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Elizabeth Pierce, Anthony Russell, Adrián Maldonado and Louisa Campbell, eds. *Creating Material Worlds: The Uses of Identity in Archaeology* (Oxford & Philadelphia: Oxbow Books, 2016, ix and 246 pp., 47 b/w figs., pbk, ISBN 978-1-78570-180-1)

The dramatic political events of 2016 and the current year so far demonstrate in a striking fashion that identity is far from being a redundant theme in either public debate or the social sciences. Whether we consider the victory for the Leave campaign in the UK's referendum on EU membership, the increasing prominence of related nationalist/Eurosceptic movements across the Continent, the election defeat of Hillary Clinton in the US, or a host of other developments around the world, the politics of identity are deeply entangled in all of these situations. While many analysts seek to explain these recent events in terms of economic inequality and/or the consequences of globalization, or more subtle effects of age-group and educational demographics, for example, the more overt language of identification is clearly important as a central part of the discourses many of the new populists—and their opponents—deploy, and its significance is likely to be deeper than that too. This volume of papers dealing with identity and its place in contemporary archaeology is therefore timely and welcome, seeking as it does to integrate several new theoretical strands into more traditional approaches to the archaeology of identity. If it has perhaps been somewhat overtaken by events that is hardly a matter for criticism. What does need to be considered in this review, though, is how the approaches to identity aired in this volume provide both fruitful insight into past social dynamics and how they might benefit archaeology in its inevitable future engagement with identity politics. For, given the strong connection between earlier generations of archaeologists and colonial and national movements of the late nineteenth and early twentieth centuries, we must be alert and prepared for the likelihood that a new wave of nationalist politics will seek to draw upon highly partial constructions of past identities. In short, we must learn from our own past and be better equipped, theoretically and empirically, to challenge ethnocentric and other divisive narratives of identity that will be—indeed, already are being—aired from political pulpits.

One exciting thing about this volume is that it arises out of informal collaborations between early career researchers, with most contributors having been research students at the University of Glasgow. That institution deserves credit not only for encouraging a creative atmosphere but more specifically providing financial support for the initiative of organizing a lecture series, workshop, and publication to develop these themes, with some participants from other universities joining the roster of volume contributors. While the locational origins of the project lead to a

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slight bias towards Scottish and North Atlantic/North Sea archaeology in the contents, there is by no means a problem with the diversity of the volume; contributors come from several national backgrounds, as the editors highlight in the Preface, and case-studies in various chapters include Mediterranean and North American material. Structurally, there is also a mixture of papers with different balances between theoretical and empirical discussion, as well as with different points of theoretical departure. This is also of course a good thing in many ways, but there is a more challenging side to this as reflective of the current state of theoretical fragmentation in archaeology (cf. Mizoguchi, 2015; Gardner, 2016a). Indeed, this process has arguably been exacerbated by some of the developments which the volume is intended to engage with, which might be grouped under the heading of the 'material' or 'ontological turn'. An eclectic movement drawing upon thinkers in a range of disciplines including not only anthropology and philosophy but also fields like Science and Technology Studies (STS), this tends in a post-humanist direction and proposes concepts like 'object agency' and credulity towards ontological alterity. To reveal my biases as a reviewer, I have been interested in this programme for some time but have grown increasingly sceptical about several of its implications (see, e.g., Gardner, 2016b; cf. Ribeiro, 2016); in an open-minded spirit, though, I am keen to see applications and arguments that make me rethink my preconceptions; does this volume deliver?

