Scaling an island of hunter-gatherers
Writing the Mesolithic of Ireland

Graeme Warren

Introduction

In Spring 2020 I was nearing the end of a four-year term as Head of the UCD School of Archaeology and looking forward to the sabbatical that would follow. One of the main aims of the sabbatical was to write a long-planned book on the Mesolithic of Ireland (c. 8000-4000 BC) – *Hunter-Gatherer Ireland: making connections in an island world* (Warren 2022). Each chapter was to start with a detailed account of an artefact, based on proposed work in museums and archives. I was also to travel internationally and help develop comparative approaches to the Irish material. With lockdown imposed from March 2020, none of this could happen. My professional horizons shrank to a desk in the corner of a bedroom, with occasional Zoom connections to other places. My social world revolved almost exclusively around my wife, two children and our cats. And of course, the book changed as the scales at which I could operate changed. The book reflected my increasing, desk-bound, interest in how we could make statements about hunter-gatherer lives in the deep-time past, how such knowledge claims worked and what value such narratives might have during a time of crisis. The latter included reflection on the ways in which archaeological accounts of long dead hunter-gatherers might be relevant to those with an interest in the lives of contemporary hunter-gatherers.

As I began to prepare the book, two short statements about the Mesolithic in Ireland made in recent publications were very much in my mind. These comments were by two senior Irish archaeologists, including one who would have been regarded as the leading Mesolithic researcher in Ireland, and they suggested that aside from a small number of spectacular sites, the large number of archaeological excavations conducted in advance of commercial or infrastructural development in Ireland had contributed very little to our under-

standing of hunter-gatherer activity in Ireland (Waddell 2020: 54; Woodman 2015: 79), and therefore made little contribution to broader understandings of hunter-gatherer lives. These statements frustrated and angered me. Dismissing the results of the single largest phase of archaeological work ever seen in the history of Ireland as having made little contribution to how we understood deep-time hunter-gatherers did not seem to place value on the work of many colleagues across the profession who had painstakingly excavated Mesolithic sites, sometimes in very difficult conditions. Devaluing these contributions did not seem collegial and did not seem likely to encourage the careful excavation of ephemeral materials in the future.

But more importantly, these dismissals also suggested a fundamental misunderstanding of the archaeological record for the period. Many Mesolithic sites excavated in advance of infrastructural development in Ireland are characterised by small spreads of archaeological material, scattered hearths, and a few stone tools. Structural evidence is rare. These sites are *not* spectacular. But to dismiss them as not contributing to our understanding of the period is wholly to miss the point. These sites are the dominant form of Mesolithic archaeology in Ireland. They have been demonstrated to be such by the large-scale excavations that could only have been carried out in archaeological interventions in advance of development. Understanding the Mesolithic of Ireland therefore means foregrounding this material and the activities of hunter-gatherers in the past that generated these sites. One of the aims of my book became to create a narrative that engaged this material and provided a framework for such evidence.

The opportunity to attend the *Scale Matters* workshop helped refine my growing realisation that many of my concerns about how we could make statements about the past and the value of those statements were resolved by careful consideration of scale. In particular, rethinking the material recovered during infrastructural works and dismissed by other accounts means rethinking what this material tells us about scale: including the scales at which archaeological evidence is resolvable, and the scales at which lives were lived in the past.

The remainder of this chapter therefore considers three aspects of how scale articulates my approach to the Irish Mesolithic, and provides a case study for the importance of scale, and associated concerns about analytical resolution, in writing narratives about deep-time hunter-gatherers in other places. In turn, we will consider temporal scale; social scale; and finally, and in brief, how we might quantify scale. Many of the themes discussed in brief

here are considered in substance – and with fuller references and examples – in *Hunter-Gatherer Ireland*.

