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## Pots and time in Bronze Age Ireland

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A.L. BRINDLEY. *The Dating of Food Vessels & Urns in Ireland* (Bronze Age Studies 7). vii+392 pages, 164 illustrations, 75 tables. 2007. Galway: Department of Archaeology, National University of Ireland; 9535620-2-6 hardback €40 + €7pp.

This magnificent volume represents the culmination of nearly three decades' work, and constitutes the first systematic attempt to date Irish Early Bronze Age pottery. Brindley is already well known for her radiocarbon dating programmes on Irish Neolithic single graves and wedge tombs. In this volume she deals with Early Bronze Age funerary pottery: Bowl and Vase Food Vessels, urns in the Vase tradition (Encrusted and Vase Urns), Collared and Cordoned Urns, and the small pots which she terms 'miniature vessels' but which others have described as (*inter alia*) 'accessory vessels' or 'pygmy cups'. Beaker pottery – only rarely found in funerary contexts in Ireland – is excluded, as are non-funerary Food Vessels and Urns.

The focus is on closed, funerary contexts, to maximise the chances of achieving a reliable chronology.

The volume is divided into five parts. Part 1 sets the scene, covering ceramic terminology and type definition; radiocarbon dating and the factors to be taken into account when assessing the reliability of <sup>14</sup>C dates; and the history of research on Irish Food Vessels and Urns. Brindley rightly emphasises that much work has been undertaken as an adjunct to research on related material in Britain, and from a woefully anglocentric – and often Wessex-orientated – perspective. Part 1 concludes with a clear statement of Brindley's objectives (p. 49):

- 'to make available a significant body of radiocarbon dates for the dating of food vessels and urns;
- to propose a sequence of development for the pottery which is consistent with the radiocarbon dating;
- to match this development with the calibration curve for the period; and

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- to identify the absolute chronology of the earlier bronze age in Ireland, i.e. that period defined by the use of food vessels and urns.’

Part 2 presents a detailed catalogue of more than 200 new radiocarbon dates that were obtained for this study (mostly from the Groningen laboratory, and mostly from human bone), ordered by pottery type. Full technical details of the measurements are provided; almost all the vessels are illustrated; other associated finds are listed; and the dates are critically assessed. Each chapter ends with a list of dates deemed acceptable for that pottery type, ordered as a ‘preliminary calibrated date range’ (PCDR). Many of the results were obtained from cremated bone directly associated with the pottery. The development of a method for reliably dating this material (Lanting *et al.* 2001) is one of the most significant advances in archaeological radiocarbon dating of the past decade, and one of the strengths of this volume lies in demonstrating the potential of this technique to provide reliable dating in situations where other suitable material is scarce.

Brindley turns to typology in Part 3, and here she acknowledges the inevitable involvement of ‘*intuition, subjectivity, and the biases of individual workers*’ (p. 160). The method used is essentially seriation, informed by the radiocarbon dates and by artefactual associations. Aspects of form and decoration are given differing weight in arriving at the typo-chronology of each pottery type; and Brindley divides the otherwise-seamless sequence for all types except the miniature vessels into three stages, ‘*for convenience*’ (p. 159).

Part 4 is where things get really interesting. The radiocarbon dates are grouped according to Brindley’s ceramic stages for each pottery type, and the results are compared with the shape of the calibration curve in two ways: through a graph of the calibrated date ranges (at one and two standard deviations) and through a visual approach to ‘wiggles matching’ the measurements against the calibration curve (e.g. Fig. 92). This involves visually assessing and mitigating the effects caused by the wiggles in the calibration curve for each group of dates in an attempt to address the attendant statistical scatter, which can make past activity appear to start earlier, end later and endure for longer than it did in reality. The final list of dates (which offers a shorter date span than the PCDR for each ceramic stage) is called the ‘final calibrated date range’ (FCDR). An alternative – and, in Britain, increasingly popular – way of dealing with statistical

scatter on groups of dates is Bayesian modelling (of which more below). Brindley does not discuss this or explain why it was not tried as a way of cross-checking her typo-chronology.

