

RHINDS QUERIES AND ANSWERS (in no particular order, except that the ones about carved stone balls are grouped at the end)

Mike (by email)

Q: As a National Trust guide to Avebury and the Stonehenge Landscape, I was fascinated by her almost-throwaway remark about the Ring of Brodgar being based on Avebury. She referred to having written about this elsewhere (presumably in some papers or a contribution to a Festschrift) and I'd love to follow it up. From her lecture it seems there is some doubt as to the dating of the Ring, and indeed this is the case with the stone circles at Avebury (as opposed to the bank and ditch of the henge, tho still a long way from Durrington levels of "accuracy")

A: Thanks. Yes, the relationship between the Ring of Brodgar and Avebury is indeed a fascinating topic that deserves closer attention and some serious research. Personally I feel strongly that the wholly exceptional monument at Ring of Brodgar – by far the largest henge and stone circle in Scotland – was inspired by a visit to the even huger Avebury monument, which would imply a date of c. 2500 BC for its construction. In Lectures 5 and 6 I went into some detail about the current uncertainty about the date of construction of the Ring of Brodgar, and the need for more excavation to try to establish this more securely. I have mentioned the possibility that this monument was inspired by a visit to Avebury in several publications, most recently in the following:

Clarke, D.V., Sheridan, J.A., Shepherd, A.N., Sharples, N.M., Armour-Chelu, M.J., Hamlet, L., Bronk Ramsey, C., Dunbar, E., Reimer, P.J., Marshall, P.D. and Whittle, A.W.R. 2016. The end of the world, or just 'goodbye to all that?' Contextualising the red deer heap from Links of Noltland within late third millennium cal BC Orkney. *Proceedings of the Society of Antiquaries of Scotland* 146, 57–89. <https://archaeologydataservice.ac.uk/library/browse/details.xhtml?recordId=3204182andrecordType=Journal>

The work that Prof. Josh Pollard (University of Southampton) has been undertaking on Avebury is helping to refine the dating of that magnificent monument. The question of the undertaking of long-distance journeys between Orkney and Wessex is something that has fascinated me for many years, and it seems likely that there were indeed, over several centuries, visits from south to north and north to south. We can see a wonderful example of this in an Early Bronze Age context, around the 20th century BC, in the magnificent grave goods found in a Wessex-style barrow at the Knowes of Trotty: here, the amber jewellery can only have been obtained from Wessex, and the gold 'button' covers arguably emulate the embossed sheet goldwork of Wessex. See my article on this:

Sheridan, J.A., Kochman, W. and Aranauskas, R. 2003. The grave goods from the Knowes of Trotty, Orkney: reconsideration and replication, in J. Downes and A. Ritchie (eds) *Sea Change: Orkney and Northern Europe in the Later Iron Age AD 300-800*, 176–88. Balmuccie: Pinkfoot Press

I could go into detail about the Grooved Ware in Wessex and Orkney, but I shall be covering that in an article on the results of the *Times of their Lives* radiocarbon dating project (directed by Profs Alasdair Whittle and Alex Bayliss) that will be written this year. Watch this space!

Matt Leivers

Q: The evidence for interpersonal violence from the megalithic chambers is very interesting. Do you have an opinion on the contexts in which that violence might have been happening? Were these people victims of fighting, do you think, or might there be elements of ritualised violence as well?

A: Hello Matt! This is an interesting question, and the evidence is indeed fascinating. I tried to paint a picture of a society of fairly prosperous farmers in Orkney where there had been long-standing rivalry between groups, played out in the funerary monuments they built to honour their dead. The culmination of this spiral of competitive conspicuous consumption was the construction of Maeshowe and similar passage tombs, along with nucleated settlements with some large communal buildings, plus the astonishing complex at Ness of Brodgar. Given that stone weapons feature so prominently among the symbols of power at that time (i.e. c. 3200–2800 BC) and that much of the evidence for cranial trauma and other injuries also falls into that time bracket, that does make me suspect that the imposition of a new social order may well have involved inter-group violence. It's clear that men, women and children were attacked. There are, of course, other contexts in which the injuries could have occurred; we shouldn't assume that inter-community relations were always harmonious. Indeed, if you consider the ethnographic record, there is plentiful evidence (e.g. from Papua New Guinea) for inter-group conflict that flared up periodically. Likewise, it could be that there was brutal domestic abuse going on. As for ritualised injuries: I'd argue that there isn't a consistent pattern in the injuries that would encourage us to such a view: contrast, for example, the evidence for death by decapitation in an Iron Age context at Covesea cave, Moray*. Someone had wondered whether the bashing of old people on the head in Orkney may have been a way of 'dealing with' the elderly, but the incidence of the same kind of violence on younger individuals, including children, shows that head-bashing wasn't limited to one age group.

That inter-personal violence did not just take place in Orkney is clear from the leaf-shaped arrowhead found embedded in a vertebra at Tulloch of Assery B, Caithness, probably dating to c. 3600 BC, or the evidence for blunt force cranial trauma on an individual buried at Strath Glebe on Skye, which I mentioned in Lecture 3.

I hope this answers your question.

* Armit, I. & Büster, L. 2020. *Darkness Visible: the Sculptor's Cave, Covesea, from the Bronze Age to the Picts*. Edinburgh: Society of Antiquaries of Scotland (and see Lindsey's excellent recent lecture to the Society: bit.ly/33UC6hl)

Emma Watson

Q: Regarding the spiral markings on the Carved Stone Ball at Howie, those elsewhere in Scotland and in the Meath region of Ireland, how do they relate to Long Meg and the Calderstones' markings in Cumbria and Lancashire?

