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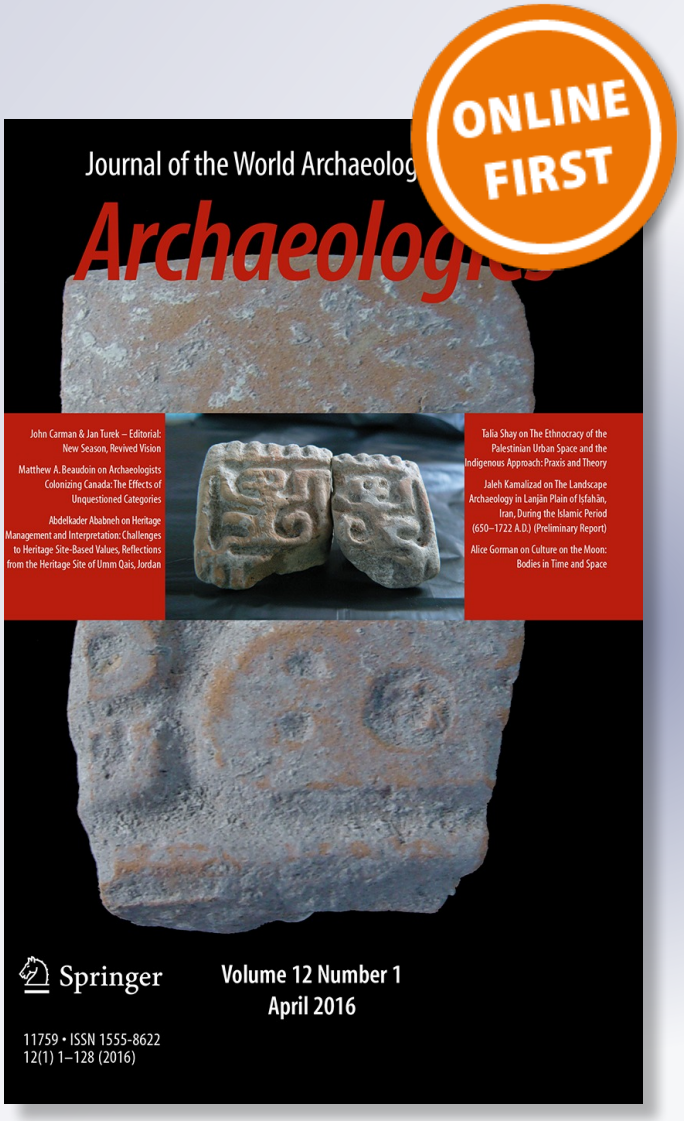

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Educating for Sustainability in Archaeology

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ABSTRACT

'Sustainability' is a concept that suffuses the present. Policy initiatives require 'sustainability' as one of the criteria by which projects are judged. In recognition of their role as interpreters and custodians of the past, archaeologists are one of the many groups contributing to the creation of 'a sustainable historic environment' and 'sustainable communities'. Accordingly, sustainability is a concept that we perhaps need to incorporate into our activities as educators of future good citizens and into our training for the profession of archaeology. This paper seeks to address this issue, particularly in the light of Themes and Sessions relating to both sustainability and education at WAC8, but where the link between them remains unexamined.

Résumé: La durabilité est un concept qui baigne le présent. Les initiatives politiques exigent que la «durabilité» soit un des critères d'évaluation des projets. En reconnaissance de leur rôle d'interprètes et de gardiens du passé, les archéologues font partie des nombreux groupes qui contribuent à la création d'un «environnement historique durable» et de «communautés durables» . La durabilité est donc un concept que nous devons potentiellement intégrer dans nos activités d'éducateurs, pour former des citoyens de demain et des professionnels de l'archéologie de premier rang. Cet article tente de cerner cet enjeu, particulièrement à la lumière des thèmes et séances du WAC-8 relatifs à la durabilité et l'éducation, mais là où le lien qui les unit demeure mal étudié.