Temporal scale

It is often stated that archaeology's distinctive strength is the long-term perspective that it provides on human lives. It is true that much of our data is resolvable only with comparatively coarse chronological resolution. Time perspectivism stressed that archaeology needed to tailor its questions to the temporal resolution of its data (Bailey 2007, 2008) and questioned whether archaeology should be trying to apply concepts drawn from disciplines characterised by different temporal resolution – such as social or cultural anthropology. At times, strong versions of this position imply that archaeology can *only* provide data on the long-term (Perreault 2019; Kelly this volume): in such accounts our strength is also our limit.

I find this conclusion regarding the potential temporal scale of hunter-gatherer archaeology to be unduly pessimistic. I also think that it does not adequately characterise the nature of the archaeological record of the Mesolithic (see also Elliott and Griffiths 2018). Negotiating the evidence of hunter-gatherer lives in the deep-time Irish past requires engaging with data which has very different chronological resolution and using these different scales of analysis to highlight key aspects of that data. Three 'types' of chronological scale are reviewed here: long term and persistent places; places used only for short periods of time, and individual moments – or perhaps 'situations', All of my examples lie within the Later Mesolithic of Ireland – and with all the examples cited falling broadly within the period c 6000-4000 BC.

We start with the long-term and the coarse temporal resolution. A key feature of the Mesolithic landscape at this time was locations that were repeatedly returned to over the long term. Recent excavations at coastal sites like Ferriter's Cove, Co. Kerry (Woodman, Anderson, and Finlay 1999); Belderrig, Co. Mayo (Warren 2009) and Fanore, Co. Clare (Lynch 2017) show that individual episodes of occupation left little clear structural trace – occasional pits, hearths or stakeholes – but that visits to these locations took place over periods of hundreds of years. We do not know if these visits took place every year, or whether there were gaps in otherwise continuous cycles of occupation. In any case, in some of these places, this resulted in truly time-averaged archaeological deposits: 'occupation soils' containing the accumulated and mixed

materials of multiple individual acts. Disaggregating those individual activities is not possible. Analysis must therefore seek to explain them as long-term phenomena. These recent excavations are broadly paralleled by poorly understood mid-Twentieth Century excavations of coastal sites in eastern Ireland: because they are a frequently occurring site type, understanding these long-term sites is crucial to considering the character of Later Mesolithic activity in Ireland.

Many of these sites were associated with the exploitation of local raw materials for stone tools, and the large accumulations of so-called waste materials which were found in the excavations would have been observable in the past. They may have acted as material prompts and traces of previous activities, as well as convenient places to find lithic material to use as tools without the need for further flaking (Dibble et al. 2017: 829). Seasonal evidence from these persistent coastal places suggests presence in autumn, at least, and in-shore marine fishing appears common, as well as patchy evidence for exploitation of terrestrial plants and animals.

Whatever the specifics about activity on individual sites these places were frequently visited at time scales beyond those of individual life spans. They were *persistent places* in the Mesolithic landscape. As Shaw and colleagues have argued

> "Places that groups return to repeatedly are invested with the qualities of the interactions that have taken place before—whether they are held in direct memory, or inferred from observable traces (old fireplaces, reused lithics, bone refuse). A persistent place possesses different qualities as a locale … to a transient camp because it is overlain with this enhanced patina of extended social life." (Shaw et al. 2016: 1450).

Temporal scale, as experienced in the past, created different senses and experiences of place. Understanding our long-term sites should recognise that they created particular experiences of time, whatever precise form this recognition of previous activity took.

So far, so long-term. These persistent places were often excavated in a research-led context: with researchers drawn to highly visible accumulations of shell or frequently discarded local lithic raw materials. Ironically, the poor chronological resolution of the sites enabled the greater archaeological visibility and greater research interest. Given this high archaeological visibility, it is therefore a little surprising that such sites are quite rare in development-led archaeology. Instead, the large areas excavated on infrastructural projects

