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# Against retention in situ

How to best preserve archaeology for 'future generations'?

Raimund Karl

**Abstract:** Archaeological heritage management has long been based on a preference for the principle of preservation of archaeology in situ. While this principle is sound in theory, in practice, we frequently only achieve mere retention in situ: the archaeology is left where it is, unexcavated and unrecorded, but is not actually protected against most of the real and present dangers it faces. The situation is made worse by the fact that many of our heritage management laws, policies, and practices have made the principle of 'leaving it unexcavated' a disciplinary dogma, especially so in Austria and Germany. Instead of realistically assessing the likely future fates of archaeology merely retained in situ, any kind of archaeological fieldwork, whether invasive or non-invasive, is treated as undesirable by the national and state heritage agencies, even if conducted to professional standards.

In this paper, I demonstrate that retention in situ does not lead to the best possible preservation of archaeology for future generations, but rather leads to near-total loss of most archaeology, especially archaeology in places unlikely to be threatened by development. I also demonstrate that the only real means of preserving archaeology as long as possible is not to retain in situ, but to excavate as much and as rapidly as possible of any archaeology which cannot actually be preserved in situ. By increasing the amount that is excavated, the likely gains in archaeological information saved from total loss is massive and would benefit the study of archaeology immensely.

It is thus argued in this paper that there is an urgent need for significant change in archaeological heritage management law, policy, and practice. Since we cannot increase the amount we excavate arbitrarily due to the limited resources available to us, better preservation by professional record can only be achieved by training as many members of the interested public in archaeological skills. Once they have received such training, anyone who wants to should be encouraged and given license to excavate any archaeology which can currently only be retained, but not actively preserved, in situ.

**Keywords:** archaeology, in situ preservation, heritage management, law, Austria, Germany

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The most important principle of current archaeological heritage management in much of Europe and beyond is the principle of retention of archaeology in situ. It is, according to disciplinary consensus, the preferable means to preserve the archaeological heritage. To put it in the terms of the Valetta Convention, it is retained '...to be studied by later generations' (Article 2 ii; CoE 1992). Yet, the preference for retention in situ is not just explicitly expressed in Article 4 ii of the Valetta Convention, but also seems to have become something of a dogma, at least for many archaeological heritage managers, and heritage jurists, in at least some parts of Europe.

## Law and policy on retention in situ in Austria and Germany

For instance, in Germany and Austria, many of the commentaries to the respective state (16 in Germany) or national (in Austria) heritage preservation laws interpret this principle as a general prohibition against any ‘unnecessary’ archaeological fieldwork. Fieldwork in this context is considered to be ‘unnecessary’ if it is not in response to an immediate threat of destruction of archaeology. Thus, ‘unnecessary’ fieldwork includes research excavations (e.g. Viebrock 2007, 241-242; Hönes 1995, 273; Strobl & Sieche 2009, 266; Davydov et al. 2016, 248), sometimes disparagingly referred to as ‘*vanity excavations*’<sup>1</sup>. The alleged need to retain archaeology ‘unchanged’ in situ is even used in many German states (all but Bavaria, Brandenburg, Berlin, and Nordrhein-Westfalia) and in Austria to justify quite restrictive legal requirements for official permits for conducting completely non-invasive archaeological fieldwork. These permit requirements even apply on sites where no archaeology is known to exist, and apply to e.g. purely visual inspection, magnetometry or GPR (e.g. BDA 2016, 11-16; Strobl & Sieche 2009, 263).

Despite the fact that the freedom of research is a constitutionally guaranteed civil liberty of every citizen in both Austria (Art. 17 *Staatsgrundgesetz* 1867) and Germany (Art. 5 (3) *Grundgesetz*) (Karl 2016a), heritage jurists argue that the need for retaining archaeology in situ overrides this fundamental civil right where archaeological fieldwork is concerned. To justify this, they frequently go to considerable lengths.

For instance, several German states (Berlin, Bremen, Mecklenburg-West Pomerania, Lower Saxony, and Schleswig-Holstein) rely for justification on articles in their respective constitutions which determine the ‘protection of culture’ as an aim of the state (Krischok 2016, 181-4). Yet, in some cases (e.g. Mecklenburg-West Pomerania and Schleswig-Holstein), these very articles not just explicitly determine the ‘*protection and promotion of culture*’ as an aim of the respective state. Rather, they also determine the ‘*protection and promotion of science*’ as an aim of the state, sometimes even in the very same sentence. In some cases, a clear emphasis is put in these articles on the ‘*promotion of culture and science*’ in title of the relevant Article (e.g. Art. 16 (1) *Landesverfassung Mecklenburg-Vorpommern*)<sup>2</sup>; with the state additionally protecting academic freedom in a separate article of its constitution (Art. 7 (1) *Landesverfassung Mecklenburg-Vorpommern*). Thus, a strong constitutional protection of the freedom of research can be undermined by reliance on a half-sentence in one of the provisions which create that very protection (Martin 2007, 164). Remarkably, Hamburg even has to rely entirely for justification on an unwritten constitutional principle, of Germany as a ‘*cultural nation*’<sup>3</sup>, implicitly underlying the German constitution. This principle, however, is primarily derived from the constitutional protection of artistic and academic freedom of Art. 5 (3) *Grundgesetz* (Krischok 2016, 134), the very freedom restricted by the permission requirement for archaeological fieldwork.

Some commentaries go as far as claiming that academic freedom is not unduly restricted since a lot of archaeological data would become available anyway by means of ‘rescue excavations’. An ‘*absolute prevention*’ of archaeological research, which would be ‘*constitutionally questionable*’,<sup>4</sup> thus would

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<sup>1</sup> ‘*Lustgrabungen*’ (Viebrock 2007, 241-242; Hönes 1995, 273).

<sup>2</sup> ‘*Artikel 16 (Förderung von Kultur und Wissenschaft). (1) Land, Gemeinden und Kreise schützen und fördern Kultur, Sport, Kunst und Wissenschaft. Dabei werden die besonderen Belange der beiden Landesteile Mecklenburg und Vorpommern berücksichtigt.*’ (Art. 16 (1) *Landesverfassung Mecklenburg-Vorpommern*).

<sup>3</sup> ‘*Kulturstaatsprinzip*’ (Krischok 2016, 133-137).

<sup>4</sup> The phrasing in the German original, that an ‘*absoluter Forschungstopp*’ would be ‘*verfassungsrechtlich bedenklich*’ (Strobl & Sieche 2009, 266) is remarkable. Indeed, an ‘*absolute prevention*’ of all archaeological research by means of heritage legislation would not just be ‘*constitutionally questionable*’, but rather would be obviously, blatantly and grossly unconstitutional, full stop: it would directly, massively and excessively violate a

not be caused by legal prohibitions against archaeological fieldwork which give precedence to retention of archaeology in situ (Strobl & Sieche 2009, 266).

Despite this extremely weak constitutional basis for restricting the freedom of archaeological research at all, several commentaries explicitly raise even much more extreme claims. Again based on the argument that for optimally preserving archaeological heritage, it must be retained in situ, commentaries derive a privilege for the state (exerted through its heritage agencies) of conducting archaeological fieldwork (e.g. Hönes 1995, 273; Viebrock 2007, 238-239; Strobl & Sieche 2009, 265; also cf. Davydov et al. 2016, 247).

They even argue that the legal requirement of the state permitting – often any, even entirely non-invasive – archaeological fieldwork is not just a ‘preventative’, but a ‘repressive’ prohibition (Krischok 2016, 128-9). In German law, a ‘preventative’ prohibition aims to scrutinize an otherwise permissible activity for potentially illegal misconduct. A ‘repressive’ prohibition, on the other hand, aims to generally prohibit the proscribed activity and to only allow it in exceptional circumstances (Pieroth et al. 2015, 75). For any activity to be made subject to such a prohibition, the activity proscribed must be damaging to society or socially undesirable (Krischok 2016, 129). Thus, by arguing that any archaeological fieldwork, even if conducted fully professionally, using entirely non-invasive methods, on sites where no archaeology is known to exist, is subject to a ‘restrictive’ prohibition, the commentaries effectively proclaim that any archaeological fieldwork, unless conducted by the state or its heritage agencies, is a socially undesirable or damaging activity, because it threatens the retention of archaeological heritage in situ and thus its preservation for ‘the future’. The state heritage agencies, on the other hand, are normally exempt from any requirement of having their archaeological field research permitted (e.g. Davydov et al. 2016, 245; Bazil et al. 2015, 64; Strobl & Sieche 2009, 269), even where such an exemption is not explicitly mentioned in the relevant heritage protection law itself, but only in the commentary (e.g. Hönes 1995, 273).

This seems to be taking the principle of retaining archaeology in situ remarkably far: it seems as if these state heritage agencies and their jurists believe that archaeology has to be retained in situ at almost any cost, even at the cost of not professionally researching it with entirely non-invasive means. Apparently, they believe that archaeology must be retained in situ, unlooked at and unstudied, even on sites where there isn’t yet any actual or constructive knowledge, or even only probable cause to suspect that archaeology might exist, let alone any archaeology potentially existing there imaginably being threatened by the type of fieldwork to be conducted. Except, of course, when the state itself, or rather the public officials employed in its heritage agencies, want to do it, who are as free as the birds where their archaeological field research is concerned. Some animals, apparently, are more equal than others in German heritage management.

## Preservation and retention in situ: a significant difference

What makes this particularly questionable is that, as you may have noticed, I have not been using the words ‘preservation in situ’, as it is usually done in archaeology, but rather have been talking about ‘retention in situ’. This is because, in the following pages, I will not argue against preservation in situ, but against mere retention in situ, which is not one and the same thing; despite at least some archaeological heritage managers, and apparently many heritage jurists, appearing to think so.

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fundamental, unconditional civil liberty enshrined in the German constitution for no justifiable reason whatsoever. Calling this ‘questionable’ is a euphemism of epic dimensions, which can only be explained as an attempt by the authors of the commentary to downplay the likely unconstitutionality of their legal opinion that the retention of archaeology in situ automatically takes precedence over researching it.

While even preservation in situ has not gone entirely unchallenged (see e.g. Willems 2012), in principle, it is a sound idea. After all, if a site is actually preserved in situ, it will be available to future research (at least mostly) unchanged, and thus a (re)source which might be examined in the future with potentially better methods than available today (e.g. Brunecker 2008, 16). While that still is not necessarily preferable to opening it up to research today, since there may indeed be pressing current research questions which can only be answered if a site, which could otherwise be preserved in situ, is (at least partially) excavated, it at least creates a sound rationale for leaving any such site unexcavated (though certainly not un-researched by non-invasive methods) if no such research needs exist. This has, in fact, long been recognised by archaeology, and is reflected, for instance in Principle 2 Rules 2.2 and 2.3 of the ClfA's Code of Conduct (ClfA 2014, 5-6). It is also already being reflected by changes to planning policies in some countries, e.g. in England, where a preference for preservation in situ was explicitly stated in the 1990ies in Planning Policy Guidance 16<sup>5</sup>, but no longer features in the National Planning Policy Framework<sup>6</sup> and associated guidance (e.g. Historic England 2016), where it is only presented as one of several options.

But preservation in situ is not the same as retention in situ: it is a perfectly well-known and established fact that archaeology left in situ in the ground is always necessarily subject to processes of degradation (e.g. Huisman 2009), even in the most benign conditions. It also almost always is subject to processes of erosion (e.g. Trow et al. 2010), unless there are rather exceptional circumstances which prevent this (e.g. the Archaeology is located 200 meters below the modern surface in a prehistoric salt-mine like that in Hallstatt in Upper Austria). These facts are indeed also well-known to Austrian and German archaeological heritage managers and jurists (e.g. Martin & Krautzberger 2010, 851-852; Kriesch et al. 1997, 27; Planck 1991, 22; Bazil et al. 2015, 16). Preservation in situ thus requires, at the very least, active monitoring of the condition an archaeological site is in, and its rate of deterioration and erosion. This is required to be able to decide when the unavoidable attrition of the archaeology in situ would cause irreparable damage to it and thus its preservation by record – that is, its excavation – becomes necessary. It also may require proactive measures to manage or prevent not just potential threats to it by human action, like ploughing or other forms of normal human land use; but also to counter changes to e.g. soil chemistry or the water table which might be detrimental to any archaeology still there, to extend the time it remains reasonably well-preserved in situ.

This is very different to mere retention in situ, that is, just leaving the site alone and preventing by law some, but by no means all, human actions which might acutely threaten it with immediate destruction. If archaeology is merely retained in situ, it will certainly degrade, and almost certainly be eroded, at an unknown speed or rate. Thus, unless it happens to get excavated by mere chance before, it will eventually be destroyed. Not only will it be destroyed; but its destruction will go mostly, if not entirely, unnoticed and will not be recorded properly with archaeological methods. Thus, from an archaeological perspective, any such archaeology destroyed, unrecorded, in situ, is a total loss.

## Practice in Austria and Germany

The above-mentioned commentaries claim that the permission requirements for archaeological field research in Austrian (Bazil et al. 2015, 61-65) and German heritage protection laws (see the summary in Krischok 2016, 188-192) aim at preserving archaeology in situ (e.g. Hönes 1995, 273; Viebrock 2007,

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<sup>5</sup> <http://webarchive.nationalarchives.gov.uk/20120919132719/http://www.communities.gov.uk/documents/planningandbuilding/pdf/156777.pdf> [23/2/2017], page 6 no. 13.