A: Good question, Emma – and note that it's Towie, not Howie. All will have been inspired by the passage tomb art of the major passage tombs in the Boyne Valley, Co. Meath, especially Newgrange and Knowth, two of the huge monuments (along with Dowth) in the Bend of the Boyne. As I explained in Lecture 5, people will have come from far and wide to visit these wonders of the ancient world, and probably also to participate in their ceremonies which – at Newgrange – focused on sunrise at winter solstice, when the sun's rays enter the chamber along the passage, via a 'roof box'. If you want a real treat, log into the inspiring 2020 solstice recordings for Newgrange – accompanied by a really fabulous explanation by Dr Frank Prendergast and Clare Tuffy ([gov.ie - Winter Solstice at Newgrange 2020 \(www.gov.ie\)](https://www.gov.ie/en/winter-solstice-at-newgrange-2020/)). It's likely that the linked spirals express/symbolise the movement of the sun as it rises and sets at different points on the horizon.

During the Neolithic, the visitors' reactions to what they had experienced varied, so that in Aberdeenshire people carved the spiral designs onto carved stone balls, while in Orkney they adopted and adapted the double-spiral motif and incorporated it into lintel stones of some

Maeshowe-type passage tombs. In Cumbria they pecked a spiral design (plus cup and ring motifs) on the tall standing stone known as Long Meg, which stood beside a huge stone circle that we now know – thanks to excavations by Paul Frodsham – *may* have been constructed as early as 3300–3000 BC. You can read all about his work in a brand-new book:

Frodsham, P. 2020. 'A most noble work', at the heart of Neolithic Britain. Some thoughts on the Long Meg complex in the light of recent fieldwork. In G. Hey & P. Frodsham (eds), *New Light on the Neolithic of Northern England*, 147–75. Oxford: Oxbow

In the same book you can read Richard Bradley and Aaron Watson's account of the rock art at Copt Howe, at the entrance to the Langdale valley.

The Calderstones passage tomb is one of several passage tombs – the others including Barclodiad y Gawres and Bryn Celli Ddu on Anglesey – which will have been built as a direct response to Irish passage tombs, during the late 4th millennium BC. The original location of the Calderstones monument is unknown; it was reconstructed at Calderstones Park in Liverpool in or before 1845 and its presentation recently (2019) underwent an impressive overhaul – see [034-041_ca347_calderstones_mechsc.pdf \(orbisconservation.co.uk\)](#) for an account of the conservation work and recording of the designs.

Matthew Pearce

Q: I have an interest in the landscape at Kilmartin. I wonder what has drawn people there over 1000s years. cairns, standing stones, carnasserie castle and Kilmartin Church itself. What are your views on the continuous occupation here? Is there a close link between farming and religion? It is a wonderful place.

A: I share your passion for the landscape in and around Kilmartin Glen – and can highly recommend Kilmartin Museum, its wonderful curator Dr Sharon Webb MBE and its great café! (The Museum is closed just now until 2023, while its major redevelopment project is underway [[Redevelopment | Kilmartin Museum](#)], but there will be outdoor events – Covid-permitting – during the summer of 2021 and 2022, and a new website will soon be launched, offering more information and opportunities to get involved.) In answer to your question, without doubt the dramatic topography of the Glen has provided a theatrical landscape within which ceremonies and monument building took place over millennia. You can read all about the development of this landscape during the Neolithic, Chalcolithic and Bronze Ages in the following article:

Sheridan, J.A. 2012. Contextualising Kilmartin: building a narrative for developments in western Scotland and beyond, from the Early Neolithic to the Late Bronze Age, in A.M. Jones, J. Pollard, M.J. Allen and J. Gardiner (eds), *Image, Memory and Monumentality; archaeological engagements with the material world*, 163–183. Prehistoric Society Research Paper 5. Oxford: Oxbow ([PDF](#)) [Contextualising Kilmartin: building a narrative for developments in western Scotland and beyond, from the Early Neolithic to the Late Bronze Age | Alison Sheridan - Academia.edu](#)

...and in my contribution to the Regional Archaeological Research Framework for Argyll:

Sheridan, J.A. 2017. Neolithic, Chalcolithic and Bronze Age c 4000BC – 800BC. (Section in the *Regional Archaeological Research Framework for Argyll*) <https://scarf.scot/regional/regional-archaeological-research-framework-for-argyll/6-neolithic-chalcolithic-and-bronze-age-c-4000bc-800bc/>

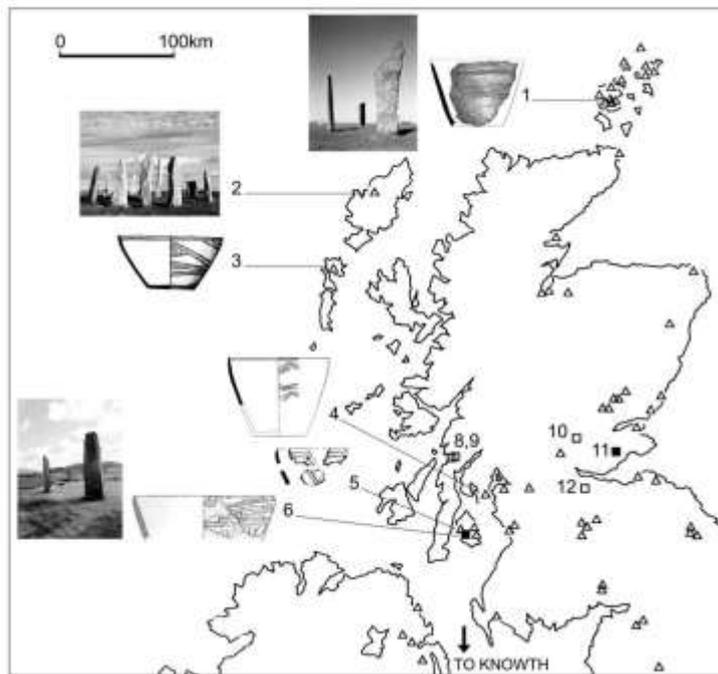
See also:

Webb, S.H 2012. *In the Footsteps of Kings: A New Guide to Walks in and Around Kilmartin Glen*.
Kilmartin: Kilmartin Museum

Thomas Legendre

Q: To what extent do you believe Kilmartin Glen was involved in the connection between the Boyne Valley and Orkney? (And thanks for excellent and engaging lectures!)

