that. I don't know whether we do address it. We've got a coal-mining museum at the Big Pit (*NB Big Pit Coal Museum, part of National Museum Wales*) – it would be interesting to know what angle is taken there.

*Question 9 What opportunities can you envisage for using archaeological objects from your collections in an exhibition about climate change? Can you think of specific examples?*

Yes, there's certainly a temporary exhibition in the pipeline, based on the changing evidence of the Severn estuary, and looking at – I suppose climate change will come into it – the human impact on that very fragile estuary environment. I think there's potential to bring climate change into that, as an element of that human impact, with sea level change.

The exhibition will feature the burial and Mesolithic sites that we know about – but also, in terms of the impact on fish stock and the changing species that are present in the coastline around Wales, how that has changed in time as well. There's a lot of marine biology that's going on with the natural science department here – it's highlighting the fact that the water temperature's warming, and so the different species are moving and changing their ranges, so that would certainly come in to it as well.

So that's the natural history side, but then we can also talk about the evidence we have from the excavated sites from the past – the fish bones of the Mesolithic sites, the dense oak woodland we know was around the edge of the estuary at the time. So I think there are opportunities to bring those stories out and to link them with the artefactual evidence for chopping down trees with the axes, the burnt evidence from some of the Mesolithic flint and so on as well.

*That's what museums are so amazing at, isn't it - crossing those boundaries. The natural history will come up with something that an archaeological artefact will somehow be embedded with.*

It can be, very easily, yes. One object can tell twenty or more stories. It just depends which angle you choose to go for with it, really. Just one axe can tell you not only about the person who's made it, the process of making it, the axe factory perhaps from which the stone object came from – chopping down trees and the impact on the environment – there's so many angles, let alone its history and story of how it came to be in the museum in the first place, which can also be fascinating.

*Its provenance, its context -*

That's right. So there are multiple opportunities from one object, I always feel. Sometimes it's knowing which one you take and where you stop.

It's going to be very interesting with how the changes we're making at St Fagans will go down, because there we're not having the chronological story which people have become familiar with, what they're expecting from the National Museum; so we're going to have a much more thematic approach - one of the galleries is going to be thematic based on how things are made, so some objects are sitting in as an example of how they made a pot in the past, or how they made an axe, or metal-working through time. One of the galleries is very much focused on people, the life cycle of a person - what sort of foods they ate, how they prepared food, comparing people, and about status.



*It's a more imaginative approach - the chronological aspect has to be there, but it's time and change – and similarities and differences - which are fascinating.*

And that's what people relate to as people. And the curriculum is much more intermixed with the education now, so – it's much more snapshots through time, perhaps, than telling the whole story of the history of Britain, which we learnt. So there are lots of opportunities, I think, to do things differently.

*Question 10 Climate change can be seen as a political issue. In your opinion, do museums have a responsibility to be contentious? Should every museum be addressing climate change?*

Yes, it can be political and it can be perceived by people in different ways. And I think there is that responsibility on the museum, to tell both sides of the story where it possibly can be told. We'd never allow ourselves to be hostage to a specific view, so we would always try to maintain that balance and present it in as careful, rational and reasoned way as we possibly could. But yes, I think it is a museum's role to present difficult subjects from time to time, and that's what we should and must do really, as these are topics which are so important to people in the future as much as to people today, so how we do that is very important, I think.

*Yes, archaeology's so much about the future really – we think it's about the past, but it's more than that.*

It is, that's right – it's about what's going to last -

There was a big exhibition in Germany a couple of years ago which we lent some material too - I've got the catalogue for it – which tackled climate change past and future. It was part of the celebration of a hundred and fifty years since the discovery of the first Neanderthal – that's how the exhibition first came into being, and then they decided to create this exhibition over about three or four different museums within the Dusseldorf area of Germany, the Ruhr, the big industrial area there.

And one of the exhibitions was specifically focused on climate change. And it was very blatantly done, with an awful lot on carbon monoxide and why you shouldn't keep cows! – and going back in time to tell the story of natural climate change and humans' place through time with it. And we lent our Neanderthal fossils to that particular exhibition.

### *Supplementary questions*

*How is/could new technology, such as augmented reality, used/be used to expand visitors' knowledge and experience of the museum's collections?*

The displays at St Fagan's are going to be a mix of different things. A lot of the information will be presented graphically with the traditional panels and so on. We're developing new web resources and there'll be the opportunity for visitor feedback through social media devices in the galleries – so there's the opportunity for visitors to vote on cases or displays, things they like or don't like.

But also we're in the process of making more information about our collections accessible as well, so we're trying to get all our collection information linked with our photographic database, and make that available. So in terms of interaction with things in the gallery we had big ambitions to start with but the budget is constraining us a bit on that, unfortunately.

We had looked at the MShed in Bristol for a potential model, but I don't think we're going to be doing quite as much as they do. What we are going to do is quite a lot of oral testimony, oral history, with listening posts, that sort of thing. I think our experience is that anything that links you back to a person, people love – and that's largely going to be our focus, I think.

In relation to augmented reality - we have a digital media department, it may be something they're exploring, but I'm not necessarily involved with that.

*How flexible is the exhibition space?*

What we try to do is – there's always the intention that an exhibition will be changeable and moveable. But then budget constraints raise their head. So what we try to instead is to create a temporary exhibition space within all our permanent galleries, so that there's at least one element or one area where we can react to new discoveries, or new ideas and thinking, or whatever it is that we're wanting to do. Also, with the closure of the archaeology gallery here we've now got more facilities for temporary exhibitions as well. And that's the museum's intention – that the space we used to occupy is going to go over to temporary exhibition space. So we're already working on the programme for exhibitions that will go into there.

And likewise at St Fagans – the fourth of the galleries will be a temporary changing exhibition.

We used to do exhibitions for three to four months, and I think increasingly we're moving to a six-month cycle now. Budgets are getting cut and we can't afford to do quite as many as we used to. There's always going to be one new gallery or exhibition being prepared at two or three or four different sites.

*How are school groups and other visiting groups organised within the museum? Do they follow a set pattern of activities? Are there opportunities within the education programme for addressing climate change?*

Yes, a lot of school visits. There's a whole department dedicated to education. I think they try to make all of the resources for schools as multi-faceted as possible, to accommodate as much of the curriculum as they can possibly get in to it. So bringing maths into our exhibition is a big project, and we've received some external funding to be able to do that. So we have one member of staff who's just looking at opportunities to embed teaching some of the mathematical curriculum into the things we're doing. So there's that, and I don't see why climate change and physics and all the different processes can't be embedded.

*Do you have any touring exhibitions?*

Yes, we have a few going, but it's not been something we've done a lot of in the past. We've done some small touring exhibitions - we've done one on dinosaurs - there are a few going round. But what we've tended to be focusing on a little bit more is working in partnership with local museums, to get some of the national collections on display more locally as well.

So that's been the big initiative that CyMAL - the Welsh Museums Archives and Libraries Council - has been doing. So we've been putting a lot of money into helping museums to improve security and helping them to buy higher quality cases, so that we can then lend items from the collections. So we've got a big programme of working on different exhibitions with local museums, and helping them to develop those. It's very much a reactionary thing for us, because we don't necessarily know what museums are wanting until they come into contact and put in a bid in for the funding.

*Are there any temporary exhibitions or touring exhibitions which address the climate change agenda? Have you come across anything in your work?*

Not other than this one in Germany, I haven't, I'm afraid.

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