Resumen: La sostenibilidad es un concepto que cubre el presente. Las iniciativas políticas requieren ''sostenibilidad'' como uno de los criterios mediante el cual se juzgan los proyectos. En reconocimiento de su papel como intérpretes y custodios del pasado, los arqueólogos son uno de los muchos grupos que contribuyen a la creación de 'un entorno histórico sostenible' y de 'comunidades sostenibles'. Por consiguiente, la sostenibilidad es un concepto que quizás necesitemos incorporar a nuestras actividades como educadores de buenos ciudadanos futuros y a nuestra

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formación para la profesión de arqueología. El presente documento trata de abordar esta cuestión, en particular a la luz de Temas y Sesiones relativos tanto a la sostenibilidad como a la educación en WAC8, pero sigue sin ser examinado el vínculo entre ellos.

KEY WORDS

Sustainability, Education, Material, Practice, Value, Community

This paper explores the understanding of 'sustainability' as it applies in archaeology and archaeological education. It does so drawing upon the recognition that both form the topic of Themes at WAC8 but that the two are treated quite separately in distinct sessions. If sustainability is a topic that we need to take seriously, it is perhaps one to be included in archaeological curricula and one we need to consider quite deeply in our own terms. In doing so, it becomes clear that the concept of 'sustainability' is a slippery one, ill-defined in relation to our field and difficult to pin down (Howard 2013). We need to ask ourselves: is it an area we should be concerned with only in relation to archaeology as an area of academic and professional activity *in the present* (ie. 'sustaining' archaeology as a practice); or can the ability of archaeology to give *insights into the human past* offer something distinctive to a wider 'sustainability' debate (eg. about climate change, environmental degradation, or the nature of community)? Or is it a concept we need only engage with in order to meet the requirements of external bodies (governments, intergovernmental agencies, UNESCO, etc.)? These are the issues this paper will seek to address and on which it will attempt to offer ideas for the incorporation of discussions of 'sustainability' in archaeological syllabi and curricula.

It is not the contention here that sustainability should be treated as a separate topic within a teaching programme devoted to archaeology. Accordingly, I do not recommend that individual courses, lecture series, seminars or lectures should be devoted to it as if it can be 'bracketed off' from other issues of which students need to be aware. As an issue that affects all our lives, the approach advocated is to incorporate the notion into those parts of the curriculum where it has relevance and resonance and to use those specifically archaeological topics as ways of engaging with the notion of sustainability. I offer here a series of questions rather than a set of answers: I do not offer a course outline nor even an approach to a course outline, but rather an attempt to locate the issue of sustainability as it may arise in relation to archaeological topics. It will be for individual institutions in particular countries to take the ideas presented here and adapt them to their own context: however, since I am a UK citizen working at a UK institution, it will be difficult for me to ignore this entirely, and so for examples there will be explicit reference to that particular context.

What is Sustainability?

An internet search for 'sustainability' produced 165 million links to websites and -pages: the websites included those for national governments, local and city governments, government agencies, not-for-profit organisations and NGOs, commercial firms, academic institutions and a growing number of publications both academic and otherwise; collectively, they covered the entire English-speaking world and beyond. A considerable number of these websites offered definitions of the term 'sustainability'. All of them considered sustainability to be a good thing—none challenged the concept—and for all of them, it was primarily a future-oriented concept (Table 1).

Sustainability as a Concept

This idea of 'sustainability' derives from two different disciplinary contexts (Table 2).

What biology and economics have in common is a propensity for self-generation. Plants and animals reproduce themselves: as individuals die, they leave behind offspring; as each generation dies, it leaves descendants to carry on the cycle of reproduction and predation. Economic activity generates wealth and this wealth can be used to finance further economic activity: economic activity therefore leads to more economic activity. It is this capacity for ongoing and continuing activity—both biological and economic—that gives the idea of sustainability its meaning in these fields. Sustainability here does not mean mere survival of discrete entities but the creation of systems of activity, and it is the *activity* which is sustained, the *system*, rather than the individual components.

