Zuweisung zum Modell Rosheim lediglich auf Querprofile mit unterschiedlichen Sohlenformen und wechselnder Verfüllung stützen, beides Charakteristika, die, wie in Herxheim gezeigt, beim simultanen Anlegen auch benachbarter Grabensegmente durch verschiedene Arbeitsgruppen entstehen können. Da es Einfriedungen aus Grabensegmenten in fast allen Kulturen des europäischen Neolithikums gibt, glaubt Jeunesse, hier eine im Frühneolithikum geschaffene Traditionslinie von Pseudo-Grabenanlagen nachweisen zu können, die sich durch die gesamte Jungsteinzeit zieht. Sein Hauptbeleg für die Fortführung dieser Tradition bis in das 4. Jahrtausend v. Chr., die beiden Erdwerke von Sarup, werden vom Ausgräber und langjährigen Erforscher dieser Anlagen aber wenige Seiten vorher gerade gänzlich anders angesprochen – nämlich als in kurzer Zeit erschaffen und insgesamt schnell wieder verfüllt. Alles in allem ergeben sich so doch begründete Zweifel an den ubiquitären Erdwerken aus Pseudo-Gräben. Tatsächlich sieht auch nur eine kleine Fachkollegenminderheit dieses Modell für das Alt- und Mittelneolithikum europaweit vertreten (vgl. die Beiträge in Ph. Lefranc [Hrsg.], Les enceintes néolithiques à pseudo-fossé. Monuments cérémoniels danubiens dans la plaine d'Alsace. Rech. Arch. 15 [Paris 2018]. https://hal-inrap.archives-ouvertes.fr/hal-02295757 [letzter Zugriff: 7.4.2021]; P. van de Velde u. a., An LBK earthwork at Beek [Prov. Limburg]. *Le modèle Rosheimois* in the Netherlands. Arch. Korrbl. 39,4, 2009, 455–470), wogegen der Autor meint, nur „bestimmte Kreise besonders konservativer Fachkollegen" würden das Modell der „Pseudo-Gräben" nicht in seiner ganzen Tragweite anerkennen (S. 227).

Der Tagungsband stellt eine willkommene Erweiterung unserer Kenntnis neolithischer Erdwerke Europas dar und konzentriert speziell für das Mittel- und Jungneolithikum ganz erstaunliche neue Grabungsergebnisse und weiterführende Interpretationsansätze. Letztlich kann auch dieses Werk die Frage nach der Funktion der Erdwerke nicht befriedigend beantworten, zeigt aber in der Vielfalt der vorgelegten architektonischen und geographischen Detailinformationen, dass jede Einfriedung ihre eigene Geschichte besitzt und Erdwerke aus ganz unterschiedlichen Anlässen und Beweggründen geschaffen worden sein mögen. Das Zusammenspiel verschiedener Prospektions- und Untersuchungsmethoden, wie hier beispielhaft vorexerziert, mag ein Vorgeschmack auf die technischen Möglichkeiten sein, die uns in der näheren Zukunft verbesserte und vertiefte Erkenntnisse zu neolithischen Einfriedungen in ihrer ganzen Spannbreite bieten könnten. Redaktionelle Mängel wie fehlende Bezeichnungen von Teilabbildungen („A", „B"...), falsche Befundbezeichnungen in Bildunterschriften und fehlerhafte Planzeichnungen können den Gesamtwert des vorliegenden Bandes nur unerheblich schmälern. Einzig die häufig viel zu kleinen und damit unverständlichen Abbildungen behindern für manche wichtige Aussage deren Nachvollziehbarkeit.

DE–67346 Speyer
Kleine Pfaffengasse 10
E-Mail: zeeblanz@outlook.de

Andrea Zeeb-Lanz
Generaldirektion Kulturelles Erbe Rheinland-Pfalz
Direktion Landesarchäologie

Bettina Schulz Paulsson, Time and Stone. The Emergence and Development of Megaliths and Megalithic Societies in Europe. Archaeopress Publishing, Oxford 2017. £ 48.00. ISBN 978-1-78491-685-5 (Paperback). £ 16.00. ISBN 978-1-78491-686-2 (E-book). xiv + 376 pages with 209 figures and 10 tables.

