ABSTRACT
Physical and intellectual access to heritage is shaped by conservation through a long-term, cyclic and symbiotic relationship of representation and intervention (or lack of it). This informs future use and representation. Value (which may be assigned for different reasons) makes heritage. All heritage is valued for varied reasons. Some argue that heritage has inherent value; this is not covered in this paper. Some values are preferred over others in decisions on what to use or conserve. The process below describes a number of different recurring phases in this relationship, which differs with different kinds of heritage: 1. Various agents change heritage; 2. Change affects valued elements of heritage; 3. Valued elements affect how change is perceived; 4. What is perceived as damage affects decisions about conservation interventions; 5. Conservation affects which valued elements are most likely to be preserved; 6. Preserved elements influence how heritage is represented; 7. New forms of representation will affect future conservation decisions.

Historically, how heritage has been represented has affected how an object is preserved. This affects later representation and use, making the relationship symbiotic.

INTRODUCTION
Direct physical and intellectual access to heritage is the product of a range of decisions and events that span its whole existence. It is continually affected by the decisions and actions we take, or do not take, as conservators. This paper aims to identify common turning points and rites of passages of different kinds of heritage to reveal a common process that varies with different circumstances. The process revolves around two aims of heritage conservation - understanding historic material and preserving historic material. We try to understand and interpret heritage to reveal now what the world was like, and we preserve heritage in order to keep the material reality so that we can interpret it: representation and intervention. Furthermore, we must represent in order to intervene, and we intervene through those representations. For this reason, it is the relationship between change and value in the preservation of heritage that is the common link, not the physical changes or the values themselves. This relationship may be fast-moving or gradual and each may influence the other in equal or unequal, simultaneous or cyclical ways. This paper will describe each phase in the process, illustrating how the consequences, whether considered positive or negative, leave their imprint on future decisions about conservation. Figure 1 illustrates how these phases move in relation to each other.

It is difficult to offer complete examples of the whole process, since the alternative realities of decisions that have not been made will never be known. Therefore the choice of examples illustrates different types, scales and periods of heritage. Some of these decisions might not be made today, but this paper is intended to set out a process that encompasses time frames in which societal values may have changed, and which all contribute to the current condition and value of heritage. When seen together, a pattern emerges that demonstrates that phase changes are not isolated from each other. Consequently, the same examples of heritage may be used to illustrate more than one part of the process, demonstrating how relationships become inter-twined.
Fig. 1 The relationship between value, conservation and representation, which can be cyclic or linear.

Phase 1: Various agents change heritage

Phase 2: Change affects valued elements of heritage

Phase 3: Valued elements affect how change is perceived

Phase 4: What is perceived as damage affects decisions about conservation interventions

Phase 5: Conservation affects which valued elements are most likely to be preserved

Phase 6: Preserved elements influence how heritage is represented

Phase 7: New forms of representation will affect future conservation decisions

Different kinds of value

Representation and use

Conservation decisions
CONSERVATION AND VALUE

Value is often referred to as though it has a homogeneous character, but many kinds of values exist and there are several typologies that reflect this [1]. The term ‘value’ when applied to heritage can have a number of meanings and many parts of an object may contribute to any one of those values. Value is often said to be gained or lost, but different kinds of value will vary with different kinds of change. It can be argued that value cannot be looked at on a single scale, like price, but that it embodies a spectrum of values which shift as different kinds of value increase or decrease. For example, a painting may be valuable for different reasons, including monetary, social or informational value even if the most significant value often associated with a painting is its aesthetic quality. Ways to preserve individual values are often in conflict with each other, such as retouching a painting or deciding suitable environmental conditions for an assemblage of different materials. Inevitably, conservation interventions, however subtle, can cause the loss of some kinds of value in order to preserve others. Even choosing whether or not to display an object can have a long-term effect on the qualities that give that object value, for example the rate of fading of colours can enhance or reduce aesthetic value.

Things ‘become’ heritage for different reasons, have different functions and are valued in different ways. Values change over time and in different locations for many reasons. Communities relate to the material evidence of their own pasts in different ways. Also, as societal values shift, the way heritage is perceived and is represented changes. Consider what communities consider to be ‘heritage’ now and say a generation or a century ago. An instructive place to start is to consider models that show how heritage is created [2] as the relationship between value and conservation begins at this point. How heritage is sustained, and the role of conservation in sustaining it, is a separate model that follows from Avrami et al. [2]. The process relates to the public and society as well as heritage professionals. A current example is the Liverpool Conservation Centre in the UK. By considering the histories of different kinds of heritage, we are able to view conservation decisions as part of a phased process, rather than as discrete events.