The concept of sustainability has spilled out beyond biology and economics into other realms. MacFarlane (2000:152; after Rannikko 1999) lists

Table 1 Some definitions of sustainability

[activity that] meets the needs of the present without compromising the ability of future generations to meet their own needs (Report of the World Commission on Environment and Development [Brundtland Commission] 1984; http://www.un.org/documents/ga/res/42/ares42-187.htm); *living and managing activities that balances social, economic, environmental and institutional considerations to meet our needs and those of future generations* (Fraser Basin Council, Vancouver, Canada; http://www.fraserbasin.bc.ca/about_us) and *a state of organisation… that ensures… an opportunity for evolution, not just now but well into the future* (Solstice Institute; http://www.sustainability.org/index_secondary.html)

Table 2 Disciplinary contexts for sustainability

A concept from biology	A concept from economics
As a concept originally deriving from *biology* (eg. Adams 1990), it represents the attempt to create or maintain self-sustaining biological systems that will persist through time. Plants and animals can be introduced into a space and allowed to interact as they would if left entirely alone: the result will be a stable ecology where cycles of reproduction and predation will result in the continuing survival of species. Existing ecologies will be managed in such a way that the cycle of reproduction and predation already established will be allowed to continue and thus ensure the survival of species	As a concept adopted by *economists* and development agencies, sustainability means the creation of types of new economic activity that—by allowing the creation of new wealth—will allow a human community and its established way of life to continue. 'Development' alone has come to mean the introduction of new opportunities for the creation of wealth regardless of cultural factors, that may lead either to rejection of the new wealth-creating opportunities or their adoption but with significant effects upon the community whose well-being they were meant to ensure. 'Sustainable development' means the introduction of new wealth-generating opportunities which are grounded in local ideology and existing practices, allowing the established way of life to continue

the 'dimensions' of sustainable development (Fig. 1) as ecological sustainability, economic sustainability, social sustainability and cultural sustainability. The common theme here is that of working in harmony with—rather than against—the object of sustainability, whether it is a natural ecology, economic wealth creation or a human community. Where one or more objects are concerned—such as in creating an economic system that will conserve biological systems and existing lifeways—the task becomes one of combining several different imperatives so that they do not conflict (see also Sustainable Communities Task Force 1993). In similar vein, Selman (2008) argues that the concept of 'sustainable landscape' contains five elements (Fig. 2), although for him these are ranked equally.

It is evident from these two examples that sustainability itself is not a unitary concept, but can be subdivided into various kinds of sustainability, all of which are required to achieve an overarching state of 'generalised' sustainability. In considering sustainability from an archaeological standpoint, therefore, we need to do the same. The following sections will each endeavour to offer such a 'breakdown' of the sustainability concept that can be used in archaeology courses at the University level.

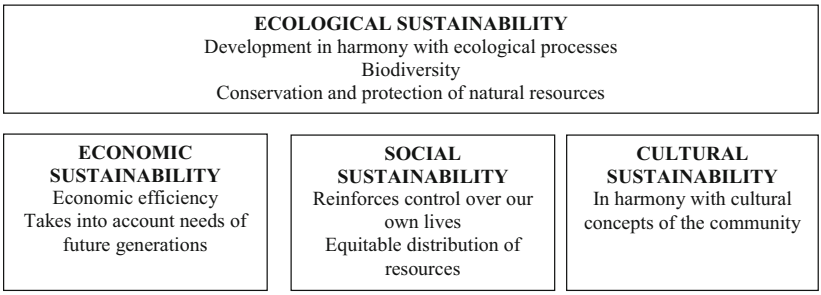

Figure 1. Dimensions of sustainable development (after MacFarlane 2000:152).

Archaeology as a Problem for Sustainability: Material and Process

The question that arises is how to envision the idea of sustainability in relation to archaeology. The name of our discipline can be used in two ways:

- to represent the *material* that is the focus of our enquiries: the sites, landscapes and artefacts that we study and
- to represent the practices of archaeologists in understanding the past through its material remains: this is archaeology as *process*.

As *material*, archaeology represents a problem for sustainability as conventionally understood. Archaeological remains do not breed, they do not renew themselves, they do not create further archaeological remains and they do not generate resources to be used to create new archaeological sites. Instead the archaeological record is classically held to be finite and non-renewable (eg. Darvill 1987:1; McGimsey 1972:24). Accordingly, a 'sustainable archaeological record' is a problematic category: it is inherently non-sustainable if subject to continuous investigation by destructive means, such as the process of excavation, since once destroyed it cannot be remade. Nevertheless, some commentators (Carman 1996:7–8; Holtorf 1998, 2001) have argued that the archaeological resource is in fact—at least to some degree—'renewable' and non-finite. They do so on the basis that it is a creation of archaeologists through their practices: we are constantly seeking new sites, new categories of material, new ways of exploring the past, and thereby constantly increasing the amount of material we can include in the archaeological record. As a body of material, then, archaeology can be considered to be sustainable so long as the process of archaeology can be continued. The recent history of archaeology confirms this: Industrial Archaeology is a topic that emerged from the 1970s (see eg.