have shown the importance of small sites, sometimes without any associated artefacts. At Curraghprevin 3, Co. Cork, for example, a fire-setting and few stake holes was argued to be a short-term activity area (Hanley and Hurley 2013). Excavations at Farriters, Co. Tyrone found an isolated hearth dating to the mid fifth millennium BC (Site 35) and a pit from a few centuries later (Site 36) (Dunlop and Barkley 2016). At Tinryland 1, Co. Carlow, excavations revealed a hollow dating to about 4000 BC with a few Later Mesolithic stone tools and carbonised hazelnuts. Although it is not stated explicitly, sites of these kinds were probably in the minds of Waddell and Woodman when they made their comments on the limited contribution of developer led archaeology. And of course, these small sites are unlikely to have attracted the attention of research-led excavations, partly because they often appear on complex multi-period sites, but also because they would be very hard to find and not necessarily repay the limited resources and need for impressive results of research led excavation (for discussion of the value of 'small sites' see Marchand and Goffic 2009)

These short-lived places provide another perspective on temporal scale and therefore on hunter-gatherer lives in Ireland. The resolution of our radiocarbon dates means that we can only date these events to some point within a few hundred years, but in most instances the activities that gave rise to the archaeological evidence need only have taken a few hours or days. One interesting feature of these places is that they were not revisited over long periods of time. They did not become *persistent*. Activity in these places may therefore have lacked the 'patina' of previous activity enabled by more persistent locales, and they speak to us of different experience in the past. It is not clear *why* these locations did not develop and persist. But making sense of hunter-gatherer use of landscapes requires that we consider these shorter-term visits, as well as the long-term aggregates.

Finally, our archaeological evidence includes individual moments. These are often hard to access – such as the blows of a stone hammer that removed a flake from a core; or the dump of material into a pit. But sometimes those moments are vivid. A good example is in the presence of pine tapers on sites such as Corralanna (Warren, Little, and Stanley 2009), Derragh (Fredengren 2009) and Moynagh Lough (Bradley 2001), with slightly different examples from Clowanstown (Mossop and Mossop 2009). These tapers are short lengths of wood with charring at one or both ends. They are most likely to have been used as sources of light, with the resinous pine wood chosen for the quality of its flame. They were transient artefacts – consumed in the act of their use.

We can't be certain what they were used for, their frequent recovery on lake-edge platforms suggests a role in using light as a lure for fishing, but as they would only be preserved on water-logged sites, there is a circularity in this argument. Perhaps they were torches to light a journey, or to accompany dance, song, or other rites.

Whatever their specific use, consideration of the tapers has the potential to provide a connection with short term processes and activities in the hunter-gatherer past. This connection is partly analytical and partly empathetic: with the imagined use of an object and the places and social contexts that it illuminated providing a powerful point of engagement with the past. These types of connections resonate with the hunter-gatherer situations described by Widlok: "the social space created by particular practices that are associated with hunter-gatherer ways of life" (Widlok 2016a). The short-term use of flickering torches is an example of the way in which hunter-gatherer situations allow us to engage with the deep time past. The creation of persistent places, and the experience of the patina of previous lives was another hunter-gatherer situation in Ireland: a practice that was associated with their way of life and generated senses of time and place.

The temporal scales that characterise the evidence of hunter-gatherer lives in Ireland therefore range from aggregates across centuries and millennia to moments that lasted minutes and hours – even if we can't always say exactly when these moments took place. The craft of writing a narrative of hunter-gatherer lives in Ireland means moving between these scales and using each of them to illuminate the others. We can play to our long-term strengths, but also highlight moments of contact and connection. To emphasise one temporal scale at the expense of the others would be a loss.

Scales of social life

A key assumption that operationalises the analysis in *Hunter-Gatherer Ireland* is that much of the evidence from Ireland is in keeping with hunter-gatherers who had a reasonably high degree of routine residential mobility and relatively small residential group size. This assumption is drawn, inductively, from twenty years of my work on the period. It is an assumption that can, and should, be questioned by others. But the value in making this assumption explicit in my analysis is the access to comparative and general models of hunter-gatherer behaviours that it enables.