Implicitly, our representation of heritage is based on condition and value. How a collection is used depends on how it is valued and how it can be used (its potential for exploiting value), based on its fragility, context and other issues. Whether it can be stored, studied, displayed, loaned or handled depends on such assessments. Bringing an object into a museum affects its value through the act of removing it from its previous context or location.

A museum’s objects acquisition policy is an example of how we implicitly begin the relationship between change and value, and how it is affected by use. How an object enters a museum is increasingly informed by its value, and this often dictates the level of care that is given it. Collection management policies recognise that objects have value/ function once they enter a museum, which is similar for all things that are identified as heritage. Thus acquisition and management policies can be interpreted as acting upon future changes and the value of objects. They decide an object’s future use and importance in a particular context, and deeply influence the likelihood of change in condition and value. Policy priorities are very important for an institution; they highlight the way values are the contextual background to the future condition of heritage. All of these factors feed into conservation decisions, but the first phase of the process is already beginning as heritage enters its new context.

Phase 1: Various agents change heritage: a comment
There is a wealth of literature on the impacts of various agents on a wide range of different materials [3, 4]. Change to heritage is often due to a complex mix of agents, and there are usually interlinked factors causing damage. These will vary with different types of environment, and as well as being made of different materials, objects can also be assembled in different ways. Many of the consequences of these interactions are visible (and affect representations).

The extent of change may be influenced by the fragility of materials or assemblies, the extent of the presence or impact of an agent of change or the way in which an object has changed. For example, decorative or painted surfaces may be what gives some objects much of their value. A change in the surface would bring about a change in value because of the change in the material.

**Phase 2: Change affects valued elements of heritage: a comment**

Different kinds of value change in different ways, which suggests that some kinds of value may be easier to maintain than others. The spectral shift in values, which may take place when an object changes physically, can be predicted to a certain extent. Ashley-Smith [5] points out that although some kinds of value are very likely to be altered by changes in an object’s condition (exchange/ monetary; use; potential; complexity; documentary; scientific; aesthetic), others are highly unlikely to be altered (social/ political; symbolic/spiritual; existence; rarity; material; age; context; history). Any one of these values will be more important to some kinds of cultural heritage than others. For example, the loss of use-value may affect a historic house that opens to the public more than a textile that is in storage.

**Phase 3: Valued elements affect how change is perceived**

It is accepted that one cannot state that deterioration always decreases value, or even that conservation has always increased value. Whether or not change is perceived as damage, and to what extent, depends on how it is valued. For example, changes to the surface of a bronze statue are more likely to be considered acceptable than changes to the surface of a painting. Moreover, the position of localised surface change on a painting will affect how the severity of damage is perceived.

Objects do not ‘live’ or ‘die’ but gain and lose different kinds of value, or can or cannot be used for different purposes. The condition of an object will determine certain uses, which will affect the ways in which its value is perceived. In terms of utility, there will be points at which an object can no longer be used in certain ways without intervention, such as an unsafe building or a book whose pages cannot be turned. These are points where value and potential use are directly affected, and intervention is required if those elements of value are to regain the state they previously had, which has the potential to affect other valued elements.

**Phase 4: What is perceived as damage affects decisions about conservation interventions: an example**

Reasons for current conservation decisions may appear obvious or ethically straightforward but they are all related to the contextual backdrop of what is considered to have value or not. A broken pot may look better when the pieces are put together but other kinds of alteration, due for example, to use, may show the value with which evidence of original material is held. Values are a pervasive influence, not always directly attributable to decisions, but always providing an all important context. Context influences not only what we have access to but the way in which we have access.
Emerick [6] discusses conservation decisions in the early nineteenth century, where monuments in Britain were seen as either ‘living’ or ‘dead’, based on their use, with the assertion that “there is all the difference in the world in their treatment” [7, p.135]. Often ‘dead’ monument included old buildings that were in poor condition, such as Whitby Abbey in Yorkshire, whose history was declared ‘ended’. Buildings in good condition were valued for their use, and conservation included adaptations to modern uses. Ruins and buildings in poor condition were approached as frozen in time and place, and later features were removed.

Stonehenge is a unique stone circle of prehistoric date (~3000 BC), considered a masterpiece of creativity and engineering, now the heart of a World Heritage Site in the United Kingdom spanning 2000 hectares. Its restoration came some time after the stones had fallen. Images from the early nineteenth century illustrate that the setting was romanticised by the paintings of Turner and Constable and by the poetry of Byron, and value was given to their existing state. Constable was not considered a Romantic artist, so figure 2 illustrates how much the influence of the time had on the way he perceived Stonehenge. As social values changed, the fallen stones were later perceived as damage and re-erected.

