

and science of the application of ABM in archaeology. As noted by the authors, NetLogo is among several software packages available for ABM. *Agent-Based Modeling for Archaeology* is a timely work *right now*, but as developers update NetLogo, hopefully the sole reliance on popular software of the day will not consign this book to the back bin in a few years. The authors chose NetLogo because of its ubiquity in archaeological ABM practice and low barriers to entry, but other considerations are important—namely, broad scientific usability, robust algorithmic development and advancement, and the long-term availability of expert and peer support.

Overall, the book will be most useful to two groups of people: instructors of computational social simulation and the beginning learner. Instructors will find code needed for practical lessons as well as suggested exercises at the end of chapter. For the beginner practitioner, this textbook is the necessary “all-in-one” manual for ABM and archaeological application. Most archaeologists should appreciate Chapters 3 through 6—arguably the strongest portions of the work—in which an array of behavioral algorithms describing movement (e.g., random walks and targeted walks), exchange (e.g., price setting and content bias), and subsistence (e.g., Lotka-Volterra and patch choice) are modeled through coding in ABM. However, new theoretical and methodological developments in ABM and archaeology are out of the scope of this book. For example, Chapter 8 relies on NetLogo’s underdeveloped algorithms for relational or networked data, resulting in the weakest chapter in the work. Chapter 4 mentions machine learning (ML) briefly in relation to the use of ML for model selection. The incorporation of both network science and ML into ABM is transforming computational social simulation, and although deep treatment of these topics may be out of scope of the current textbook, the field looks forward to a possible second volume discussing advanced methods in ABM and archaeology.

Bronze Age Worlds: A Social Prehistory of Britain and Ireland. ROBERT JOHNSTON. 2021. Routledge, London. xv + 374 pp. \$160.00 (hardcover), ISBN 978-1-13803-787-8. \$46.95 (paperback), ISBN 978-1-13803-788-5. \$46.95 (e-book), ISBN 978-1-31517-763-2.

Reviewed by Matthew J. Walsh, National Museum of Denmark

Robert Johnston’s *Bronze Age Worlds: A Social Prehistory of Britain and Ireland* provides a fascinating

and accessible exploration of the late prehistory of Britain and Ireland, focused on the pivotal transition from the Late Neolithic into the Chalcolithic and Bronze Ages (ca. 2500–700 BC). Notably, Johnston situates his overview of this transformative period in a novel framework emphasizing kinship, as it is reflected at varied scales of social interaction and dynamics that can be glimpsed in the archaeological record through objects, features, sites, site complexes, and landscapes. It is a lofty assertion that one might draw anything but speculative (or flatly unfounded) conclusions about the complexities of kinship and social relationships that generate them from the archaeological record, and yet Johnston succeeds at doing so cohesively and provocatively.

Rather than dwelling too long on precisely *what* “kinship” can or should be, Johnston takes for granted that however defined, kinship is first and foremost relational—it reflects social relationships in which some form of mutual identity is understood, constructed, and articulated. Of course, kinship goes well beyond consanguinity (Joanna Brück, “Ancient DNA, Kinship and Relational Identities in Bronze Age Britain,” *Antiquity* 95:228–237, 2021; Catherine Frieman and Joanna Brück, “Making Kin: The Archaeology and Genetics of Human Relationships,” *Journal for Technology Assessment in Theory and Practice* 30 [2]:47–52). It also encompasses the forming and forging of relationships and identities through gift giving, communal engagements, and shared spaces. Thus, he sets out his discussion by formulating and then following through with illustrating five key observations about kinship as a concept that

creates personhood and collective belonging . . . associates people with nonhuman beings, things and landscapes . . . is historically constituted, territorialized and codified . . . is made through the sharing of substances and presences . . . is creative, performative and political [pp. 15–18, italics in original].

Given that this perspective situates kinship as a relational ontology, in many ways this book can be seen as an equal companion to Joanna Brück’s insightful book *Personifying Prehistory: Relational Ontologies in Bronze Age Britain and Ireland* (2019). Both works call for prehistoric archaeology to explore more anthropological theories of personhood, identity, and diverse ontologies in the past. Brück’s *Personifying Prehistory* and other works explore subjects such as personhood, gender, and identity (see also Chris Fowler, *The Archaeology of Personhood: An Anthropological Approach*, 2004), as well as

exchange relationships and rites of passage (see also Flemming Kaul, “Bronze Age Tripartite Cosmologies,” *Præhistorische Zeitschrift* 80[2]:135–148), as ways in which Bronze Age peoples understood and navigated their place(s) in their world. Equally adroitly, Johnston’s monograph illustrates how objects, people, structures, and their places in and on highly anthropogenic landscapes respectively shaped what each of those different types of things meant as features of social connectivity (i.e., kinship). Johnston shows that these dynamics constitute a fabric of kinship that can, somewhat miraculously, actually be inferred from the archaeological record.