<sup>6</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/6077/2116950.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf) [23/2/2017].

239; Strobl & Sieche 2009, 265; Martin & Krautzberger 2010, 852, 887-889). However, in practice, what they achieve, at best, is retention in situ.

For instance, in Austria, there currently are c. 1,100 scheduled archaeological monuments,<sup>7</sup> and c. 52,000 archaeological sites known to the Austrian National Heritage Agency, the *Bundesdenkmalamt* (BDA).<sup>8</sup> These figures are already surprisingly low if one compares them with e.g. the c. 4,000 scheduled monuments (Schofield et al. 2011, 92) and over 100,000 known archaeological sites in Wales,<sup>9</sup> which has about one quarter the size of Austria (when calculated as numbers of sites per square kilometre, Austria has a density of known archaeological sites of 0.62, while Wales has one of 4.81; that is, a density nearly 8 times higher).<sup>10</sup>

Yet, despite this, hardly any of even only the c. 1,100 scheduled archaeological monuments in Austria are regularly being monitored by the BDA, let alone any of the other c. 51,000 unscheduled sites known to the BDA. And that is hardly surprising: the BDA currently employs c. 13 full-time professional archaeologists for all of Austria, who are mainly occupied with bureaucratic tasks. In 2014, for instance, they were writing expert statements for various planning processes, including EIAs (2,139 cases), issuing archaeological fieldwork permits (537 cases), conducting 'rescue excavations' (88 cases), and preparing and publishing major publications (6; including the 7,246 pages long volume 53 of the *Fundberichte aus Österreich*, its annual 'finds reports'; for the caseload figures given, see Hebert & Hofer 2014, 13). It is no wonder that with such low resources, no more than a few handful of scheduled archaeological monuments are visually inspected by professional archaeologists of the BDA ever so often, let alone regularly monitored.

It would be a mistake to believe that the situation in Germany would be significantly different. Nobody, for instance, could seriously believe that the Bavarian *Landesamt für Denkmalpflege* (BLfD), with its c. 40 state and county archaeologists (BLfD 2013, 63; cf. Krausse & Nübold 2008, 42) could regularly monitor all of the areas highlighted as archaeological sites in the online Bavarian Monument Atlas,<sup>11</sup> let alone actively preserve them in situ. The archaeology staff available in Bavaria, even if these had no other work on their plates, would hardly get around to visually inspect every site once every 5 years, let alone properly monitor their rate of attrition.

Thus, except in a very limited number of archaeological sites, there is no preservation in situ to speak of; but in the vast majority of all cases, only retention. And as yet, we have only considered archaeological sites which are already *known* to the archaeological authorities. Yet, it has to be assumed that not nearly all existing archaeological sites are known to the authorities, but that at least some percentage of them, and perhaps even the vast majority, is as yet completely unknown.

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<sup>7</sup> Pers. Comm. B. Hebert, BDA.

<sup>8</sup> According to the BDA, there currently are c. 52,000 entries in its site register (pers. comm. C. Mayer, BDA; cf. Farka 2008, 10).

<sup>9</sup> <http://www.cofiadurcahymru.org.uk/arch/> [24/2/2017].

<sup>10</sup> The territory of the Republic of Austria is an area 83,879 km<sup>2</sup> in size, while Wales covers an area of 20,761 km<sup>2</sup>. Both countries also have quite comparable relief, with c. 60% of both being rather inaccessible mountainous terrain which is comparably unsuitable to human habitation and has, since presumably the Late Bronze Age, mostly been used as upland pasture or been heavily forested, with the remaining c. 40% relatively densely populated, fertile lowlands. Their (pre-) history of human habitation also seems quite comparable, even though it starts several millennia earlier in Austria. Thus, one would normally assume the density of sites in Austria would be at least as high, if not considerably higher, than in Wales; rather than the opposite.

<sup>11</sup> 'Bayerischer Denkmaltatlas', see <http://www.blfd.bayern.de/denkmaleregister/denkmaliste/bayernviewer/> [24/2/2017].



To arrive at the latter conclusion, one just has to recall the density of c. 0.62 archaeological sites per square kilometre currently known to e.g. the Austrian BDA, and compare these to that of 4.81 for Wales: it seems exceedingly unlikely that, in fact, the density of archaeological sites in Wales is actually about 8 times as high as that in Austria. Rather, one has to assume that the general knowledge about existing sites in Wales is simply about 8 times higher than in Austria. And considering that systematic archaeological land survey has been conducted by the RCAHMS in Wales since 1908,<sup>12</sup> while no such effort whatsoever has been undertaken in Austria, that would indeed seem the much more sensible explanation. Yet even in Wales, it is absolutely certain that we do not know all archaeological sites which still exist, and at that, quite possibly less than half. Thus, one has to presume that e.g. in Austria, less than 1 of every 10 archaeological sites still in existence is known to the BDA, if not much less.

Unknown sites, however, cannot be preserved in situ: it is utterly impossible to even only monitor, let alone actively preserve, archaeology one doesn't even know exists. They can, at the very most, only be retained in situ, that is, left in the ground to deteriorate.

Many archaeologists might now argue that, even so, retaining archaeology in situ is still preferable, since a site is certainly being damaged or destroyed when excavated. In fact, the idea that archaeological excavation equals the destruction of archaeology is so ingrained in archaeological thinking that it even has entered into our laws and the legal commentaries (e.g. Strobl & Sieche 2009, 264-265). To quote verbatim from the Austrian *Denkmalschutzgesetz*: '*... due to the changes or destruction necessarily caused by it, any excavation needs to be permitted by the National Heritage Agency ...*' (§ 11 (5) *Denkmalschutzgesetz*, translation: RK; Bazil et al. 2015, 62).<sup>13</sup>

It seems as if many archaeological heritage managers and jurists assume that the damage indubitably caused by an excavation is necessarily and invariably much greater than the information about it preserved by record, even if an excavation is conducted professionally. In some cases, one even finds the thought explicitly expressed that archaeological heritage management is not about excavating as much as possible, as soon as possible, but rather that the '*... preservation of and care for the irreplaceable ...*' takes precedence before excavation, not least because '*... it is most probable that the excavation methods of the future will be less destructive than those of today*' (Brunecker 2008, 16; translation: RK).<sup>14</sup>

## Timescales of archaeological heritage management

The belief connecting such statements, the commentaries, the laws and heritage agency policies is that, if archaeology is retained in situ by preventing its imminent destruction today, it will still be here tomorrow. Thus, it will have been preserved for 'the future'. Yet, by restricting considerations to such short timescales, the damage caused to archaeology in situ by its constant, but normally quite slow, attrition due to erosion and degradation seems negligible. Preservation and retention in situ are thus perceived as being one and the same: as long as events are prevented which cause the immediate destruction of archaeology in situ, heritage management has achieved its aim of preserving it.

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<sup>12</sup> <https://rcahms.gov.uk/about-us/> [24/2/2017].

<sup>13</sup> E.g. *... bedarf die Grabung wegen der damit zwangsläufig verbundenen Veränderungen oder Zerstörungen auf jeden Fall auch der Bewilligung des Bundesdenkmalamtes ...*' (§ 11 (5) *Denkmalschutzgesetz*, Bazil et al. 2015, 62).

<sup>14</sup> *Im Denkmalschutz geht es keineswegs darum, so viel und so schnell auszugraben als möglich. ... Der Respekt vor dem Überkommenen, die Erhaltung und Pflege des Unersetzlichen genießen Vorrang. Es ist nur zu wahrscheinlich, dass die Grabungsmethoden der Zukunft schonender sein werden als heute.*' (Brunecker 2008, 16).

This, of course, makes preventing ‘vanity’ excavations and other archaeological fieldwork appear to be essential: after all, there are so many other acute threats to archaeology in situ that the state archaeological heritage services simply cannot keep up. Especially, there is much too much development going on; and development is (seen as) the biggest ‘unpreventable’ threat to the preservation of archaeology in situ.

In Austria, for instance, greenfield development has been progressing at a near-constant rate of c. 20 hectares per day since at least roughly 1970 and is currently using up c. 0.5% of all available agriculturally useful land per annum. In Germany, that rate is only 0.25%, which is slightly, but not much better (Jeschke 2016, 103-104). In Austria, this amounts to c. 73 km<sup>2</sup> of annual greenfield development. There aren’t even nearly enough archaeologists in all of Austria to properly preserve all the archaeology destroyed by this by record, let alone enough state archaeologists. Thus, the excavation of any archaeology not threatened by imminent destruction clearly appears to be of much lower priority than ‘rescuing’ what is currently being destroyed. Even entirely non-invasive ‘unnecessary’ archaeological fieldwork must be prevented as much as possible, not only because it uses up resources which could be invested into ‘rescue archaeology’. Rather, it also has to be prevented because previously unknown sites might be discovered and thus become known to metal detectorists, perceived as the other main threat to archaeology in situ. Thus, preventing archaeological discovery is seen as a prevention of looting by proxy.

Compared to the immediate threats of development and looting, the slowly accumulating damage to archaeology in situ by degradation and erosion not just seems insignificant, but also and particularly a much less urgent problem. After all, archaeology retained in situ is unlikely to degrade or erode much over the next year, or indeed the next decade or two. Thus, compared to threats of immediate destruction, the priority assigned to dealing with this cumulative damage always is, and will remain, rather low: if one does not preserve imminently threatened archaeology by record today, it will be gone tomorrow. If one doesn’t preserve slowly deteriorating archaeology by record today, it will in all likelihood still be there tomorrow. Thus, one necessarily must deal with the imminent threats today, and retain whatever else that remains until tomorrow.

But, as we are all painfully aware, tomorrow never comes.

### What future for the past?

As was already remarked upon by Graham Fairclough some 25 years ago (quoted in Holtorf & Högberg 2015, 509), and more recently reiterated by Cornelius Holtorf and Anders Högberg (2015, 519-521), for a field as obsessed as (archaeological) heritage management with ‘the future’, remarkably little thought seems to have been invested by almost anyone in this field into what ‘the future’ we aim to preserve the archaeology for actually is, or indeed what fate it is likely to hold for the archaeological heritage. As discussed above, much of archaeological heritage protection law, legal commentary, and disciplinary thinking about the retention of archaeology in situ seems to be concerned exclusively with the here and now, while not even properly considering tomorrow, let alone any more distant likely future. Preventing imminent destruction by prohibiting some human actions, and mitigating the consequences of ‘unavoidable’ destruction in situ by ‘rescuing’ archaeology by preservation by record, ensures that what was there yesterday will be retained ‘as much as possible’ today, but nothing more. It does not concern itself with the future of archaeology, just its present.

This becomes most obvious if one considers the increasing archiving problems in Austrian and German archaeology (see e.g. Karl 2015), which are quite representative of a trend also observable in other (European) countries. For instance, the new central archaeological storage facility of the Austrian BDA, which was officially opened on November 14, 2012, was already filled to capacity in 2011 (Karl 2015,



26). The then only, and since retired, archaeological conservator of the BDA remarked in 2011 already that during a recent revision of that archive, *'It became apparent that already restored iron objects had partly been severely damaged'* (Marius 2011, 32; translation: RK). A survey conducted in 2014 by the BDA regarding storage arrangements for archaeological finds excavated in 2012 established that just c. 5% had been deposited with the BDA itself, and c. 36% had been deposited in (public) museums or collections. A whopping c. 52% remained in temporary storage with the archaeological contractors which had excavated them, c. 7% remained with landowners or developers, and c. 1% was kept by registered charities (Hinterwallner 2014). Yet, little thought, if any, seems to be given by the BDA or anyone else to selection strategies, whether regarding which imminently threatened sites should be 'rescued' by archaeological excavations at all, or which finds should be selected for 'permanent' archiving. The future, even of the archaeology which is 'rescued' before being destroyed in situ, is not considered at all, despite the fact that there even is a German translation of the guidelines for archaeological archiving developed by the ARCHES project (Perrin et al. 2014; see specifically on selection strategies p. 25).

Even less effort is invested in considering the future of the archaeology which is retained in situ: it is just left there, to either survive whatever threats the world it inhabits throws at it, or to be destroyed by them, unnoticed, and, archaeologically most importantly, entirely unrecorded. But if this is the case for the vast majority of all known, and all unknown archaeological sites, one has to wonder what the purpose is of restrictive prohibitions against archaeological fieldwork is? If the overwhelming majority of the archaeology is just left out there, to survive or be destroyed on its own, why stop anyone, and especially even professional archaeologists, to dig it up as they see fit?

Admittedly, one can always hope that a site that is left on its own will survive for many years, perhaps even centuries to come. But it is such longer timescales that are the only relevant ones in archaeological heritage management. After all, it helps little if a site is preserved until tomorrow, or in a year's time, if it is then destroyed unrecorded in situ.

Hoping for the best, but doing nothing to prevent the worst, is not a sensible heritage management strategy, whether for the archaeology or anything else. To hope is all fine and well. But where the management of a non-renewable resource is concerned, one at least has to consider how likely it is that one's dreams of a better future will come true. And how likely is it, actually, that by just retaining archaeology in situ, it will indeed survive *'... to be studied by later generations'* (Article 2 ii; CoE 1992) of archaeologists?