SUSTAINABLE LANDSCAPE				
ENVIRONMENTAL SUSTAINABILITY Biodiversity Facilitating species' lifecycles Resilience	**ECONOMIC SUSTAINABILITY** 'Virtuous circle' of production and use that makes area attractive	**SOCIAL SUSTAINABILITY** Inclusion of public preferences Peopling of place with social relationships Health issues	**POLITICAL SUSTAINABILITY** Effective governance structures	**AESTHETIC SUSTAINABILITY** 'Acquired' aesthetic value Appreciation of 'discordant' objects

Figure 2. Sustainable landscapes (after Selman 2008).

Cleere and Crossley 1985:xiv); battlefield and Conflict Archaeology date from the 1990s (Carman 2013) and Contemporary Archaeology from the early 21st century (McAtackney et al. 2007). Each of these new areas of archaeological enquiry brought new material within the realm of archaeologists.

It is necessary therefore to decide what we consider to be the *process* of archaeology that is amenable to sustainability. As practiced across the globe, archaeology is at once an academic pursuit, a profession, an amateur avocation, a public service, a cultural activity, an industry, a legal requirement, an entertainment and no doubt a host of other things. Those we call 'archaeologists' do many things: they work in laboratories, conduct non-invasive survey, excavate, teach, write, appear on television, think, advise on policy, assess others' work and serve as bureaucrats in local government and national and international agencies. Some do several of these things; others do only one. If archaeology as a process is to be sustainable, we need to consider what will be sustained into the future:

- Archaeology as a study of the past through its material remains? In which case this can be by professionals or amateurs: there is presumably no need to maintain the present structures of national heritage agencies, professional units, academic departments and archaeological officers in government positions;
- Archaeology as a role of government? In which case we have no need of amateurs nor perhaps of academic departments: archaeological training can be seen as a purely vocational exercise at the service of particular needs;
- Archaeology as an academic discipline? In which case there will be no need for professional units or for involvement in government;
- Or all of them, and others? In which case a mechanism for maintaining a diverse range of types of archaeology will need to be created.

Whatever the choices we make in answer to these options, what will be required for any of these to remain viable into the future will be the continued presence of material to be investigated. This in turn depends upon whether we understand the archaeological record to be finite or renewable.

Sustainability in Archaeology; Sustainability for Archaeology

The issue that was raised above was that of what constitutes a 'sustainable archaeology'. On the one hand, we are concerned with the material residues of the past that come to us as material to be studied and preserved for whatever purposes future generations may decide. On the other, we may be concerned with the sustainability of archaeology as an academic discipline and a set of practices.

Sustaining the Archaeological Record

The work of those who consider the archaeological record to be renewable was mentioned earlier. For Carman (1996:7–8), the process is threefold:

- The deposition of new material to become the archaeology of the future (Schiffer 1972, 1987; Rathje and Murphy 1992);
- The discovery of new sites and
- The discovery, recognition or identification of entirely new classes of archaeological material (eg. DNA traces, 20th century military remains).

Holtorf (1998) goes further by arguing that the process of archaeology itself actively creates the record which we study, that the amount of material available to us as part of the archaeological record is increasing exponentially, and that destruction is merely another stage in the lifecycle of objects. In the latter point, he is supported especially by Lucas (2001) who argues for the idea of 'transformation' rather than 'destruction' of sites by excavation. If some of these arguments are accepted, then all that is required for a sustainable historic environment is for archaeologists to continue their practices, much of which is focused upon the identification of new sites and new material to examine.