A: Thanks for your kind words (and I cannot tell you how super-chuffed I was to be described by you as 'the Fonz of archaeology'! Tee hee! That is THE coolest compliment I've ever had!). I'm delighted that you, and so many other people, have enjoyed the lectures. I believe that the people in Kilmartin Glen were indeed very much involved in the interchange of ideas between the Boyne Valley and Orkney, and here's an image from an article I published in 1984* that expresses that visually:



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* Sheridan, J.A. 2004. Going round in circles? Understanding the Irish Grooved Ware 'complex' in its wider context, in H. Roche, E. Grogan, J. Bradley, J. Coles and B. Raftery (eds), *From Megaliths to Metal. Essays on Honour of George Eogan*, 26–37. Oxford: Oxbow [\(PDF\) Going round in circles? Understanding the Irish Grooved Ware complex in its wider context | Alison Sheridan - Academia.edu](#)

Numbers 8 and 9 are the Temple Wood North and South stone circles (with T.W. North also having a timber element). I believe these were inspired by the Stones of Stenness stone circle, and the connection with Orkney is reinforced by: i) the presence of a spiral design on one of the stones of T.W. South; ii) the presence, in the area, of a carved stone ball (which could have been acquired/made thanks to links with Orkney rather than links with Aberdeenshire) and iii) the presence, elsewhere in Kilmartin Glen, of early Grooved Ware pottery that could be 'lost' in Orkney. Essentially, as I set out in my publications on Kilmartin, ** I believe that people along Scotland's Atlantic façade will have visited Orkney and will have encountered people from Orkney and Ireland, travelling between these major centres of sacred monuments and ceremonies.

**Sheridan, J.A. 2012. Contextualising Kilmartin: building a narrative for developments in western Scotland and beyond, from the Early Neolithic to the Late Bronze Age, in A.M. Jones, J. Pollard, M.J.

Allen and J. Gardiner (eds), *Image, Memory and Monumentality; archaeological engagements with the material world*, 163–183. Prehistoric Society Research Paper 5. Oxford: Oxbow ([PDF](#))
[Contextualising Kilmartin: building a narrative for developments in western Scotland and beyond, from the Early Neolithic to the Late Bronze Age | Alison Sheridan - Academia.edu](#)

...and in my contribution to the Regional Archaeological Research Framework for Argyll:

Sheridan, J.A. 2017. Neolithic, Chalcolithic and Bronze Age c 4000BC – 800BC. (Section in the *Regional Archaeological Research Framework for Argyll*) <https://scarf.scot/regional/regional-archaeological-research-framework-for-argyll/6-neolithic-chalcolithic-and-bronze-age-c-4000bc-800bc/>

Lorraine Edwards

Q: Is there any research into how these Neolithic societies were governed? Would society have been peaceful or warlike with their neighbours? Were there leaders, religious or king-like, or was it non-hierarchical? What evidence is there?

A: I hope that my lectures will have given you *some* general idea of the nature of society and of relationships between different communities – especially as far as Orkney, between c. 3200 BC and 2800 BC, is concerned. (You will remember all those human remains with evidence of injury on them, and the fancy stone weapons that were also symbols of power. This was an inegalitarian society, with those who ran the ceremonies at Maeshowe and elsewhere in the heart of Orkney in positions of power.) We use evidence from monuments, settlement structures and material culture to glean what we can about the nature of society – and I hope you will have got the message loud and clear about competitive conspicuous consumption on monument construction in some parts of Scotland. There's no evidence for kings/queens, but there will have been leaders of various kinds at different times and in different places during the Scottish Neolithic, and their lives and strategies are what I was describing in Lecture 5. You will recall that I contrasted the situation in Late Neolithic Orkney with that in Shetland, where there was no possibility of building up the kind of surpluses that permitted an inegalitarian social structure to emerge. We may never be able to arrive at a detailed account of the nature of social organisation at various times during the Neolithic, in different parts of Scotland, but we are trying to extract as much information as possible from the evidence at our disposal!

Lorraine Edwards

Q: I am fascinated by your idea that burial mounds reflect a change from phallic/male-dominated culture to a more "pregnant"/female-centred one. Would this reflect the idea of a Mother Earth religion? What further evidence is there for this shift in belief? Or is this shift merely an expression to ask for divine earthly intervention throughout the seasons for a successful farming crop?

A: Yes, this is the theory proposed by Christine Boujot and Serge Cassen vis-à-vis the change in monuments in the Morbihan region of Brittany during the third quarter of the 5th millennium BC, and if you look in Prof. Cassen's academia.edu website you can find many publications on this matter, and on the Neolithic of the Morbihan more generally. The belief system is expressed in material culture and in megalithic art as well as in the form of the monument; for interpretation of the symbolism, see for example:

[\(8\) \(PDF\) Cassen S., 2017. D'un signe l'autre, des Alpes à l'Atlantique : représentant et représenté. In : Objets-signes et interprétations sociales des jades alpins dans l'Europe néolithique \(tome 4\).](#)

[Cahiers de la MSHE C.N. Ledoux n°17, Besançon, Presses Universitaires de Franche-Comté n°1224, p. 883-909. | Serge Cassen - Academia.edu](#)