The Introduction to the volume by Adrián Maldonado and Anthony Russell does a good job of charting the intellectual and historiographical terrain of identity in archaeology—proposing a 'three-wave' structure for the development of research in this domain. They also highlight recent criticism of work on identity from some quarters, and discuss the challenges that post-humanist thinking poses. I might quibble with aspects of the historical review, but this chapter sets up the problematic on which the volume hinges effectively. The next chapter (Ch. 2, 'Becoming Post-Human: Identity and the Ontological Turn') by Oliver Harris is one of the most purely theoretical essays in the volume and addresses the potential for reconciliation—or otherwise—of the concerns of the ontological turn with work on identity. This is an interesting paper which covers a number of aspects of this latest 'turn' and attempts a genuine rapprochement between it and some of the key issues in identity studies; it deserves to be widely read, but still leaves me with some questions. Mostly these are to do with aspects of the post-humanist position outside of the paper's remit, but to be frank I find that position philosophically inconsistent, ethically problematic, and troublingly close to an extreme Darwinian position, notionally at the opposite end of the theoretical spectrum (as other commentators have discussed, e.g. Jones, 1996; Johnson, 2006: 125; cf. Gosden, 2005: esp. 198; Hodder, 2012: esp. 147–57). This is not the place to debate all of these issues but they do need to be thrashed out if archaeology is going to move forward, and our current state of fragmentation makes this difficult. The next two papers deal with related archaeological contexts. In Chapter 3 ('Materialising the Afterlife: the Long Cist in Early Medieval Scotland') Adrián Maldonado looks at the materiality of stone used in long-cist burials in early Medieval Scotland, while Erin Halstad McGuire (Ch. 4, 'Move Along: Migrant Identities in Scandinavian Scotland') examines evidence, again mainly from burials, for the relationships between different axes of identification within migrant communities in Viking Age Scotland. These are both good papers

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with detailed case-study material weaving theoretical sensitivity into more focussed interpretation. The former highlights the rich associations of particular stones chosen by people for burial rites across different groups, and the latter the complexities of the intersectionality that much recent identity theory focuses on in a contemporary context; as such, Halstad McGuire's paper is particularly valuable as a perspective on current debates around migration.

The next paper (Ch. 5, 'Smoke and Mirrors: Conjuring the Transcendental Subject') is a really interesting piece by John Creese which, in terms of identity, is focussed mainly at the level of the subjective self, in its social context—in this case with archaeological exemplification from a study of Iroquoian smoking pipes from northeastern North America. This paper is one of the most successful in bridging the different approaches which the volume seeks to encompass, and makes a good case for exploring the interdependencies between representational and relational modes of identification in different social contexts, rather than treating these as a dualism either in etic or emic terms. The role of institutions in reifying certain sorts of subjects therefore becomes a key focus of archaeological enquiry, and I think this is a highly worthwhile programme. The three papers which follow have more of an empirical focus but all address important issues in the archaeology of identity, particularly the ways in which differentiation and/or integration might have played out in past circumstances of culture contact. Jeremy Hayne (Ch. 6, 'Drinking Identities and Changing Ideologies in Iron Age Sardinia') looks at relationships between 'locals' and 'foreigners' in Sardinia at the end of the Bronze Age and beginning of the Iron Age, particularly as articulated through drinking vessels and the alcohol they contained. In Chapter 7 ('Impressions at the Edge: Belonging and Otherness in the Post-Viking North Atlantic') Elizabeth Pierce examines the fascinating ways in which Norse communities scattered across the medieval North Atlantic, in Iceland, the Faroe archipelago, and Greenland, negotiated their relationships with the rest of Christian Europe, trying to reduce their own degree of 'otherness'. Conversely, in Chapter 8 ('We Are Not You: Being Different in Bronze Age Sicily') Anthony Russell looks for evidence of the conscious creation of difference in Bronze Age Sicily, using a range of evidence and generating some interesting sociological insights into the processes of identity formation underway in this context. These papers engage less with the more outré aspects of post-humanist approaches, but in my view are the better for it. Chapter 9 ('There Is No Identity: Discerning the Indiscernible'), by Dene Wright, is a theoretically ambitious paper which does seek to combine several approaches, especially aspects of Deleuzian philosophy and technological choice theory. As an account of a theory-building process it is a worthwhile exercise, though I would concur with the view of volume discussant Bernard Knapp that there is scope for greater clarity in the argument. The last two substantive papers deal with further situations of culture contact, with Beatriz Marín-Aguilera using foodways to explore aspects of colonial relationships in Phoenician Iberia (Ch. 10, 'Food, Identity, and Power Entanglements in South Iberia between the Ninth–Sixth Centuries BC'), and Louisa Campbell examining the role of fragmentary objects in northern Britain beyond the Roman frontier (Ch. 11, 'Proportionalising Practices in the Past: Roman Fragments beyond the Frontier'). Both present interesting material and interpretations, though the latter seeks to cover a wide range of theoretical approaches and the results are a

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little patchy, needing greater space than this publication context allows. A short 'Afterword' commentary by Bernard Knapp concludes the volume, rightly focussing on the papers' degree of engagement with the 'material turn', which is indeed a key point to consider.