This included two key areas of work on hunter-gatherer sociality that had inspired me. On the one hand, many recent accounts emphasise the importance of the intensity of intimately shared presence in hunter-gatherer groups and the ways in which this is central to key aspects of hunter-gatherer sociality (amongst many, see Bird-David 2017a; 2017b; Hewlett et al. 2019; Widlok 2016b). On the other hand, was the strong statement that "foragers do not live in small scale societies" (Bird et al. 2019). Coincidentally, these two seemingly contradictory considerations of scale were a key point of discussion in the *Scale Matters* workshop. Simplifying crudely, these discussions implied that given conditions of high mobility and small group size I could assume that sociality within a band would be characterised by a high degree of intensity and flexibility associated with varied acts and types of sharing; but that contact between groups over long distances should also exist. I found this assumption about scales and their implications very helpful in thinking through two aspects of the Irish data: firstly, the absence of evidence for structures on many sites and secondly, the evidence for contact over distance.

Evidence for what might be considered domestic buildings or structures on Irish Mesolithic sites is comparatively rare, especially for the Later Mesolithic. Most accounts stress that issues of taphonomy and loss have been significant in shaping the record: arguing that soil formation processes or later phases of activity have disturbed or removed the evidence of Mesolithic buildings. This emphasis on the role of taphonomy is important – but beyond this, there is also a lack of precision in terminology and analysis: poorly defined 'huts', 'shelters', 'wind-breaks' are described as constituting 'campsites'. The lack of precision, and the assumptions of taphonomic loss, mean that there has been little attempt to make sense of the nature of domestic architecture.

An analytical framework originally applied to Norwegian Mesolithic structures (Fretheim et al. 2018; Fretheim 2017) defines tents as 'portable dwellings, built to be easily assembled, disassembled and transported' and stresses that in many instances they leave very little clear archaeological trace in terms of structural evidence, precisely because they are designed to be mobile. Communities reliant on tents may therefore leave little direct evidence of those structures, with sites dominated by scattered artefacts and isolated features. Such a description is in keeping with much of the Irish evidence of accumulated occupation soils, spreads and occasional pits and fire settings. We have occasional (semi-)permanent buildings and some 'composite buildings' (where some structural features such as poles might be left on site for re-

use), but tents appear to have been more common, especially in the Later Mesolithic. The precise form of the structures is probably not identifiable, but the choice appears to have been significant in shaping the archaeological record.

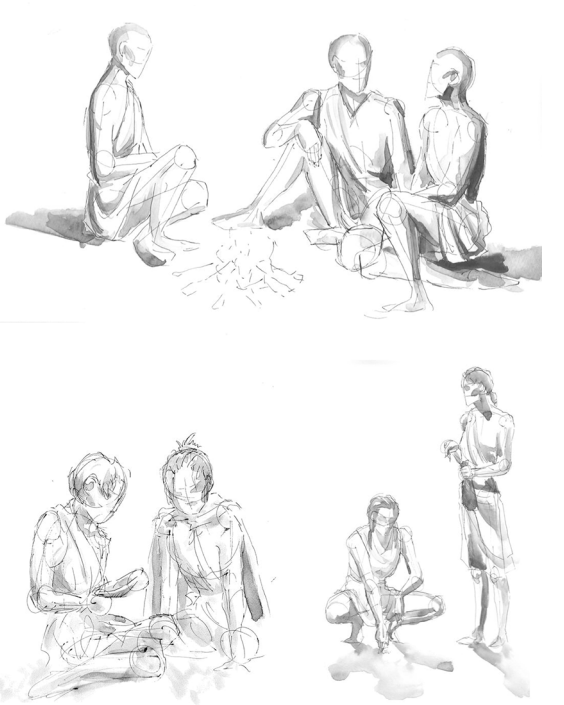
But why choose to live in tents? Unfortunately, beyond the assumption that mobility was essential to Mesolithic lives, this question is rarely considered in the Irish literature – not least because of the absence of terminological clarity and the pervasive power of stereotypes of hunter-gatherer behaviour. Drawing on the work on hunter-gatherer social scale outlined above, my argument is that the reliance on tents was a choice made by deep-time hunter-gatherers in Ireland *because* living in tents enabled the proximity and intimacy so important to their social worlds. As Friesem and Lavi observe

