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Many understand today that archaeology has an important role to play in contemporary society. There are many good examples of outreach initiatives communicating archaeological methods and research results to a wider audience. Having said that, there are three good reasons why public archaeology (broadly defined as the interface of archaeology and contemporary society) should be open to exploring new paths:

- **Benefits for all:** Empirical research shows that at present only certain groups within the population are interested in historical learning or

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visit heritage sites (for heritage e.g. DCMS 2019). Not all people visit archaeological sites or museums, consume educational material about the past or trust the expertise of heritage authorities. But archaeology is supported by legislation and taxpayers’ money, and it ought to provide benefits for all. The solution is not to lure additional audiences into existing programmes of popularisation but rather to develop additional outcomes that complement existing programmes and will benefit many more people in society in the future.

- **Beyond Romantic Nationalism:** Common references in society on the importance of specific cultural values, a shared cultural identity and a joint cultural heritage can make it seem natural that a culturally defined “we” is considered to be inherently different from cultural “others”. That legacy of Romantic Nationalism motivates distinctions and exclusions which easily raise tensions between different cultural groups in any one society. Not coincidentally, conservative and populist ethno-nationalist groups, which keep pointing to the values of traditional heritage and to the challenges of high levels of immigration, are often particularly firmly committed to preserving the cultural heritage and benefit most from initiatives promoting it (Kisic 2020). Archaeology should be wary about being appropriated by only one faction of the political spectrum and seek out strategies that help to overcome this unintended one-sided association by promoting also alternative meanings of cultural heritage.

- **Anticipating the future:** The only thing that is certain about the future is that it will not be like today and that future generations will not think as we do. However, there has been little interest by archaeologists in creating clarity about which future(s) archaeology actually addresses (or intends to address) by the accumulation of knowledge about the past and the preservation of archaeological remains, and which future challenges it may contribute to solving (Högberg et al. 2017). Archaeologists cannot predict the future any better than, for example, planners or politicians but they do not have to be less competent or be less committed to the future either. Archaeologists could do a lot better in anticipating and working towards concrete benefits they will provide for specific future generations. In the long term, policies and strategies based on the assumption that things will roughly stay the same can only fail. For these main reasons, I suggest that archaeology ought to work in society in new ways, and indeed must do so in the interests of present and future generations. It must ask the following questions: Can archaeology provide additional benefits for society? Can archaeology overcome one-sided political associations? Can archaeology offer more palpable
benefits for specific future generations? Given the principal character of
the first two challenges and the difficulty in making significant headway
on any of them in the short term, I suggest that they may be addressed
by being linked up with the third challenge, i.e. by considering an optimi-
sation of possible outcomes of archaeology in the future.

This paper reviews some recent and current projects conducted at
Linnaeus University in Sweden. The paper’s principal objective is to show
that it is possible for archaeology to engage actively and constructively
with the future, which is a precondition for being able to optimise the
benefits of archaeology for future society (table 1). I am not claiming that
the archaeologists involved in the various projects discussed know more

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Table 1. Archaeology can and must engage actively and constructively with the future. A timeline of futures, engagements and goals, as discussed in the present paper.
about the future than anybody else, nor do I suggest that they are necessarily the best in adapting archaeology to the future. I do however insist that those who claim that archaeology cannot (or should not) address the anticipated needs of future societies are misinformed on what is possible and indeed on what is sensible. My overall aim is not to provide uncritical public relations for a number of our own projects but rather to make them known to a broader audience so as to invite others to engage in critical dialogue concerning the ambitions, approaches, methods and possible outcomes of our work.

1. GRASCA: capacity-building in contract archaeology

Since 2015, we have been operating the Graduate School in Contract Archaeology (GRASCA) at Linnaeus University. Nine archaeologists are currently conducting doctoral research, funded in large part by the five affiliated archaeological companies at which the students are employed, and by the Knowledge Foundation, a national funding body that supports the competitiveness of Swedish businesses and industry. The first cohort started in 2015, a second in 2019. The students are developing new competencies for contemporary archaeology, enhancing its capability for meaningful social engagement and increasing the competitiveness of their companies by expanding the market and reaching new customers with new products and services.

