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Commentary Article

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The Complexities of Metal Detecting Policy and Practice: A Response to Samuel Hardy, ‘Quantitative Analysis of Open-Source Data on Metal Detecting for Cultural Property’ (Cogent Social Sciences 3, 2017)

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Abstract: In his paper ‘Quantitative analysis of open-source data on metal detecting for cultural property’, Samuel Hardy suggested that permissive policy is ineffective in minimizing the damage done to cultural heritage by non-professional metal detecting. This response paper contests the basic assumptions upon which this analysis is based. While Hardy’s comparative, quantitative approach is laudable, it is founded in a biased and simplistic outlook on the metal detecting phenomenon.

Keywords: archaeological metal detecting; heritage management; public archaeology

As the papers in this Topical Issue demonstrate¹, non-professional metal detecting (and other forms of prospecting) for archaeological artefacts is a contentious issue throughout the world, not least in Europe. Legal and policy approaches towards this activity differ greatly across jurisdictions, ranging from highly restrictive to permissive or even supportive. Professional attitudes towards metal detecting have been similarly divided and have been mostly internal to the different European countries and legislations since the Valletta Convention of 1992. Opinions are often polarised and based on ethical standpoints and even emotive arguments rather than a thorough understanding of the background, practices and impacts of non-professional metal detecting.²

¹ See Open Archaeology 2016, vol. 2, issue 1.

² We use the terms ‘non-professional’, ‘hobby’, ‘leisure’ and ‘amateur’ detecting/detectorists as interchangeable terms throughout this paper, to distinguish the practice from both the use of metal detectors by professional archaeologists in the field, and by illicit detector users driven primarily by financial motivations.

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In analysing readily-available open-source data, a recent paper by Samuel Hardy (2017) heralds an interesting new approach to collecting basic data that can inform appropriate heritage management responses. This perspective is very much in line with what was proposed in the introduction to this Topical Issue (Deckers et. al., 2016b). As was stated there, the way out of the entrenched debate is to study and internationally compare the practices and impacts associated with metal-detecting. However, we find that the underlying assumptions as well as the conclusion of Hardy's paper are fundamentally flawed, and that overall, there is insufficient attention to the complexities of the metal detecting phenomenon.

We consider Hardy's paper potentially impactful (e.g. Schlanger, 2017, p. 3), and hence deemed it necessary to write a response. We will not challenge the finer detail of the analysis here, even though the results thereof are undermined by several non-negligible factual errors. These include erroneous interpretations of (in some cases) outdated statistics of reported finds and reporting detectorists; neglecting the transnational character of both detectorist fieldwork and their participation in social media; and a lack of understanding of – sometimes recently changed – legislation in several countries. In the case of Belgium, national statistics are confused with those from the Flemish region, the level at which authority over heritage legislation resides.

Rather, we wish to highlight a number of major problems with Hardy's paper. From this it will emerge that Hardy's conclusion – that permissive regulations do little to minimize damage to cultural heritage – may not be appropriate or indeed accurate. Moreover, and arguably more importantly, it should be qualified to a significant extent. As the editors of the journal in which Hardy's paper originally appeared were unwilling to consider publishing our response, we are thankful that, in slightly revised form, it could find a place as a late addition to this Topical Issue.

It should be noted that, although as authors of this response our backgrounds lie in academic research and practice based in jurisdictions with so-called 'liberal' approaches to metal detecting, this is not intended as a defence of the latter. Rather, we argue that, despite its unfortunate deficiencies, Hardy's approach still exemplifies an important element of future empirical research that should ultimately result in more effective heritage policies, whether permissive or restrictive.