> "the rule of thumb among hunting and gathering societies is that houses are open or semi-open structures, built with very light and easily modified materials. Above all, the house design and site structure among foragers seems to manifest a social preference to ensure maximum sharing, co-presence and living-together." (Friesem and Lavi 2019: 88-9)

Choosing to live in tents was an option that asserted and maintained a form of hunter-gatherer sociality in Mesolithic Ireland, a form of intense and shared presence characteristic of living in small social groups. The intimate scales of hunter-gatherer social life thus give rise to our evidence. Rather than simply representing taphonomic loss, therefore, the absence of structural evidence on many Mesolithic sites in Ireland can be interpreted as resulting from choices made in the past to emphasise the creation of intimate co-presence, itself enabling the maintenance of key institutions such as sharing. These choices arguably arose from an emphasis on forms of relational wealth, and, presumably, acted to inhibit the inheritance of material wealth or power. Reconstruction drawings commissioned for the volume try and capture something of these moments (Figure 1). Some evidence suggests possible population growth in the final phases of the Irish Mesolithic (Chapple, McLaughlin, and Warren accepted) and it is interesting to note that this increase does not appear to be associated with the significant development of social inequality many general evolutionary models would suggest: perhaps the strong assertion of intimate living was a way of resisting this?

Alongside the creation of intimate spaces for small-scale sociality, Irish hunter-gatherers appear to have maintained long-distance contacts – at least across the island of Ireland. A common feature in Later Mesolithic lithic as-

Figure 1: Shared Mesolithic moments



semblages is the presence of (very) small amounts of non-local raw materials, often drawn from distances of c 100-200km. These include sites on the coast such as Bay Farm, Co Antrim (Woodman and Johnson 1996), Belderrig (Warren 2009) and Ferriter's Cove (Woodman, Anderson, and Finlay 1999) as well as inland at Clogheen, Co. Waterford (Kador 2007) and Lough Derravaragh, Co. Westmeath (Little 2010). Most of the time these are finished objects and they do not appear to be especially different in terms of their functional characteristics or possible 'prestige'. They are often only a handful, or even single, artefacts in assemblages dominated by local raw materials.

Multiple interpretations of the precise processes by which these artefacts travelled over distance are possible, but it is most parsimonious to simply assume that they represent contact of some kind between different groups or across distance. Following the observations on scales of hunter-gatherer so-

ciality reviewed above, the contacts indicated might be considered an example of suggestion by Bird et al. of a

> "model for hunter-gatherer group formation in which fluid groups of co-residing/co-working individuals are not drawn from a small well-defined community or ethnolinguistic group, but rather from networks of social organization maintained in relational, rather than material, wealth accumulation." (Bird et al. 2019: 96)

The small amounts of 'exotic' raw materials from distance resulted from social strategies that encouraged small amounts of movement and contact between places and between groups: an emphasis on connectivity and relationships which enabled mobility.

In these examples, considering the scales of sociality characteristic of hunter-gatherers as observed ethnographically and in anthropological synthesis enables interpretation of Irish archaeological evidence not simply as taphonomic loss or a failure to find the right kinds of sites, but as resulting from the decisions of past hunter-gatherers to emphasise the generation of relational wealth arising from intimate co-presence and fluidity. Scale gives meaning and depth to our accounts.

Quantifying scale

The final reflection on how scale shapes narratives about deep-time hunter-gatherers in Ireland considers how we quantify scale. Ireland has not been isolated from the increasing popularity of demographic approaches to prehistoric social change. This has usually taken the form of statistical modelling of radiocarbon dates: in the Irish instance, different models, sometimes on limited data sets, have produced very different results for the Mesolithic (Griffiths and Robinson 2018; Riede 2009; Riede, Edinborough, and Thomas 2009; McLaughlin 2020). A variety of attempts to quantify population levels have been made, drawing on ethnographic parallels or supposed carrying capacities for different environments (Woodman 2015). Dominant narratives suggest that Ireland was isolated and with a low population level. These archaeological discussions parallel recent genomic data from two Mesolithic individuals which has also been used to argue for both a low overall population level, possibly with a significant bottleneck (Cassidy et al. 2020). Against this expectation of a limited population size Cassidy comments that the absence of evidence of inbreeding in the genomic data "is remarkable, given that the

Mesolithic population of the island is typically estimated as no more than 3,000-10,000 people" (Cassidy 2020: 34).