In the work of GRASCA lie the foundations of a commercially run archaeology that will allow the next generation of professionals to address additional needs, generate more value and benefit new groups of people in society. This model of archaeology can serve even outside Sweden as inspiration for a necessary development of the way in which archaeology fulfils its role in society as intended by national legislators. For example, a recent analysis of commercial archaeology in Spain identified a collapse of the current system and called into question the ability of Spanish commercial archaeology to establish practices of sustainable heritage management. Eva Parga Dans (2019, p. 121) concludes her study by asking how to “conceive of an archaeology that understands its practice as part of social life” and that is able to “connect with communities and social demands”. This is where GRASCA becomes directly relevant.

In one of the GRASCA projects, Clara Alfsdotter studies the disposal of the dead, both investigating the unburied human remains from a massacre dated to the Iron Age and human taphonomy in the present (see Alfsdotter 2018). The aim is to start forensic archaeology in Sweden and thus contribute to analysing human corpses in ongoing police inves-
tigations. In another project, Charina Knutson examines the cooperation between archaeologists and minority communities, exemplified by the indigenous Sámi in northern Sweden. Her research will help archaeologists and other specialists to collaborate more successfully with various groups in society, for the benefit of all.

The widely perceived gap in archaeology between ‘theory’ and ‘practice’ is largely imaginary once you get together and identify common goals and aspirations. Even in a competitive situation, good ideas for future development and capacity building are essential. Even new academic thinking needs to be implemented in practice to make a difference in the long term. Together we can reform what archaeology in contemporary and future society may be, possibly affecting both the way it is (and will be) practiced by archaeological companies and the way it is (and will be) taught by universities, in Sweden and maybe even elsewhere.

GRASCA shows that it is possible to create extensive long-term collaboration between academic archaeology and contract archaeology, jointly trying to shape important aspects of future archaeology and providing more benefits for future society.

2. Agenda 2030: contributing to global sustainable development

The year 2030 is a full decade away. In the “Agenda 2030” document, the United Nations agreed in 2015 on 17 ambitious Sustainable Development Goals to be reached by that year (fig. 1). These goals include, for example, the end of poverty in all its forms everywhere (Goal 1), the achievement of gender equality and women’s empowerment (Goal 5) and the general availability and sustainable management of water and sanitation (Goal 6). Archaeology should not be afraid of dealing with the big societal challenges of our time as they are expressed in those goals of Agenda 2030. It is more than a form of employment, which links it to Goal 8, promoting economic growth and decent work for all. Heritage is explicitly mentioned in direct relation to one of the goals. In the framework of making cities and human settlements more inclusive, safe, resilient and sustainable, the strengthening of efforts to protect and safeguard the world’s cultural and natural heritage is a recognised target (Goal 11, target 11.4).

Much more research will be needed to identify promising strategies for archaeology and cultural heritage management to be able to contribute to achieving the Sustainable Development Goals, not the least with regard to Goal 11. Another doctoral thesis in Archaeology at Linnaeus University deals with this important topic. Ulrika Söderström, who
is also part of GRASCA, investigates how futures are created in modern urban planning and development by using cultural heritage as a resource. The aim is to show how improved interaction between urban planning and cultural heritage management, specifically archaeology, can enhance social sustainability (Söderström 2018). Below I will briefly discuss another archaeological project, addressing the need for more sustainable consumption and production patterns and reducing risks for the environment and the health of future populations (Goal 12).

Contributing to a range among the Sustainable Development Goals will allow archaeology to provide additional benefits for future societies around the world, which will also help to overcome any one-sided political associations drawing on narrow symbolic meanings.