1 A Simplistic and Incorrect Basic Assumption

Essentially, Hardy's methodology is geared towards inferring the necessary quantitative variables to resolve the following formula for each of the territories he wishes to compare:

$$(\text{number of licit detectorists} \times \text{intensity of detecting} \times \text{number of archaeologically valuable ['reportable'] finds} / \text{proportion of unreported finds}) + (\text{number of illicit detectorists} \times \text{intensity of detecting} \times \text{number of finds}) = \text{cultural damage}$$

The implicit, basic assumption underlying this formula is that the number of finds recovered by metal detectorists, but not recorded by archaeological professionals, equals irrevocable damage to the cultural heritage of an area. As Hardy states, 'metal detecting is far more destructive than archaeological excavation' (2017, p. 2). We argue that such a categorical statement is fundamentally wrong.

In order to be considered 'cultural damage', a find and/or its associated information would have to be irretrievably lost. This assumed loss is a two-step process. Firstly, the 'unscientific extraction' of archaeological artefacts in itself, occurring whenever a metal detectorist digs down and retrieves an object from the soil, is assumed to be inherently damaging. This is undoubtedly true in cases where 'treasure hunters' (whether using a metal detector or not) remove an object from its archaeological context, thus irrevocably destroying its associations with structures, artefacts and other features on an archaeological site. However, the majority of detector finds in North-West European countries originate from the plough soil (Dobat, 2013, p. 710; Lewis, 2017). Normally any contextual associations of an object in the soil have been compromised by the mixing effect of ploughing and other agricultural processes; the recovery of the artefact in itself does little damage. It is for this reason that the recently-enacted legislations in the Netherlands and Flanders, allowing non-professional detecting after a decades-old ban, limit the activity to this disturbed top 30cm of the soil (Dutch Heritage Law of 2016, article 2.2, clause 1, Onroerend Erfgoed,

2016, hoofdstuk 33). The only contextual information that is available for a plough soil find is its geographic location, which most detectorists, at least in the permissive jurisdictions considered by Hardy, record to varying degrees of precision.

This brings us to the second step, the transmission of finds information to the public record. The key issues here are the completeness and accuracy of the recorded information, as well as its accessibility. It is true that a number of finds go unreported, even under a permissive legislation and with a recording scheme in place. However, this unreported information is not necessarily lost; often detectorists keep private records of their finds and finds locations. At least under permissive conditions, many detectorists are open to collaboration and willingly give access to this information when asked by professional archaeologists, even if they have not reported on their own initiative, a phenomenon described elsewhere in studies on avocational artefact collecting attitudes as “responsive” (e.g. Shott, 2017, p. 135). One may wonder whether such ‘hoarding’ detectorists are more willing to divulge information later on under permissive or restrictive legal regimes!

Another aspect that should be considered is the likelihood that an artefact would yield information if it was not recovered by a detectorist. In the plough soil, finds are threatened by agricultural activity (e.g. Haldenby & Richards, 2010; Baastrup & Feveile, 2013). Furthermore, and while not an ideal methodology in many cases, the plough soil is often mechanically removed as a matter of course in professional, development-led excavations. Any finds from this top layer are neglected (except when they are recovered from the spoil heap, not uncommonly by volunteer metal detector users). This practice may be damaging in particular where it concerns the metalwork fraction of a site’s material culture. An analysis in the Netherlands found that in the plough soil overlying one Roman-period settlement site metalwork artefacts were overrepresented in relation to ceramic finds such as spindle whorls and weaving weights by a factor of ca. 4 (Heeren, 2009, pp. 321–364, appendix III), corroborating a more general impression that metalwork is often recovered outside stratigraphical contexts even during a professional excavation. We might furthermore point out that development-led archaeological fieldwork in North-West Europe often employs sampling strategies rather than fully excavating the threatened area. Thus, even when full attention would be given to the plough soil, artefacts outside the sample areas would still be overlooked, and likely lost forever during the subsequent building work.

It is at present impossible to calculate where the balance lies in these factors; how much information is lost or salvaged due to metal detecting. It suffices to conclude that it is too simplistic to equate unreported metal-detected finds with the loss of cultural heritage, in particular in those parts of the world where arable land forms a major fraction of open land, and where a system is in place to record available information in the first place. Here, unreported finds are not damage, but at worst a zero-gain (as they may not have been picked up by regulated fieldwork, or may have been lost through damaging agricultural activity), at best information that may become available in the future. It is our view that, in countries that liaise with detectorists, these finds data from the plough soil can advance archaeological knowledge, complementing traditional archaeological survey and fieldwork.

