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Beyond the 'thingification' of worlds: Archaeology and the New Materialisms

Eloise Govier and Louise Steel
University of Wales Trinity Saint David, Lampeter, UK

Abstract

This article considers the application of the New Materialisms within archaeology, primarily in response to Witmore's influential discussion article: *Archaeology and the New Materialisms* (2014), specifically his emphasis on *things*. This, the authors demonstrate, is peripheral to the main thrust of the New Materialisms discourse. They unravel complexities in the terminology and consider the etymological and epistemological framework of concepts such as matter and thing. This leads them to consider some important issues that arise applying Deleuzian assemblages to the archaeological record and the potential of employing Barad's agential realist theory instead. Barad's concept of phenomena moves beyond the notion of things as separate, bounded entities, emphasizing entanglements of matter and illustrates how matter (including humans) co-create the material world. The authors' aim is to demonstrate how engaging with matter rather than things enables us to better make sense of the material world and *our* place within it.

Keywords

agencement, agential realism, assemblage, materiality, matter(ings), phenomena, thing

Introduction

This article interrogates New Materialist territory (Coole and Frost, 2010; Fox and Alldred, 2019) and considers how archaeologists might engage with some of the theoretical notions articulated by this approach, highlighting in particular debates surrounding agency, relationality and matter. In doing so, we are challenging how people have been intellectually prioritized over the rest of the environment within Enlightenment epistemologies, in binaries that separate culture from nature (Barad, 2003, 2007). Notwithstanding, like many other scholars engaged with this debate in archaeology

Corresponding author:
Louise Steel, Faculty of Humanities, University of Wales Trinity Saint David, College Street, Lampeter SA48 7QY, UK.
Email: l.steel@uwtsd.ac.uk

(Cipolla, 2018; Harris, 2014a, 2014b; Marshall and Alberti, 2014) we also acknowledge the importance and value of identifying people in the archaeological record: their actions and the consequence of their actions, how they shaped, and were shaped by, past environments. We recognize the inevitable tension between socialized archaeologies, which foreground people, and the New Materialisms where the emphasis is on matter. The materiality of people is, to paraphrase Ingold (2017: 24), part of the 'worlding world'. Our aim in this article is to encourage archaeologists to explicitly engage with the physicality of the material world, in particular the properties and capacities of materials (Bennett, 2010; Boivin, 2012[2004]; Conneller, 2011; DeLanda, 2006; Drazin and Küchler, 2015; Malafouris, 2013); we are situating our discussion within the intellectual discourse of scholars such as Bennett (2010), Coole and Frost (2010) and in particular Barad (2003, 2007), who have been so influential in shaping our understanding of the material world. Our aim is to demonstrate how an agential realist approach both challenges Cartesian mindsets and offers a radical reworking of the matter of the world and thus by extension the archaeological record.

Revisiting 'Archaeology and the New Materialisms'

> The global North – due to the enlightenment foundation of its knowledge base – tends to imagine the world as something compromised of discrete bounded entities.
> (Attala, 2019: 39–40)

The material turn addresses the importance of objects and materials to social practices and daily life, and focuses on relationality and material agency; this has had a huge impact upon the wider social sciences (Mukerji, 2015), for example Actor-Network Theory (ANT) (Latour, 2005) and Object-Oriented Ontology (OOO) (Harman, 2018; see also Olsen, 2010). The New Materialisms, which have emerged from this intellectual turn, are increasingly being employed to interpret the archaeological record (for example, Fowler and Harris, 2015; Hamilakis, 2017; Harris, 2014b, 2017; Marshall and Alberti, 2014; Witmore, 2014). There are many different ways that the New Materialisms are being developed in the social sciences; the plurality of these interpretations is observed by Lemke (2015) and Fox and Alldred (2019).