3. Visualizing a World Heritage site in 2050

The Agricultural Landscape of Southern Öland is a World Heritage site that, according to the 1972 UNESCO World Heritage Convention, is supposed to be transmitted to (unspecified) future generations (see below). To date, nobody has seriously asked what the future may look like for which this cultural landscape is preserved.
In a recent project, we took the year 2050 as our starting point and visualised five different visions of the future in visual scenarios realised by the illustrator and archaeologist Daniel Lindskog. His illustrations of Öland in 2050 are speculative visions, not scientific forecasts. In researching a series of different possible changes in the landscape, archaeologist Gustav Wollentz consulted biologists, meteorologists, botanists, strategists and local agriculturists. The project resulted in five pairs of images, consisting in each case of one illustration of the status quo today and one view of a specific visual scenario:

- **A landscape without people**: People have left Southern Öland, which is now dominated by large mammals, abandoned houses, car wrecks and wild natural spaces.

- **A dry landscape**: Southern Öland is some degrees warmer now, exhibiting more of a Mediterranean climate during the summer months. Tourism during this period has increased significantly while farmers need to adapt to a drier climate.

- **A wet landscape**: More extreme weather, with periods of persistent heavy rain, and specific measures in the landscape, have made the Möckelmossen lake bigger and lush with vegetation. The lake has now become the perfect destination for ornithologists and hunters.

- **A landscape without cows**: Southern Öland is no longer inhibited by cattle (cows) and local meat has been replaced by imports or a vegan diet. Farmers have adapted and are now cultivating fruit, vegetables and beans while at the same time the Great Alvar’s grazing pastures are overgrowing.

- **A landscape with more people** (fig. 2): The population of Southern Öland has increased dramatically and the area attracts many visitors from all over the world. New cultural heritage sites are created and old cultural heritage sites receive a new purpose.

None of these scenarios represents what the Agricultural Landscape of Southern Öland actually will look like in 2050. Instead, the images have a heuristic function, precisely because the five scenarios are rather different from each other. They make us ask new questions such as: what future do we anticipate for the agricultural landscape of Southern Öland? How may future generations live in and use the area, and what significance may the cultural landscape have for them? How can we maximise the benefits for future generations through our management of the World Heritage site today? What will be the relation between natural and cultural heritage on Öland in the future? There are no given answers to the questions, but these are important issues we need to address in order to prepare for a future that in significant aspects will differ from the present we know today.
Fig. 2. View of UNESCO World Heritage Site Agricultural Landscape of Southern Öland in 2050. Figure 2a: Scene today. Figure 2b: The same scene according to one scenario for 2050 entitled “A landscape with more people”: The population of Southern Öland has increased dramatically and the area attracts many visitors from all over the world. New cultural heritage sites are created and old cultural heritage sites develop a new purpose. Visualization realised by Daniel Lindskog and researched by Gustav Wollentz. Visible at the bottom is the artwork “Life no. 8” by Anne Hamnin Simonsson. For visualizations of alternative scenarios see http://oland2050.nu.
4. Time travel to Kalmar in 2068

In 2018, Kalmar County Museum was commissioned by Linnaeus University to develop and practice a time travelling role play into the future. They asked a school class (and since then some adult groups too) to travel 50 years ahead, to the year 2068. The museum had previously run many time travels to the past but never before to the future (Westergren 2017).

A scenario was written that described Kalmar 50 years ahead in terms of risen sea levels, increased flooding threatening existing buildings and, as a consequence, profound social challenges. The hypothetical situation involved cultural heritage at risk of being destroyed by water. Through the time travel experience, the pupils were invited to reflect on questions about change, preservation, cultural belonging, social cohesion and relevant ethical dilemmas (Norlin 2019). The threatened future heritage was not the primary subject of the role play, but it was used as a pedagogical tool through which participants were prompted to discuss issues of a more general relevance that are of great concern even today.