Sheridan, J. A., Pétrequin, P., Pétrequin, A.-M., Cassen, S., Errera, M., Gauthier, E. & Prodéo, F. 2019. Fifty shades of green: the irresistible attraction, use and significance of jadeitite and other green Alpine rock types in Neolithic Europe. In C. Rodríguez-Rellán, B.A. Nelson & R. Fábregas Valcarce (eds), *A Taste for Green: a global perspective on ancient jade, turquoise and variscite exchange*, 97–120. Oxford: Oxbow

[\(8\) \(PDF\) Architecture du tombeau, équipement mortuaire, décor céramique et art gravé du Ve millénaire en Morbihan. À la recherche d'une cosmogonie des premières sociétés agricoles de l'Europe occidentale | Serge Cassen - Academia.edu](#)

The 'guardian' figure at Knowth West may well be a representation of a female divinity; it closely matches those in the angled passage tombs of Le Luffang and Les Pierres Plates in the Morbihan. In Ireland and Britain there isn't the emphatically male-dominated social structure that we see in early to mid 5th millennium, pre-passage tomb Morbihan, so there wasn't this ideological shift.

It's important to dissociate expressions of female fertility and power from the sort of all-encompassing 'Mother Earth religion/cult' theory as proposed by Prof Marija Gimbutas back in the 1960s. That is an example of a 'big picture; idea that has been painted across vast swathes of the world inappropriately. Belief systems and ideologies have to be approached on a local and regional scale first, and then the inter-relationships between the belief systems of different, contemporary regions can be approached. There certainly weren't 'megalithic missionaries' going around converting folks to an 'Earth Mother' cult. I like Boujot and Cassen's approach of trying to understand how societies ticked, and how notions of power and fertility were expressed, and changed over time, in their belief systems.

The farmers who came from the Morbihan and built the closed chambers and simple passage tombs will have brought over the Morbihannais belief system, with its notion female power and female fertility, but then it will have undergone many centuries of development and change over the succeeding generations. A renewed emphasis on the notion of female divinities might have been introduced when people from Orkney chose to build their own version of Newgrange at Maeshowe and elsewhere, but I don't accept the idea that the 'Westray wifie' figurine found at Links of Noltland was necessarily a goddess figure in a 'Mother Goddess' cult. Let's not forget 'Brodgar Boy', the phallic figurine, and the androgynous/asexual 'Buddo' from Skara Brae. These are figurines into which people have tended to pour their own preconceptions! As archaeologists we have to be aware of all the possible interpretations, and not get swept up into populist preoccupations with 'earth mother' cults – not that I am suggesting that that's your position at all, I hasten to add!

I hope this answers your question.

Richard Caie

Q: Do you see any reaction to the inexorable rise of the sea level over the millennia?

A: Well, apart from the obvious – that is, the assumed movement slightly inland to avoid areas that were being submerged – there isn't really any unambiguous evidence of how people reacted; but I'm not the best person to comment on that. Caroline Wickham-Jones and her *Rising Tide* project* in Orkney have been looking into this question, so I recommend that you check out her work for her reflections on sea level rise in Orkney and its consequences. One area where a change would have been detectable over the course of one to two generations was the inundation, by seawater, of the

formerly marshy Loch of Stenness, possibly around 3000 BC (i.e. during the heyday of the Ness of Brodgar).

* <https://www.abdn.ac.uk/geosciences/departments/archaeology/the-rising-tide-investigations-into-the-submerged-archaeology-of-orkney-261.php>

<https://orkneyarchaeologysociety.org.uk/video-rising-tides-talk/>

...and see also the recently-published book, which includes a report on the project:

Brend, A., Card, N., Downes, J., Edmonds, M. & Moore, J. (eds) 2020. *Landscapes Revealed: remote sensing across the Heart of Neolithic Orkney World Heritage Site*. Oxford: Oxbow

Mark Pettit

Q: Do we have evidence for sudden climate change and/or epidemic leading to population collapse prior to arrival of Beaker people.

A: NO! There is no evidence for any kind of crisis, either in Britain and Ireland or on the Continent, whence the Beaker People came. A recent TV programme suggested that there had been a climate-change crisis but there is no evidence for this whatsoever! Note that not all social changes are the result of crises.

Su Carlin

Q: Regarding the settlers in Shetland, do you think that they had much communication with those on Orkney or that they were very much a smaller frontier society, concentrating on their own survival. The crossing to Shetland is more difficult than that from the Scottish mainland to Orkney.

A: As I explained in Lectures 2 and 5, and in several publications including the one below, no I don't think they had much communication with Orkney. There is no doubt that they DID have **sporadic** contact, as is clear, for example, from the fact that they were using the same kinds of macehead as people in Orkney were using around 3000 BC. I wouldn't call them a 'frontier' society – frontier of what? – but instead an insular community of farmers who, having become established on Shetland by 3700 BC, lived their own lives and – in the case of the people buried in the Sumburgh cist around 3300–3000 BC – had a really tough time of it.

Sheridan, J.A. 2014. Shetland, from the appearance of a 'Neolithic' way of life to c 1500 BC: a view from the 'mainland'. In H.C. Gulløv & D. Mahler (eds), *Northern Worlds – Landscapes, Interactions and Dynamics*, 67–92. Copenhagen: Nationalmuseet ([PDF](#)) [Shetland, from the appearance of a 'Neolithic' way of life to c. 1500 BC: a view from the 'mainland' | Alison Sheridan - Academia.edu](#)

Norman Meddle

Q: The Dwarfie Stane megalithic tomb on Hoy is extremely unusual. Any view on a cultural origin?