### [Estimated average rate of attrition of archaeology retained in situ](#)

Naturally, it is impossible to determine the specific rate of attrition of archaeology on sites not regularly monitored, and even more so on sites still completely unknown. Thus, it cannot be predicted when any individual site or archaeological object still in the ground will have degraded or eroded so badly that significant archaeological information has been lost, which could still have been preserved by record if only we had excavated it any earlier. Nor can it be predicted when it will have been damaged so much that, in effect, it has been totally lost, and thus cannot be preserved by any means or methods, whether the ones available to us, or the (again: hopefully) much better ones of the future.

But the fact that no specific predictions are possible about the likely future fate of any particular archaeological site or object does not mean that no general predictions about the likely future fate of any old archaeology still in situ cannot be made either. Of course, any such general predictions are meaningless where the likely future fate of any particular individual archaeological site or object is concerned. But they are very relevant where the answer to the question of what means and methods are best suited to preserve as much information as possible, for as long as possible, about the

archaeological heritage in its totality is concerned. After all, the archaeological heritage, in its totality, is nothing but the sum of any archaeology which still exists in or ex situ. Thus, it is not the specific rate of attrition of any particular archaeological site or object that matters. If our aim is to preserve as much of the currently existing archaeological heritage as long as possible, only that general rate matters, which at least can be estimated reasonably accurately.

So how to reasonably estimate that general rate of attrition? Any such estimate can, of course, not be calculated directly. After all, for the vast majority of the archaeology still left in situ we don't know the specific rate of attrition, and thus cannot just calculate a general rate by averaging all known specific rates of attrition. Also, expressing numerically those specific rates of attrition we do know would be quite difficult, although there have been attempts to do so (see e.g. Holyoak 2010). As such, until better methods for calculating and numerically expressing specific rates of attrition have been developed, the best means to estimate a general rate of attrition is by proxy, by looking at the percentage of sites which are known to have existed at some time in the past, but have since been deemed to have been destroyed in situ.

For instance, recent work by Murray and Michael Cook (unpubl.) on the attrition of cropmark sites in North-East Scotland have produced rather staggering results. In contrast to previously published results from other parts of Scotland that subsurface features survive despite evidence for plough attrition (e.g. Dunwell & Ralston 2008, chapter 5), Cook and Cook (unpubl.) found evidence of total loss of subsurface features in four of the five sites they examined, and near total or total loss in the fifth. Yet, all of those sites had been visible on earlier aerial photographs and been identified by RCAHMS, one only in an image from 1940, but the others as late as in the late 1970ies or even 1980ies. One, indeed, had already been subject to invasive evaluation in 1980 and had back then been identified as a ditched enclosure, none of which seems to have survived until its re-evaluation in 2008 (Cook & Cook unpubl.). Of course, the sample examined by Cook and Cook is very small and may not be overly meaningful, even though it does indicate that, at least in some regions, the general rate of attrition, at least of shallower features, may be as high as 80-100% over as little as the last c. 40 years.

A better proxy may be provided by research carried out in 1985 by the German state archaeologists on the overall loss of archaeological monuments in the state of Baden-Württemberg already known in 1830, that is, a sizeable sample, observed over a period of 155 years. Of course, in 1830, pretty much only such archaeological sites were known which still had visible upstanding remains, which may erode more heavily than subsurface features. Given that upstanding features are also more likely to get into the way of land use, there is also quite a distinct chance that more of these have been ploughed out or otherwise intentionally removed than archaeology that is invisible because no upstanding features are preserved. This somewhat biases this sample. However, since upstanding remains are also easier to protect than sites which lie, completely unknown, somewhere beneath the surface, this bias may well be in favour of longer-term survival than it would be for buried remains. Thus, the percentage of 95% loss of archaeological remains observed over the period of those 155 years in Baden-Württemberg (Brunecker 2008, 16) can serve as a reasonable first approximation for the general rate of attrition we are looking for, at least until better data becomes available.

For the following calculations, I will be using the general rate of attrition deducible from the data from Baden-Württemberg, and will assume all else being equal; that is, a constant general rate of attrition, not just for the 155 years from 1830-1985, but also the foreseeable future. This assumption, I have to admit, is almost certainly false: farming and forestry have become thoroughly industrialised only since the end of World War 2, which has certainly significantly, if not even massively, increased the general rate of attrition of archaeology in situ. And that greenfield development has massively increased in the last decades is equally beyond doubt, and proven by the figures already referenced above (Jeschke

2016, 103-104). This, however, matters little for my following calculations: if the general rate of attrition has indeed significantly increased over the last decades, this makes my estimate for the rate at which archaeology retained in situ is lost a rather conservative one. Since I am thus erring in favour of retention in situ, rather than the opposite, my argument against in situ retention is strengthened, rather than weakened, by this error.

If one makes these assumptions and works from a general rate of attrition of c. 95% over a period of 155 years, one arrives at an annual general rate of attrition of c. 2%<sup>15</sup> of all archaeology still present in situ at the start of each year. This, then, allows to generate a projection (or, if you prefer, a prediction) as to what the likely fate of any archaeology still present in situ will be in the short (say, the next c. 25 years), the medium (until in c. 100 years), and the long term (from c. 100 years into the more distant future). Anything still present in situ at the moment is the baseline we work from, i.e. 100%. Whatever is still there now, from now on will degrade and erode.

### Estimated average probability of professional preservation of archaeology by record

In a similar way, one can also estimate the general probability of archaeology being preserved by record by means of professional archaeological excavation. Under the current fieldwork permission system in Austria and Germany, this is virtually the same as 'rescue excavations'. For calculating a rough estimate of this, I will use the figures for Austria for the past few years, since the BDA kindly publishes these in their annual finds reports.

As already mentioned above, the current number of known archaeological sites in Austria is c. 52,000, though most likely, there are at least 10 times as many sites that are still in existence; that is, an estimated half a million. Over the last decade, while the number of excavations per annum has considerably increased, there have certainly been less than c. 500 excavations in any given year (e.g. cf. Hebert & Hofer 2009, 11 Abb. 2; Hebert & Hofer 2014, 13 Abb. 2). Only few of these actually lead to complete excavation, and many only excavate small percentages, of the sites targeted. Taking into account both the likely number of actually existing sites and the fact that most excavations do not lead to the complete excavation of the sites targeted, one can estimate the annual rate of preservation by record. For Austria, this rate of preservation by record would seem to be somewhere, and probably considerably, below 0.1% of the archaeology still present in situ at the start of each year. Again, this rate is a very conservative assumption, which is very much erring in favour of retention in situ, rather than the opposite.

This can also be projected into the future, again assuming all else being equal, that is, no change in this rate for the foreseeable future. Assuming no change in the rate of preservation by record in the future seems sensible, too: while, of course, the amount of the archaeology currently still present in situ will decline due to the rate of attrition leading to the destruction of more and more of it; new archaeology, that is, the archaeology of our and future times will be created, and become an object of interest to future archaeologists, too. Thus, our successors will have to dedicate an increasing amount of their resources to preserving by record the archaeology of the 21<sup>st</sup>, the 22<sup>nd</sup>, etc. century. Thus, as the amount of 'older' archaeology still present in situ declines, so will the amount of excavations that examine and preserve them by record. While it is unlikely that this will, in practice,

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<sup>15</sup> More precisely, if one assumes an annual loss of 1.925% of all archaeology still present in situ at the start of every year, one arrives, over a period of 155 years, at an overall loss of 94.99% of the archaeology that was present at the start of the 155-year period. Thus, an annual rate of 1.93% has been used as the unmodified general rate of attrition in all the following calculations. For calculations where this rate has been modified, the numerical value given in the main text has been added to this rate, thus giving the modified general rate of attrition.

lead to the rate of preservation by record remaining truly constant, it is currently unpredictable as to how that rate will change. It may well fluctuate considerably due to either disciplinary fashions and/or the development of new archaeological heritage management strategies that might lead to a greater or indeed lesser focus on the more distant past from the perspective of future archaeologists. Thus, a constant rate seems the most appropriate assumption for any projection at this time.

#### Future projections: continued preference for retention in situ

The estimated figures can now be used to make projections about the likely fate of archaeology still remaining in situ (fig. 1). Figure 1 demonstrates quite painfully what the likely outcome for most archaeology still in situ is, if the rates of attrition and preservation by record estimated above are projected 200 years into the future. Even in the short term, the loss is already dramatic: after a mere 25 years, only slightly over 60% of the archaeology still in the ground today will still be there, with only c. 2% of it having been (partially) preserved by record. After 100 years, slightly less than 15% of the archaeology currently still in situ remains, but only c. 4.5% of it have been (partially) preserved by record. After 200 years, that is, as long again into the long term, hardly 2% of all the archaeology still in situ today remains there, with only c. 5.1% of it having been preserved (at least partially) by record.

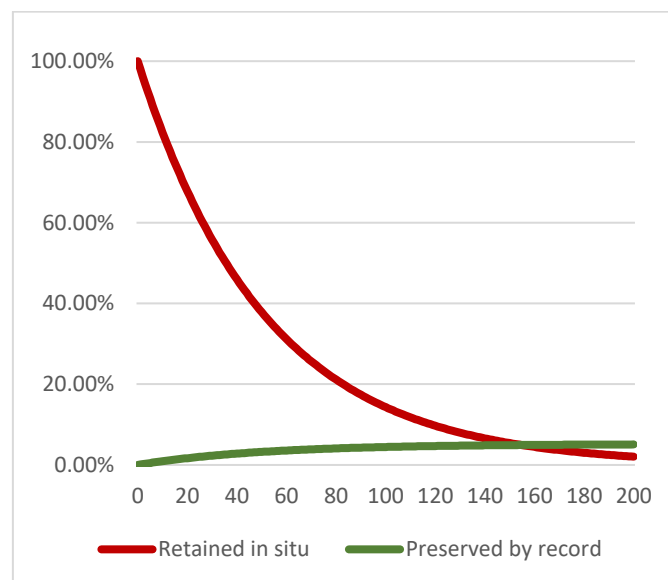


Fig. 1: Archaeology retained in situ, and at least partially preserved by record, projected over the next 200 years; assuming unchanged continuous rates of attrition and excavation calculated from past data.

Of the archaeology currently still existing in situ, but merely passively retained, nearly 93% will have been completely destroyed, unnoticed and – inconveniently for *'later generations'* (Article 2 ii; CoE 1992) of archaeologists who might wish to study them – completely unrecorded 200 years from now. However much better the methods of our then successors may be: even they will struggle to get any meaningful results from data which simply isn't there to be examined any more, neither in situ, nor as a record.

Even worse, much of the attrition that is likely to damage retained archaeology is likely to be front-loaded: since the damage will mostly affect archaeological sites from top to bottom, it will at first mostly be shallow features which will be lost, while deeper features will remain in situ for much longer. Yet, on most sites, at least outside major historic (which is most often the same as modern) conurbations, not only are shallow features much more common than deeper ones, but also often are what provides deeper features with their archaeologically meaningful contexts. A (formerly) 10 meter-deep well, which supplied a settlement with water, may well survive for several thousands of years

even if just retained in situ. However, once the foundations of any houses, the roads and open places, the postholes of fences, the refuse pits and even the cellars have gone, the surviving well alone will tell us very little, and certainly much less than the whole site could have told us and later generations of archaeologists if excavated and recorded with our current methods. Thus, the further we progress into the future, the less likely will any archaeology that survives in situ be able to meaningfully tell us much about the past. To put it rather bluntly: most of what we haven't recorded in the short, and virtually all that we didn't record in the medium term, is unlikely to be of much use to our distant disciplinary successors, however improved their methods might be.

### Changed future projections: digging like there is no tomorrow

So let us now change some of our assumptions and create a set of modified projections. We cannot reasonably assume that we will be able to significantly reduce the general rate of attrition as long as most archaeology is just retained in situ. What we could change, however, is the current policy of archaeological heritage management in Austria and Germany of excavating archaeology as little, and as late, as possible. We could instead go into full reverse overdrive, and excavate as much, as soon, as imaginably possible. Let us say for the sake of argument that we could increase the number of excavations we conduct by a factor of 10. What would that mean for the future of the archaeology still resting in the ground today?

If we were to increase how much we excavate by a factor of 10, that changes the basis for our projections in two significant ways. First of all, the rate of (at least partial) preservation of archaeology by record increases from the current c. 0.1% of all archaeology still present at the start of each year to c. 1.0% of it. Secondly and correspondingly, the (now modified) annual rate of attrition increases by c. 0.9%, from its current annual rate of c. 1.93% of all archaeology still present in situ at the start of each year, to c. 2.83%. After all, the unmodified annual rate of attrition includes the current annual rate of c. 0.1% preservation by record by archaeological excavations, since they also destroy archaeology in situ. And of course, every excavation we carry out additionally in the future will equally increase the modified annual rate of attrition, since it will destroy any archaeology in situ that it affects. So what effect would these changes have on our future projections?