At first glance, it would seem that a 'sustainable historic environment' would be most similar to the idea of *ecological* sustainability as outlined by McFarlane (2000; Fig. 1). This would be built around the idea of development in harmony with existing historical and cultural processes, ensuring a diversity of historical resources and the conservation and protection of his-

torical resources. In other words, something like the current systems of heritage management applied in the UK (Hunter and Ralston 2006) and more widely across the world (Carman 2015)! This is not, however, the understanding adopted by responsible agencies who, from their first thinking about how to make the concept of sustainability apply to archaeology, have often opted for an idea more akin to that of social and cultural sustainability (eg. English Heritage 1996). This places archaeological and historic structures in the context of the construction of a 'place' which has social and cultural importance to its inhabitants (English Heritage 2000). This style of thinking collapses the idea of a sustainable historic environment into that of the sustainable community, and how such 'communities' are sustained. In terms of the archaeological record, this means most often the retention of recognisable 'time marks' in a locality (Walsh 1992:152–153; see also Johnston 1994) and effectively therefore the 'adaptive re-use' of individual monuments and buildings.

In other words, in current schemes of thought, the concept of the sustainable historic environment—comprising archaeological remains, built structures and other components—is subject to reduction to one of two very limited options (Fig. 3). Either it is conceived as the preservation of individual sites and monuments as something separate from their surroundings or it is conceived as the adaptive re-use of sites and monuments to fit with the economic revival and social maintenance of a particular place and its community. Neither of these is to be condemned: there is nothing inherently wrong with preserving archaeological remains and monuments for their intrinsic historic value, and indeed this is a guiding principle of archaeological resource management (Lipe 1984; Darvill 1995). Similarly, there is nothing inherently wrong in placing such material at the service of other worthwhile social and political agendas (McDavid and Babson 1997), making them available for new uses in the present.

Sustaining Archaeological Practices

It is essential in considering archaeology that we bear in mind that archaeology is an invention of the modern world with a comparatively short history. The antiquity of humanity was established only in the mid-19th

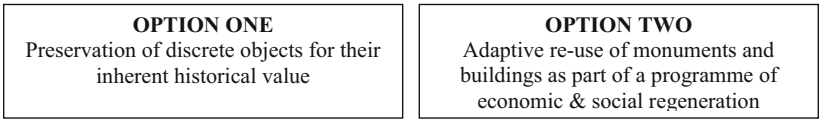

Figure 3. Current options for archaeological remains under a regime of 'sustainability'.

century, at about the same time as the principles of stratigraphy were adopted by excavators of landscape features. The widespread recognition of archaeology as a distinct discipline takes place from the early years of the 20th century (Trigger 2006): in the UK, the first University courses in archaeology were established only in the early 20th century, just after the first laws to protect archaeological remains, and archaeology only became an essential component of the UK planning system in the 1990s. While there is evidence for widespread popular interest in archaeology as a field of enquiry from relatively early in its history, this interest waxes and wanes with the availability of media to capture the public imagination. The two options remain, however, a rather limited and unimaginative approach.

Archaeology currently faces a number of threats to its existence of which we may need to be aware.

- The number of students attracted to degree courses in archaeology varies from year to year and is serious decline in some countries, such as the UK.
- There is also a noticeable decline in the numbers of viewers of specifically archaeological programmes on television.

These may be transient phenomena which are the result of a range of factors, few within our control, but they are of significance if archaeology is to remain an activity that has a future that can be sustained.

A greater threat lies within what Malcolm Cooper (2008) calls 'rhetorical destruction' of the archaeological record—by which those who have an interest in preventing the preservation of remains attempt to undermine the credibility of those who speak for the historic environment. In Cooper's experience in the UK, they do so by discrediting four things:

- Heritage objects and places: labelling them as a 'slums', 'industrial wastelands' or 'ruins';
- Heritage philosophy: using the so-called 'common sense' arguments that a concern for heritage impedes progress, that 'old buildings are inflexible' and ill-adapted to new uses, that heritage agencies are unrealistic in their expectations, that structures from the past fail to meet modern expectations regarding environmental quality and health and safety and that there are already too many museums;
- Heritage management practice: again using so-called 'common sense' arguments to emphasise aspects such as expected delays in decision-making, higher costs associated with delay, higher risk entailed in dealing with an old structure and confusing and contradictory legislative frameworks and

- Individual heritage agencies: questioning their competence, effectiveness and intentions.

In similar vein, local community needs and associations may be claimed to carry greater weight in decision-making than national or regional policy. Therefore, the archaeologist is cast as an 'outsider' who seeks to assert an oppressive authority over an 'organic' community, which is a perspective shared by other critics of heritage practice (eg. Herzfeld 1991, 2004).