A: Yes it is indeed a one-off: a rock-cut monument, with a short entrance passage, two side compartments leading off the chamber and a large blocking stone outside. That stone was observed to be in position, blocking the passage, during the 16th century according to a 'Jo Ben' (Davidson & Henshall 1989, 114). You can see the 3D photogrammetric model made by Dr Hugo Anderson-Whymark for Historic Environment Scotland here:

<https://sketchfab.com/3d-models/dwarfie-stane-tomb-hoy-orkney-7681512a940343009498c06c30fc5f1a>

and it was recorded and discussed by the great Audrey Henshall, most recently in her book on the chamber tombs of Orkney:

Davidson, J.L. & Henshall, A.S. 1989. *The Chambered Cairns of Orkney*. Edinburgh: Edinburgh University Press

Was this a Neolithic chamber tomb? Or was it created much later? The Neolithic chamber tombs of Orkney vary widely in their design, and it is quite plausible that people chose to be different from their neighbours and, instead of constructing a chamber tomb by erecting a stone chamber and covering it with a cairn, they chose the arduous task of shaping and hollowing out the natural block of Old Red sandstone instead. Shape-wise, it is least dissimilar to the so-called 'Bookan' group of chamber tombs – but it's not close to them either, and in any case this category of monuments seems to span quite a long period in its construction. We will never know for sure whether the Dwarfie Stane was created during the Neolithic. The monument has been accessible for the last 500 years and no artefacts giving a clue to when it was created have been found. It's been knocked about over the ages: the roof had probably already been breached by the 16th century and further damage will have occurred when the blocking stone was removed. Moreover, a fire in the interior damaged the roof yet more. There are graffiti of various ages from 1735 onwards (which you can also see in a 3D model), and metal chisel marks, many from attempts to get the blocking stone out. Hugo Anderson-Whymark observed that, in one of the cells, there is a 'pillow stone', where the floor of the cell has been carved to leave a rectangular area standing proud, and he has noted that this is a feature of many medieval tombs (although, overall, the Dwarfie Stane does not resemble any known medieval structure). It might be worth checking out the 'fresh-looking' peck marks on the roof of the southern cell, to see what kind of tool had been used to hollow out that cell. If a metal tool, this would rule out a Neolithic date. For now, though, the Dwarfie Stane retains its mystique!

Kate Starling

Q: You say that the early Neolithic house in East Lothian was burnt down by the inhabitants rather than others, and then make the same comment about the burning of cursus being a positive act by believers. What brings you to that view?

A: As I explained in Lecture 3, it would take a very great deal of effort to burn down a cursus monument, and so there must have been a very good reason for doing so in a systematic manner. Regarding cursūs (the plural form of the word 'cursus'), one would have to be a particularly dogged iconoclast to go to all the effort of gathering enormous amounts of kindling wood and burning hundreds of posts – and then do it again and again, to other cursus monuments. As Julian Thomas has pointed out in the book cited below, the burning makes more sense as part of a ritual carried out by the people who constructed cursūs, where these enormous monuments were constructed and destroyed as a seamless set of ceremonial activities by a large group of people. Whether or not they were associated with funerary rites, or with honouring the dead by letting their spirits free in the act of burning down the monument, the point remains that burning is a part of the theatrical performance of ritual – and a very striking and impressive one too.

Thomas, J. 2007. *Place and Memory: excavations at the Picts Knowe, Holywood and Holm Farm, Dumfries and Galloway, 1994–8*. Oxford: Oxbow

And while a flaming arrow could indeed start a conflagration in a hall, the relatively small amount of artefactual material that's been found inside the several burnt-down halls in Scotland militates against the idea of a stealth attack. Contrast this with the huge amount of material that's been found in the Late Bronze Age settlement at Must Farm, Cambridgeshire, which burnt down (either

by accident or not) and collapsed into the water below it, preserving the contents (<http://www.mustfarm.com/>). The deliberate destruction of these communal houses for the first farmers in an area makes sense as part of the 'budding off' process: as I argued, as soon as a group of incoming farmers felt sufficiently well established in an area, the group would disperse into individual farmsteads, with the buildings usually being quite a bit smaller than the halls. (Doon Hill is an exception, though, as the second building was nearly as big as the first.)

Other evidence that supports my interpretation is the paucity and short-term nature of the 'halls' phenomenon in Scotland: had these been standard houses, that were burned down by attackers, one would have expected the owners to rebuild them at the same scale. While the Doon Hill secondary structure was nearly as large as the first one, this is not the case elsewhere (except perhaps at Carnoustie – but there, people replaced the biggest hall by a small house within its footprint).

If you want to read more about Early Neolithic 'halls', see:

Sheridan, J. A. 2013. Early Neolithic habitation structures in Britain and Ireland: a matter of circumstance and context. In D. Hofmann and J. Smyth (eds), *Tracking the Neolithic House in Europe*, 283–300. New York, Dordrecht, Heidelberg and London: Springer

Merryn Dineley (by email)

Q: What were they doing with the grain? Were they making malt? Can we look forward to more research, discussion and investigation of this aspect of neolithic life in the future

A: Clearly they were cooking with the grain, as we know from the cutting-edge lipid analyses of Neolithic pottery from the Outer Hebrides by Dr Simon Hammann who, along with Dr Lucy Cramp, has recently developed the technique of lipid analysis so that it is capable of detecting cereal lipids. See:

Hammann, S. & Cramp, L.J.E. 2018. Towards the detection of dietary cereal processing through absorbed lipid biomarkers in archaeological pottery. *Journal of Archaeological Science* 93, 74–81 <https://doi.org/10.1016/j.jas.2018.02.017>

Whether they were brewing ale using barley – a topic which I know is your own favourite – is a matter that has not, as yet, been demonstrated conclusively. The evidence that you cite in your various blogs and other social media outlets is not, sadly, proof: the claims made for the Grooved Ware from Balfarg Riding School in the report published in 1993 (which also included the claim that people were drinking an hallucinogenic liquid containing henbane) have been comprehensively discredited by research by Deborah Long and colleagues on the same organic residues on the same pottery in question, published in 1999 in the *Journal of Archaeological Science*: this showed not only that there are no traces of henbane but also that no clear cereal grain structure could be detected, contra the original claim.

