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In the days before radiocarbon dating, when dealing with a short chronology of only some 500 years for the British Neolithic (Piggott, 1954), our ceramic sequences, based on rigorous relative chronologies, were convincing and easy to understand. Carinated Bowls with European ancestry marked the start of the Neolithic and developed into southern decorated variants, in the Middle Neolithic and Peterborough or Impressed Wares in the Late Neolithic (Gibson, 2002). These Impressed Wares were contemporary with Grooved Ware, the first flat-bottomed ceramic type in British prehistory, and heralded the arrival of Bell Beakers and the Early Bronze Age in the early second millennium BC. Bronze Age pottery was mainly recovered from sepulchral contexts and comprised Food Vessels and Collared Urns, both ultimately derived, with external Beaker influence, from the Late Neolithic insular traditions.

An internal development within the Impressed Ware tradition could also be identified on typological rather than strictly chronological grounds. This basically comprised modestly decorated Ebbsfleet bowls at the start of the typology, developing into more heavily decorated Mortlake style bowls with developed rims and finally Fengate style vessels with heavy collared rims at the end of the sequence. In these last-named pots, the developed rim of the Mortlake style vessels had developed into an overhanging collar and the pots also had impractically small and crudely formed flat bases thought to be influenced by the very different but contemporary flat-based Grooved Ware. The Mortlake bowls had strong typological links with Early Bronze Age Food Vessels and the collared Fengate vessels had strong typological links with Collared Urns (formerly known as Overhanging Rim Urns) in terms of their collars, flat bases and filled triangle decoration on the collar. The advent of radiocarbon dating did little to change this accepted sequence and although it extended the timeframe of the British Neolithic initially this was not by a great deal, only some 500 years. Furthermore early radiocarbon dates had large margins of error, had often been ill-chosen (old wood or poor integrity) and, of course, no calibration curve had been produced or, indeed, had been thought necessary (fig. 1).

As radiocarbon sample selection improved and calibration curves became available, it was obvious that the founding fathers of British Neolithic chronology had seriously underestimated the time-scale. Calibration of radiocarbon dates pushed the British Neolithic back by a millennium to 4000 BC. This affected the dating of the early Neolithic ceramics but did not have a great effect on Impressed Wares and Grooved Ware largely because the pool of dates for these ceramic types was small and there seemed no reason to change their broad contemporaneity (fig. 2). Furthermore, the finding of Impressed Ware, Grooved Ware and Beaker ceramics in the blocking material within the West Kennet chambered tomb, Wiltshire, suggested that there was indeed a time at the
Before Calibrated Radiocarbon - Years uncal BC

3000 2750 2500 2250 2000 1750

Fig 1: The British Neolithic and Early Bronze Age ceramic sequence as perceived before and during the early years of radiocarbon dating.

AFTER Radiocarbon Calibration - Years cal BC

4000 3500 3000 2500 2000 1500

Fig 2: The British Neolithic and Early Bronze Age ceramic sequence as perceived after the introduction of radiocarbon calibration.
Fig 3. The old (above) and revised (below) internal sequence for Impressed Wares based on Marshall et al. in Beamish (2009).

Fig 4: Current chronologies. The link between Impressed Wares and Early Bronze Age forms is now more questionable with an apparent gap of some 800 years between the demise of the former and the appearance of the latter.
advent of the Bronze Age when all three ceramic styles were in contemporary use (Piggott, 1962).

The accepted ceramic sequence was first challenged in 1996 when radiocarbon dates associated with an Impressed Ware bowl from Horton, Berkshire, suggested a Middle Neolithic date in the second half of the 4th millennium BC. This was initially met with disbelief, and more dates were commissioned but proved identical. This prompted a review of Impressed Ware associated radiocarbon dates (Gibson & Kinnes, 1997) and though the database was poor, those dates with good integrity strongly suggested that Impressed Ware did indeed date to the second half of the 4th millennium and that furthermore the Ebbsfleet - Mortlake - Fengate sequence did not seem to work but rather all three sub-style appeared to have been broadly contemporary.