The difference would, indeed, be quite stark (fig. 2, 3): given that we would excavate 9 times more of the archaeology than we currently do, and the increased rate of attrition resulting from this, the percentage of archaeology destroyed in situ increases considerably more rapidly than it would if we didn't excavate more. 25 years from now, only slightly under 50% of the archaeology currently still in situ would have been retained there, compared to slightly over 60% if we just continued to excavate as much as we do today. After 100 years, only slightly over 5% of all archaeology currently still there would still remain in situ, compared to slightly under 15% if we just continued to excavate as much as we currently do. 200 years from now, less than 0.5% of all archaeology in situ today, that is, practically none of it, would still remain in situ. Yet, compared to the loss over the same period if continuing at the same rate of excavation as today, this is hardly significant any more: after all, in 200 years' time, nearly 98% of all archaeology still in situ today would have been destroyed anyway.

Speeding up the rate of preservation by record by a factor of 10 does indeed lead to a significant increase in the loss of archaeology in situ, particularly over the short and medium term. At the end of my short term, c. 12.75% more archaeology will remain in situ if we do not speed up the rate of excavations than if we do increase it by a factor of 10. Indeed, about 15-20 years into my medium term, the difference between the projections for retention of archaeology in situ reaches as much as c. 14.25%; or peak retention difference. But from then on, this difference starts to decline again. At the end of my medium term, that is, 100 years from now, it will have come down to 8.65%. That is still

significant, but already considerably less than at peak retention difference. However, the further we look into the future, the less significant the difference becomes: 150 years from now, it will have come down to c. 4%, 200 years from now it will be a mere c. 1.75%, and in 300 years' time, have shrunk to as little as 0.3%. Whether the difference in retention is still significant in 150 or 200 years is very much debateable.

But of course, if we excavate 10 times as much as today, that doesn't just have a detrimental effect on the retention of archaeology in situ. It also has a positive effect on how much of it is, at least partially, preserved by record. Thus, greater loss in situ by increased excavation may be offset, or indeed more than offset, by greater gain by preservation by record.

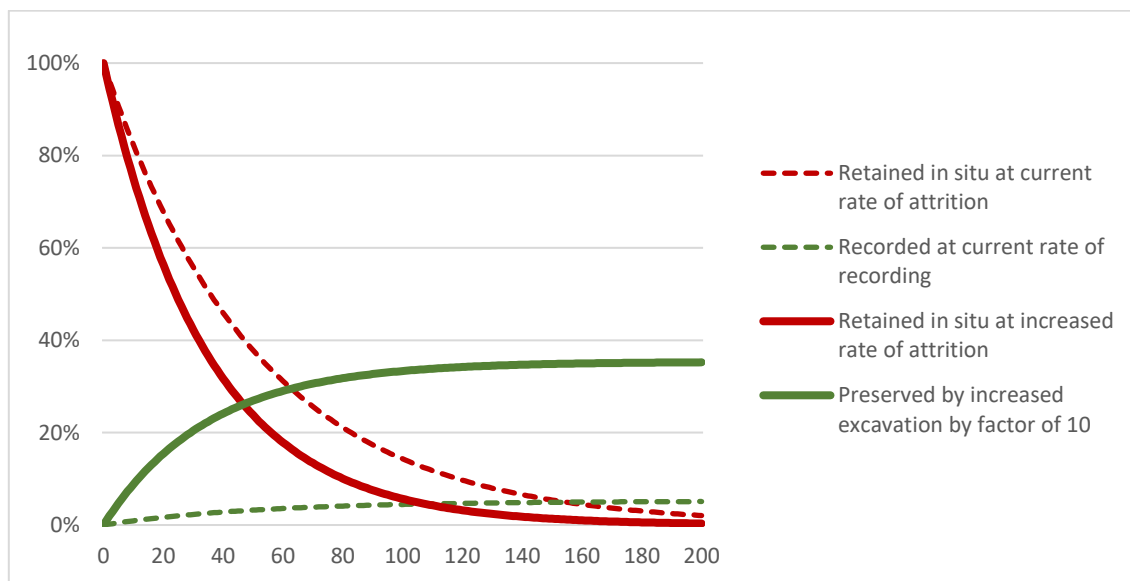


Fig. 2: Archaeology retained in situ, and at least partially preserved by record, modified for an increase of the amount we excavate by a factor of 10 compared to the current amount of excavations, projected over the next 200 years. The projections with the unmodified rates of attrition and preservation by record are shown as dashed lines for comparison.

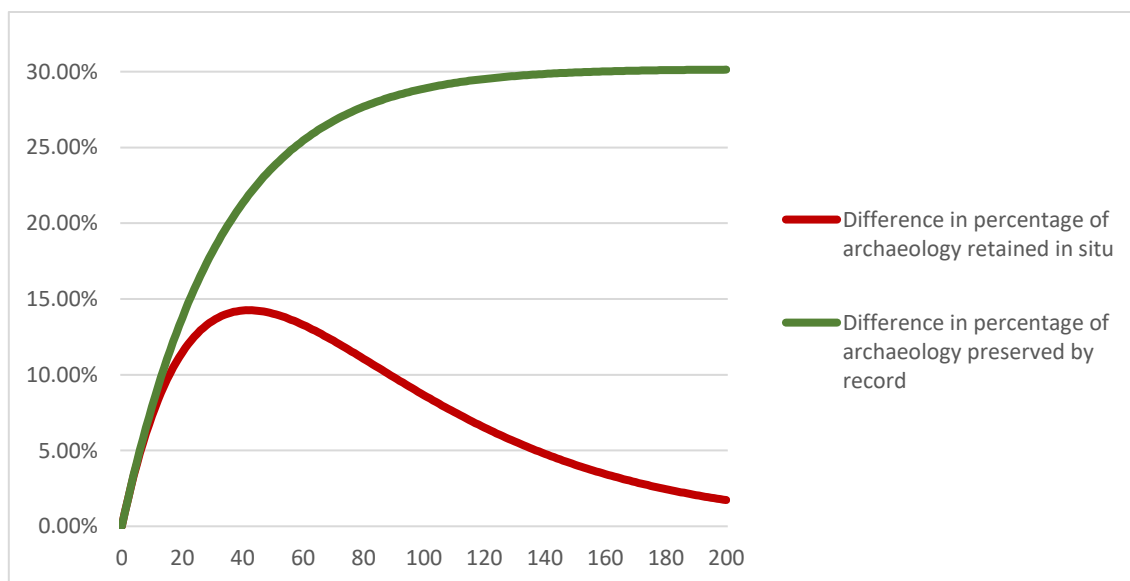


Fig. 3: Difference in the percentage of archaeology retained in situ, and such that is at least partially preserved by record, between the projections over 200 years using the modified and unmodified rates of attrition and preservation by record.



As figures 2 and 3 demonstrate, that would clearly be the case. If increasing the amount of excavations by a factor of 10, retention in situ decreases rapidly. But preservation by record increases even faster, particularly in the short and medium term. After 25 years, instead of only c. 2%, a whopping c. 18% of all archaeology still in existence today would at least partially have been preserved by record, an overall gain of c. 16.1%. After 100 years, that gain would indeed have risen further to nearly 29% more of the archaeology preserved by record. In total, c. 33.3% of it would have been preserved by record instead of a mere c. 4.5% at the current rate of excavations. That gain eventually levels out in the long term, at c. 30.15% more preservation by record. Still, if we increased the amount we excavated by a factor of 10 compared to what we excavate today, we would, over the next c. 200 years, at least partially preserve by record c. 35.2% instead of just 5.1% of all the archaeology still present in situ today.

### Myths and reality of (future) methodological developments

While it is not entirely impossible, it seems very unlikely that any improved methods of the future, however superior they may be to ours today, could create significantly more archaeological knowledge from the comparably small percentage of archaeology retained for a little longer in situ by excavating less, rather than more. Leaving aside for the moment the fact already mentioned, that the most significant loss of archaeological information is likely to be front-loaded due to the earlier loss of the more common, shallower contexts, the time window for methodological improvements remains very narrow for most of the period archaeology just retained in situ is being lost (fig. 4).

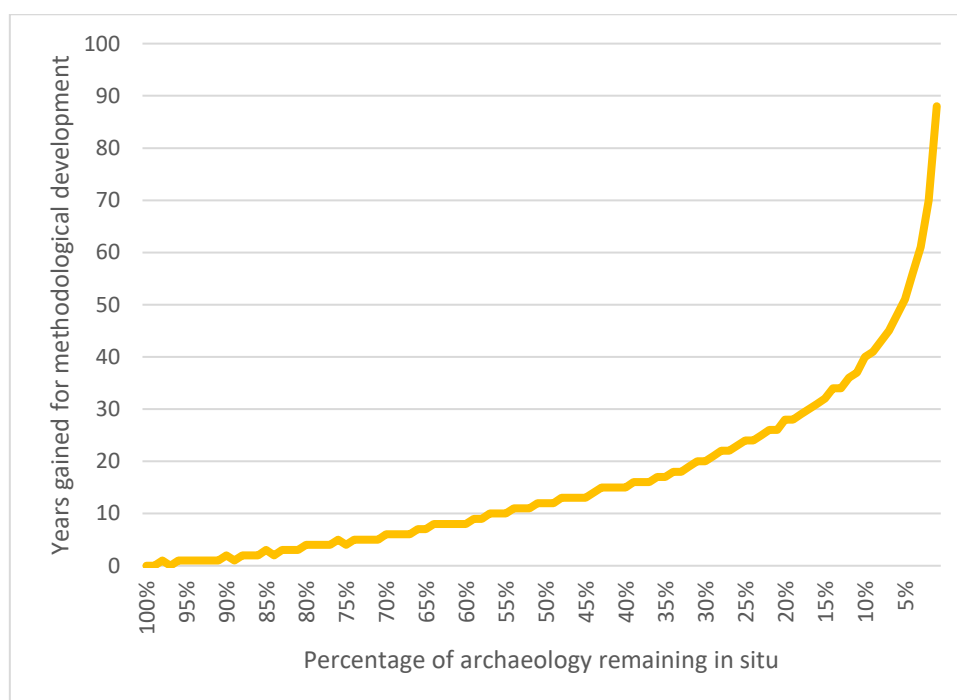


Fig. 4: Years gained for methodological developments if continuing at current rather than at 10 times increased rate of excavations.

As little as 10 years for future methodological developments are gained until c. 45% of the archaeology currently still remaining in situ has been lost either way. The 20-year mark is broken when only 31% of the archaeology still remain, 30 years when only 17%, and 50 years when only 5% are left. The maximum amount of time is gained for methodological developments when only c. 1% of the archaeology currently still in the ground is left, some c. 200 years in the future, and that is only c. 88 years.

There is little doubt that our methods will continue to improve, and every reason to hope that they will improve considerably. Still, the development of new and improved methods takes time, and considerable time at that. If one looks at the development of archaeological methods over, say, the last 50 to 100 years, there has indubitably been much that is noteworthy. Whether it is absolute dating methods, various (other) forms of isotope analyses, or, indeed, most significantly for archaeological fieldwork, the development of reasonably reliable non-invasive prospection methods, many new and improved methods have been developed over the last century.

Yet, decent plans and section drawings were already made as far back as the mid-19<sup>th</sup> century, e.g. during the excavations of the Hallstatt cemetery by Johann Georg Ramsauer (e.g. see Kern et al. 2008, 121). And creating and analysing such drawings is still the main means of both recording and interpreting the archaeological record, and for gaining insights from it. Nor is the stratigraphic method of excavation particularly new either: it was properly developed and already used by some archaeologists in the 19<sup>th</sup> century, too. Indeed, Mortimer Wheeler (1954, 41-42) ascribes the first recorded, proper archaeological application of the principles of stratigraphy to none less than Thomas Jefferson in 1784, even though the principle had not even been named and explicated at that time. While much has changed in (field) archaeology in the last 100 years, most of the fundamentals of site recording seem to have remained pretty much the same.

Thus, it seems rather dubitable that the relatively short time gained by retaining as much archaeology in situ as possible will be sufficient to create significantly improved new methods. And whether any advances in methodology will provide us with such significant gains in our understanding of the past that they will outweigh the losses caused by unrecorded in situ destruction of much of the currently retained archaeology by degradation and erosion is even more questionable.

The assumption that methodological advances will outweigh unrecorded losses of archaeology in situ becomes even more dubitable given that most of the archaeologically most significant loss will be front-loaded, that is, accrue mainly in the short and medium term. After all, the increased time gained for developing new and improved methods is the shortest in the short and medium term. When the time gained by preference of retention in situ becomes long enough to allow for real progress in archaeological methods, say, at least 20, better 30, or even 50 years, most of the archaeology currently retained in situ will have been destroyed unnoticed and unrecorded, shallow features first, pretty much across the board.

It is features like those which Cook and Cook (unpubl.), when examining 5 cropmark sites in North-East Scotland still clearly visible on aerial images from the late 1970ies and 1980ies, found to have disappeared completely in the last c. 50 years, that will go first. Thus, our methods, which we think are also much better than those of 50 years ago, don't allow us to get any information out of them anymore; because what is no longer there can no longer be examined. How much better, one has to ask, would it have been if 50 years ago, someone had taken a spade and excavated them, however badly? At least some knowledge about them might have survived, then, to be studied by us later generations of archaeologists.