Such accounts attempt to provide a meaningful scale for hunter-gatherer Ireland through consideration of population, and especially the repeated emphasis on low population levels. Quantifying the scale of the past in this sense means counting *people*: scale is population and a population number seems to provide something solid to hold onto. In this sense it is interesting that a common query from members of the public is to ask what the population was at varied times in prehistory: quantification provides some comfort in the face of the unknown. But population estimates for hunter-gatherer Ireland on the basis of a wide range of general models of carrying capacity for appropriate environments and/or more-or-less explicit analogies with hunter-gatherers in similar environments provide a bewildering range of estimates (for discussion see Warren 2015). If it is comfort that is sought through their use, then at best they offer false comfort.

The specific background to Cassidy's comment about a population of 3,000-10,000 is interesting to explore. This is claimed to be provided in Woodman's 2015 discussion, although he states 3,000-5,000 (and in another place, 800-8,000). Woodman's figure of 3,000-5,000 is drawn from Lourandos' (1997) summary of the potential pre-contact population of Tasmania, itself drawn from Jones' work on the diaries of George Augustus Robinson – the 'Chief Protector of Aborigines' 1839-1849. Robinson played a significant role in the resettlement of Aboriginal Tasmanian communities in the mid nineteenth century. British scientific accounts of Tasmanian society at this time were racist and complicit in colonial atrocities: not least in creating a 'myth of extinction' – the idea that Tasmanian society was in decline prior to colonial genocide. Downplaying the size of Aboriginal populations was part of this dominant narrative. Most recent historical accounts suggest estimates of 6,000-10,000 are more appropriate (Taylor 2017). Given that Tasmania is only 81% the size of Ireland, if we want to follow this logic, this might suggest a population of 7,300-12,300. But even this logic requires caution. In this attempt to quantify some of the scales at which deep time Irish hunter-gatherers lived we are embedding knowledge about hunter-gatherers which was gained under recent conditions of colonialism into the deep time past.

Most accounts of the Irish Mesolithic that discuss population assume that the meaningful scale for understanding population is that of the island of Ireland. This is unfortunate. Setting aside the complex issue of links beyond the island of Ireland, and staying with our parallel for contact-era Tasmania –

noting that these are records of societies undergoing significant violence and disruption – it is important to consider the structure of the island-wide population of Tasmania. This was organised into about 100 clans which formed nine nations and five language groups (Ryan 2012; Taylor 2017). Marriage was often within nations and nations held a variety of different relationships with their neighbours. This example suggests that quantifying scales of population at the level of the island may not be meaningful because the scales at which lives were lived were not structured at that level.

Finally, and as observed by Nurit Bird-David (this volume), quantifying the scales of population or community– and what might be small-scale or large-scale – depends to a considerable degree on who and what you include in your counting. This important observation highlights a final theme that articulated the writing of *Hunter-Gatherer Ireland*, the connections established between people and different aspects of the worlds that surrounded them, which in turn are central to considering the scales at which lives were extended. Whilst many of the details of these relationships are hard to recover, we can observe that the first Holocene settlement of the island of Ireland in the centuries surrounding 8000 BC appears to have involved the movement of hunter-gatherers and animals – with the translocation (possibly not synchronously) of wild boar, wild cat/lynx, dog and, just possibly, bear (Warren et al. 2014). This was not just a case of humans 'colonising' an island environment, but the arrival of a multi-species community: and one which probably extended beyond the mammals listed above. The ecological impact of these varied communities on the landscape of Ireland is not well understood, with too many commentators assuming that the pre-farming landscapes of Ireland were 'natural' woodlands. A more refined understanding of Early Holocene landscapes in Ireland needs to consider not that they are anthropogenically altered, but that they are the product of multi-species communities acting at different scales and bound into relationships of differing degrees of dependence. Boar, for example, have considerable influence on ecosystems, possibly enriching them through disturbance. A different example is wild cat, which was presumably less bound with human lives, but had considerable influence on the behaviour of small mammals and ground nesting birds. Understanding the scale at which hunter-gatherer lives were lived requires that we understand relationships that extend beyond the human. And in this context, the consumption by Mesolithic communities of small amounts of birds of prey, including peregrine falcon, owl and eagle, is probably best understood not as driven by calorific need but as the consumption of some kind of prop-