2 Inappropriate or Unrealistic Definitions

A second major problem is that Hardy employs a simplistic frame of reference that distinguishes licit and illicit detectorists, permissive and restrictive regimes in an overly dichotomous way. While this is an understandable decision necessitated by the format of quantitative analysis, we feel obligated to point out the ways in which it obscures crucial nuances.

2.1 Legislation: Permissive vs. Restrictive

It is true that archaeologists in European countries are often either outspokenly pro or contra non-professional detecting (with many more ambivalent on the subject), and that attitudes, and indeed the spirit and intent of legislations, can be accordingly characterized. However, in practice, and for the purpose of

serious analysis of the effects of such legislation on the activities of detectorists, more nuanced distinctions are needed.

Legislations, and even more so their implementations in policy, range from very restrictive through largely indifferent or unenforced, to permissive and professionally accompanied by governmental or non-governmental agencies. For instance, between 1993 and 2016 Flanders was characterized by a formally prohibitive, but in practice tolerant official stance to metal detecting (Deckers, forthcoming). England and Wales can be described as very permissive, but here metal detecting is still prohibited without permission in certain areas, notably on scheduled monuments (Bland, 2009) and other sites of scientific interest under certain types of land stewardship (PAAG, 2017).

Therefore, better measures for international comparison, rather than the simplistic dichotomy of permissive/restrictive (and the consequently difficult distinction between licit and illicit detectorists – see below) might be proposed. The total area of land within which metal detecting is legal might be one such possible indicator; the degree to which a prohibition is actually enforced – as measured, for instance, by the number of convictions (where these are discernible in police and court records) – might be another.

2.2 Detectorist Behaviour: Licit vs. Illicit

Similarly, the distinction between licit and illicit detectorists is difficult to make. Definitions of licitness vary amongst experts (e.g. Renfrew, 2000; Mackenzie, 2014), and perhaps a more useful starting point for analysis is the legality of non-professional detecting practice. For instance, what is legally or practically considered a reportable find varies widely across countries depending on a range of factors including the nature and vulnerability of the archaeological record. Chronological limits may be legally imposed (e.g. 300 years in the Treasure Act in England, Wales and Northern Ireland; or 100 years in Finland) or a more pragmatic definition of archaeological finds may be used (e.g. in Flanders and Scotland). The Portable Antiquities Scheme prioritizes finds that date before 1540 (and is more selective in recording finds of more recent date, see Portable Antiquities Scheme, n.d.), while at the Scottish Treasure Trove Unit, an estimated 10–15% of finds reported by detectorists is deemed archaeologically unimportant and thus not recorded. In addition, as the aforementioned example of the long-standing policy of tolerance in Flanders highlights, discrepancies between legislation and heritage management policy can create an ambiguous area between licit and illicit detecting, regardless of legality in a strict sense.

The letter of the law aside, views of ethical behaviour are equally disparate amongst heritage professionals. While heritage managers and archaeologists in many countries abhor artefact buying and trading, numismatists and museum curators (faced with the practical considerations of curating large quantities of archaeological material of common types) often see fewer problems with this, as long as the items' details and their provenance are preserved within a written or digital record, much like excavated sites. Similarly, the scope of academic interest is constantly developing, and find categories that were largely ignored for archaeological research purposes may attain new significance as research progresses. An example of this are musket balls, which are receiving increasing attention from scholars interested in battlefield archaeology (Ferguson, 2013).