One piece that has particularly encouraged wider debate of this approach in archaeology is Christopher Witmore's discussion article of 2014. While this article brought the New Materialisms into archaeological discourse, we contend that it in fact obscures some of the underlying principles of the New Materialisms, specifically through its emphasis on *things* rather than *matter*. Furthermore, some of the responses to Witmore (Barrett, 2016; Ingold, 2014) follow his focus on things and thus we would argue that these critiques are tangential to the core principles of the New Materialisms (cf. Coole and Frost, 2010). There might be an argument for framing archaeology as a 'discipline of things', using the etymological root of the word archaeology, *ta archaia*, to mean old things (Olsen et al., 2012: 3). Whilst some would argue that the use of thing is not anthropocentric and attempts to offer some autonomy to entities beyond human thought (Harman, 2011: 25; Pétursdóttir, 2014; Witmore, 2019: 2) for us, archaeology *within the framework of the New Materialisms* is much more than the study of things – it is a

relational practice. The tendency to mesh New Materialisms with an OOO (Barrett, 2016: 1682) is in fact problematic, and various scholars have recognized these as epistemologically distinct perspectives (see Harman, 2016: x; Leach, 2016). Similarly, Harris and Cipolla (2017: 186–187) make clear the distinction between the flat ontology of symmetrical archaeology (Olsen and Witmore, 2015; Witmore, 2019), Harman's OOO (inspired by Heidegger and focused on objects) and the New Materialisms, in particular assemblage theory inspired by Deleuze and Guattari (1980; DeLanda, 2006, 2016). We will address some of these issues in the ensuing discussion.

Witmore was in the vanguard of the New Materialist turn in archaeology. This article seeks to review his approach in particular as presented in his influential 2014 article (but see also Olsen and Witmore, 2015; Webmoor and Witmore, 2008; Witmore, 2007; and Witmore's more recent work on things, 2017, 2018), which has already generated considerable debate (notably Barrett, 2016). The emphasis on things in the 2014 article is a perspective we will problematize, drawing upon Barad's (2003, 2007) critique of thingification and Coole and Frost's (2010) emphasis on matter. We debate the absolutism of Witmore's article, untangling some of his terminologies and questioning the implicit 'epistemology of separation' (Attala, 2019: 40; see also Barad's Cartesian Cut, 2003: 815). Instead, we aim to demonstrate the plurality (Coole and Frost, 2010) and inclusivity of the New Materialisms, firmly embedding humans as matter, one of myriad co-constitutive elements in the material world. We make a case that the New Materialisms potentially provides a middle ground between scientific-based archaeologies and social archaeology (see also Harris, 2014b: 333), bringing together landscape, environment, physical anthropology and material culture, and thereby bridging the chasm between processual and post-processual schools of thought. In doing so, we will also present our ontological and epistemological handle on the material world, which draws upon Barad's agential realism (2003, 2007) and maintain that the concept of the thing is as an arbitrary sectioning of a dynamic reality. By embracing Barad's agential realism, we reject speculative realism and feel uneasy with the semantic and ontological compartmentalization of the world into things; for us, the discursive – the critical element of the material-discursive practices that inform the archaeological record – is veiled when we simply subscribe to the thing (Barad, 2007: 335).

Thinking about material culture, materialities and agency

Before we consider the premises of the New Materialisms as presented by Witmore (2014), we first want to unpick the meanings of material culture and materiality, emphasizing the distinction between the two. Archaeological terminologies tend to equate material culture with things made by people, namely objects and artefacts (Boivin, 2008: 26; Hurcombe, 2007). These archaeological approaches have tended to be empirical – thick description and scientific analysis – what we might term a measurements, matrices, munsells, and mohs mindset. While this methodology still underpins archaeological understandings of the material world (for example, Martin and Meskell, 2012; Nakamura and Meskell, 2009; Steel, 2013: 53–55) and remains good practice, more recent engagements also acknowledge cultural expressions and social relations (Boivin, 2008; Hodder, 2012; Meskell, 2005: 2). Anthropologically informed approaches to material culture focus on

the links between people and objects (see Boivin, 2008: 19), how objects are represented, given meaning and ascribed values. Material culture has been explored as being culturally constituted within diverse social worlds (Appadurai, 1986; Miller, 1998; Shanks and Tilley, 1987), conveying symbolic meaning and something that can be 'read' like a text (Tilley, 1991). This discourse privileges the role of humans, presupposing that the object world is created by (and belongs to) people. Schiffer reinforces this human exceptionalism arguing that '[what is] distinctive and significant about our species [is that] human life consists of ceaseless and varied interaction among people and myriad kinds of things' (Schiffer, 1999: 2). While we do not advocate a move away from analysing people and their actions (as evidenced in the archaeological record), we question the dominant and pervasive positioning of the human agent at the helm, imposing their will upon a passive and inert natural world.

