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Debate Article

Times they are a-changin': a response to Magli and Belmonte

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Debates about archaeological interpretation are always healthy and welcome, and when, as here, arguments are not killed off, they inevitably become stronger. Importantly, the comments by Magli and Belmonte (2023) serve as a reminder that reconciling conflicting theoretical perspectives is never easy when times are changing. Grounded in positivism, their critique draws upon assumptions that become justificatory assertions. For better or worse, archaeological thinking has moved away from the processualism of the late 1960s, 1970s and early 1980s—a key turning point being Hodder's (1984) review of positivism in archaeological interpretation and his call for more contextualised approaches. The authors might usefully have consulted this and other works before setting out onto the choppy waters of post-processual archaeology. Many of their points simply escalate questions posed in my original text (Darvill 2022), and they often fail to distinguish between suggestions, arguments and more solid interpretative statements. Notwithstanding, they neatly arrange their response around three issues that are here addressed seriatim.

Numerology, in the sense of constructing meaningful relationships between numerical patterns and concepts as a way of understanding the world, may not be to Magli and Belmonte's 'scientific' taste, but it is regularly observed amongst non-Western societies when building calendars and giving order to the cosmos. Many of the case studies unfolded in Nilsson's (1920) classic study of primitive time-reckoning provide examples, while Crump's (1992) study takes a wider historical perspective. Rather than being arbitrary and selective in my arguments, I work with the available evidence, building inductively from the bottom up. For example, the use of movable markers to indicate the sarsen upright for a particular day, and hence the progression of the calendar through the year, is a strong possibility. A number of very large and heavy spherical stones that are distinct from the range of more common hammerstones recovered from the site might have fulfilled such a role (Cleal *et al.* 1995: 387 & fig. 2.11). It would certainly also be convenient, although not strictly necessary, to identify pillars marking the proposed 12 months. But we must remember that we are dealing with partial datasets. Less than half of the area inside the Stonehenge earthwork has been excavated, and even the areas examined are often difficult to interpret. As I previously noted (Darvill 2022: 327), standing stones in the north-east entrance provide excellent candidates for 'month-stones'. Burl (1994: 93–94) suggests that six of these form what he calls a "megalithic rectangle" and their spacing "accords well with the 30 stones of the sarsen circle and the five trilithons inside the ring". Set astride the solstitial axis, these six stones could each represent a specific month within each of the two halves of the year.

Concerns are expressed by Magli and Belmonte about the variable sizes of the uprights in the Sarsen Circle but here, as elsewhere in their critique, a greater familiarity with the archaeology of the site might have set their minds at rest. The widths of stones are variously known because the stones are still standing, because their sockets have been excavated, or because their sockets have been recorded as parch marks. That the diminutive size of S11 is the result of breakage and loss is known, as referenced in my original text (Darvill 2022: 322), through the results of laser scanning.

Under the heading of 'Archaeoastronomical argument', the imposition of a modern astronomer's view of the solstice as "the instant of maximal declination" (Magli & Belmonte 2023: 747) onto prehistoric communities—long before the development of compasses and theodolites—is inappropriate. The word 'solstice' means 'standstill of the sun', and most archaeoastronomers accept that, at least in practical observational terms, a solstice has a duration of four or five days (Ruggles 1999: 24–25). Magli and Belmonte are looking for precision and order, but the shadow of positivist science again colours their view. Ancient calendars are quite different from their modern counterparts. Amongst non-Western societies, the physical representation of their calendars might look robust and infallible. But as Nilsson (1920: 348–53) has emphasised, the people operating them are inconsistent and fallible, with the result that adjustments and changes are often made—usually at critical moments such as the start or end of a year—in order to keep everything running smoothly.

For Magli and Belmonte, the biggest issue seems to revolve around the use of cultural astronomical analogies, especially my suggestion that the main elements of the Egyptian civil calendar might have contributed to the underlying structure of the Stonehenge calendar. Supported mainly by self-citation, the authors claim that the basic calendar of twelve 30-day months (each comprising three 10-day weeks) together with five epagomenal days, and perhaps one additional day every four years, is a scheme not represented until the later first millennium BC. This view is at odds with most other authorities on the subject. In fact, their beef is not really with my suggestions about Stonehenge but with conclusions based on detailed analysis undertaken by a wide range of scholars, whose work is represented in a rich literature (some referenced in my original paper) that discusses and debates the early development of solar calendars in the Eastern Mediterranean during the third millennium BC. Stern's recent authoritative overview draws much of that work together, noting that "the Egyptian calendar was probably the simplest calendar of the ancient world" and that it "was extremely ancient, as evidence goes back to the third millennium BCE; but its origins are shrouded in mystery" (Stern 2012: 126 & 128). Equally, the question of when the leap-year adjustment was recognised and introduced is a matter of ongoing debate (*cf.* Parker 1974: 53; Stern 2012: 138–39).

Whether, and if so how, the Egyptian civil calendar influenced the development of time-keeping in north-west Europe during the later third millennium BC is also a topic for further research, and thus Magli and Belmonte's attempts to close down the debate are unhelpful. Archaeologically, it is clear that the rise of solar cults, and their association with the spread of Beaker-using communities, was central to a great deal of social change through the later third millennium BC throughout the Western Mediterranean and Atlantic seaways. Peer-

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polity interactions between communities may well have been the mechanism by which people, items and ideas moved considerable distances across a series of cultural stepping stones (Renfrew & Cherry 1986). Isotope studies and the investigation of genetic ties revealed through aDNA show that we must revise outdated ideas about the nature and extent of long-distance movements (Furholt 2019). In addition to the widely distributed artefact groups briefly mentioned in my original paper, we can augment the picture with, for example, the distribution of bone pendants of the type found with the Boscombe Bowmen, buried sometime between 2500 and 2340 BC in a grave 4km east-southeast of Stonehenge that includes examples from southern Italy and Greece (Fitzpatrick 2011: fig. 21).

In their conclusions, Magli and Belmonte (2023: 749) propose that "matters such as ancient calendars, astronomical alignments and cultural astronomy should be reserved for specialists" in a way that suggests academic arrogance. Their attempts to undermine the central idea of a Stonehenge calendar by picking at the edges and exploiting acknowledged uncertainties ultimately fails, because their positivist agenda neglects the socio-cultural contexts in which prehistoric calendars were developed and operated. Most notable of all, however, is that Magli and Belmonte do not make any suggestions as to what the settings at Stonehenge might have meant, how they might have worked, or how they might have been used by prehistoric communities. Surely modern archaeoastronomy can do better?

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