erty of the animals in a context where the boundaries between humans and other beings were fluid. The intimate social worlds of Irish hunter-gatherers were lived in the 'pluripresence' of multiple beings (Bird-David 2017a; 2017b). In such a world, considering scale appropriately means thinking beyond the human.

Discussion

The aim of this brief essay has been to highlight how different uses of and conceptions of scale create kinds of knowledge about the deep-time hunter-gatherer past, and about how these provide value. Considering scale appropriately is a key step in making sense of the archaeological record and scale underpins most of my analysis and interpretation in *Hunter-Gatherer Ireland*. Not recognising the importance of scale is one of the reasons that some commentators have misunderstood the character and significance of evidence from the Mesolithic period in Ireland.

Although articulated most clearly in ethnographic and anthropological work, new approaches to the scales at which hunter-gatherers live enable new interpretations of deep-time hunter-gatherer lives. Temporal scale helps to create distinctive hunter-gatherer situations. In the Irish case, this allows us to consider how temporal scale affects the experience of place and how moments in the past provide points of contact and connection from the present. The importance of the latter should not be overlooked, and certainly provides one area where public interest can be engaged.

Considering the scales at which lives were lived provides an opportunity to foreground the textures of sociality in the past, with intimate co-living resulting from deliberate choices to maintain forms of architecture that enabled the development of trust and positive relationships. The value of this relational wealth was also upheld through longer journeys that bought people together. Thinking with scale in this sense allows us to understand the forms of our evidence as more than just loss, and to emphasize choices and social strategies in the past.

Attempts to quantify the scales of hunter-gatherer sociality in terms of population and demography also require careful consideration. Beyond the specific methodologies involved it is important to highlight the assumptions about appropriate scales and analogies that articulate some discussions.

Finally, taking the scales of hunter-gatherer life seriously means that we should not restrict our focus to humans. The intense connections with others,

articulated so beautifully in recent ethnographies and summaries, have to be at the heart of our archaeological approaches to hunter-gatherers.

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Comment by Charlotte Damm

Archaeology is arguably challenged by the choice of scale to an even greater extent than anthropology. The discipline must deal with a variety of temporal scales as well as spatial and social ones. A fundamental issue for most archaeological projects is deciding the temporal and spatial scales most appropriate for addressing the research questions. We may wish to investigate the evolutionary development of early hominids in Africa on a continental scale and over more than a million years or identify individual flint knappers through refitting of lithic debris produced during one short knapping session extending over a few square meters – or on any scale in between.

Warren's discussion of scales provides a different angle as he contemplates social scale and temporality as perceived and experienced by past hunter-gatherers. The emphasis on the experience of scale is evident, for example, when Warren argues that small dwellings were preferred because of the intimacy they afford. An additional possibility is that tents were preferred because they could be adjusted to the number of people in any current camp.

With regard to the experience of temporality, some sites bear evidence of having been repeatedly occupied, (perhaps) a consequence of their recognisability because one had been there before, or because the place has qualities that repeatedly drew people there. The material left behind would be familiar to later inhabitants, much as we today may enter deserted ruined houses and find a broken comb or an empty matchbox. Repeated visits to such persistent places may also suggest that the location was named. The many short-lived sites, on the other hand, show us that life in the Irish Mesolithic was dominated by a rhythm of movement and a variation between new sites and persistent places. Variation is also a key element when Warren turns to social scales, where he assumes that much time was spent in small intimate groups, but that in addition interaction occurred across longer distances. Intimacy and movement were thus two central experiences in the Irish Mesolithic, but also the rhythm of variation between new and familiar sites, near and more distant regions.