Such considerations require archaeology to establish its *relevance* in the modern world and the provision of direct benefits to those outside the field.

Archaeology, Sustainability and Communities

It was mentioned above that one understanding of sustainability in relation to archaeology was related to the idea of the 'sustainable community'. The notion of 'community' and its inherent value as a concept is one subject to critique (see eg. Smith and Waterton 2009) and yet is still maintained as a central plank of environmental and other policy. The development of 'community archaeologies' of varying types and nomenclature ('collaborative', 'community-engaged', 'community-based', 'community-led', 'democratic' and others [see for alternatives Carman 2005:86; Smith and Waterton 2009:115–116]) has contributed to the growing idea that archaeology needs to be *relevant* to others if it is to have a place in the world of the future.

Types of Community

Yvonne Marshall (2002:216) suggests that in general archaeologists encounter two kinds of overlapping community: one defined by geography is the 'local' and the other defined by affiliation is the 'descendant', of which the indigenous community is a particular example (Layton 1989a, b; Smith 2004). However, no community is a single, corporate entity: it is instead a collective of individuals, and the specific membership of that collectivity will change over time depending upon how the community defines itself. If defined in terms of geography—as a 'local' community—then membership will change as individuals, families, etc. move in and out of the locality. If defined in terms of cultural or biological affinity—as a 'descendant', 'ethnic' or 'Indigenous' community—then membership will change as individuals die and are born, and as they are recognised as fulfilling the criteria for inclusion or identified as failing relevant tests of affiliation. Smith and Waterton (2009:18) point out that local and descendant communities are not the only kind available: communities may be built around any kind of

shared experience of ''class, gender, age, religion, sexual orientation [and] political beliefs''. Any or all of these types may be those that interact with and perhaps benefit from archaeology.

Community Archaeologies

In so far as archaeologists are concerned with ensuring the survival into the future of material that has come to us from the past—objects, buildings, landscape features and entire landscapes—we are providing to the people in particular localities the 'time marks' (Walsh 1992:152) which are essential to the construction of a sense of 'place'. Places in this sense are not mere locations, but places of association and meaning: a location exists only in the three dimensions of physical space; but a meaningful place exists in a 'four-dimensional web' (Walsh 1992:153–157) where time is the fourth dimension. While the spatial dimensions emphasise fixity, this fourth dimension emphasises processes of change, both in the past and into the future. Such an appreciation of 'place'—especially one that is shared by a group of people—is at the heart of creating a local community. Places may also be significant to communities created along other bonds of similarity between people—a common homeland, for instance, or a common experience in an alien environment. This is one way in which archaeology can contribute to 'community'.

Community-'led' or '-engaged' archaeology projects actively seek to build a sense of community through archaeological practice rather than material. Archaeological projects that seek to involve non-archaeologists are frequently limited to 'outreach' which represents a one-way process of communication and education; beyond this is a willingness to recognise the contribution to knowledge and information others can make and beyond this is an active process of consultation. Other projects—a key example is the Community Archaeology Project at Quseir, Egypt (CAPQ; Moser et al. 2002)—seek to go beyond these more conventional archaeological approaches to community involvement by fostering active social relationships with the local community. Accordingly, this involves the following:

- maintaining a presence in the community between fieldwork seasons,
- employing locals as part of the project,
- using locals as the means of outreach programmes and
- ensuring the retention of remains retrieved locally in the local area (Moser et al. 2002:223).

Such processes ensure that there is a genuine local interest in the project and that the community itself gains some advantage from it—both cultural and economic.

'Democratic' archaeology projects aim to go further still. At Sedgeford in England, for example, a committee of local trustees controlled the project as well as employing—indeed relying heavily upon—local labour, while hierarchical structures were kept to a minimum (Faulkner 2000:31–32). In other cases, more formal structures served to support community control. At the Levi Jordan Plantation site in Brazoria, Texas, USA (McDavid 1997, 1999, 2000, 2002, 2004) control over archaeological research and its public interpretation was in the hands of a board of trustees drawn from descendants of former owners of the plantation and those they enslaved and their representatives, the aim of archaeologists being to collaborate with members of local descendant communities in reciprocal, non-hierarchical, mutually empowering ways (McDavid 2000:222). Any particular initiative required the permission of the trustees, and committee members were involved in every stage of the project and were seen as the 'bosses' who directed the archaeologists; these were then concerned both to involve committee members, and to be "involved in [committee members'] own agendas, according to… mutual needs" (McDavid 2000:222). At both Sedgeford and Brazoria, the archaeologists took second place to the community they served.