## The possible future fates of archaeology retained in situ

It is, of course, not a realistic proposal to increase the rate at which we excavate archaeology by a factor of 10. We simply lack the sheer numbers of professional archaeologists that would be required for this, and even more so the resources to do so. Professional archaeological fieldwork costs money, and these days, quite a lot of it. What we dig up professionally would also need to be archived, at least the records we have created, and ideally also at least a representative sample of any finds made, so

that what we have found is preserved to be studied, both by us and by later generations. But storing records, and even more so storing and preserving finds, also costs money, and these days, quite a lot of it. Thus, digging 10 times as much as we are today, is not really an option.

So what, then, to do? Just resign ourselves to the bitter fact that the vast majority of the archaeology still in situ will, in the medium or early long term, be lost to degradation and erosion, unnoticed and unrecorded? Or is there anything we might be able to do to actually maximise the chances that any old archaeology currently retained in situ, or at least as much of the information still stored in it, might be preserved for the study by later generations after all?

Before I look at possible solutions to this conundrum, let us examine the possible future fates of archaeology retained in situ; and which of these fates are preferable to the others. This may help us to find a way towards better solutions than the ones we currently try to implement.

If one simplifies matters a bit, there are only three possible future fates of archaeology retained in situ. These three possible fates are the following:

- 1) **The archaeology is left in situ indefinitely and will eventually be destroyed** there, unrecorded. This is the most likely fate currently awaiting any archaeology just retained in situ, and is the inevitable fate of all archaeology left in situ indefinitely, whether just retained or actively preserved. Even the best preservation in situ cannot prevent, but only delay the inevitable. Thus, unless it is eventually excavated or found by some other means, it is not a question of whether, but only of when, archaeology retained in situ will be lost completely.
- 2) **The archaeology is recovered unprofessionally.** This will destroy it in situ. However, some parts of it – the ones that whoever recovers it intends to keep, at least temporarily – come into human possession. They thus can, at least in theory, be recorded and any records created archived. Thus, some random part of unprofessionally recovered archaeology can, at least in theory, be preserved permanently, since some of the information recorded about it will be arbitrarily reproducible. Thus, if unprofessionally recovered, it is not so much a question of when or whether, but rather one of what of the archaeology retained in situ will be lost.
- 3) **The archaeology is professionally excavated.** This will also destroy it in situ. However, those parts of it deemed significant by its excavators at the time will be recorded; and at least those parts of these records considered worthy of and suitable for long-term preservation will be archived. Since a significant part of this archive will be arbitrarily reproducible information, rather than specific physical objects, much of it can, at least in theory, be preserved permanently. Thus, if it is professionally excavated, it is not so much a question of when, but rather of whether and what of it will be lost.

### [The hierarchy of desirability of the possible fates](#)

In a hierarchy of the archaeological desirability of these possible future fates of archaeology currently still present in situ, 1) would clearly be the least desirable, 3) clearly the most desirable, and 2) be somewhere in between.

After all, any archaeology destroyed unnoticed and unrecorded – as it will eventually be in scenario 1) – is a total archaeological loss. And not just that, it is also a total loss to the public, in whose interest we always profess to preserve and research the archaeology in the first place. After all, it would be gone without anyone even only knowing that it ever existed, let alone benefitting from it in any imaginable way.

Anything professionally excavated as per scenario 3), on the other hand, will not be fully, but at least partially preserved by record, as best as possible at the time of the excavation. It is also very likely that

it will be made accessible to both scholarship and the public, whether directly or by proxy of the dissemination of the results of archaeological research. It will thus not just be preserved ‘...to be studied by later generations’ (Article 2 ii; CoE 1992) beyond the point of its eventually inevitable destruction in situ, but also be benefitting as many people as possible, as soon as possible.

If, on the other hand, recovered unprofessionally as per scenario 2), it may or may not be preserved much longer than its destruction in situ, and may or may not be benefitting archaeological scholarship and the general public. But at least there is a chance that it will be preserved more or less indefinitely, and that it will benefit the public, at least if it becomes known to professional archaeology and is recorded as best possible. Moreover, it will, at the very least, become known to and be beneficial to someone, if only a single individual for their very short-term enjoyment and pleasure. However small that benefit may be: it is still better than none whatsoever to nobody, as would be the result in scenario 1).

Naturally, as archaeologists, we do not only prefer to, but are compelled by professional ethics to try to achieve the best possible fate for the archaeology, our discipline, and the public (see e.g. ClfA 2014, especially principles 2 and 4). Thus, we should strive to, at least eventually, achieve fate 3) for the archaeology wherever we can; and must try to prevent that it suffers fate 1) as much as possible.

## The difficult issue of unprofessional recovery of archaeology

That leaves us with fate 2) to consider: clearly, it is much less desirable that archaeology currently still in situ is recovered unprofessionally than that it is professionally excavated. At the same time, however, it is also clearly much more desirable that it is recovered, even if unprofessionally, rather than being destroyed unnoticed and unrecorded in situ. After all, if recovered unprofessionally, at least someone, if only the person recovering it, benefits from its recovery; and potentially, if it is recorded and archived as best possible, many others, including current and later generations of archaeologists and the wider public, might benefit from it.

The latter outcome can be achieved, at least to some extent, by systems of recording and archiving at least some information deemed relevant about any archaeology recovered by other means than professional archaeological excavation. If combined with treasure trove regulations, even (at least some particularly significant) finds can become accessible to public archiving. The probably currently most prominent such system is the Portable Antiquities Scheme (PAS) in England and Wales (see e.g. Lewis 2015; 2016), even though there are other, somewhat differently organised systems for the same purpose in other countries, too, e.g. in Denmark (see e.g. Dobat & Jensen 2016).

Such systems allow to ensure that at least some relevant information about the archaeology recovered by less than fully professional excavation is also recorded and archived and thus preserved ‘...to be studied by later generations’ (Article 2 ii; CoE 1992). This is not to say that such systems are anywhere close to being ideal, and that they cannot be deservedly criticised in at least some regards, or could not be further improved upon. But they are certainly better than no system at all, or something so close to nothing that it is indistinguishable from it, which in practice leads to any archaeological information which could be preserved to be lost completely.

## Total loss of unprofessionally recovered archaeology due to law, policy, and practice

Having no system whatsoever to record and possibly even acquire unprofessionally recovered archaeology effectively turns fate 2) into fate 1): total archaeological loss, unnoticed by professional archaeology, and unrecorded.

Yet, legal prohibitions against any kind of ‘unpermitted’ non-professional and professional archaeological fieldwork, like the ones outlined above for Austria and Germany (e.g. Hönes 1995, 269-279; Viebrock 2007, 238-245; Strobl & Sieche 2009, 263-270; Bazil et al. 2015, 61-65; Davydov et al. 2016, 245-249), necessarily lead to the same effect in practice, or worse. Not only do they prevent systems for systematic recording of unprofessionally recovered archaeology from working in practice, they even negate any potentially positive effect legal duties imposed on finders to report finds to the archaeological authorities might have.

A compulsory duty for finders to report any finds of archaeology to the archaeological authorities is included in the Austrian national (Bazil et al. 2015, 56-57) as well as all German state heritage laws (Martin & Krautzberger 2010, 919). Yet, since anyone searching for archaeology without a permit, when reporting their finds, at the same time automatically report themselves for committing an administrative or even criminal (§ 24 *Denkmalschutzgesetz Schleswig-Holstein*) offence, those metal detectorists (and other finders) who have searched without a permit will naturally not report their finds. Thus, archaeological information which could be recorded and archived if it were reported is not, and systems for more or less systematically recording and archiving archaeological information and potentially also finds discovered by means of unprofessional recovery are bound to fail.

This is a considerable issue: after all, the heritage protection laws, policies, and practice turn possible cases of partially avoidable loss of archaeology as per fate 2) into total loss of archaeology as per fate 1). Thus, the very mechanisms and means there to prevent avoidable loss of archaeological heritage positively contribute or even cause such avoidable loss. By trying too much to achieve the best possible fate for the archaeology, we cause it to suffer the worst.

### Bad odds

It is an even bigger issue if, as also demonstrated above, we will just preserve less than c. 5.1% of all archaeology currently still in situ by records created on proper, professional excavations if we continue at the rate we are excavating today, while almost 95% of it will eventually be completely lost. If seen in this context, any archaeology recovered, however unprofessionally, before it is totally destroyed in situ, and any information about it recorded and archived, will in all likelihood – that is, with a chance of c. 95% - add to the archaeological information we will be able to actually preserve more or less permanently, rather than be lost without trace.

This is particularly the case where such archaeology is concerned that currently is still present, but exceedingly unlikely to be professionally excavated before it is destroyed, in situ. After all, we currently do not excavate strategically what we consider to be most valuable of the archaeology still present in situ, wherever it may occur. Rather, in the vast majority of cases, the choice of what to excavate is not even ours, but is forced upon us by where development happens to take place. And while developers do choose strategically the location for their developments, they do not choose for strategic archaeological reasons. As a consequence of the strategic reasons underlying development planning, development is neither spread evenly across the landscape nor targeted at recovering a meaningful sample of the archaeology. Rather, it clusters in particular locations, mostly in such where earlier development provides an already existing infrastructure, making new developments more attractive and cheaper.

That, however, means that some archaeology still retained in situ is particularly likely to be affected by future new developments, that is, that which is close to modern conurbations, and thus considerably more likely to be professionally excavated than on average. Most other archaeology, on the other hand, especially that relatively far from modern population centres, but still subject to intensive human use by farming and forestry, is considerably less likely to be professionally excavated

than on average; and thus even less likely to be professionally excavated before it suffers fate 1). And that is the archaeology on c. 80% of the Austrian and German territory, and even more in Europe as a whole, where the average seems to be c. 87% (see e.g. Jeschke 2016, 114-118; Trow et al. 2010, 10-11). The chance that archaeology still preserved on those c. 80% of Austrian and German territory unlikely to be affected by development will be properly professionally excavated before it is destroyed by plough, harvester or degradation is currently probably at the most c. 1%, if not considerably less. This is not what I would consider to be good odds.

## The not entirely irrational irrationality of retention in situ

How one can, under these conditions, reasonably believe it is better to retain the archaeology in situ and let it get destroyed there unnoticed and unrecorded than to have it recovered, even in the most unprofessional manner imaginable by anyone who would want to, is actually quite beyond me. Other than by a fear of damage caused by 'looters', the disciplinary preference for retention in situ is hardly explicable.

This is not to say that this fear is entirely irrational and not based on any evidence: there certainly have been quite a few spectacular cases where looters did indeed do significant damage to archaeology still preserved in situ. For instance, there is the case of the *Nebra Sky Disc* (e.g. used as a case study in Otten 2012, 21-24), whose unprofessional removal from the ground led to damage both on the disc itself and to the features in which it had rested in situ until discovered by two metal detectorists (for an image of the follow-up excavation at the site, see Otten 2012, 22 fig. 14, where the disturbance caused by the looters is clearly visible in the section). Yet, whether any such damage caused, even in this particular case, was more than what the archaeology which still remained there in situ would have suffered had a harvester driven across it, or had it never been found at all and instead slowly degraded and been eroded away by natural processes, is already quite debateable. Even more debateable is whether this case is truly representative for the kind, amount and significance of damage done to archaeology still present in situ by the unprofessional recovery of finds.

One has to wonder, for instance, what damage looting has done to a site like *Roseldorf an der Schmida* in Lower Austria. This site has been known to be productive for 'Celtic' (gold) coin finds since at least the 19<sup>th</sup> century and has been a prime target for metal detectorists in Eastern Austria (and well beyond) ever since metal detectors became more widely available to the public, that is, at least since 1970 (see on this date in particular Karl 2016b, 278-279). Interestingly, 5 so-called 'Celtic sanctuaries' have been excavated there over a period from 2002-2014.<sup>16</sup> In their enclosing ditches, these contained significant concentrations of metal finds, like near-complete swords, spearheads, shield bosses, metal chains, etc. (see e.g. Holzer 2003, 5; 2014, 3-4). Some of these ditches even were quite shallow, preserved to no greater depth than 0.15-0.30 m below the c. 0.25 m strong topsoil (Holzer 2014, 3), with the metal finds easily within the advertised penetration depths of many a modern metal detector. Yet, while the excavators were perfectly capable to identify massive disturbances by prehistoric animal burrows (Holzer 2003, 1-3), they seem to have missed entirely to record any evidence of more recent disturbances of these metal-rich features caused by looters. Apparently, despite this being one of the most popular and productive sites for (illicit?) metal detecting in all of Eastern Austria, the damage done to the archaeology still present in situ is quite insignificant, if there is such damage at all.

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<sup>16</sup> For the excavation reports, which have been made public in an exemplary speedily manner, see <https://www.keltenforschung-roseldorf.com/forschung/forschungsergebnisse/grabungen/> [27/2/2017].



### The wondrous dearth of data on damage caused by unprofessional recovery

Quite generally speaking, there seems to be a surprising dearth of reported archaeological observations of significant damage to archaeology caused by the activities of looters, like. e.g. the 'disturbance' feature clearly visible in the section of the follow-up excavations at the find spot of the *Nebra Sky Disc* (Otten 2012, 22 fig. 14), if one looks at finds reports created during professional excavations.<sup>17</sup> Apart from spectacular cases of finds of 'treasure' like that of the *Nebra Sky Disc*, there is hardly any evidence that damage caused by unprofessional finds recovery is archaeologically significant or has made it even only more difficult, let alone impossible, to interpret the archaeology on excavated sites.