By drawing on a heritage-related challenge and re-purposing the time-travelling method that was originally derived for archaeological outreach, this exercise created in the participants a particular kind of future consciousness. Although for many of us adults the year 2068 seems very remote and we may not ourselves be alive anymore by then, one of the 8th graders expressed a sentiment that highlighted the potency of this approach: “I will still be alive when this is actually going to happen in 2068. So, it’s cool to imagine now what it will be like then — and perhaps be able to help solve those problems already now”.

Time travelling to the future is a way of learning to understand how the future may differ from the present and how we can act today to maximise benefits for both present and future societies.

Fig. 3. Time travel to the future in Östersund, Sweden. Poster prepared and used by Kalmar County Museum in 2020.
Since 2011, my colleague at Linnaeus University Anders Högberg and I have been collaborating with the nuclear waste industry in Sweden. We share with them an interest in how best to communicate information, in this case about a currently planned radioactive waste repository (fig. 4), to the people who will live near the location of the repository over the next 100,000 years or even longer. The aim of the communication of records, knowledge and memory across many generations is to prevent our human descendants inadvertently being harmed, e.g. in case they decide to drill down right into the repository. Therefore, steps have to be taken so that future generations will be able to make knowledgeable decisions based on long-term memory about the location, content and safety arrangements of these repositories of hazardous material (Schröder 2019).

5. Preserving memory across many generations

In terms of Agenda 2030, this kind of work aims to contribute to ensuring sustainable consumption and production patterns (Goal 12). Specifically, our project helps achieve the target of the environmentally sound management of chemicals and all wastes throughout their life cycle in order to minimize adverse impacts on human health and the environment. Our engagement with this question also contributes to fulfilling Goal 3 about ensuring healthy lives and promoting well-being for all by strengthening the capacity for early warning, risk reduction and management of national and global health risks.

Fig. 4. An archaeological site of the distant future: the planned repository of nuclear waste at Forsmark, Östhammar Municipality, Sweden (image: SKB/Lasse Modin).
Because of the large temporal distance and the strong socio-cultural dimension of human behaviour, the question is very complicated. Since the 1980s, a number of extensive projects and detailed studies on this topic have been conducted internationally. Some of them involved archaeologists and included reasoning based on archaeological expertise (e.g. Adams, Kaplan 1986, see fig. 5).

Intriguingly, there are many similarities between nuclear waste and archaeological heritage. In fact, there are so many of them that arguably nuclear waste is a very particular form of cultural heritage (Holtorf 2019):
- both nuclear waste and archaeological heritage are ambiguous and may be considered either as meaningless waste material from the past (best discarded) or as something valuable and powerful (best kept);
- just as archaeological heritage reminds us of our distant past, with the oldest remains taking us back millions of years to the first emergence of human beings, nuclear waste evokes distant futures, since some of the material will retain its radioactivity for more than a million years, thus considerably extending and even challenging our ordinary timeframes in daily life;
- nuclear waste may not make people proud or provoke much nostalgia but it is nonetheless an important part of the human legacy, precisely like other examples of ‘difficult heritage’ such as battlefields, concentration camps or archaeological sites associated with the Cold War;
- nuclear waste demands safe conservation to minimize future risks just as archaeological heritage demands safe conservation to maximize its future benefits.

This last point is particularly interesting in the present context. Is the effort to prevent future generations from being harmed by one kind of heritage more important than offering them benefit from another kind of heritage? What steps are we taking today to ensure that the heritage we preserve today for the future will be able to provide significant benefits when that future comes? In the nuclear waste sector, equivalent questions have attracted considerable attention, for decades. Archaeologists can benefit from the lessons learned during that work and themselves improve the way they anticipate and prepare for the needs of future generations (Högberg, Holtorf 2014).

Fig. 5. “Do not dig” - a marker intended to communicate a message to future generations in relation to a geological nuclear waste repository nearby (see Adams, Kaplan 1986) (photograph: C. Holtorf 2003).
6. World Heritage: preserving timeless value?