Meanwhile Garwood (1999) had similarly reassessed Grooved Ware dates and these suggested that Grooved Ware dated to the early 3rd millennium with very little chronological overlap with Impressed Ware. The previously solid foundations of the theory of contemporaneity had been severely shaken. Radiocarbon dates obtained for these two ceramic styles since the 1990's have further supported this date separation and Bayesian modelling of dates (Marshall et al. in Beamish, 2009) has refined this further even suggesting a revision of the internal Ebbsfleet - Mortlake - Fengate sequence (fig. 3). This work over the last 20 years has had a serious effect on the typo-chronological model (fig. 4).

The formal and decorative similarities between Impressed Wares and Early Bronze Age Food Vessels and Collared Urns is still very strong. They have undeniable resemblances not only in shape and in the repertoire of decorative motifs but also in the impressed nature of the decorative techniques that are employed such as twisted and whipped cord decoration, birdbone impressions and incision. Herringbone and filled triangle motifs are found on both the Middle Neolithic and the Early Bronze Age vessels. Zoned decoration and toothed comb impressions are certainly Beaker-influenced and while the flat bases may possibly derive from Grooved Ware, there is nevertheless a growing number of Mortlake style pots that are exhibiting this trait in the later 4th Millennium (Gibson, 2010, Fig. 23; 2013a). The plastic decoration and tub-shaped forms of Grooved Ware appear to have had little if any influence on either insular Beaker developments or on Food Vessels or Collared Urns. The current problem is that there is now a chronological gap of some 800 years between the disappearance of Impressed Ware and the appearance of the Early Bronze Age forms that are clearly developed form it.

It was thought that here must be ‘missing links’ for how else could Early Bronze Age ceramics have been so strongly influenced by an earlier ceramic style that had been out of use for some 800 years or at least 40 generations? But searches for those missing links have so far proved elusive. The obvious place to search is amongst the domestic assemblages on settlement sites where, perhaps, remnants of earlier styles may have lingered or where later forms may have become embryonic but this has been shown not to be the case and claims to the contrary (Millson et al., 2011) are unconvincing (Gibson, 2013b). There seems to have been little mixing of ceramic traditions within the domestic repertoire. Rarely are sherds of Impressed Ware and Grooved Ware found in association, and if they are, this can be explained by residuality. Beaker does appear on some Grooved Ware sites but actual sherd counts are low and this tends to occur on long-lived ritual sites rather than in the domestic sphere: Beaker, for example, makes only a fleeting appearance at the very end of the Orcadian Grooved Ware settlement sequence. Beaker settlements in Britain differ greatly from many other parts of western Europe in that they are late in the insular Beaker sequence (post fission Horizon - Needham, 2005) and comprise classic Beaker forms: they are ‘pure’ Beaker settlements with none of the Begleiterkeramik found in many Beaker-producing areas of Europe (Salanova, 1998; 2000; Matejicková and Dvořák, 2012). Food Vessel settlements are rare but sites such as Ardnave, Islay (Ritchie and Welfare, 1983) are also ‘pure’. Collared Urn settlements are even more rare but the scatters of domestic evidence have been found around the Fen edge and East Anglia such as at Hockwold-cum Wilton, Norfolk (Gibson, 1982) though sometimes on sites also (or previously) occupied by Beaker users.

The crucial period seems to have been broadly between 2900 BC and 2400 BC which, of course, is the period of currency for Grooved Ware (fig. 5). This ceramic style dates to the 32nd century BC in the Orkney Islands (Ashmore, 1998) but appeared in southern Scotland, England and Wales around 200 years later. The Grooved Ware ‘horizon’ marks a change in British prehistory. Early Neolithic causewayed enclosures ceased to be built and indeed were even rarely visited in the Late Neolithic: Grooved Ware finds at these sites are rare. The same can be said for long barrows and chambered tombs. The ceramic continuum from Carinated Bowl to Impressed Ware stopped abruptly. In the Early
Fig 5: Grooved Ware. These distinctive tub, bucket and barrel-shaped vessels appear to have originated in Orkney and spread rapidly southwards around 3000 BC.

and Middle Neolithic, burial modes were varied. Articulated and disarticulated bone groups are encountered in causewayed enclosures, barrows and chambered tombs. Small oval and circular monuments also date to the end of this period as do the elongated and enigmatic cursus monuments. Old established traditions can be seen to have come to an end.