Overall, the picture is mixed, as Knapp points out and as indeed one would expect, given the diversity inherent in such a volume and the range of theoretical points of reference encompassed even within the umbrella of the 'ontological turn'. Like most other major movements in archaeological theory since the 1960s, in fact, one can argue that as it spreads and is applied more widely, so it is transformed, and this is evident in other publications dealing with similar issues at the moment (cf. Van Oyen & Pitts, in press). The sociology of this process in archaeology needs continued serious study if we are to be truly reflexive, and for all that it is a process involving computers, conference facilities, and other material things, I think the interesting part is the human interactions that these mediate. It is in the human interactions that we discover important issues we might still need to address in terms of the power structures and disciplinary conventions which influence our academic identities, and ultimately it is the human interactions that will drive progressive change. This is one reason for my scepticism about post-humanism, and that has not been transformed by this volume. What the book does show very effectively, though, is that archaeologists need to push boundaries in the way that this group of scholars have done, to find out what works and what doesn't. Moreover, the volume demonstrates how successfully archaeologists can talk about identity in lots of different contexts and with lots of different evidence. This is what is important right now. Whether it is post-humanism or more 'humanistic' brands of social theory that is most useful is something that we need to continue to debate, but more vital is that we surrender neither the terrain of identity politics nor some claim to have expertise in speaking about it. My concern is that the events of the last year have shown that even highly unified scholarly communities can be readily ignored by politicians. In the realm of identity, as in many others, we urgently need to assess where archaeology's centre of gravity is, and start to make better use of it.

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Marieka Brouwer Burg, Hans Peeters and William A. Lovis, eds. *Uncertainty and Sensitivity Analysis in Archaeological Computational Modeling* (Interdisciplinary Contributions to Archaeology. Cham: Springer International Publishing AG Switzerland, 2016, 175 pp., 7 colour and 31 b/w illustr., hbk, ISBN 978-3-319-27831-5)

Model-based archaeology aims to use computer simulation to improve our understanding of the past. Simulation is widely used in other sciences as a major research tool but its adoption within archaeology has been not an easy one. The first archaeological simulations were developed almost four decades ago and provided interesting examples of its potential. Despite these benefits, simulation is still not popular in mainstream archaeology, in contrast with other computational tools such as Geographic Information Systems. However, the situation seems to be gradually changing as can be observed in the large number of recent reviews and special issues focused on this method (Madella et al., 2014; Wurzer et al., 2015).

The adoption of computer models in archaeology is rather unique. Being placed at the junction between the humanities and science, most archaeologists do not receive a strong mathematical training. This is radically different to the fields where simulation is typically found: physics, chemistry, and more recently biology. This unusual situation has raised serious issues because essential components of the modelling methodology are being generally ignored in archaeology. This is even more relevant for Agent-Based Modelling (ABM), a popular type of model that is theoretically closer to archaeological thinking than other models (i.e. equation-based models). Platforms such as NetLogo (Wilensky, 1999) allow researchers with no mathematical training to develop a simulation in minutes. This is an excellent tool to learn how to create a model, but what about the rest of the method steps such as validation or experiment design? How can we analyse complex models without a proper mathematical background? It seems that sometimes we gladly embrace these tools without critically discussing their assumptions, complexities, and challenges or even thinking if they are equipped to deal with archaeological case studies.

The aim of this edited volume is to address these concerns. The book derives from a forum held in 2014 at the Meeting of the Society for American Archaeology (SAA) in Austin, Texas under the title *Error, Sensitivity Analysis, and Uncertainty in Archaeological Computational Modeling*. Sensitivity Analysis (SA) is the family of methods designed to study how the output of a model is linked to the input parameters. SA is typically performed to assess the degree to which each variable is affecting the result. This task combines tests exploring how slight variation on one parameter affects the final outcome of the model, or finding regions of the parameter space where the model gives specific