Archaeologists and other cultural heritage experts are committed to the protection of cultural heritage for future generations. This applies, for example, to the sites inscribed as UNESCO World Heritage, according to the 1972 World Heritage Convention which recognizes “the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage” (UNESCO 1972: Article 4). One of these sites is the Agricultural Landscape of Southern Öland, mentioned earlier, on the local World Heritage Council of which Linnaeus University is represented.

It is very unclear which future generations are evoked in statements such as the one cited, and how the relevant experts and civil servants can best plan in the interest of the future generations. For how many years do archaeologists actually want to preserve archaeological heritage, whether it is designated World Heritage or not? At present, they do not engage with this issue at all (Högberg et al. 2017). Instead, policies such as the World Heritage Convention assume a kind of eternal or rather timeless value of the inscribed sites. There is no provision for present values that may lose their current significance or for additional values that could create new forms of global significance in the future.

Given the long and often turbulent history of what we today call cultural heritage, nobody should assume that any sites we select today can possess timeless values which are likely to be appreciated and of benefit to people during a never-ending future. According to the 1972 Convention, the sites designated as UNESCO World Heritage are deemed to possess “outstanding universal value” (UNESCO 1972), but it is difficult to see how such assessments can be established and especially how they can be expected to last. Instead, we need to accept that the values, significance and uses of cultural heritage do not only vary in relation to where we are on Earth (as is widely recognised and often linked to the notion of cultural diversity) but also when we are on Earth (see also table 1 and figs. 2-5 above). All values and uses of heritage are dependent on socio-cultural contexts which are highly variable in space and time. That is why archaeologists need to get better at anticipating future benefits of the heritage they intend to preserve for the benefit of future generations.

Archaeologists are probably not well advised to worry too much about the value and uses of heritage in a future that lies 100,000 years ahead, which is the kind of future the engineers in the nuclear waste sector are planning for. It could however be very sensible to consider possible benefits circa 30-60 years ahead, i.e. more or less the time when children and grandchildren have reached the age their parents are now. The
question is, then, what UNESCO World Heritage sites could contribute to meeting the challenges of the next one or two future generations. Many of these challenges we can anticipate today.

7. Steps on the path ahead: post-corona archaeology

Nobody could predict the specific corona crisis that swept across the entire planet in 2020. But that does not mean society could not have been better prepared for it. Can we learn anything from the present crisis, which at the time of writing is still ongoing, for optimising the possible outcomes and benefits of archaeology in the future?

The risk of a new virus pandemic was well known in general terms. So, the most important thing to learn from the corona crisis is maybe to consider carefully which other significant challenges we can anticipate for the future. A second concern would be to deliberate what, if anything, archaeology may be able to provide to meet any of these challenges. In other words, what can archaeology contribute to the area known in international policy-making as “risk-preparedness”, including “disaster risk reduction” (e.g. Jigyasu 2015)?

Even though our societies and even our individual lives were affected a great deal and it seemed that the future might never be the same, the corona crisis has not really affected how we should look at many fundamental trends for the next 30-60 years. Technical progress concerning, for example, digital communication tools will persist or even accelerate, as will the global economy albeit perhaps in slightly modified form. Demographic trends as to population sizes in various world regions, people’s life expectancies and health, patterns of urbanisation and migration are all likely to continue. It goes without saying that climate change will hardly stop now either. Most (if not all) of the goals in Agenda 2030 will, even in the post-corona period, still stand as desirable aims to work for.