Part 5 looks beyond Ireland to present a critical review of the current state of dating of Early Bronze Age pottery (and its associated artefacts) in Britain; here, the collaboration between the Groningen laboratory and one of the present reviewers (JAS) is acknowledged. It also provides an overall summary and conclusions regarding the Irish material, and a synchronisation with developments in Irish metalwork. If reading the whole volume proves daunting, page 328 is the key page as far as Brindley’s overall ceramic chronology is concerned.

Four Appendices provide valuable supplementary information, including a *corpus* of Irish Vase Urns (Appendix A), recently-obtained Groningen laboratory dates from Britain (B), and ‘other relevant Irish dates’ (C). Appendix D presents a translation of Lanting & van der Plicht’s (2002) *Palaeohistoria* discussion of the chronology of the Bronze Age in Britain, NW France and the Netherlands, which challenges Stuart Needham’s 1996 periodisation of the British Chalcolithic and Early Bronze Age and proposes a late, and arguably contentious date of 1825 BC (p. 378) for the start of the Bush Barrow ‘phase’ of rich Early Bronze Age burials in Wessex. The latter has informed Brindley’s discussion at various points in the volume, not least as regards faience use in Ireland and Britain.

There is much to applaud in this volume. It clearly demonstrates the value of systematic, rigorous and long-term commitment to a specific problem, and constitutes a step change in our understanding of developments in Irish funerary practices between the 22<sup>nd</sup> century BC and 1500 BC. Brindley is right to stress the importance of maintaining tight control over the <sup>14</sup>C database, and to emphasise, as Waterbolk did in 1971, that short-life, single-entity samples are not enough – the association between the dated material and the archaeological event of interest is critical. This is a lesson that has been learnt painfully slowly by British archaeologists.

However, the volume is not without its faults. The absence of an index is regrettable; captioning is often insufficient; spelling (especially of place-names) can be erratic; and there are some factual errors concerning the British material (for example, the description of an embossed item from the Migdale hoard as being of

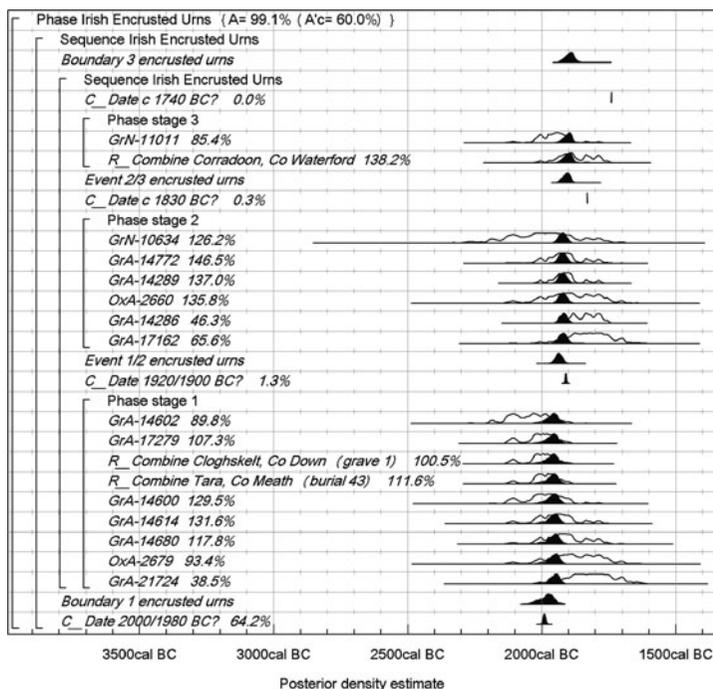


Figure 1. Probability distributions of dates from Irish Encrusted Urns. Each distribution represents the relative probability that an event occurs at a particular time. For each of the dates two distributions have been plotted: one in outline, which is the result of simple radiocarbon calibration, and a solid one, based on the chronological model used; the event associated with, for example, 'GrA-14772', is the growth of the individual dated. Distributions other than those relating to particular samples correspond to aspects of the model. For example, the distribution '1 Encrusted Urns' is the estimated date when the first Encrusted Urn of type 1 was buried. The large square brackets down the left-hand side of the diagram, along with the OxCal keywords, define the overall model exactly (<http://c14.arch.ox.ac.uk/>).