In this context, one has to wonder why the Austrian and the German heritage agencies have not yet used their powers to attach conditions to fieldwork permits for the purpose of creating a systematic survey of the damage caused by unprofessional recovery of archaeology. After all, they could compel every professional archaeological excavation carried out in Austria and Germany to record, in a separate list and plan layer, all modern disturbances to the archaeology likely to be attributable to 'looting'. Stratigraphic theory would have us believe that such modern disturbances should at least be observed and hopefully also recorded in a professional stratigraphic excavation, and hopefully even be identifiable for what they are, that is, holes likely dug for unprofessional finds recovery; even if there will inevitably be a certain margin of error. It cannot seriously be that professional archaeological heritage managers who have been tasked by the state to protect the archaeology have not as yet thought of this possibility to determine the actual scale of the problem, because they must know the stratigraphic method as well as I do. It thus certainly isn't rocket science to consider its systematic application in archaeology to assess a problem that we archaeologists constantly claim is one of the biggest we have to solve.

If one just used this method for one year on just the c. 500 archaeological excavations currently carried out per annum in Austria, one would get a reasonably reliable sample for assessing the real scale of the damage to archaeology caused by unprofessional recovery. If this, in one fell swoop, were done across all of Austria and Germany, the sample would probably increase to somewhere between c. 5,000-10,000 randomly distributed excavations. That would certainly provide us with a statistically significant sample and allows to draw sufficiently reliable conclusions.

So why has this not long been done already? Are we afraid that the results of such a systematic survey would show something other than we would like them to? And indeed, thinking back to the *Roseldorf* case, what is it we would actually like them to show? That there is loads of significant damage that we couldn't prevent, or that there is in fact very little significant damage that has been caused to the archaeology by unprofessional finds recovery?

### No future for the past? Working towards a solution

But let us, for the sake of the argument, assume that the damage caused by unprofessional finds recovery is sufficiently significant that it is greater than the completely unrecorded loss of c. 95% of all archaeology still remaining in situ. Indeed, let us assume that it is greater still than the probably c. 99% or more of loss that is likely to occur on those sites far away from development hotspots. What are we to do about this, then?

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<sup>17</sup> As one can, for instance, by looking through the so-called 'digital part' of the official annual finds reports for Austria, the *Fundberichte aus Österreich*, which, for instance in volume 53 for 2014, take up a whopping 6,418 pages.

Over the past 5 decades or so, Austrian and German archaeology have reacted with increasingly prohibitive laws (see e.g. Karl 2016b). But these laws have not been successful in the least: the number of metal detectorists has been rising steadily (see also for current estimates of the per capita ratio of metal detectorists in Austria, Germany and the UK compared Karl & Möller 2016), and so, presumably, has the number of unprofessional retrievals of finds. But if ever more restrictive laws don't appear to solve the problem, what else could we do to resolve or at least reduce this problem?

Indeed, I think there is something we could do to maximise the chances that more archaeological information could be preserved than would be if we simply did nothing. What I will propose in the following isn't even a particularly radical idea, but rather one stolen directly from Georg Dehio (1905, 273-274), the 'father' of modern German heritage management, who expressed it already in 1905:

*„With this I come to the consideration which has forced itself upon me most when observing attempts by the state to protect heritage: it is that the state, as indispensable as its involvement is, can solve only half the problem. The state does not have enough eyes, it cannot see all the many and little things that matter; his official bodies are not flexible enough to adapt rapidly to the ever changing local conditions. A truly effective protection can only come from the people themselves, and only if they provide it, the living power of the monuments will overflow into the present. [...] If only the people are educated about what it is that is required, they may assume both choice and responsibility where past and present come into conflict. [...]“ (Dehio 1905, 273-274; translation: RK)<sup>18</sup>.*

Bluntly speaking, not only do we seem unable to stop metal detectorists and other interested members of the public from searching and digging for archaeology by restrictive laws. It also seems rather unreasonable to prohibit their activities in the first place if, in all likelihood, the retention in situ thus achieved will only lead to the unrecorded destruction of that very archaeology in situ.

### Training the public to professionally excavate as a solution

But it would not seem unreasonable if we tried to actually train those who wish to search for and dig up archaeology in the necessary professional skills to do so; thereby trying to ensure that the fate of as much of the archaeology that is dug up in situ is preserved as well as possible by record. That would achieve the exact opposite than the current restrictive legal permission regimes in use in Austria and Germany: rather than increasing the chance that archaeology recovered unprofessionally as per fate 2) is turned into total archaeological loss as per fate 1) by preventing its professional recording, the chance would be increased that archaeology now recovered unprofessionally as per fate 2) would instead be recovered (more) professionally as per fate 3). Thus more, rather than less, archaeology still in situ would be preserved better, rather than not at all, by record, assuring the best possible outcome for the archaeology itself, the archaeological profession, and the public, both present and future.

Of course, this would require many European Heritage Agencies, and (almost) all Heritage Agencies in Austria and Germany, to radically change their policies and practices. It is, however, quite arguable

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<sup>18</sup> „Ich komme hiermit zu der Erwägung, die sich mir bei der Betrachtung der Versuche, den Denkmalschutz vom Staate aus zu realisieren, an stärksten aufdrängt: sie ist die, daß der Staat, so unerlässlich sein Eingreifen ist, die Aufgabe nur halb lösen kann. Der Staat hat nicht Augen genug, er kann nicht all das Viele und Kleine, auf das es ankommt, sehen; seine Organe sind auch nicht geschmeidig genug, den immer wechselnden örtlichen Verhältnissen sich prompt anzupassen. Einen ganz wirksamen Schutz wird nur das Volk selbst ausüben, und nur wenn es selbst es tut, wird aus den Denkmälern lebendige Kraft in die Gegenwart überströmen. [...] Wenn das Volk erst darüber unterrichtet ist, worum es sich handelt, mag es, wo Gegenwart und Vergangenheit in Konflikt kommen, die Wahl und Verantwortung übernehmen. [...]“ (Dehio 1905, 273-274).

that educating the public about how to actively engage with the archaeological heritage, whether in or ex situ, rather than prohibiting them from actively engaging with it, is what these agencies and we, as a discipline and a profession, should have been doing to start with. After all, enabling the public to actively engage with and contribute to the archaeological process would clearly be much more beneficial to them, and the preservation of the archaeology for future generations, than if the public remains restricted to the role of passive consumers of archaeological knowledge. What is more, it would also be much more in line with the provisions of the Faro Convention (CoE 2005), and arguably also Art. 27 (1) of the Universal Declaration of Human Rights (UN 1948).

Of course, teaching interested members of the public how to do field archaeology properly requires resources, especially staff who can teach them. But these resources might well be available; at least if less staff time were invested by state heritage agencies on dealing with applications for permissions for (even non-invasive) fieldwork to examine archaeology that would be destroyed unrecorded in situ anyway if just retained there; and some other of the bureaucratic tasks created by restrictive prohibitions against unpermitted archaeological fieldwork.

Teaching the basics of field archaeology, after all, is not rocket science either. One just has to look at the curricula for most archaeology degrees across Europe, that is, the courses we use to train future professional archaeologists up to a level where they can be expected to be able to work in the field with little or no supervision. On average, most archaeology degrees across Europe seem to contain one or two theoretical modules on the archaeological excavation process with something like 20-40 hours of contact time each; and some practical field school module(s), which require students to participate in roughly 1-2 months of practical fieldwork in total (see Karl forthc.).

Of course, nobody would seriously claim that after c. 60 hours of excavation theory and perhaps as little as 20 days of practical fieldwork training, students would be sufficiently prepared to run a major excavation on their own. Archaeological fieldwork, like any craft, requires lots of experience to become truly proficient at. But dig a 1 square meter test pit and record anything they find in it reasonably properly, mostly or completely unsupervised? That, they hopefully would be sufficiently capable to do.

Of course, if the archaeology they dig up would be such that can be and actually is being actively preserved in situ, it would be better if they didn't excavate with just basic fieldwork training. But if that archaeology is just being retained in situ, the records created by someone who 'just' had basic archaeological fieldwork training are still vastly preferable to the most likely alternative; that is, the utter, completely unrecorded destruction of that very same archaeology in situ. And as shown above: the probability that most of the archaeology still present in situ will suffer the latter fate is at least 95%, if not 99% or more in most of the countryside outside major conurbations.

60 hours of theory, that is either 2 weeks of an intensive course, or could be taught as 2-hour Saturday evening classes over the course of slightly more than half a year. And 4 weeks of excavations can actually be a very nice holiday experience, particularly for keen archaeological hobbyists or indeed metal detectorists. This is especially so if completing such a course, then, would give them the right to pursue their hobby entirely legally; on any site that isn't specifically scheduled or designated as an 'archaeological reservation'.

### [Licensing or professional accreditation as a pre-condition for freedom of research](#)

I do not, in this article, wish to argue for a 'free for all' approach to the recovery of archaeology, even though an argument could be made for this. After all, such a 'free for all' approach is actually taken by much of the UK, where consent for archaeological fieldwork is only required when scheduled

archaeology is targeted by it. And as far as I can see, this hasn't led to any more significant damage to the British archaeological resource in situ than that of comparable countries with much more restrictive archaeological fieldwork permission regimes has suffered; but arguably to much better preservation by (however un- or semi-professional) record through means like the PAS (see e.g. Lewis 2015; 2016) and (perhaps not always fully professional) fieldwork reports by community archaeologists to the respective local Historic Environment Records and in local archaeology society journals. Still, my point is not that any Tom, Dick and Harry should be allowed to dig holes, whichever way they see fit, wherever they would like, except on scheduled sites.

Rather, I would argue that a system of assuring that those who are allowed to dig for archaeology at least have mastered the basic principles of the art should be introduced; and that only those who have demonstrated that they know – to put it in Dehio's words – *'what it is that is required, ... may assume both choice and responsibility'* (Dehio 1905, 274) as to what unscheduled archaeology they would like to excavate, when, and – within the general canon of archaeological methods – also how. That would serve to maximise the number of cases where archaeology in situ which would suffer by unprofessional recovery fate 2), would instead be recovered and recorded as best possible, and thus its fate turned into of scenario 3) (or at least that of a scenario 2.5) which sits somewhere between fates 2) and 3)). At the same time, that would hopefully significantly reduce the number of cases in which unprofessional recovery as per 2) turns, at least effectively, into fate 1), that is, total unrecorded loss of the archaeology.

This could be best achieved by a system of licensing or professional accreditation (similar to the system used in the UK by the Chartered Institute for Archaeologists<sup>19</sup>). Under such a system, the competence of applicants could be tested against established minimum standards for professional archaeological fieldwork. If they would meet or exceed the required standard of competence, they would then be given a license, or be professionally accredited, to conduct archaeological fieldwork. Of course, the license or professional accreditation could and should be linked with a commitment to continually adhere to professional standards in any future fieldwork they conduct, and be revocable in case of serious professional misconduct being proven.

In such a system, again following roughly the example of ClfA accreditation, it would also be perfectly possible to define different levels of competence that provide different rights to suitably qualified persons. For instance, if metal detectorists would want to be licensed or accredited, they might well not need to do a full 60-hours theory course and 160-hours (~ 4 weeks) practical archaeological field school as outlined above, but rather do a shorter course and less fieldwork training, as already offered by some German state heritage agencies. In turn, since they have not received 'full' training, their license or accreditation might well in turn restrict any finds retrieval to the 'disturbed' topsoil, or a set maximum depth, e.g. of 30 cm on ploughed soils and 10 cm on all other land. If, on the other hand, someone had completed the 'full' training outlined above, their license or accreditation might entitle them to conduct archaeological fieldwork on any land, excluding sites scheduled as monuments or areas designated as archaeological 'reservations'<sup>20</sup>.

It might even be sensible to provide persons who have completed a full archaeology degree at University with an even more wide-ranging license or accreditation, which might entitle them to conduct non-invasive archaeological fieldwork without a separate permit even on scheduled sites and in archaeological reservations. After all, the whole point of preservation in situ is to protect archaeology from avoidable damage, not to protect it from being researched with non-invasive

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<sup>19</sup> See <http://www.archaeologists.net/join/individual> [23/3/2017].

<sup>20</sup> 'Grabungsschutzgebiete' or similarly designated areas under Austrian and German heritage laws.

methods. It thus makes no sense whatsoever to require demonstrably competent professional archaeologists to apply for permission before researching scheduled or otherwise designated monuments, sites or 'reservations' with non-invasive means which cannot imaginably damage the archaeology that is being retained or even preserved in situ.

A system quite similar to what I propose here, indeed, has just recently been introduced in the Netherlands (Koninkrijk der Nederlanden 2016, especially articles 2 and 3). While the new Dutch system does not require e.g. metal detectorists or associations for amateur archaeologists to acquire any kind of license before conducting archaeological fieldwork within the limits set by the provisions of arts. 2.2 or 2.3 respectively of the decree (Koninkrijk der Nederlanden 2016), a licensing and accreditation system is established for professional archaeological organisations, which could very well also be imagined to be extended to metal detectorists and associations for amateur archaeologists as well.