From the mid-2000s, the notion of materiality has been increasingly articulated in the archaeological literature (Boivin, 2008; Conneller, 2011; DeMarrais et al., 2004a; Meskell, 2005). This reflects a move away from objects as passive static entities awaiting humans to anoint them with meaning, instead recognising them as social (Appadurai, 1986) and relational beings entangled (Hodder, 2012) in complex human–thing networks (Latour, 2005; Olsen, 2010) or meshworks (Ingold, 2008). Nonetheless, materiality has proven a problematic term, its meanings fluid and slippery. Ingold (2013: 27) for example draws attention to the 'two faces of materiality', the physical properties or thingness of things (see also Boivin, 2008: 26; DeMarrais et al., 2004b: 2). Indeed, the thingly properties (i.e. materiality) of things is something that was previously highlighted by Heidegger (1971: 166, 167). Another aspect of materiality is the engagement of human agents and things (Ingold, 2013: 27; DeMarrais et al., 2004b: 2) within a recursive relationship, described by Meskell (2005: 6) as 'a set of cultural relationships . . . [i]mbued matter and embodied objects [that] exist in relationship to the specificities of temporality, spatiality, and sociality'. Boivin (2008: 129) takes this concept further, recognizing the agency of matter, 'that it has dimensions, that it resists and constrains, and that it offers possibilities for the human agent (or organism)' (p. 26). Archaeologists are increasingly critically engaging with the agency of materials (Conneller, 2011; Govier, 2017, 2019; Malafouris, 2013; Steel, 2018), a concept which is foregrounded within the New Materialisms.

There has been considerable discussion of object and material agency (Chua and Elliott, 2013; Gell, 1998; Knappett and Malafouris, 2008), although traditionally the human actor tends to be perceived as the dominant partner in the relationship (Bennett, 2010: 29–30; Ribeiro, 2019: 43; Witmore, 2014: 210). The New Materialisms challenge this anthropocentric understanding, instead recognizing the agency of matter (Barad, 2003, 2007, 2012), thing-power (Bennett, 2010: xvii, 2–6), and that agency is not simply 'an essential characteristic of the rational subject, a deity or some vital force' but a 'reflexivity, creative disclosure, and transformation that emerge hazardously within the folds and reversals of material/meaningful flesh' (Coole, 2010: 113). It is worth noting, however, that Coole (2013) has highlighted problems in equating the intentional agency of the rational human subject and the agency of nonhuman matter, noting how this potentially allows humans to lose a sense of responsibility for their destructive actions in the Anthropocene. Nonetheless, for Barad (2003: 826), 'agency is cut loose from its traditional humanist orbit. Agency is not aligned

with human intentionality or subjectivity.' She maintains that intra-actions still reveal power imbalances as an array of complex material practices and different sorts of causality are revealed through the approach (Barad, 2012: 54–56). This is the way we understand agency in this article – the localization of agency as an enactment (Barad, 2003: 827).