Furthermore, as has been shown for Norway (Rasmussen, 2014), heritage professionals involved in liberal schemes have to come to realize (e.g. Ferguson, 2016; Lewis, 2016), and as Hardy too acknowledges (p. 3), even collaborative detector users do not always behave as they should, and easily cross the line between licit and illicit. For example, the same detectorist might have permission to search in one area, but search on another without permission. Inevitably, this also needs to take into account the background and motivations of detectorists. Research shows that motivations for detecting and artefact collecting – and therefore behaviour towards cultural heritage – represent a 'continuum of interests' (Herva et. al., 2016, pp. 2–4; similarly see Lacroere, 2016). Yet it is wrong simply to conflate hobby detectorists with commercial entrepreneurs, as Hardy does (p. 2). Even though the line may be thin and groups may even overlap to some extent, undoubtedly the former activity is far less damaging to cultural heritage than the latter, even if finds are not (immediately) reported (see Daubney, 2017).

It is therefore inappropriate to reduce individual behaviour to such a duality as licit/illicit. Rather more realistic – although admittedly less easy given the available evidence – would have been to define cultural damage in a more nuanced fashion, and then consider the behaviours that cause it, such as the intensity of detecting on protected or vulnerable (e.g. forests) land, the degree to which finds information is properly recorded by the finder, and the proportion of finds that are (and remain) accessible for heritage management and research purposes.

3 A Skewed Perspective: Overlooking Regional Diversity

It is ironic that it is England and Wales, the region with the most permissive legislation, the largest contingent of detector users, and therefore – in Hardy’s argument – the most damaging conditions considered in the analysis, that delivers much of the information from which the constants in the basic formula are derived. This is not surprising. A lot of what we know and assume about detectorists’ activities and motivations stems from research in areas where ‘responsible’ metal detecting is, at least, condoned – not least England and Wales. More broadly, sociological research into how the public relates with heritage is particularly topical in Anglo-Saxon scholarship and, thanks to the permissive conditions, most detectorists feel free to divulge details about their pastime activity in the framework of such studies without having to fear for incrimination (Thomas, 2012; Winkley, 2016; for recent surveys in other countries see Karl, 2011; Rasmussen, 2014; Dobat & Jensen, 2016; Bailie, 2017; Immonen & Kinnunen, 2017).

As Hardy realizes, one way to circumvent this issue is to consult the online material produced by the communities themselves. This might help to exclude some biases such as representation bias (Rasmussen, 2014) or the self-selecting effect of online surveys, as well as allowing access to data on areas poor in information from official sources. However, the methodology employed here may not be sufficiently adapted to the multiple languages and the diverse status of metal detecting within the area of study. How representative, for instance, is the membership count and content of Facebook groups and fora that are accessible to an outsider living in a country that prohibits metal detecting?

Another issue is Hardy’s extrapolation of proportions of active detectorists based on numbers active in discussion forums, derived from one (non-professional) survey that is over a decade old (Marc, 2004). Questions must be raised as to whether the figures and percentages suggested in that source are still relevant, 14 years on, as well as whether it is possible to suggest that the percentage indicated would even translate to every cultural and national setting that Hardy addresses. Most importantly in this regard, it may be surmised that the proportion of forum members that no longer actively participate in the hobby is not a constant, but tends to accumulate over the years.

Hardy furthermore states that “systematic sampling was limited to discussion in English, in order to ensure that the samples were reliable and manageable” (Hardy, 2017, p. 24). This decision to exclude non-English evidence did not assist with the representativeness of the sample. Not only did it largely limit the analysis to the Anglophone countries within the sample, but it also precluded the inclusion of many countries for which no English-language information was available.

France, for instance, would have formed a valuable case study of the impacts, attitudes and experiences relating to non-professional detecting: it is characterized by a very restrictive regime, but the external variables (land use, archaeological record) are closely comparable to some of the more liberal countries in the dataset (Gransard-Desmond, 2013; Lecroere, 2016). In addition, taking into consideration of the estimated number of 50.000 to 100.000 (!) detectorists active under a restrictive legislation in Poland might have affected the overall conclusion regarding the effectiveness of liberal versus restrictive schemes (Makowska *et al.*, 2016; Wrzosek, 2017).