Such a licensing or professional accreditation system for archaeological fieldwork would not only have the advantage that it would allow to increase, perhaps even significantly, the instances where archaeology currently just retained, but not actually preserved, in situ would ultimately suffer the most desirable fate it can meet; that is, be recorded and archived as professionally as possible as per scenario 3) described above. It would also benefit the interested public considerably more than it currently does, both that of the present and the future, by allowing everyone who wishes to, and is suitably qualified, to conduct whatever archaeological fieldwork they like on any archaeological site that is not actively preserved in situ '*...to be studied by later generations*' (Article 2 ii; CoE 1992), but – at least in current practice – left in the ground to survive or be destroyed unnoticed, unrecorded, and entirely unused.

Such a system would also have the added advantage that it is much less problematic from a constitutional perspective than the current restrictive prohibition regime operated by Austrian and German archaeological heritage management. After all, the freedom of research is a constitutionally protected, unconditional civil liberty according to both Art. 17 Austrian *Staatsgrundgesetz* (Berka 1999, 342-347), Art. 5 German *Grundgesetz* (Pieroth et al. 2015, 172-180) and the constitutions of several German states. It is also protected by Art. 13 of the Charter of Fundamental Rights of the European Union (EU 2012, 398) and can also be derived from Art. 27 (1) of the UDHR (UN 1948). How difficult it is to justify the current restrictive permission regime in Austria and Germany in the light of this fundamental civil liberty has already been demonstrated above.

Yet, while it is exceptionally difficult to justify restrictive permissions that, effectively, declare archaeological research to be an activity that is damaging to society or socially undesirable (Krischok 2016, 129), it is constitutionally unproblematic to make the exercise of this civil liberty dependent on a proof of competence. After all, not every search to retrieve archaeology is archaeological research and thus protected by this particular civil liberty.

Rather, to be protected by this civil liberty, the activities conducted must be, in the words of the German Constitutional Court, a '*serious and systematic attempt in both form and content to discover the truth*'<sup>21</sup> (quoted in Pieroth et al. 2015, 176; translation RK), with the Austrian Constitutional Court using the same definition, almost verbatim, only substituting '*knowledge*' for '*truth*' (see Berka 1999, 343). Thus, research requires a certain degree of knowledge and professional competence within the

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<sup>21</sup> '*Wissenschaft ist jede Tätigkeit, die „nach Inhalt und Form als ernsthafter und planmäßiger Versuch zur Ermittlung der Wahrheit anzusehen ist.“*' (Pieroth et al. 2015. 176)

respective research field, must be conducted methodically<sup>22</sup>, and its results be fed into the public (academic) discourse<sup>23</sup> (Pieroth et al. 2015, 176).

Thus, requiring of individuals who wish to exercise the freedom of archaeological research to demonstrate their general competence to conduct actual archaeological research, but not restricting this freedom disproportionately for those individuals who have demonstrated that they are indeed competent, does not cause any constitutional issues. A licensing or accreditation system which serves to assess the general archaeological competence of any individual who wishes to engage in archaeological fieldwork thus would not cause any constitutional issues. The freedom of archaeological research of anyone sufficiently competent to conduct it, using appropriate methods to appropriate standards and reporting their results to the appropriate archives would not be unduly restricted<sup>24</sup>. The activities of anyone who is not sufficiently competent to conduct systematic archaeological research, and/or is unwilling to submit his results to the appropriate archives, on the other hand, are not protected by academic freedom to start with.

*'The people!'*<sup>25</sup> (Dehio 1905, 273; translation: RK)

The one means available to us to improve the amount of archaeology preserved in the only way it truly can be preserved for the long term – that is, by record – is not to prohibit the public from engaging in archaeological fieldwork because they might accidentally destroy and cannot professionally record any archaeology they might discover, but rather to train and encourage them to engage as much and as professionally in archaeological fieldwork as possible. While this may not be enough to increase the rate of 'professional' excavations by the factor of 10 that I used for my alternative projections above (figs. 2, 3), it will allow to increase it compared to that which can be achieved by relying on a workforce of paid professionals alone. Even if the increase that could be generated by that means were to be minimal; any increase is better than none, however minimal that increase may be.

As Georg Dehio pointed out in 1905, *'the state, as indispensable as its involvement is, can solve only half the problem'* (Dehio 1905, 273). That statement holds true, not just where the state, but the community of archaeology graduates is concerned. Much like in 1905, we do not have enough eyes to see all the many and little things that matter, nor are we flexible enough to adapt to the ever changing

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<sup>22</sup> Even if the choice of the specific methodology used is up to the individual researcher, there must be a discernible methodology by which it is conducted; that is, the research must be systematic rather than just the arbitrary collection of some data or objects (cf. Pieroth et al. 2015, 176; Berka 1999, 343-344).

<sup>23</sup> While this does not necessarily require the formal publication of research results in printed format, it does at least require that the results be made available in some suitable way, shape or form to the wider scholarly or scientific community; e.g. by depositing them in some kind of archive accessible to others. This precludes any possibility that any retrieval of archaeology could be protected by the freedom of research which does not, at least eventually, lead to some reporting to some suitable archive, which in case of archaeology would of course be first and foremost the archives kept by the responsible archaeological authorities, the state or national heritage agencies.

<sup>24</sup> Reasonable restrictions imposed by scheduling or the designation of archaeological 'reservations' to preserve archaeology in situ, e.g. against unpermitted invasive archaeological fieldwork, would not cause any serious constitutional issues either. After all, it is both reasonable and can be justified by the constitutional aim of both the Austrian and German state to protect 'its' respective culture to preserve some archaeology in situ *'...to be studied by later generations'* (Article 2 ii; CoE 1992); at least unless there are some pressing current research needs that outweigh the need to protect a particular scheduled monument, site or designated archaeological 'reservation' from invasive – and thus, in situ, destructive – work of any kind, including research. Such restrictions of academic freedom clearly are proportionate with the aims the state tries to achieve; at least if there is actual (active) preservation in situ, and not just mere retention of the archaeology in question.

<sup>25</sup> *'Das Volk!'* (Dehio 1905, 273).



local conditions (Dehio 1905, 273); and even more importantly, our numbers are simply too few to be able to cover everything that would need to be covered. We need help, and we urgently need it, if we want to preserve more than just c. 5% of the archaeology still present in situ today, if we want to ensure that more than just the bare minimum is preserved so that it can be '*studied by later generations*' (Article 2 ii; CoE 1992).

The solution for improving archaeological heritage management thus rests, quite firmly, with '*the people!*' (Dehio 1905, 273). Of course, for enabling them to preserve as much of the archaeological heritage as can be, we will need to train them in the professional skills that are indeed required for properly recording archaeology when it is removed ex situ. And not only do we need to train them in the necessary skills, we also need to provide them with archaeological heritage management systems that do encourage rather than discourage them to report their discoveries, whether they be just the finds or finds and records, to the authorities both responsible and capable for preserving them for the long term.

This is where we come in, and why we are also indispensable in such a system: such a system needs both management and funding, and needs to be run by paid professionals, who train the others, manage the heritage everyone engages with, and ensure that those bits of it deemed sufficiently important are indeed preserved for the long term. Such a system also needs those who concentrate their efforts on that archaeology in situ which is immediately threatened by destruction, e.g. by development. After all, we cannot rely for the preservation of that which is acutely endangered on the variable and changeable interests of those members of the public who actively want to engage with archaeology as a hobby. For anything urgent, paid professionals who are available when they are needed, rather than when they fancy it, are necessary. Thus, the sectors of archaeology that are already well developed and provide us paid professionals with our jobs – the training, state heritage management, museum and rescue excavation sectors – must and will remain (at least mostly) ours. And if there is new, additional jobs to train, advise, support and help the public with engaging actively in archaeology, that's only good for us.

But anything we cannot cover, because we don't have the numbers, time and resources to cover it ourselves, we must leave to those who want to deal with it. Because if we don't, we won't preserve archaeology for the benefit of the public, but just hoard it for our own benefit. Yet, if archaeology belongs not just to us, but to everyone, I see little justification for that.

## Conclusions: against retention in situ

Archaeological heritage management in Austria and Germany, but not just there, has for decades been based on the principle of retention in situ. This principle is fundamentally flawed, not least because it mistakes the act of just leaving archaeology where it is at the moment for preservation in situ. Yet, preservation in situ requires at least the regular monitoring of, and in many cases active management of threats which could damage, the archaeology in situ. While many of our archaeological heritage management laws, policies, and practices pretend that the archaeology in situ is '*preserved*' for '*future generations*' by just leaving it where it is; in fact, most of the archaeology in situ is left to degrade, erode or be destroyed by the manifold threats it faces there. The effect of this is that in all likelihood, most of the archaeology that still exists at this moment will soon be destroyed, unnoticed and unrecorded.

As has been shown in this article, assuming a constant rate of attrition of archaeology equivalent to that which could be observed over a 155-year period in Baden-Württemberg until 1985 – that is, mostly before intensive modern development, farming and forestry practices became the norm – 25

years from now nearly 40%, in 100 years slightly more than 85%, and in 200 years nearly 98% of all archaeology currently still there will likely have been destroyed. Yet, by the time all currently still available archaeology will have been destroyed, only c. 5.2% of it will have been preserved (at least partially) by professional record.

Equally importantly, under the principle of retention in situ, the damage to archaeology caused by ordinary farming, forestry, and natural factors like in situ degradation and erosion of sites is never properly considered and always assigned much lower priority than the more immediate damage caused by development or other excavations (including professional archaeological excavations). This leads to a massive bias towards the preservation by record of archaeology in areas subject to modern development, since this is where the vast majority of professional 'rescue' excavations happen. As an effect of this, we currently don't record even only a random sample, let alone a representative sample of all archaeology currently still in situ; but a sample that is much more representative of modern development patterns than anything else.

The only available means to change this, both in terms of ratio and bias of preservation, is to ensure that much more of the archaeology currently not recorded when destroyed by plough, harvester, or changes in the water table, soil chemistry, or indeed natural erosion is preserved by professional, or at least semi-professional, record. If one assumes an increase in the amount of excavations by a factor of 10, while the rate of attrition would be considerably greater in the short and medium term, in the long term, the increased loss by excavation becomes negligible: 200 years from now, the difference would be a measly c. 1.75%. In contrast, the percentage of archaeology preserved by (professional or semi-professional) record would increase by a whopping c. 30% to slightly over 35% of all archaeology currently still in situ. It seems rather exceptionally unlikely that any future improvements in archaeological methods will be so significant that the additional information gained by leaving archaeology in situ for a little longer – and it is only a little longer that it will remain in situ if it is not excavated – and only excavating it once methods have improved will be considerably greater than the information that can be gained by excavating 10 times more, and thus recording 7 times as much of it, as soon as possible. Relying on potential future improvements of archaeological methods in some undetermined timeframe, while letting the majority of the archaeology still in situ degrade and erode in the here and now, is no sensible archaeological heritage management strategy.

The only means of turning the currently most likely, but least desirable, fate that archaeology retained in situ is bound to suffer – that it will be destroyed unnoticed and unrecorded in situ – into the currently much less likely, but most desirable one, is to change our archaeological heritage management strategies considerably. Because that most desirable fate is for it to be professionally excavated and recorded, as any site eventually must be; if it is not to be destroyed unrecorded in situ. But that outcome cannot be achieved by trying to prevent, as much as possible, any excavation that isn't necessitated by an immediate threat to the retention of archaeology in situ, as most Austrian and German heritage laws, policies, and practices currently do. Rather, it can only be achieved by excavating, as professionally as possible, as much of the archaeology still in situ as rapidly as possible.

Yet, the number of professional archaeologists, and the resources available to pay them, are severely limited, and there is no indication that this will change anytime soon. Especially as long as the majority of archaeological fieldwork is developer funded, paid professional archaeological labour will go where the money is, because it must if it wishes to remain paid professional archaeological labour. Thus, at least at this time, it seems extremely unlikely that much of the archaeology that isn't acutely threatened by development will ever be excavated and recorded by paid professional archaeologists: there simply will not ever be the funds for it.

That means that the only way to actually increase the amount of not acutely threatened archaeology that is excavated is to encourage members of the public to excavate it, as professionally as they can. Given that many members of the public currently cannot excavate professionally, that would require providing as much training as possible for them, to upskill them as appropriate. And arguably, this is what archaeological heritage managers and us as a discipline should have done to start with: rather than excluding the public, train the public to be able to take responsibility for engaging with the archaeology as best they can.

I thus suggest that a system of licensing should be introduced, with those having had appropriate training given the right to excavate any site that isn't scheduled or designated as an archaeological 'reservation'. After all, a site neither scheduled nor designated as a 'reservation' is exceedingly unlikely to be excavated by paid professionals, especially if it is not in an area which is likely to be built over anytime soon. But if that is unlikely to ever happen, and it is not actively preserved in situ, but just passively retained anyway, and there is no known reason as to why it should be actively preserved in situ, why stop anyone who has been trained to professionally excavate and record it from doing so?