The book is effectively organized in three parts: “Gifts,” “Dwellings,” and “Landmarks.” Each part is divided into two sections that summarize developments from the onset of the Chalcolithic, through the Early Bronze Age, and finally to the Late Bronze Age in the British Isles. Each segment contains its own references section, allowing chapters to stand alone while also contributing to overarching themes. Johnston saves us from charts, tables, or lengthy lists of artifacts or artifact types. Instead, he provides photographs, illustrations, and descriptions of objects and features, while site maps and images of often striking locales and landscapes help contextualize the lived environs described throughout.

Notably, Johnston describes these artifacts, features, and landscapes in elegant detail. From the grave and grave goods of the famous Amesbury “archer” buried near Stonehenge, to a delicate tin-studded, cattle-hair bracelet from a stone cist grave at Whitehorse Hill in Oxfordshire, to the remarkably well-preserved bronze shield from Moel Hebog in north Wales, and many more, Johnston sets each example deftly into contexts in which they can be readily imagined as not only reflecting but shaping and being shaped by dynamic social configurations and identities. The archaeological evidence is presented in an erudite yet unpretentious manner. The materials and assemblages discussed come through so clearly that I am reminded of Neil MacGregor’s excellent book, *A History of the World in 100 Objects* (2013). For example, Johnston’s introduction aptly argues that the Bronze Age Dowris hoard in Ireland, including more than 200 objects—such as swords, numerous spear and axe heads, enigmatic bronze “crotals,” and an assortment of bronze horns and razors—is much more than the sum of its material parts. Rather, Johnston characterizes this assemblage as the ultimate outcome of “a process of collecting or gathering exchanges over time prior to deposition” (p. 5). In this way, the hoard reflects collective action—the result of gathering human and animal “persons” with aims toward (re)creating or signaling kinship relations.

At first, I thought that some of Johnston’s conclusions about the archaeological evidence presented were almost not believable. For example, I was initially skeptical of the supposition that there is an *explicit* link between kin making and hoard depositions or the mere presence of cups, buckets, or cauldrons as artifacts that materialized the mindful navigation of social relationships through feasting. After all, sometimes a cup is just a cup. But, I was missing the point. Upon further reading and reflection, I recognize that Johnston expertly unfolds a middle-range theory for reading complex relational identities from a broad spectrum of archaeological materials and the landscapes in which they are embedded.

For example, when Johnston states confidently of the deposition of the Dowris hoard at the edge of a dry, otherwise insignificant and unutilized bog that “marginally played an important role in facilitating kinwork—the practices that made and sustained kinship” (p. 10), or of the creation and management of cairns, field systems, and enclosures that “both monuments and clearance cairns can be interpreted as the means through which kin groups, of varying scales, periodically defined their connection to places and landscape” (p. 306), it is not because he is desperate to force the reflection of kinship onto the Bronze Age landscape. It is because kinship is indelibly marked on the anthropogenic landscapes he describes. Once you see it, you cannot “un-see” it. This becomes increasingly self-evident with each new set of examples the author brings to light. Overall, Johnston decisively confirms *kinship* as a relevant frame of reference for archaeological interpretation. For this reason, this book provides profound insights into the ways in which we can (and should) consider many aspects of the material record.

The Diffusion of Neolithic Practices from Anatolia to Europe: A Contextual Study of Residential Construction, 8,500–5,500 BC cal. MAXIME NICOLAS BRAMI. 2017. BAR International Series S2838. British Archaeological Reports, Oxford. \$70.00 (paperback), ISBN 978-1-4073-1578-2.

Reviewed by Trevor Watkins, University of Edinburgh

The basis for this book is Maxime Brami’s doctoral research at the University of Liverpool, but this monograph is no mere transfer of thesis to print. Brami writes clearly, concisely, and simply, and he makes a good case in support of his hypothesis. We have been slowly learning about how the Neolithic way of life evolved in the early Holocene around the hilly flanks of the Fertile Crescent and in central Anatolia, but there has been a