The use of informal discussions within online communities comes with its own biases and problems (e.g. Kozinets, 2015), which are not sufficiently addressed in the study. A number of factual errors, for instance due to misrepresentation of the legislation of different countries, could have easily been prevented by checking with actual legal documents and local specialists. The same is true for the ‘constants’ inferred by Hardy, which do not sufficiently take into account regional variations throughout the study area. Crop

regimes, for instance, will differ from area to area and limit the time annually available for detecting on agricultural land. In more northerly regions, within the study area most importantly Canada, the ‘detecting’ season will naturally be limited to the warmer summer months for much of the country.³

The number of finds recovered per time unit is based solely on information from England. Nonetheless, one might expect that the richness of the archaeological record plays an important role in this, and that this number is thus far from constant across regions. Even within England and Wales, there is significant variability, exacerbated by several forms of collection bias (Robbins, 2013). The studies from which the finds rate was derived all pertain to the relatively finds-rich south and east of the country. All the more so, one might expect that countries where metal as a raw material for artefacts made its entrance relatively recently have a much lower overall finds rate. This scarcity of metalwork may also help to explain why notably New Zealand, Australia and Canada feature relatively small metal detecting communities (Hardy, 2017, table 10), whereas metal-detecting may in these conditions also be part of ‘artefact hunting’ and collecting as a broader pastime, for instance in the USA (e.g. Labelle, 2003; Pitblado, 2014).

Several other regional variables conceivably determine the intensity of detecting in a given area, and thus affect the analysis. For instance, rather than weighing detecting impact by total surface area, a better indication may be the available unbuilt land for (legal and illegal) detecting, as countries vary significantly in the degree to which they are urbanized. Cultural variation may also determine the popularity of the detecting hobby. In many countries it relates to a specific ethos of freedom, the outdoors and even a certain disdain for authority; as such, it may compete with other hobbies such as fishing and hunting, and the opportunities afforded to those activities in a given area. Similarly, the hobby may tie into a sense of national identity or a specific interest in military history. Combined with the nature of the archaeological record, such factors presumably at least partly account for the varying popularity of the detecting hobby across different countries.

4 Cause and Effect

A final major problem with Hardy’s analysis is a product of his simplistic basic ‘formula’ and lack of broader framing of the analysis. Hardy’s conclusion is that ‘permissive regulation is ineffective in minimising harm to heritage assets’ (pp. 1–2), and that ‘restrictive and prohibitive regulation appear to be more effective’ (p. 43). Regardless of the internal validity of the analysis (a full assessment of this falls outside the scope of this response paper), it may be questioned whether this conclusion is justified. First of all, it really only pertains to England and Wales and the USA, as otherwise his ranking by number of annually recovered artefacts (tables 26–28) shows no clear distinction between permissive and restrictive regimes. Furthermore, even if this were the case, concluding that a restrictive regime results in less cultural damage confuses co-variation with causation.

Some detractors have discussed the ‘promotional effect’ that PAS may have (Barford, 2010; Fowler, 2007, p. 98). Indeed, PAS and the Treasure Act provide support and visibility for the metal detecting hobby, for instance through market-level fees paid for metal-detected artefacts of Treasure (under the Treasure Act, 1996) which usually become the main ‘hook’ for press coverage on these finds. It is conceivable that this attracts new people to the hobby, although it is unknown how many. It is also an open question as to what extent they remain active once they realize that, apart from chance finds, successful detecting requires skill, time, preparation and equipment, and that financially valuable finds are rare; most Treasure finds are valued in £100s, rather than £1000s (Parol & Richardson, 2017, pp. 17–59).