<https://www.researchgate.net/publication/232393275> Black Henbane Hyoscyamus nigerL in the Scottish Neolithic A Re-evaluation of Palynological Findings from Grooved Ware Pottery at Balfarg Riding School and Henge Fife). Moreover, the claim that barley lipids had been identified among pottery from Barnhouse – a claim made by Andrew Meirion Jones *et al.* in 2005, and based on GC-MS analyses undertaken in the 1990s – has not been accepted by those who specialise in lipid analysis. As Hammann & Cramp's 2018 publication demonstrates, the methodology for reliably identifying cereal lipids did not exist until very recently. Finally, the barley grain lacking its embryo from the hall at

Balbridie does **not**, as you claim, constitute proof that Early Neolithic farmers there were brewing ale, or that the hall was a store for barley used in brewing. There are various factors that can lead to the loss of an embryo in a barley grain.

What needs to be done now is the application of the best possible scientific techniques in order to identify **unambiguous** evidence for the use of barley for brewing. The biomolecular and microscopic studies of Heiss *et al.* 2020

(<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0231696>) and Cordes *et al.* 2021 (<https://www.sciencedirect.com/science/article/abs/pii/S0305440320302181>) point the way in which this can be achieved. We need to move away from a 'world as wished for' approach to archaeological evidence to something considerably more rigorous.

Joe P.

Q: Re: 'Where are the bodies?'

A book from 1825 (James Denniston, "Legends of Galloway"?) recounts: about 30 years previously, the farmer at Cairn Holy was constantly interrupted in his plowing, running into stones — with urns and bones, so old they fell apart in his hands.

Are there other such reports?

Has there been any subsequent evaluation?

A: The excavation at the chamber tombs of Cairnholy I and II undertaken by Professor Stuart Piggott and Terence Powell in 1949* concentrated on these monuments, rather than on the area around. It sounds as though farmers had come across and destroyed a flat (i.e. unrounded) Early Bronze Age cemetery. The Canmore entry for site no. 63758 (<https://canmore.org.uk/site/63758/cairnholy>) may relate to the site described by Denniston; this also mentions the discovery of battle axeheads which, if they are of stone, would be consistent with an Early Bronze Age date (c. 2000-1500 BC in this case). It's likely that all traces of this cemetery were destroyed by the ploughing, and it would be difficult to do fresh fieldwork, not least as the area is under rough pasture. Once disturbed, ancient pottery can decay to nothing within a couple of years on the surface of a ploughed field. That's the problem with these very old finds: the items that were found got lost if they didn't make it into a museum, and it can be hard to pinpoint where the site had been.

If you want to see what has been found in the area, I suggest you type in 'Cairn Holy' in the Canmore site search webpage

(https://canmore.org.uk/site/search/result?SIMPLE_KEYWORD=Cairn%20holy&site_results_page=1)

* Piggott, S and Powell, TGE 1949 The excavation of three Neolithic chambered cairns in Galloway, 1949. *Proceedings of the Society of Antiquaries of Scotland* 83 (1948–9), 123–9
https://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-352-1/dissemination/pdf/vol_083/83_103_161.pdf

Adrienne Hume

Q: What about the recent discovery in the Boyne Valley about the very close relationship between individuals. Any evidence for similar 'close' relationships?

A: I presume you mean in Scotland. I did mention in Lecture 3 that while no evidence for incest or other very close genetic relationships has been found among the people buried in Scottish chamber tombs who have been analysed for DNA, there is evidence for a close relationship – probably father and son – between two men whose remains were found in Macarthur Cave in Oban.

For further information on the Newgrange incest individual, see:

Cassidy, L.M., Ó Maoldúin, R., Kador, T., Lynch, A., Jones, C., Woodman, P.C., Murphy, E., Ramsey, G., Dowd, M., Noonan, A., Campbell, C., Jones, E.R., Mattiangeli, V. & Bradley, D.G. 2020. A dynastic elite in monumental Neolithic society. *Nature* 582, 384–8. <https://doi.org/10.1038/s41586-020-2378-6>

Sheridan, J.A. 2020. Incest uncovered at elite prehistoric Irish burial site. *Nature* 582, 347–9. [d41586-020-01655-4.pdf \(nature.com\)](https://doi.org/10.1038/d41586-020-01655-4)

Stuart Forbes

Q: Is there any evidence for writing in neolithic Scotland even if restricted to record keeping or measurement as was happening in the Near East at this time?

A: No, none whatsoever.

Portia Askew

Q: The research for the future would include a greater survey/excavation/evaluation, that would require funding. Is there a plan in place for this to happen.

A: Dear Portia, I see that you are a Senior Archaeologist with the Museum of London Archaeology service. As such, you will be aware of the parlous financial state of archaeology in Britain, especially given the uncertainty of whether/for how long we can access EU sources of funding. In Scotland there is no dedicated fund for survey/excavation/evaluation (other than the resources dedicated to survey by Historic Environment Scotland); as with elsewhere in Britain, much archaeology is undertaken as an adjunct of infrastructural and other development, with additional funding being available through various grant schemes. I'd love to report that the Scottish Government has a magic money tree dedicated to archaeology, but it hasn't; Historic Environment Scotland's resources for archaeological research are tightly constrained. That said, it is very useful to have a national strategy for archaeology (*Scotland's Archaeology Strategy* http://archaeologystategy.scot/Scotlands_Archaeology_Strategy_Aug2016.pdf), as well as a national Scottish Archaeological Research Framework (<https://scarf.scot/national/>) and various regional Research Frameworks (<https://scarf.scot/regional/>). These, at least, can guide funding as and when it is available.