In their examination of the relationship between archaeology and community, Smith and Waterton (2009:138) emphasise that "community interaction is [always] contested, fraught and dissonant" as it inevitably involves negotiation between different sets of interest and worldview. They go on to argue that effective community engagement relies on five principles:

- honesty—including as to what is possible and what is not within a particular context;
- dialogue, requiring a mutuality of trust and respect;
- recognition of power, and especially differential power relations;
- a holistic and integrated approach, that recognises different types of knowledge and
- a critical regard for the inevitably political nature of the process (Smith and Waterton 2009:139).

At Whose Service?

A question that goes frequently unasked in relation to such 'community' archaeologies, however, is the purposes they serve.

One of the founding statements of public archaeology began with the resounding phrase that "there is no such thing as a private archaeology" (McGimsey 1972:5). The remainder of the book was primarily concerned

with putting legislation in place to protect and manage the archaeological record: however, it was also noted that there is a need for public education to support programmes of preservation, and elsewhere McGimsey (1984) offers advice as to how to 'sell' archaeology to non-archaeologists. Other writers have made a similar case. If archaeology truly "belongs to all" (Merriman 1991:1), then there is presumably no need for a dedicated marketing programme by archaeologists to sell their wares: community programmes—whether outreach, collaboration, community-led or democratic—work entirely at the service of the non-archaeological community and serve their interests above any others.

An alternative view is that community programmes primarily benefit archaeologists by providing a justification—rather than a purpose—for their work. As such, archaeologists can be seen as a self-serving 'interest group' whose outreach activities are designed to enhance their own status and promote their activities to wider society. As Smith and Waterton (2009:143) put it, archaeologists "are a community group themselves and act in much the same way as other communities to protect their interests and aspirations". It is clear, for instance, that in practice the most avowedly 'democratic' archaeology projects are in fact the product not of local community desire, but rather that of the archaeologists involved. As Carol McDavid has admitted of the Levi Jordan Project, the committee members perceived her in practice as the project leader, a role she both claimed and does not attempt to disguise (McDavid 2000:222).

'Public' Value and Sustaining Archaeology

We all live today in what has been termed the 'Audit Society' (Power 1997) where only those attributes of things that can be measured are considered valuable. Accordingly, at the service of such ill-defined but contextually relative terms as 'effectiveness', 'efficiency' and 'accountability', we find ourselves bound to offer tangible and measurable justifications for the preservation and custodianship of the cultural heritage.

Recent initiatives in valuing the cultural heritage in the UK reflect these aspects of the Audit Society. In 2005, national heritage agencies commissioned a report from an environmental economics consultancy on *Valuation of the Historic Environment* (eftec 2006). Its opening statement is "Heritage assets are economic goods" because—like other economic goods—they provide "flows of wellbeing" (eftec 2006:7) and, rather than being concerned with activities, projects and programmes as its full title suggests it should, the report actually concerns itself with how one might assess the value of such 'heritage assets'. In a parallel development, the UK Heritage Lottery Fund commissioned the think-tank DEMOS to help them recon-

sider the evaluation of heritage projects, especially in the light of new ideas about 'Public Value' (DEMOS 2005). This was followed by a conference early in 2006 where ideas about Public Value were explored (Clark 2006). The concept of Public Value was defined as ''what the public value'' and was presented as the space of interaction between three types of value:

- so-called '*intrinsic*' value, which represents the meanings and associations carried by the cultural heritage: in other words, its academic research potential, and its symbolic and associational values;
- so-called '*instrumental*' value, which represents the kinds of benefits that accrue to a community or to society in general from maintaining or using a site or monument: these could be in terms of tourist potential or economic regeneration; in other words, its amenity value and thirdly
- so-called '*institutional*' value, which derives from the activities of the organisation responsible for managing or using the site or monument or place: these were defined in terms of ''*how* organisations relate to their publics [and includes] creating trust and mutual respect between citizens… and providing a context for sociability and the enjoyment of shared experiences'' (Hewison and Holden 2006:15).