On the other hand, there may be numerous causal factors explaining the existence of a permissive legislation and correlated high numbers of detectorists. Perhaps the former is more likely to arise in contexts where metal detecting is widely and openly practiced? In the English and Danish cases, for instance, it could be argued that a strong background of public engagement with local history and archaeology explains the collaboration of many detector users with recording schemes, as well as the positive attitudes

³ In Finland for example, this period is limited to from late May to mid-October (Thomas et al., 2016, p. 340).

of many archaeologists towards metal detecting and amateur involvement more generally (Dobat, 2013, p. 712; Pollard, 2009).

Other factors can be envisioned that do not require the direct causal link between permissive laws and a large detecting community that Hardy implies. For instance, perhaps certain legislation with regards to ownership and/or state entitlement to archaeological finds is more conducive to a positive relationship between detectorists and heritage managers. Again, this would be the case in England/Wales, Scotland, Norway, and Denmark, where compensation schemes exist. On the other hand, in at least some of these countries, detectorists might attach more value to the honour or recognition of having an object acquired by a museum than to any monetary compensation (e.g. Dobat, 2013, p. 719; Ferguson, 2016, p. 119).

Other factors that characterize the northwest-European countries that allow metal detecting – in some cases since very recently – are that the archaeological record is rich and varied, but features relatively few items of very high financial value; and that a high proportion of the landscape consists of arable land. Both characteristics are attractive to detectorists, in the latter case because arable land is easily accessible, and because ploughing often continues to draw up new artefacts to the mixed topsoil. Conversely, both aspects also limit the damage metal detecting can do to the archaeological record. As mentioned above, they can even result in certain positive effects when responsibly recorded and reported, such as salvage of artefacts from destruction through agricultural processes, and the identification of archaeological sites for protection and management.

5 Policy Choices: A Range of Motivations

It is an interesting exercise to set aside the above deliberations regarding the validity of Hardy's conclusion that a permissive scheme is ineffective in preventing cultural damage through metal detecting. Indeed, limiting or preventing non-professional metal detecting is patently not the aim of such liberal policies! Rather, this section focuses on other motivations for a permissive policy choice, beside the number of finds or finds reports it might yield, and on how these might be balanced against lost information.

5.1 Knowledge Gain

Firstly, it might be argued that it is more desirable to have reports on a fraction of metal-detected finds, than to have none at all. Certainly, there is little doubt about the scientific impact of the Portable Antiquities Scheme. It has resulted in over 1,3 million detailed artefact records and numerous studies on typology as well as broader aspects of past societies.⁴ Many artefact types from England and Wales, such as Late Saxon horse-riding gear (Williams, 1997) are known almost exclusively from metal-detected finds. The impact on our understanding of landscape use in the past, and on heritage management, is difficult to understate. In Lincolnshire, for instance, 80% of PAS finds records stem from sites that were previously unknown (Daubney, 2016, p. 100). The undeniable scholarly impact of PAS is one of the main motivations for setting up comparable digital open source finds data recording and sharing schemes in Finland, Denmark, the Netherlands, and Flanders (respectively SuALT Project, 2017; Dobat *et. al.*, 2018; Roymans & Heeren, 2017; Deckers *et. al.*, 2016a).

By contrast, in restrictive contexts, finds are largely unreported and information is therefore difficult to access for researchers. The mistrust between professional archaeologists and detector users that restriction engenders often mars the availability of reliable metal-detected finds data even further. Furthermore, the deontological limits set by the professional sector on using metal-detecting data contribute to this trust gap as well as limit progress in research on archaeological metalwork even further.

As a result, the study of archaeological metalwork in countries with a restrictive policy is often limited

⁴ Recent major, geographically and chronologically broad-ranging research projects relying heavily on PAS-data include the AHRC-funded project 'Hoarding in Iron Age and Roman Britain' project (Bland *et. al.*, forthcoming), a PhD project on Roman rural settlement (Brindle, 2014) and the 'Medieval Market Sites' project (Oksanen & Lewis, 2015; <https://medievalmarketsites.wordpress.com>).

to broad typological studies, relying on existing antiquarian collections and the usually small numbers of finds from more recent, professional fieldwork. The degree to which the addition of PAS data has changed major patterns in artefact distributions in England and Wales (as well as allowing for previously impossible analyses at much finer resolutions) is testament to the limitations of this traditional body of evidence (e.g. Bland, 2009).