Sarah Botfield

Q: You mentioned several adult [sic] and children displayed evidence of starvation /near starvation at Sumburgh on Shetland. I wondered why they would not have looked to marine resources if thy [sic] were starving. Was fishing too dangerous? Or other reasons?. Did analysis show what the children's diet was? i.e, did they eat fish. Thank you for a fantastic set of lectures.

A: Thanks for your kind words; I'm glad you enjoyed the lectures.

The article that sets out the situation with the people buried in the cist at Sumburgh is:

Montgomery, J., Beaumont, J., Jay, A., Keefe, K., Gledhill, A., Cook, G., Dockrill, Stephen J. & Melton, N.D. 2013. Strategic and sporadic marine consumption at the onset of the Neolithic: increasing temporal resolution in the isotope evidence. *Antiquity* 87(338), 1060–72 [https://doi.org/10.1017/S0003598X00049863_11426.pdf \(dur.ac.uk\)](https://doi.org/10.1017/S0003598X00049863_11426.pdf)

This study demonstrates that this farming community DID look to marine resources when their farming lifestyle failed, as I explained in Lecture 2. The farmers who came to Britain and Ireland in

the centuries around 4000 BC brought a tradition of not eating fish, and this avoidance was perpetuated when there was a secondary expansion of farmers within Scotland during the late 38th century BC. This was first and foremost a **cultural taboo**. Now, isotopic specialists argue among themselves about how much of one's diet can be taken up by marine resources before it shows in one's isotopic values, but the point remains that the tradition that was initially introduced featured a reliance on terrestrial resources. Over the centuries, as I explained in Lecture 3, some farming communities *did* start to exploit marine resources, albeit to a small extent. Montgomery *et al.*'s study argues that in Shetland, this is what the farming communities tried to maintain, but they were forced, through starvation, to resort to eating fish. They fed fish to their children to prevent them from dying of starvation. Some did die, but for those who survived, they reverted to a terrestrial diet. It's a fascinating piece of research – and all the more interesting given that, historically, Shetlanders have been described as 'fishermen who farm', in contrast to Orcadians, 'farmers who fish'. I hope this answers your question.

Fiona Jowett

Q: I appreciate this is a tricky question, but I wonder what your thoughts are on the reason why seafood was obviously not in the Neolithic diet?

A: As I explained in the lectures and in my reply to Sarah Botfield's question about Shetland, it was a cultural taboo: the farmers who came over from different parts of France did not appear to eat marine resources – or if they did, this was to such a small extent that it did not leave a trace in their isotope values. There are many cultural taboos about foodstuffs around the world today and over time: consider, for example, the rules of halal and kosher food.

I also added, in Lecture 3, that over time, and in parts of Scotland, some farmers did appear to take up fishing; there's clear evidence from Orkney, for example. So people's beliefs, concerns and taboos could change over time.

Elizabeth Johnson:

Q: can you say more about the Spanish and Portuguese neolithic structures? what is time frame and where did they get their inspiration from

A: This would require a lecture in itself! There is a **huge** literature on Portuguese and Spanish Neolithic funerary monuments; one way to get into that would be to check the bibliography used by Bettina Schulz Paulsson in her recent publications, and to see what she says about the dating of these monuments (from the second half of the 5th millennium BC onwards):

Schulz Paulsson, B. 2019. Radiocarbon dates and Bayesian modeling support maritime diffusion model for megaliths in Europe. *Proceedings of the National Academy of Sciences* Feb 2019, 116 (9) 3460-3465; DOI: 10.1073/pnas.1813268116

Schulz Paulsson, B. 2017. *Time and Stone: the emergence and development of megaliths and megalithic structures in Europe*. Oxford: Archaeopress

..and see also, for example:

Rocha L. 2005 *As Origens do Megalitismo funerário no Alentejo Central: A contribuição de Manuel Heleno* [The origin of megalithic tombs in the central Alentejo]. PhD thesis (University of Lisbon, Lisbon).

[\(9\) \(PDF\) CASSEN S., et al., 2012. Dépôts bretons, tumulus carnacéens et circulations à longue distance. Breton hoards, Carnac tumuli and long-distance circulations | Serge Cassen - Academia.edu](#)

Bradley Battles

Q: I would love to see what suppositions of animalism/totemism [sic] in a full set of 7 houses descendant of "cruithne"? Clan eagle dog boar stag ?salmon? (Highland)cat horse? And how those clans later became pictish place gods&houses of royal families mixed with some celtic .. ?mindsets/pantheon?.. to create the unique culture which existed by the iron age** in Scotland?? I wonder..

A: Thanks, but sorry, no: we can't put **any** names on **any** social groupings in Neolithic Scotland. Do bear in mind that these people existed at least two and a half millennia before there was any written reference to Scotland. There is absolutely **no way** of knowing what these people called themselves, or precisely how their societies were ordered. There may indeed have been an element of totemism in the pattern of deposition of animal remains in mid- to late third millennium Orkney, but how the depositors named themselves – and whether they belonged to clans - can never be known. No continuity of practice exists between these people and the inhabitants of Scotland during the first millennium AD.

If you want to understand Iron Age Scotland, I recommend that you look at the excellent lecture by my esteemed colleague Dr Fraser Hunter: "[Celts: Art and Identity](#)" by Fraser Hunter - [YouTube](#). And if you are interested in early medieval Pictish society, check out Dr Gordon Noble's [The Northern Picts Project | School of Geosciences | The University of Aberdeen \(abdn.ac.uk\)](#)

Moreover, there is an excellent book by Professor Jim Mallory that explores the relationship between myths, legends and accounts of oral history and the archaeological record. It's about Ireland but is pertinent to interpreting Scottish oral traditions:

Mallory, J.P. 2016. *In Search of the Irish Dream Time: archaeology and early literature*. London: Thames & Hudson.