While it was recognised that 'instrumental' and 'institutional' values would represent tangible returns that can be measured, albeit with some difficulty, it was generally agreed that the measurement of 'intrinsic' cultural value was inherently more problematic: the general feeling was that this was the province of heritage professionals such as archaeologists. However, because of their greater measurability, so far as policy initiatives are concerned, 'instrumental' and 'institutional' values would always dominate decision-making processes.

The importance of these developments was that they required archaeology as a contemporary activity to justify the role it plays in society and the benefits that accrue from archaeological activity. In order to be sustainable, it puts archaeologists in the position of meeting the agendas of policy-makers rather than those generated from academic exchange. A sustainable archaeology is thereby one located in the public realm, meeting the needs of 'communities' as defined by others and not by archaeologists.

Sustainability in the Archaeological Curriculum

It is evident that there is more to the relationship between sustainability and archaeology than a concern with retaining bodies of material for future archaeologists to investigate: it goes well beyond the narrow concerns of

archaeological or cultural resource management (ARM; AHM; CRM) to the purpose of archaeology itself. It inevitably takes us into the realm of 'public' and 'community' archaeologies and raises the issue of whether an archaeology that does not relate directly to the requirements of communities has a future. We work in a world where our direct contribution to wider agendas is under close scrutiny. All across the globe, professional archaeology relies on State support for its existence (Carman 2015): whether in Universities, through government agencies or under the semi-privatised system operating in countries such as the UK, Australia and the US, archaeologists need the political and financial support of national governments to stay in business. The issue of the sustainability of archaeology therefore potentially infects a number of areas of any archaeology curriculum. These include:

- **History of the discipline**: A sustainability agenda invites us to consider the relevance of past versions of archaeology to their age. Rather than seeing antiquarians and our 19th century forebears as deficient versions of modern archaeologists (as so often), it suggests we should ask what purposes the study of the past served in that period and place and whether it was viable in those terms, or divorced from current concerns.
- **Theory:** A sustainability agenda goes to the heart of 'why do archaeology?' The context within which paradigms emerged and how they were driven may provide food for thought on the contribution they allowed archaeology to make to wider issues. It will also allow a consideration of the ability of theoretical approaches to produce a 'relevant' archaeology in our own time. Would, for instance, a processual or post-processual interpretation of data create more worthwhile results that can assist in promoting archaeology as a 'useful' discipline?
- **Scientific archaeology**: The notion of sustainability can especially inform the study of past human–environment relations. Did non-sustainable practices cause the decline of particular cultures? For how long has human intervention in nature caused global environmental change? Can modern study of past environments contribute to the climate change debate? It can also inform on the nature of the archaeological resource by investigating how environmental change is likely to affect vulnerable components of the resource.
- **Management and heritage**: The notion of sustainability is central to the idea of preserving the historic environment. It is also of high relevance to the contexts within which management of the archaeological resource takes place: employment opportunities, training and career development, funding archaeological work, organisational structures and their interrelations, etc.

- **Practice**: The notion of sustainability informs aspects of archaeological practice. Research designs should include a consideration for the future of the material to be retrieved, how it will be conserved and archived, and make provision for the maintenance of the archive into the future. Fieldwork will need to include practices that do not cause damage to the environment around the site and encourage the re-use and recycling of materials. Post-excavation analysis and lab-based work will need to have regard to the use of re-usable materials and non-damaging chemicals. Publication in digital form may reduce environmental impact, but this also raises issues regarding the sustainability of digital archives.

Towards WAC8

The themes of sustainability and education are not expressly linked at WAC8. This paper has sought to indicate how they nonetheless interrelate and in doing so raise important questions about what we do as archaeologists, our wider social roles, and how we should look to the future of our discipline. The inevitable question to University-based teachers of archaeology is: how will you incorporate ideas about sustainability in your programmes? A question for our students is: how will you respond to the challenge of sustainability as it applies to archaeology? The answers will determine the future of our field across the globe and will no doubt inform future WAC Congresses.

As we look towards our gathering in Kyoto in August, we may go further than this short article and ask how other themes may be linked in a way that will inform our deeper understanding and appreciation of what we—collectively and individually—do as archaeologists. The prospect is I hope an exciting one!

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