gold, not bronze; the inclusion of an urn from Culla Voe, Shetland, as a Vase Urn (see Sheridan 2007a); the description of beads from Bedd Branwen as of jet, rather than cannel coal (see Sheridan & Davis 1998)). In discussing British congeners for the Irish ceramic traditions, might a touch of 'Hiberno-centrism' have crept in? Brindley dismisses several dates for Scottish Food Vessels that appear to be younger than those from the Irish sequence as being 'possibly the result of humic contamination' (p. 304; a claim rejected by the laboratory responsible), rather than considering them as evidence that Food Vessels may genuinely have had a longer currency in Britain. And in discussing whether, and by how long, the traditions of Beaker and Food Vessel use overlapped in Britain, she flatly dismisses the evidence for clear Beaker-Food Vessel 'hybrid' pots (p. 299; see Sheridan 2004 and 2007b). One might also point out that Brindley occasionally strays from her own high standards in assessing and

using radiocarbon determinations. For example, some results on unidentified charcoal are included in the analysis (and not only as *termini post quem*), while others are not (e.g. Tables 13 and 14); and several very old (1970s and 1980s) determinations for some Scottish Food Vessel burials are trotted out without comment (see Sheridan 2004). Most worrying, perhaps, is the preternatural tidiness of the overall model and the firmness of some of the assertions. By banishing 'anomalous' dates, non-overlapping ceramic stages end up neatly stacked within a chronological 'chest of drawers'. More than twice as many dates are excluded from the PCDR because they are too 'late', than because they are too 'early'. There is a danger that a sampling bias has been introduced here.

Finally, one might legitimately ask whether Brindley's chronological scheme for Irish Early Bronze Age pottery is actually correct. The wiggle-matching

technique that she has used is informal, probably only broadly reproducible between workers, and does not produce quantifiable error estimates, unlike Bayesian modelling. To test the accuracy of the date estimates provided in this volume, a Bayesian model has been constructed for each of the Irish ceramic types. An example is shown here in Figure 1. Each model contains the dates used by Brindley (here for Encrusted Urns, shown in Brindley's Fig. 108), and applies her interpretation of each typological series as a continuous use of the vessel form divided into three successive, but non-overlapping type phases. This is not, in our view, necessarily the most realistic model for the chronology of the vessels in question, but is an attempt to reproduce Brindley's results using a formal probabilistic methodology.

Of the 24 date estimates for the typological phase boundaries calculated by these six models, Brindley's suggested dates fall outside the posterior density estimates provided by the Bayesian models in seven cases (at 95 per cent probability) and in 14 cases (at 68 per cent probability). For example, Brindley's estimate for the start of Encrusted Urns (2000/1980 cal BC) falls inside the Bayesian estimate for this parameter at both 95 per cent (2040 – 1935 cal BC; *1 Encrusted Urns*; Figure 1) and 68 per cent probability (2010 – 1945 cal BC), whereas her estimate for the end of this tradition (c.1740 cal BC) is substantially later than the estimates provided by the Bayesian model. There is a tendency for the Bayesian estimates to be earlier than those provided by Brindley, sometimes substantially (in all 7 cases at 95 per cent probability, and in 9 out of 14 at 68 per cent probability).

Turning to the duration of the ceramic types, of the 18 stage estimates provided by Brindley, four fall outside the 95 per cent probability range of the posterior density estimates provided by the Bayesian models (the currency of phase 1 Encrusted Urns is provided, for example, by taking the difference between *1 Encrusted Urns* and *1/2 Encrusted Urns*), and 11 fall outside the range at 68 per cent probability. In this case, there is a marked tendency for the durations estimated by the Bayesian models to be shorter than those provided by Brindley (in all 4 cases at 95 per cent probability, and in 8 out of 11 at 68 per cent probability).

Does this matter? Are Brindley's estimates *importantly* wrong (see Bayliss *et al.* 2007)? It depends on your perspective. Her answers are rarely more than one

or two generations away from those provided by more formal modelling, and she *has* got away from a fuzzy prehistory floating timelessly across centuries. Ultimately this is what matters. New approaches to chronology are revealing that prehistoric societies and their traditions were much more dynamic and played out over much shorter timescales than are commonly appreciated by prehistorians. Over the coming years, we can dispute whether this or that parameter is best modelled as falling into this or that half century, but we are now in a prehistory of people. We salute Brindley's achievement: she has placed ceramic types and styles within the span of human lives and active social memory and, in doing so, is revealing the people behind the pots.

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