Carved stone balls queries

Peter Herbert

Q: I was most fortunate a couple of years ago to see the carved stone balls in the museum store but I am puzzled by the relative lack of broken stones. In a way they would be even more interesting than the perfect ones. What record is there of damaged/broken balls? Is there a range of materials used that might degrade more than others - not all Neolithic people could afford Arran pitchstone, perhaps!

A: Thanks for your message. I'm really glad you enjoyed your visit to the National Museums Collection Centre. There are indeed examples of broken balls, including a highly decorated one from the parish of Keith Hall and Kinkell, Aberdeenshire, that was in the collection of famed 19th century antiquary Sir John Lubbock, and which is now in the Avebury Collection in Bromley Museum. My late colleague Alan Saville published an article about this in 2015:

Saville, A. 2015. A Neolithic carved stone ball from Scotland acquired by Sir John Lubbock (Lord Avebury), with comments on the Scottish connections of Lubbock and his collection. *The Antiquaries Journal* 95, 1–20. doi:10.1017/S0003581515000591

This is a particularly interesting specimen as the break is clean, across the mid-point of the ball, and Saville argued convincingly that the fracture surface had been ground smooth – possibly during the 19th century to enable the fragment of ball to be used as a paperweight. He also observed that in Dorothy Marshall's magisterial review of carved stone balls in 1977 –

Marshall, D.N. 1977. Carved stone balls. *Proceedings of the Society of Antiquaries of Scotland* 108 (1976–77), 40–72

– she noted 29 chipped or broken examples, seven of which approximate to half-balls.

The stone used to make these balls varies greatly, from relatively soft types such as sandstone to hard types such as granite. None has been made from pitchstone! – which is a wholly inappropriate type of stone, being incapable of being shaped into the elaborate forms of carved stone balls.

If you want to find out more, check out my colleague Dr Hugo Anderson-Whymark's blog, which contains his stunning 3D photogrammetric models:

<https://blog.nms.ac.uk/2018/06/06/enormous-petrified-mulberries-a-new-dimension-on-carved-stone-balls/>

Edward Duvall

Q: Has anyone estimated roughly how many hours of work it would have taken to carve out a stone ball?

A: Yes! A very kind member of the Edinburgh Archaeological Field Society made one from sandstone, using Neolithic-style techniques, in just 19.5 hours over 20 years ago and donated it to National Museums Scotland; it has four knobs and a little decoration. However, the time needed to make a ball will vary widely according to the softness and toughness of the stone; sandstone is one of the easiest materials to use, being relatively soft.

There are several people who replicate carved stone balls now, and some use modern tools, which obviously speed the process. Incidentally, one issue pertinent to ALL newly-created balls is the crucial importance of marking them in some indelible way, so that they don't confuse archaeologists in the future! We know that some people in the 19th century faked balls to get money, and it can be tricky to tell these from the real things. People who make carved stone balls now aren't fakers (by and large); their motives are honourable – but since we don't know what will happen to their products after their current owners die, it's important not to litter the archaeological record with 20th/21st century 'white noise'.

Roger Griffith:

Q: If Carved Stone Balls were used as weapons that were thrown you would expect signs of damage when they 'missed'. Have such indicative signs been identified?

A: This is a nice, simple question but it's not so easy to answer! In her survey of carved stone balls in 1977*, the late Dorothy Marshall noted that there were 29 chipped or broken balls – a small percentage of the overall number of known carved stone balls.

* Marshall, D.N. 1977. Carved stone balls. *Proceedings of the Society of Antiquaries of Scotland* 108 (1976–77), 40–72

If the balls were indeed used as projectile weapons, it all depends on the nature of the surface where they landed and the hardness of the stone: a sandy soil, or similarly soft surface, would break

the fall of a ball; and, given that quite a few balls have been made from granite or similarly hard/tough rocks, the surface would have to be particularly hard to damage some balls. Also, do bear in mind that where there is damage, one needs to differentiate between any damage that may have occurred at the time when the ball was in use, and damage suffered a long time afterwards. The vast majority have been found during agricultural operations, be it digging for potatoes or ploughing. If a plough were to hit a ball of relatively soft stone, it could easily damage it.

What would be very useful would be a study of the fracture/damage patterns on balls, to see whether it is possible to differentiate ancient from not-so-ancient damage. Thank you for opening up this avenue of study!

Ian Wall

Q: Why go to the trouble to make a special balls [sic] when any rock would do the trick to smash someone's skull but to do from a distance requires a lot of throws or do you think these were ritual actions.

A: May I suggest that you look again at Lecture 5, where I try to sketch out the nature of society in late third millennium Orkney? These people weren't wanton vandals, obsessed with death and destruction for its own sake. Late Neolithic society was one in which certain groups of people were vying for power, and their strategy for gaining and maintaining it had several facets – including the violent imposition of their will. Their symbols of power were the monuments they built to honour their dead, and their material culture – from the ostentatious jewellery to the various kinds of weapons. These weapons reflected their identity, and they also featured in their ceremonies (as in the ritual destruction of maceheads). So, in short, carved stone balls were so much more than simple weapons. They were weapons of social exclusion as much as anything else.

Graeme Cruickshank

Q: I thought that the questions were to be live! I would have continued to ask if there is any evidence for the weapon theory for Aberdeenshire (my home territory) where carved stone balls are much more common than in Orkney.

A: There are precious few Neolithic human remains from Aberdeenshire and none (as far as I am aware) dating to the time when carved stone balls were in use. As I explained in Lecture 4, Neolithic funerary practices varied across Scotland, and it just so happens that, for the period 3200–2800 BC, we don't have unburnt human remains. Therefore, we cannot say whether people in Aberdeenshire suffered blunt force trauma injuries.