Since its invention, radiocarbon dating has become one of the most useful tools for archaeologists trying to understand and interpret the archaeological record. From early on after its invention, there were realisations that some periods of prehistory were much older than we had originally thought. Indeed, the first radiocarbon revolution demonstrated that the Neolithic lasted for con-

siderably longer than was originally envisaged and archaeologists no longer had to compress different styles of megalithic construction into a short time scale. The second radiocarbon revolution involving the calibration of dates demonstrated that some cultural connections and spheres of influence were no longer viable. This was felt particularly strongly in studies of the Neolithic, where suggested Mediterranean origins were shown to be invalid in the spread of megalithic technology. Instead, northern Europe, particularly north-western France, appeared to have the earliest instances of megaliths. This created a very different narrative from that of, say, Vere Gordon Childe. Since then, a third radiocarbon revolution has come to further enhance our analysis of radiocarbon dates. This is the application of Bayesian statistical modelling in archaeology (e. g. C. E. Buck et al., The Bayesian Approach to Interpreting Archaeological Data. Statistics Practice [Chichester 1996]), widely adopted as a way of narrowing down the date ranges that radiocarbon dates provide by utilising *a priori* data such as stratigraphy. An excellent example of this approach is in the study of Britain and Ireland, where Alasdair Whittle, Frances Healy, and Alex Bayliss have collated and modelled dates from a wide range of sites and contexts (A. Whittle et al., Gathering Time. Dating the Early Neolithic Enclosures of Southern Britain and Ireland [Oxford 2011]. doi: https://doi.org/10.2307/j.ctvh1dwp2). This landmark study demonstrates a 'staggered start' for the British and Irish Neolithic, which appears to have been first adopted in south-east England from where it spread over several hundred years. As part of this study, and in others, the Whittle and Bayliss-led team also shows that megaliths are often not part of the earliest incarnation of the Neolithic, instead being constructed slightly later on after the adoption of other Neolithic things such as pottery and cereals. They demonstrate that apparently similar megaliths in terms of style and function were built hundreds of years apart. Finally, their work reveals that not all burial monuments were in use for an extended period of time; instead, some collective deposits were the remains of only one or two generations.

This may seem an excessive preamble to a book review, but it is important to realise the potential that this approach has in our understanding of the chronological sequences, and, thus, how we subsequently interpret Neolithic societies in light of those refined chronologies. The effects of Whittle et al.'s work are now resonating throughout the studies of the British and Irish Neolithic and I suspect will continue to do so for quite a while.

The book under review here comes from a doctoral study at the graduate school "Human development in Landscapes" at *Christian-Albrechts Universität* Kiel, which collated 2410 radiocarbon dates from pre-megalithic and megalithic sites across Europe, and, where possible, the author has utilised Bayesian modelling. The book begins with a short introduction to the study of megalithic societies in Europe (pp. 1–7) followed by a chapter on radiocarbon dating and Bayesian modelling (pp. 9–18). The bulk of the book is a series of thematic chapters on different regions in Europe. It begins with north-west France, one of the longest sections in the book, and then chapters on Catalonia, southern France, Corsica, Sardinia, Malta, southern Spain, and the West Iberian Peninsula follow. Next comes a short chapter on 'other areas' which incorporates the mass of megaliths found in Britain, Ireland, and Scandinavia, among others (pp. 301–310). Finally, there is a long synthesis chapter which summarises the main arguments made in the regional chapters and then broadens out the discussion to consider why people were building these sites. Her aim is "to establish a supra-regional synthesis on the emergence and development of megaliths in Europe". Clearly, this is a study with the potential to contribute to our narratives on the uptake of megalithic architecture in Europe.

There is much to commend this book and the author. This represents a significant piece of work, and I can see that much time and effort has been spent working with a diverse literature in multiple languages. There are long summaries of megalithic traditions in the different areas, and the author very usefully provides online material in the form of a compilation of radiocarbon dates for the

key areas of megalithic Europe (http://bit.ly/2vRAqEz [last access: 28 Jan. 2021]). This will be invaluable for scholars as a database which can be built on as more radiocarbon dates are acquired from different parts of Europe. I am a fan of Archaeopress because they have a long tradition of publishing work in archaeology and, in terms of quality, they now produce crisp and clean text alongside clear and colourful images. As such, this volume is attractively presented with lots of nice colour images. Overall, this clearly represents an important and wide-ranging study which is an impressive piece of work.