Phase 5: Conservation affects which valued elements are most likely to be preserved: a discussion
The consequences of conservation affect different kinds of value to different extents. Conservation may allow an object’s value to be enhanced in a way that enables people to understand, use and exploit that value. The ‘simple’ act of repairing a pot offers an increase in aesthetic and educational value. Even decisions in favour of minimal intervention indicate a preference for some values over others. A tapestry may slowly deteriorate, making it too weak to handle, then too weak to be hung. Its utility and potential uses are reduced over time.

The way in which we intervene also varies for different reasons. Feilden [8] categorised different types of intervention that affect condition and value in different ways. These are listed in table 1 alongside the present authors’ assessment of possible impacts on different kinds of heritage value.

<table>
<thead>
<tr>
<th>Seven degrees of intervention [8]</th>
<th>Possible repercussions on value</th>
</tr>
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<tbody>
<tr>
<td>Prevention of deterioration</td>
<td>Intended to reduce change but certain kinds of value may be given priority, so values change at different rates.</td>
</tr>
<tr>
<td>Preservation of the existing state</td>
<td>Many values kept; utility and possibly aesthetic and information values slowly decrease.</td>
</tr>
<tr>
<td>Consolidation of the fabric</td>
<td>Utility increases but information decreases, e.g. DNA information.</td>
</tr>
<tr>
<td>Restoration</td>
<td>Utility and aesthetics may increase but information and material authenticity may decrease.</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>Contextual value increases, potential uses may decrease.</td>
</tr>
<tr>
<td>Reconstruction</td>
<td>Material authenticity decreases, information may increase.</td>
</tr>
<tr>
<td>Reproduction</td>
<td>Reproduction is different, since the original object is not necessarily irreversibly affected by this intervention.</td>
</tr>
</tbody>
</table>

Table 1. Feilden’s [8] degrees of intervention with possible repercussions for heritage value
Fig. 2. ‘Stonehenge, Wiltshire’ by John Constable (1836). Victoria and Albert Museum.

Fig. 3 Photograph of Stonehenge taken in 1877
All the interventions mentioned here have different implications for value and use. ‘No intervention’ is another separate decision, which may be taken for reasons such as giving priority to other materials, or neglect. The most profound decision is probably whether or not to conserve. The main reasons for valuing an object will determine what intervention is appropriate. Consequently, some kinds of intervention are more frequently carried out on certain types of heritage. For example, broken ceramics are routinely gap-filled and the colour of the filler retouched before being displayed.

Williams [9] discusses the damaging impact that standard conservation treatments can have on natural history specimens, including materials such as collagen. He states that “there is ample evidence of destructive preservation with many standard practices... it is the cumulative effect of these practices that significantly restricts future research” [9, p.3], having carried out experiments to show that material would often shrink, change colour and molecule size, and lose genetic information as a result of conservation treatments. Interestingly, the experimental data show that the impacts on these qualities vary with different treatments. Therefore, the kinds of values that are preserved, and those that are diminished are influenced by the choice of treatment. For example, a conservator may choose potassium nitrate over aqueous methanal (formalin) because it is more likely to yield genetic information, while accepting that there may be shrinkage, because there is greater interest in the information that is yielded by genetic analysis. This kind of situation is not rare in conservation and affects how heritage is perceived and used in the future.

Rouse Hill in New South Wales, Australia is a farm house with land that housed six generations of Australians from the McQuarrie era to 1978. Its preservation is the result of a conservation philosophy to preserve it exactly as it was left, that is to preserve the “cumulative, unedited archive” [10, p. 34] of the estate as a historical material record. Clear priority has been given to one kind of value over others, which has led to a very strict position of minimal intervention, creating a “time capsule” [10, p.26]. However, materials still age, and cannot be frozen in time. The estate’s material has been subjected to natural ageing and termites, so it still appears different to the time it was taken into trust. “Due to the fragile nature of this site, access to the property is by guided tour only” [11], so physical access is limited. Since heritage continues to change, the kinds of preservation actions required for some kinds of value are incompatible. Also, many different decisions affect the choice of heritage values that we seek to preserve.

Phase 6: Preserved elements influence how heritage is represented: a comment
Changes in value of different heritage items may vary from the extent of deterioration. If some kinds of value are prioritised over others, there is the potential for future value to be lost or unrepresented. Consequently, the way we understand heritage is affected by interventions. This means that the way an object is valued could be affected by the information which has been preserved.