The appearance of Grooved Ware, by contrast marked the beginning of other new developments. There is an increasing amount of evidence for there having been a common domestic house-plan in the form of small subrectangular structures built of stone in the Orkney Islands such as at the well-known site of Skara Brae or Barnhouse (Childe, 1931; Richard, 2005) or stake-defined further south such as at Tredyfan, Powys (Britnell, 1982) or Durrington Walls (Parker, Pearson, 2007).

There is an association of Grooved Ware with rock art and passage graves, particularly in the North and West of the British Isles. Circles of stone, timber and earth started at this time and appear to have escalated in grandeur and scale towards the end of the period (Gibson, 2012). Existing ritual spaces were enclosed by ditches and banks, again especially towards the end of the period (Gibson, 2010; 2012) when we also see the appearance of major building and engineering projects such as at Avebury, Durrington Walls and Silbury Hill (Cleal & Pollard, 2012). The variety of burial modes encountered in the Early and Middle Neolithic were replaced by cremation burial and inhumations were rare and tended towards those of children (Healy, 2012). The early phases of Stonehenge dating to the beginning of the 3rd millennium have been interpreted as a large enclosed cremation cemetery (Parker Pearson et al., 2009) and the change in burial practices can be clearly demonstrated at Duggleby Howe (Gibson & Bayliss, 2009). This large circular mound in was excavated in the late 19th century (Mortimer, 1905) and a recent programme of radiocarbon dating of the skeletal material remaining in the site archive has demonstrated that the monument is far from a single phased barrow (fig. 6). Two phases of crouched inhumation burial took place between the 36th/35th and the 34th/33rd centuries BC and the 30th – 29th centuries BC, the former in a pit, the latter in shallow graves in the old ground surface. The burials were accompanied by classic middle Neolithic artefacts and the two phases were separated by some 200–300 years. The primary mound of turf was erected in the 29/28th century BC associated with the crouched inhumations of at least 6 children.

Within the same mound material, and in the capping that sealed this mound, were over 30 deposits of cremated human bone though unfortunately these are now lost and the end date for this phase cannot be determined. Finally the mound was aggrandised and capped with chalk rubble from a large encircling ditch (almost 400m in diameter) in the 25th – 23rd centuries BC coinciding with the demise of Grooved Ware and the monumental building programmes of Wessex.

Against this background of cremation, crouched inhumation was reintroduced with the Beaker package in the middle of the 3rd millennium but very soon, by 2200 BC, burials had started to reference the Middle Neolithic diversity of practices. So, with later Beakers and with Food Vessels we find contracted, extended and articulated inhumations, multiple inhumations, disarticulated bone deposits and a fusion of inhumation and cremation (Petersen, 1972; Gibson, 2007). Collared Urns, however, are exclusively associated with cremation (Longworth, 1984). Furthermore, grave furniture also seems to reference the Middle rather than Late Neolithic. So, after the restricted nature of early Beaker grave goods, mainly simple copper alloy artefacts, and archers’ equipment, we have a range of both prestige and mundane artefacts and the return to the sepulchral
Fig 6: Schematic reconstruction of the burial sequences at Duggleby Howe, North Yorkshire. Section from Mortimer, 1905.

repertoire of objects made of jet which is almost completely absent from later Neolithic contexts (Sheridan and Davies 1998).

Pit burials, like that already seen at Duggleby Howe, also make a reappearance in Yorkshire associated with late Beakers and Food Vessels and combining various burial modes. Such an example from Aldo 54, East Yorkshire, produced a mixture of articulated and disarticulated burials (fig. 7) as well as peculiar deposits of human bone such as an adult cranium packed with infant bones – clear evidence for Early Bronze Age excarnation (Mortimer, 1905).

In conclusion, the emergence of pottery referencing archaic forms at the start of the Early Bronze Age can be seen as just part of a suite of re-emergent Middle Neolithic practices and monument forms (fig. 8). It is as if these have been latent since 3000 BC only resurfacing almost a millennium later. Why should this be? What are the mechanics of this resurgence? These questions are more difficult to answer and rely to a great degree on subjectivity and supposition.