That it might, but in all likelihood will not, be excavated in some more or less distant future with some futuristic methods that we have as yet not even thought of, hardly provides sound justification to prevent its (reasonably) professional excavation now. Only if a realistic assessment of the chances to preserve it demonstrate that it can be retained over an extended period of time in situ, and only if it can be and is actually regularly monitored and properly managed, a prohibitive restriction against its professional excavation can be justified. Only if we can be reasonably certain that archaeology currently in situ will still be there in a hundred, or even several hundred years, and the state it is currently in mostly unchanged compared to what it is today, preventing its premature destruction by any means, including by professional archaeological excavation, can be justified.

Just leaving archaeology where it is, but doing nothing to prevent any damage to it by any other means than archaeological fieldwork, as is the rule for the vast majority of all archaeology known, and all archaeology as yet unknown, in Austria and Germany, is no way of preserving it. Retention in situ is no sound principle of preserving the archaeological remains of the past '*for future generations*' (CoE 1992), but at best a massive self-deception, and at worst gross malpractice.

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## Bibliography

Bazil, C., Binder-Krieglstein, R., Kraft, N. 2015. *Das österreichische Denkmalschutzrecht. Kurzkommentar*. 2. Aufl., Wien: Manz.

BDA 2016. *Richtlinien für archäologische Massnahmen. 4. Fassung – 1. Jänner 2016*. Wien: BDA.

Berka, W. 1999. *Die Grundrechte: Grundfreiheiten und Menschenrechte in Österreich*. Wien – New York: Springer.

BLfD 2013. *Aus gutem Grund. Bodendenkmalpflege in Bayern. Standpunkte, Ziele, Strategien*. Denkmalpflege Themen 4, München: Bayerisches Landesamt für Denkmalpflege.

Brunecker, F. 2008. Faszination Schatzsuche: Von Ausgräbern und Raubgräbern. In Brunecker, F. (Hg.), *Raubgräber, Schatzgräber*, 14-39. Biberach: Theiss.

CIfA 2014. *Code of Conduct*. Reading: Chartered Institute for Archaeologists, <http://www.archaeologists.net/sites/default/files/CodesofConduct.pdf> [23/2/2017].

CoE 1992. *European Convention on the Protection of the Archaeological Heritage (Revised)*. European Treaty Series - No. 143, Valetta: Council of Europe, <https://www.coe.int/en/web/conventions/full-list/-/conventions/rms/090000168007bd25> [22/2/2017].

CoE 2005. *Council of Europe Framework Convention on the Value of Cultural Heritage for Society*. European Treaty Series – No. 199, Faro: Council of Europe, <http://www.coe.int/en/web/conventions/full-list/-/conventions/rms/0900001680083746> [22/3/2017].

Cook, M.L., Cook, M.J. unpubl. *Some observations on Scotland's Cropmark Enclosures*. Unpubl. Manuscript.

Davydov, D., Hönes, E.-R., Otten, T., Ringbeck, B. 2016. *Denkmalschutzgesetz Nordrhein-Westfalen. Kommentar*. 5. Aufl., Wiesbaden: Kommunal- und Schul-Verlag.

Dehio, G. 1905. Denkmalschutz und Denkmalpflege im neunzehnten Jahrhundert. Festrede an der Kaiser-Wilhelms-Universität zu Straßburg, den 27. Januar 1905. In G. Dehio (Hg.), *Kunsthistorische Aufsätze*, 263-82. München/Berlin: Oldenbourg, <https://archive.org/details/kunsthistorische00dehiuoft>, [21/2/2017].

Dobat, A.S., Jensen, A.T. 2016. "Professional Amateurs". Metal Detecting and Metal Detectorists in Denmark. *Open Archaeology* 2, 70-82, <https://www.degruyter.com/downloadpdf/i/j/par.2016.2.issue-1/par-2016-0005/par-2016-0005.pdf> [4/2/2017].

Dunwell, A., Ralston, I. 2008. *The Management of Cropmark Archaeology in Lowland Scotland: a case study from the Lunan Valley, Angus*. Edinburgh: Historic Scotland.

EU 2012. *Charter of Fundamental Rights of the European Union*. Official Journal of the European Union C 326/02, <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:12012P/TXT&from=EN> [1/2/2016].

Farka, C. und Mitarbeiter 2008. Die Abteilung für Bodendenkmale des Bundesdenkmalamtes. Jahresbericht 2008. *Fundberichte aus Österreich* 47, 9-96.

Hebert, B., Hofer, N. 2009. Jahresbericht zur archäologischen Denkmalpflege 2009. *Fundberichte aus Österreich* 48, 9-44.

Hebert, B., Hofer, N. 2014. Archäologie im Bundesdenkmalamt 2014. *Fundberichte aus Österreich* 53, 11-39.

Hinterwallner, M. 2014. Umfrage zur Aufbewahrung von archäologischem Fundmaterial. *Fundberichte aus Österreich* 53, 30.

Historic England 2016. *Preserving Archaeological Remains. Decision-taking for Sites under Development*. Swindon: Historic England, <https://content.historicengland.org.uk/images-books/publications/preserving-archaeological-remains/heag100a-preserving-archaeological-remains.pdf/> [23/2/2017].

Holtorf, C., Högberg, A. 2015. Contemporary Heritage and the Future. In E. Waterson, S. Watson (eds.), *The Palgrave Handbook of Contemporary Heritage Research*, 509-523. Basingstoke and New York: Palgrave Macmillan.

Holyoak, V. 2010. Mitigation impossible? Practical approaches to managing archaeology in arable farming systems. In S. Trow, V. Holyoak, E. Byrnes (eds.), *Heritage Management of Farmed and Forested Landscapes in Europe*, 135-140. EAC occasional papers no. 4, Bruxelles: Europae Archaeologia Consilium.

Holzer, V. 2003. *Dokumentation Grabung 2003*. <https://www.keltenforschung-roseldorf.com/forschung/forschungsergebnisse/grabungen/> [27/2/2017]

Holzer, V. 2014. *Dokumentation Grabung 2014*. <https://www.keltenforschung-roseldorf.com/forschung/forschungsergebnisse/grabungen/> [27/2/2017]

Hönes, E.-R. 1995. *Denkmalrecht Rheinland-Pfalz*. 2. Aufl. Mainz: Deutscher Gemeindeverlag.

Huisman, D.J. (ed.) 2009. *Degradation of archaeological remains*. Den Haag: Sdu Uitgevers b.v.

Jeschke, H.P. 2016. Die Europäische Landschaftskonvention (ELK) und Österreich – Der Blick von innen und nach außen als ein Auftrag zum Innehalten, zum Besinnen bzw. zur kritischen Bestandsaufnahme. In Bund Heimat und Umwelt in Deutschland (ed.), *Konventionen zur Kulturlandschaft. Dokumentation des Workshops „Konventionen zur Kulturlandschaft – Wie können Konventionen in Europa das Landschaftsthema stärken“ am 1. und 2. Juni 2015 in Aschaffenburg*, 91-152. Bonn: BHU, <http://www.bhu.de/bhu/content/de/publikationen/liste/pages/1471510714.xml> [25/2/2017].

Karl, R. 2015. Every sherd is sacred. Compulsive hoarding in archaeology. In G. Sayeh, D. Henson, Y.F. Willumsen (eds.), *Managing the Archaeological Heritage: Public archaeology in Europe*, 24-37. Kristiansand: Vest-Agder-Museet.

Karl, R. 2016a. The Freedom of Archaeological Research: Archaeological Heritage Protection and Civil Rights in Austria (and Beyond). *Public Archaeology* 15/2, 1-17.

Karl, R. 2016b. Archaeological responses to 5 decades of metal detecting in Austria. *Open Archaeology* 2/1, 278-289, <https://www.degruyter.com/downloadpdf/j/opar.2016.2.issue-1/opar-2016-0020/opar-2016-0020.pdf> [27/2/2017].

Karl, R. forthc. Codes of Practice, Standards and Guidelines? Similarities, Differences and Problems of Archaeological Field Schools in Europe. In E. Bedin, A. Miaczewska, G. Cesarin, C. Vecchiet, F. Fricke (eds.), *Archaeological Field Schools*. Gainesville: University of Florida Press.

Karl, R., Möller, K. 2016. Empirische Untersuchung des Verhältnisses der Anzahl von MetallsucherInnen im deutsch-britischen Vergleich. Oder: wie wenig Einfluss die Gesetzeslage hat. *Archäologische Informationen* 39, 215-226.

Kern, A., Kowarik, K., Rausch, A.W., Reschreiter, H. 2008. *Salz-Reich. 7000 Jahre Hallstatt*. Wien: Verlag des Naturhistorischen Museums Wien.

Koninkrijk der Nederlanden 2016. *Besluit van 8 April 2016, houdende regels voor archeologische opgravingen*. Staatsblad van het Koninkrijk der Nederlanden 2016/155, <https://zoek.officielebekendmakingen.nl/stb-2016-155.html> [23/3/2017].

Krause, D., Nübold, C. 2008. *Discovering the Archaeologists of Europe: Germany*. Bonn: Verband der Landesarchäologen der Bundesrepublik Deutschland, [http://www.discovering-archaeologists.eu/national\\_reports/Disco-D-engl-korr-05-final.pdf](http://www.discovering-archaeologists.eu/national_reports/Disco-D-engl-korr-05-final.pdf) [24/2/2017].

Kriesch, E.G., Eberl, W., Bielfeldt, D., Wegener, H.-H. 1997. *Gegen die Raubgräber*. 2. Aufl., Bonn: Deutsches Nationalkomitee für Denkmalschutz.

Krischok, H. 2016. *Der rechtliche Schutz des Wertes archäologischer Kulturgüter*. Göttingen: V&R Unipress.

Lewis, M. (Hg.) 2015. *The Portable Antiquities Scheme Annual Report 2015*. London: The British Museum, <https://finds.org.uk/documents/annualreports/2015.pdf> [5/2/2017].

Lewis, M. 2016. A Detectorist's Utopia? Archaeology and Metal-Detecting in England and Wales. *Open Archaeology* 2, 127-139, <https://www.degruyter.com/downloadpdf/j/opar.2016.2.issue-1/opar-2016-0009/opar-2016-0009.pdf> [4/2/2017].

Marius, M. 2011. Archäologische Restaurierung und Konservierung 2011. *Fundberichte aus Österreich* 50, 31-32.

Martin, D.J. 2007. *Denkmalschutzgesetz Mecklenburg-Vorpommern. Kommentar*. Wiesbaden: Kommunal- und Schulverlag.

Martin, D.J., Krautzberger, M. (eds.) 2010. *Handbuch Denkmalschutz und Denkmalpflege – einschließlich Archäologie*. München: C.H. Beck.

Otten, T. 2012. *Archaeology in focus – Of scientific and illicit excavations*. Bonn: Deutsches Nationalkomitee für Denkmalschutz.

Perrin, K., Brown, D.H., Lange, G., Bibby, D., Carlsson, A., Degraeve, A., Kuna, M., Larsson, Y., Pálsdóttir, S.U., Stoll-Tucker, B., Dunning, C., Rogalla von Bieberstein, A. 2014. *Archäologische Archivierung in Europa: Ein Handbuch*. EAC Guidelines 1, Namur: Europae Archaeologia Consilium, [http://archaeologydataservice.ac.uk/arches/attach/The%20Standard%20and%20Guide%20to%20Best%20Practice%20in%20Archaeological%20Archiving%20in%20Europe/ARCHES\\_V1\\_DE.pdf](http://archaeologydataservice.ac.uk/arches/attach/The%20Standard%20and%20Guide%20to%20Best%20Practice%20in%20Archaeological%20Archiving%20in%20Europe/ARCHES_V1_DE.pdf) [25/2/2017].

Pieroth, B., Schlink, B., Kingreen, T., Poscher, R. 2015. *Grundrechte. Staatsrecht II*. 31. Aufl., Heidelberg: C.F. Müller.

Planck, D. 1991. Rettungsgrabung und Forschung – archäologische Denkmalpflege heute. In H.G. Horn, H. Kier, J. Kunow, B. Trier (eds.), *Was ist ein Bodendenkmal? Archäologie und Recht*, 11-30. Münster: Westfälisches Museum für Archäologie – Amt für Bodendenkmalpflege.

Schofield, J., Carman, J., Belford, P. 2011. *Archaeological Practice in Great Britain*. New York: Springer.

Strobl, H. & Sieche, H. 2009. *Denkmalschutzgesetz für Baden-Württemberg: Kommentar und Vorschriftensammlung*. Stuttgart: Kohlhammer.

Trow, S., Holyoak, V., Byrnes, E. (eds.) 2010. *Heritage Management of Farmed and Forested Landscapes in Europe*. EAC occasional papers no. 4, Bruxelles: Europae Archaeologia Consilium.

UN 1948. *Universal Declaration of Human Rights*. New York: United Nations, <http://www.un.org/en/universal-declaration-human-rights/> [22/3/2017].

Viebrock, J.N. 2007. *Hessisches Denkmalschutzrecht*. 3. neu bearbeitete Aufl., Stuttgart: Kohlhammer.

Wheeler, R.E.M. 1954. *Archaeology from the Earth*. Oxford: Clarendon Press.

Willems, W.J.H. 2012. Problems with preservation in situ. In Bakels, C., Kamermans, H. (Hg.), *The End of Our Firth Decade*, 1-8. *Analecta Praehistorica Leidensia* 43/44, Leiden: University.