The Nara temples in Japan are burned and rebuilt every 20 years. As a result, one cannot see values preserved in the material, but in the craft skills and intangible value which is preserved. This is a continuous, deliberately cyclic relationship between conservation and value, where the material undergoes complete change in order to preserve a specific kind of intangible value. The representation of those values rests on a particular conservation decision – the preservation of craft skills - that is applied consistently. The presentation and meaning of the Nara temples is very
different to that of the Rouse Hill estate but they follow a similar process that connects value with conservation.

**Phase 7: New forms of representation will affect future conservation decisions: a discussion**

Like the Nara temples, new representations affect how future conservation decisions are made. In the case of the Nara temples, the relationship is intentionally cyclic. In other cases, the spectrum of values will vary.

An example is the shoes that survived from the Holocaust and are displayed in the United States Holocaust Memorial Museum. The dirt on the shoes has actually been deposited over the last 50 years but was initially attributed by visitors as damage from the Holocaust [12]. The dirt acquired a value which was not based on its link to the object but on conservation decisions, which affects not only why and how they are displayed but how the shoes would be conserved in the future. The origin of the dirt was established and removed by cleaning but mistaken perceptions would have led to the introduction of an attribute that profoundly affected decisions about the representation and future of the shoes.

Stonehenge shows a complex relationship between conservation and value that can be viewed through the lens of this process. All of the phases of the process, which the authors have outlined above, can be seen in the recent history of Stonehenge. After the depictions of the Romantics, discussed in phase four, Stonehenge’s importance was officially recognised by the 1882 Ancient Monuments Act. The falling of an upright megalith in 1900 was not viewed as romantic but sparked interest in the excavation and restoration of the site. In 1901, after being fenced off, restoration took place. Options between complete restoration with concrete and asphalt and allowing it to fall into ruin were all discussed, which would have had significant repercussions on how we see and use Stonehenge today [13]. The more subtle restoration kept some of the fallen stones where they lay but others were re-erected. In 1905, druids held a mass initiation ceremony for the site, indicating a change in the way Stonehenge is valued that has lasted ever since. Future conservation decisions, including physical access, must take account of this renewed value.

In 1919 further restoration took place, and subsequently conservation and maintenance have continued, including stones being re-erected and outer stones raised after an excavation in the 1950s, based on available records, giving the site a new appearance. It can be argued that the iconic status of Stonehenge was one cause of the vandalism and graffiti to which it was subjected in the 1960s. The discovery of original markings and ancient lichen species on the surface led to further understanding of the origin of the stones, and continual cleaning would lead to abrasion and loss of informational value [13]. This and rising visitor figures led to closure in the 1970s, citing erosion from human contact. Over time, stakeholders (including road builders and road users) have contributed to the interpretation and representation of Stonehenge, all calling for change and access in different ways because of the different ways in which the site is valued. A virtual reality model made in 1996 increased indirect access to the site but decisions on how the site is preserved and presented are ongoing.

**CONCLUSION**

The decisions we make, and the values we perceive, are the consequence of years of interaction between the two shifting determinant factors of value and change. Their relationship affects access, both physical and intellectual. It determines the long-term, cumulative impact of conservation interactions (or lack of) with heritage.
This paper it is not about individual concepts, which in isolation will be familiar to many, but what connects them - the relationship they have with one and other and how each phase contributes context to the next phase. As can be seen in Figure 1, one phase does not have to finish for the next to begin, but each phase requires the previous phase to have begun. By arranging these separate elements into a coherent whole, a pattern can be clearly seen.

Priorities in conservation depend on the kind of material change being assessed but also why specific types of heritage are valued and what is valued in that context. This symbiotic relationship illustrates that it is not a matter of talking about gains and losses in value, but shifts within a spectrum of different values. By looking at how heritage has changed when certain values are at risk from change, one can see these shifts. Identifying critical points for these shifts can help us acknowledge the long-term impact of heritage conservation, both positive and negative. The process goes beyond stating whether or not deterioration or conservation affects value but what values they affect, and to what extent.

Heritage is constantly adapting to its environment - a process of which we must be conscious. Heritage survives in the form that it does due to its ‘best fit’ with the qualities that are valued at that period of decision-making. The qualities that ensure its survival or demise are those that are preserved and prioritised, and which guide its future material state. Heritage must adapt to changes, physical and intellectual, within its environment and we must be aware of this evolution.

REFERENCES


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