Firstly, practices and beliefs may have been kept alive through mythology and legend in the oral record. Secondly, although Impressed Ware had not been made for over 800 years, it may still have survived in accessible ancient places – the insides of chambered tombs or other ‘cult houses’ for example – and it must be remembered that it would have been seen in the tomb of West Kennet by the Beaker users who made the final deposits there. Few would deny the Bronze Age references kept alive through the oral tradition in Homer’s Illiad and Odyssey and the effect that these had on later Greek art and literature especially after the Persian Wars. Homer’s detailed description of a Mycenean Boars’ tusk helmet (Homer, Iliad 10. 260–5) also suggests that he had seen one and was describing it for an audience unfamiliar with such things. Once again, one may have survived in a cult or religious context and so similarly the middle Neolithic may have been ‘kept alive’ in both archaeologically tangible (chambered tombs) and intangible (legend/mythology) ways. This leaves us with the question as to why there was a renewed referencing of the middle Neolithic after 2200 BC.

We have seen that the Middle Neolithic ended abruptly with the appearance of Grooved Ware. Beaker appears in later contexts on Early and Middle Neolithic sites such as long barrows and the upper silts of the ditches of causewayed enclosures. It also occurs on Grooved Ware sites but often in relatively small quantities (for example see Durrington Walls – Wainwright and Longworth, 1971) and the Beaker presence on the Orcadian Grooved Ware settlements is very small marking the end of occupation. The aggrandizement of some later Neolithic ritual foci such as the Stonehenge and Avebury areas in Wiltshire, but also Duggleby Howe in North Yorkshire seems to be immediately after the appearance of Beakers. It is as if these
Gibson A.M. Bridging the gap between typology and chronology:

Child
Mature but deformed adult with extra adult and juvenile body parts and animal bone

Fig. 130.—Section of Barrow No. 54.
A—Upper part of mound—clay and soil.
B—Boat-shaped mass of clay and soil.
C—Chalk forming the inner mound and filling the grave.

Two 'heaps' of bone:
Mature adult
Child 8-10 years
Bones damaged and split.

Large disarticulate deposit. At least 4 children, 2 adults. Adult cranium used as a container packed with infant bones.

Fig 7: Late Beaker burials from Aldro 54, East Yorkshire illustrating the diversity of burial practices.

Fig 8: Re-emergent practices. Continuous development represented by the solid arrows, re-emergence by the open arrows. Vertical bars represent finishing points.
monumental constructions were a native response to the introduction of Beakers rather than resulting from the import of any new ideas. In these monumental spheres, the demise of Grooved Ware is as rapid as the earlier demise of Impressed Ware.

Are we seeing changes in populations? It is possible to suggest (but difficult to prove) the following scenario. Early Neolithic people, ultimately from Continental Europe, developed insular lifestyles but continued to reference their origins with exotic artefacts such as jadeite and polished greenstone axes from mountain top quarries. Their field monuments such as portal dolmens, long barrows, chambered tombs and causewayed enclosures also referenced similar sites on the continent. Material culture underwent insular development, however, especially in ceramics. This ended abruptly with the advent of Grooved Ware when ritual monuments changed to predominantly circular forms, cremation dominated the burial record, evidence for solar and lunar observation became more evident, and the lithic toolkit underwent some changes with the introduction of edge-polished knives and petite tranche derivative (PTD) arrowheads. At this time Britain was truly insular. There are very few convincing European parallels in terms of either monuments or material culture for what was happening in Britain in the early 3rd millennium BC. Instead, Britain is remarkably uniform with Grooved Ware distributed from Orkney to the south coast and with stone circles, timber circles and earth circles being spread over the whole of Britain and Ireland. There also seems to have been a socio-economic shift with a greater emphasis on pig at ritual sites. At the settlement site of Upper Ninepence in Powys, faunal remains did not survive in the acid soil, but the study of the carbonised plant remains, lipid analysis of the ceramics and microwear analysis of the flint artefacts suggested that the activities undertaken at the site differed considerably between the Impressed Ware and Grooved Ware phases (Gibson, 1999).

The idea that Grooved Ware represents a population movement may be considered an old-fashioned cultural approach. Pots representing people is no longer fashionable in our post-processual environment. But isotope analysis is showing that at least some of the late Neolithic population were mobile and one of the burials at Duggleby Howe was probably brought up as far north as the north-west coast of Scotland (Montgomery et al., 2007). If we can accept that peoples travelled great distances across Europe in the Migration period, then why are we so reticent to accept the possibility in prehistory? The question is posed here to attempt to explain the ceramic sequence. Only future research will evaluate its usefulness.

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