Naturally, with an ambitious study of this size there are some issues and drawbacks. The first relates to endless small niggles throughout the volume. Some sentences are not easy to understand, and there are many and multiple spelling mistakes throughout, everything from "archeological" (p. 58) spelt incorrectly to "burial costumes" (rather than customs, p. 311) through to "Durckheim" and "Bloc" (p. 327). England is used in place of Britain – either that or Wales is missed out. This is the downside of using Archaeopress who do not copy-edit the text – a thorough going-over this text would have been needed throughout. The second problem is with the datasets being analysed. Many important sites and regions have very few or no radiocarbon dates. This of course means that little new knowledge regarding dating can be added. In addition to this, there are substantial problems with many of the existing dates from different sites. The author highlights these (charcoal dates on old wood, marine reservoir effect, and so on), and this is useful to know, but it means that the number of new models generated by this study are restricted by this fact. I will take the first chapter, that on north-west France, as an example. This is the largest chapter in the book and significant because here, and in the summary chapter at the end, the author argues that this was potentially the origin area for megalithic construction. The author argues that this is where megaliths were first built but "since too few radiocarbon results or sequences are available, it is not possible to untangle the nuances of the emergence of megaliths in NW France" (p. 94). At the end of the book the author suggests that the first megaliths in north-western France can be dated via the artefacts found within them, which, from other contexts, can be dated to 4794–3999 cal BC – an 800 year period – so this is not helpful in narrowing down the date of this particular tradition. As a result, then, she rehearses arguments made elsewhere on the emergence and development of a megalithic tradition in this region, and it would have been useful here to draw on Chris Scarre's excellent book on Neolithic Brittany (Landscapes of Neolithic Brittany [Oxford, New York 2011]. doi: https://www.doi.org/10.1093/acprof:osobl/9780199281626.001.0001), which represents an up-to-date summary on this important area. Certainly, it is useful to summarise what we know about this sequence, and I think here this work further highlights the fact that, on a European scale, this area of France is absolutely critical for investigating the origin and spread of megalithic architecture. Why this was the case remains, in my opinion, one of the most exciting questions for us to contemplate in megalithic studies, and colleagues in France and beyond have been exploring this now for many decades.

At the other end of the book, chapter 11 deals with 'other' megalithic regions, including Britain, Ireland, and Scandinavia. This chapter is not as well researched, with major references missing and typological confusion, although in relation to the latter this is in part indicative of changing and problematic typologies within this research tradition. An example of this is the summary of megalithic Scotland (pp. 303–304), an area I have a particular interest in having researched megaliths there for over two decades. The first paragraph does not contain a single reference and here the key source on this material remains Audrey Henshall's 'The Chambered Tombs of Scotland 1–2' (Edinburgh 1963; 1972). There are no dolmens in Scotland, and a comprehensive and useful Bayesian model of all Orcadian megaliths has also been published but is not referred to here (S. Griffiths, Beside the ocean of time: a chronology of Neolithic burial monuments and houses in Orkney. In: C. Richards / R. Jones [eds], The Development of Neolithic House Societies

in Orkney. Investigations in the Bay of Firth, Mainland, Orkney [1994–2014] [Oxford 2016] 254–302. doi: https://doi.org/10.2307/j.ctv13gvg8m.15).

The final chapter of the book is the synthesis, and, for those scholars already familiar with the data, this is the chapter to which they may well first turn. Certainly, as a summary of the rest of the volume this chapter will be read more than others. I think scholars working in individual regions will have issues with some of the typologies used to describe different megalithic traditions. In many regards, this highlights the eccentric nature of the naming of architectural traditions, but this was never problematised or even discussed; after such extensive summarising of the existing data the summary chapter at the end could have discussed this point, if not entirely resolved it.

However, important advances have been made by this study, which for me included the potentially contemporaneous evolution of megalithic architecture in north-western France and Catalonia (and perhaps Sardinia), and shortly after this in southern France, northern Italy, and Corsica (fig. 12,1 represents a good summary of these findings). An interesting observation that is noted is that the earliest megaliths seem to be in the form of a non-accessible chamber set within a round mound (pp. 315; 321–326), thus making those accessible forms (e. g. with a passage) a bit later. The social processes behind the preliminary need to bury the dead which quickly evolved into the need to further access the dead could have been usefully explored in more detail. This difference is also critical for understanding megaliths beyond the earliest examples and may help us understand different structural forms. Another idea mentioned which could have been developed further is the relationship between the earliest megaliths and natural rock features. Having worked on this issue in relation to just a small part of Europe, I think it has the potential to enhance the analysis of why megaliths evolved in some places – although with the caveat that this work is time-consuming and complex due to 6000 plus years of landscape alteration since these monuments were constructed. At the end, the author concludes that this work supports the idea of migration as the prime factor in the evolution and spread of megaliths, and it will be interesting to see how this work now intersects with the aDNA work which argues the same.

To summarise: there are many positives with this book. Clearly, much hard work has gone into this study. The collection and synthesis of varied material gleaned from multiple languages into a single volume is useful for those seeking summaries in English. The associated online resource of all the radiocarbon dates will be useful for scholars working with these sites. Moreover, the contemporaneity of megalithic traditions across broad areas of Europe in the mid to late 5th millennium BC is an important outcome, although for me this really needed teasing out in terms of what this meant socially. I would like to end by encouraging B. Schulz Paulsson to keep working on this most important of issues because this work genuinely has the potential to change the way in which we interpret the Neolithisation of Europe, and I look forward to seeing where this research will go in due course.

UK–Preston PR1 2HE
E-mail: VCummings1@uclan.ac.uk

Vicki Cummings
University of Central Lancashire
School of Natural Sciences