In addition, important questions with a very substantial cultural dimension are now coming to the fore. One of the most central questions we all have to address in one way or another as human beings is how we want to live together on this planet. Post-corona, as pre-corona, the challenges of future generations include questions of identity and belonging, well-being, interhuman relations, values and priorities, among others. These issues affect how we perceive who we are ourselves and who ‘the others’ are, what we expect and value in our lives, and not the least how we communicate with each other – and indeed about what. Any disciplines engaging with people and culture are relevant here in addressing such issues, and that includes archaeology.
In relation to the corona crisis, it is not sufficient for archaeologists to point out that humanity has struggled with many infectious diseases in the past, and eventually overcame them, or to suggest that the enormous growth of the *Homo sapiens* population on earth, coupled with urbanisation, wild animals co-existing in human habitations, and increased global mobility have made our species more vulnerable to the impact of epidemics and indeed pandemics (e.g. Demoule 2020).

Archaeologists are well acquainted with discussions about the history of archaeology and its strong historical links to National Romanticism, nationalism, colonialism, imperialism, racism, and indeed communism. So what should archaeologists make of the recent surge of national symbolism, when, for example, various kings and queens prime time are addressing “their people” in front of the national flag? What should they make of a long list of democratic governments around the world suspending many civil and human rights and full parliamentary control? Or of politicians in many countries talking about a need to increase national self-sufficiency, with some also making xenophobic or racist comments?

Seldom have the relations between present and future societies felt more relevant than during the months in 2020 when the corona crisis dominated our lives. There is a real prospect that the world of the next generation is one in which basic human rights are compromised more often, in which foreigners are met with suspicion rather than trust, in which increasingly local solutions are sought for global challenges and in which resilience is built through achieving self-reliance rather than extended solidarity. These are challenges for the future that archaeology may take on by developing strategies for sustainable global development that could help mitigating these trends.

8. Conclusion: towards an archaeology for the future

At Linnaeus University we work partly in the context of a UNESCO Chair on Heritage Futures. As we define it, heritage futures are concerned with the roles of heritage in managing the relations between present and future societies, e.g. through anticipation and planning. Our work is dedicated to developing professional strategies that can enhance how heritage shapes the future (see also Holtorf, Högberg forthcoming, Harrison *et al.* forthcoming). We ask questions such as: Which future do we preserve the heritage for? Which heritage will benefit future generations most? How can we build capacity in future thinking (or futures literacy) among heritage professionals worldwide?
All this is directly relevant to archaeology too. Over the two centuries or so of its existence, the discipline of archaeology has always been contributing to the wider cultural agenda of the society within which it was practiced. It did that while focussing on the past and with the express ambition of providing benefits for future generations. But exactly what kind of archaeology will offer palpable benefits to the generations of our children and grandchildren? How can we avoid archaeological heritage making some problems bigger rather than smaller or being appreciated by only some groups in society rather than offering value to all?

Archaeologists cannot predict the future better than any others. If we focus on the next 30-60 years, there are however (as mentioned earlier) a number of clear trends that are already emerging and which are likely to remain relevant during the coming decades. These include an increasing globalization in many areas of our lives: people are more and more in direct or indirect contact with each other and increasingly interdependent, increasing also the risk of global crises, for example in the economic and health sectors. Also, clear demographic tendencies are emerging: the world population will increase for several decades before stabilizing. Many of the additional people will live in Asia and will not be children, but adults and old people, many of whom are already born today. Urbanisation is increasing worldwide and in the foreseeable future the vast majority of people will live in big cities. It also seems that, for different reasons, migrations will also become more frequent. Among the most important technical developments that will characterise the life of the next generations are comprehensive digitization, which has already begun, and the broad application of artificial intelligence, which is also already emerging, both drawing on ever increasing computational power. Needless to say, climate change will also be an important element of the future, changing the natural conditions on earth.

We need to learn to understand what it means that a few decades ahead European societies will increasingly be formed by older people with varying cultural backgrounds, living in a warmer environment, surrounded by a more globalized and urbanized society and drawing on digital and automated technologies. All these parameters have strong cultural dimensions to which archaeology can directly relate. A lot of new research will be required to help us find out exactly what all this may mean for archaeological practice today, to what extent archaeology can leave behind the legacy of Romantic Nationalism and how public archaeology will be able to provide additional and broader benefits for societies in the future.
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