What fascinates me is how Warren is first directly concerned with the resolution and scale of the *archaeological* data to be analysed, but then almost imperceptibly translates this into *lived* scales. He then takes this further, implying that the emphasis on intimacy was an inherent or perhaps even an acknowledged way of resisting social inequality.

In the final section Warren addresses the issue of who to include in our demographic counts of community members, as problematized by Bird-David. Should dogs be included? In several prehistoric hunter-gatherer contexts some dogs were buried in separate graves amongst humans in the burial grounds. Should wild animals adopted and cared for be included? And in the case of the Irish Mesolithic, several species were introduced to the island by humans, a strong indication of a multispecies community. The Mesolithic art and rock art in Europe is concerned with a limited number of species, and it is not uncommon in hunter-gatherer societies to refer to some species by kinship terms. Nurit Bird-David has previously pointed out that other-than-humans may be considered as included in a community, because what counts is the being with, rather than being like. While dealing with such issues in past hunter-gatherer communities is certainly challenging, Warren's examples of human-animal relations illustrate that the interactions go beyond a simple economic hunter-prey relationship.

Comment by Bram Tucker

Graeme Warren frames his thoughtful chapter around the experiences of pandemic lockdown in 2020, as people around the globe saw our social worlds zoom from the large scale of international travel, fieldwork, workshops, and conferences down to the small scale of living and working at home. Staying home with his wife, children, and cats forced Warren (as it did all of us) into a social world that may have been more like that of Mesolithic Irish hunter-gatherers: a social world composed of the same faces every day, a world of close kin, and of kindred extended to our non-human companions.

The other major set of events in 2020 was, in the United States at least, a public debate about exactly whose lives matter, and what it means to say that we, as a society, value the lives of Black, Brown, and Indigenous peoples. Here is a second parallel with Warren's arguments about Mesolithic Irish foragers. Warren argues that Irish hunter-gatherers should matter to us, even if their population densities were low and their buildings and artifact assemblages comparatively sparse. Mesolithic Irish foragers matter because they occupied and modified the land over a long period of time; because they exemplified a hunter-gatherer existence for which we have few ethnographic parallels; and because they influenced the people who came after them. And, of course,

because they were people who lead meaningful lives within their own social worlds.

That people in the past matter is perhaps the greatest lesson of modern archaeology. The world history that I learned as a child, focused on "the Rise of Western Civilization" and similar residual nonsense of the colonial era, pretended that the lives of most Africans, Asians, and Indigenous Americans, Australians, Pacific Islanders did not matter as much as did the lives of Aristotle, Alexander the Great, Charlemagne, and King Henry VIII. The act of considering all human lives – over the past 200,000 or more years of human history and across the globe – as having been important is an emancipatory act, for it reveals that human possibility transcends the limits of the modern world that we generally accept as normal and inevitable.

The Scale Matters workshop was framed around the apparently contradictory conclusions by Bird-David (2017) that hunter-gatherers live in nano-scale societies, and by Bird et al. (2019), that hunter-gatherers have large-scale social networks. Workshop attendees soon came to realize that these arguments were not contradictory. This is demonstrated by Warren's descriptions of the 2020 pandemic lockdown, and the Mesolithic Irish archaeological record. Professor Warren's social life during the pandemic was nanoscale in that he cohabited with the same few human and non-human persons daily. But via telecommunications technologies he exchanged advice, stories, and text with a large range of non-kin, many of whom probably became kin through these exchanges. Likewise, Warren emphasizes that Mesolithic Irish foragers living in tents composed small social worlds of genetic, fictive, and non-human kin. But using the Mesolithic equivalent of Warren's telecommunications technology – long distance trade of stone tools and other raw materials – these scattered small worlds formed a larger-scale social world that spanned the Irish island.