It is safe to state that the systematic recording and study of metal-detected artefacts enabled under a permissive scheme yields a greater gain of knowledge about the past than is possible under a restrictive scheme. It may be difficult to offset this knowledge gain against the alleged additional loss of information under a permissive approach. Clearly, the balance between the point of diminishing returns for the knowledge gained and the gravity of information lost will depend on many factors, including the nature of the artefacts and the research questions asked. Nonetheless, the example of PAS teaches us that for many important research questions, permissive schemes bring us much closer to a representative sample of the non-ferrous metalwork component of past material culture.

5.2 Social Aspects

A second reason for adopting a more permissive stance towards amateur detecting, despite potential adverse effects, lies in the less direct advantages offered to archaeology by allowing non-professionals to engage in it. As a consequence of the Valletta Convention, archaeology has in many countries seen a distinct professionalization. Although this no doubt had many positive effects, it has also resulted in tensions and mistrust between amateurs and professionals in archaeology. The commercialization that archaeology underwent over the same period, with its emphasis on procedural, preventive excavation and less attention to analysis and public presentation of fieldwork results, has exacerbated an alienation of much of society with archaeology.

Regaining the trust of and stimulating collaboration with an interested audience is therefore a legitimate choice in heritage policy, especially given much archaeology is funded through public taxation. It has been argued that a strict application of restrictive legislation can be less effective than liberal approaches or soft enforcement in certain conditions (Pendleton, 1998; Felson & Boba, 2010, p. 6). Specifically with regards to metal detecting, a lenient policy can stimulate mutual trust, and therefore help to increase the number of finds reports and the reliability thereof, as well as resulting in a greater sense of involvement with research and heritage management amongst detector users. For instance, it is not out of the ordinary that hobby detectorists in permissive countries volunteer on professional fieldwork, as they are able to bring in technical expertise that few professional archaeologists have the opportunity to develop (e.g. Dobat, 2013, p. 710; Deckers, 2013, p. 14; Pollard, 2009, p. 188). Responsible detectorists and detecting clubs can also contribute to the monitoring of sites and induce colleagues to behave in accordance with legislation (Fox, 2013; Dobat, 2013, pp. 713, 714).

5.3 Ethical Reasons

Lastly, and perhaps most controversially, there is the fundamental question of *why we do archaeology*. There can be little argument that an archaeology supported or imposed by the state (and therefore to be justified to its taxpayers) can only be legitimate if it has something to offer to society. The problem, then, lies in the implementation of this principle: how can archaeological legislation, and more precisely policy towards amateur metal detecting, best serve this public interest?

One argument is to see archaeological heritage as a finite resource of public interest that needs protection. This is the stance underlying prohibitive policies: in order to prevent private individuals from encroaching on the common good (a ‘tragedy of the commons’), hobby detecting must be restricted (Rodríguez Temiño & Roma Valdés, 2015, p. 112). The converse stance, which is based in an Anglo-Saxon or, more broadly, northwest-European perspective, is that the public should be able to responsibly participate in archaeology in an informed way, rather than being seen exclusively as a passive audience. In 2014, in an essay which explored the sticky issue of whether archaeologists should engage or not with artefact collectors, American

anthropologist Bonnie Pitblado drew upon analysis of the Society of American Archaeologists' own Code of Ethics as well as personal professional experience to suggest that "archaeologists should actively seek out opportunities to work with collectors, rather than avoiding or marginalizing them" (Pitblado, 2014, p. 386). Hobbyists, collectors and others, one may argue, are all part of the heterogeneous and diverse "public" that archaeologists should be engaging with. With this in mind, it is important for archaeologists also to be aware that there are different values, interpretations and meanings placed on archaeological heritage beyond the often positivist and objective lenses through which archaeologists attempt to make sense of the material past. This is one of the reasons why, for instance, both an appendix to the recently revised Dutch Heritage Law and a manifesto by the German Society for Pre- and Protohistory call for public participation – explicitly including detector users – in an archaeological régime dominated by development-led, professional fieldwork (Scherzler & Siegmund, 2015; Rijksdienst voor Cultureel Erfgoed, 2016).

Advocates for a restrictive attitude towards amateur metal detecting often refer to malfunctioning civic societies and the lack of a basic understanding of cultural heritage as a communal resource as the chief argument in favour of a restrictive policy. This might be legitimate in many cases and any legal measures intended to protect cultural heritage need to be formulated in light of its cultural and social context. However, what the promoters of a restrictive approach might overlook is the chance actually to use archaeology, and amateur metal detecting in particular, as a tool to build well-functioning civic societies, and to promote the idea of a shared ownership and custody over heritage resources. Even though this might be overly idealistic in light of the many cases of illicit detecting, we at least see some untapped potential in the cooperation with responsible detector users as a means of building inclusive and democratic societies (cf. Guttormsen & Swensen, 2016).

In conclusion, even if it is true that a permissive approach to metal detecting does not limit 'cultural damage' and can even generate larger numbers of detectorists while not resulting in a concomitant increase of finds reports (but previous sections have demonstrated that more data is needed to substantiate this), this might still be outweighed by other considerations. Moreover, these considerations may transcend mere pragmatism ('detecting is happening anyway, there is nothing we can do' – e.g. Bland, 2005) or even opportunism ('archaeologists are using detected finds to further their own goals, thus legitimizing the practice and disregarding the damage it does' – e.g. Barford, 2010; Lecroere, 2016).

6 The Way Forward

We hope that this response paper highlights, above all, the complexity of the problem. More often than not, current policy in Europe is based on ethical considerations, incomplete knowledge and unfounded presumptions. The full extent of all factors determining the impact of metal detecting, and the way these factors interact, is currently unknown. For many of these factors, quantitative data is moreover lacking. An empirical approach, like Hardy's, is therefore an important way forward to develop legislation grounded in a thorough analysis of all relevant variables.

Hardy's approach is inventive in more than one sense. Comparing countries – effectively considering each legislation as a laboratory test with controlled variables – is probably the best way to untangle cause and effect. Such a comparative perspective also helps to transcend the current entrenched positions of European archaeologists with regards to metal detecting. Today, studies in this field are too often limited to a description or an apology of the legislation and policy of a single country. This lack of an international perspective is lamentable, all the more so because it is increasingly clear that metal detecting is a transnational activity, with both detectorists and detected artefacts frequently travelling across borders, and detectorists sharing information and experiences with colleagues worldwide through social media (Thomas, 2016).

A second way in which Hardy points the way, is his emphasis on quantitative analysis, necessitating the collation of numerical data on an 'underground' community from numerous, often contradicting online and open source datasets. Such a netnographic methodology is not entirely new in this field (Karl & Möller, 2016), but in scope and intent the paper may serve as a model for further endeavours in this direction.

However, it is clear that such a study would need to take in far more than the evidence from online sources. Hardy's research sheds light on the limitations of using a methodology that relies solely on open source data, and suggests that triangulation with other research approaches is required; not least 'ground truthing' with organisations and national and local authorities responsible for engaging with metal detectorists. Similarly, while we have expressed our concerns with the simplicity of the formula employed by Hardy to process and render comparable the country-by-country 'lab tests', it may serve as a starting point for the development of much more sophisticated, testable algorithms that express the impact of legislation and policy on public interaction with heritage.

In short, while in its reliance on biased assumptions and simplistic dichotomies Hardy's paper reflects old perspectives on how to deal with metal detecting in Europe, in other ways this analysis seeks to provide a more sophisticated, comparative and scientific way of analyzing the complex realities of the metal-detecting phenomenon in particular, and public engagement with heritage in general.

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