Witmore's three propositions

The New Materialisms attend to the tension between human–nonhuman agency, levelling the playing field and effectively dethroning the human from their assumed position of primacy over the rest of the material world (cf. Braidotti, 2016: 19); instead it emphasizes that humans are not 'at the ontological centre or hierarchical apex' (Bennett, 2010: 11; see also Harris, 2014b: 329). Witmore (2014) explores the application of the New Materialisms to archaeology, reflecting on the relationality of the material world and offering archaeologists a route into this intellectual discourse. In this article he highlights three propositions, which he states underpin this approach: '(1) things are assemblages; (2) things are participants; and (3) things are things.' We agree with Witmore's identification of proposition two – namely the focus on agency – as being key to understanding the New Materialisms. Moreover, Deleuzian assemblages (*agencement*) are gaining a foothold in the archaeological discourse (see discussion below). The notion of things as things, however, is problematic both ontologically (Heidegger, 1971; Ingold, 2010; Preda, 1999) as well as from a New Materialisms perspective (Barad, 2003, 2007; see also Drazin and Küchler, 2015, on materials). Moreover, we would argue that there is an ontological contradiction inherent in the framing of propositions one and three, which elides two very different approaches to the material world without indicating potential pitfalls to the reader. We will return to this below. We have already touched upon the agency of matter; in the following discussion, we first draw out the problems created by Witmore's focus on things and subsequently we turn to 'things are assemblages'.

Thingification or mattering?

> . . . archaeologists need things, but things don't need archaeologists. (Ingold, 2014: 231)

Thingification, the emphasis on things – 'the turning of relations into "things"' (Barad, 2003: 812) – underpins Witmore's (2014: 204) representation of the New Materialisms, which also defines archaeology as a 'discipline of things' (see also Olsen et al., 2012). He explicitly states that he diverges from 'other variants of the "New Materialisms" by beginning with the actual thing' (Witmore, 2014: 204–205). Like Ingold (2014) and Barrett (2016), we agree that this overriding emphasis on things is problematic; however, where we part company with them is their insistence that the New Materialisms themselves are likewise problematic. For example, Barrett writes: 'If antiquarianism is the attention paid to ancient artefacts, then the recent expressions of the 'New Materialisms' in archaeology can seem to be little more than a new antiquarianism' (Barrett, 2016: 1685). This perspective is alien to the New Materialisms discourse (Bennett, 2010; Coole and Frost, 2010), which 'deal with matter – *brute matter'* (Barad, 2010: 248, emphasis added) and thus we would contend that Witmore's focus on things presents a skewed

view of the New Materialisms, one which impedes engagement with this challenging theoretical perspective.

Moreover, Witmore (contra 2014: 205) does not make clear how he is using the term 'thing'. Our reading of the article suggests that he is talking about diverse bounded entities, ranging from the microscopic to the hyperobject (Morton, 2013), from the natural elements to tangible artefacts and even the immaterial:

> So what counts as things? Air and soil, rain and sea, wooden doors and stone orthostats, nitrogen-fixing bacteria and clovers, psycho-political commitments to Rome and Hadrian's Wall, Corinthian perfume jars and dead Etruscans, mycorrhizae and maple trees, hoplites and the Athenian assembly, minke whales and lemmings, the Hudson River and steamboats, the god Apollo and the Pythia: all are things.
>
> . . . nothing should be excluded because of an arbitrary divide between made and un-made objects, artifacts and ecofacts or externs, kinetic and inert, humans and non-humans. (Witmore, 2014: 206)

We find ourselves lost in a sea of words, wading through lists of things that are presented throughout the article with little clarity as to their ontological or epistemological lineage. This confusing smorgasbord of seemingly unrelated entities brings to mind Foucault's (1989[1966]: xvii) commentary on the juxtaposition of the unusual: 'the mere act of enumeration that heaps them altogether has the power of enchantment all its own.' It seems that anything and everything can be a thing! More recent work by Olsen and Witmore (2015), however, does provide us with a clearer definition of their understanding of things:

> . . . *every being in the world can equally be seen as a differentiated thing*; that is, farmers, centaurs, ruined temples, the goddess Athena, plowed furrows, earthworms and cisterns are equally individual and differentiated entities or units that cannot be broken into their parts. (p. 191, original emphasis)

The notion of things as bounded, separate entities is situated within symmetrical archaeology, which questions the separation between nature and culture 'But . . . does not provide any applicable theory' (Witmore, 2019: 2). Moreover, this is problematic in the remit of New Materialisms, which also reject this separation (Harris and Cipolla, 2017: 186–187), but instead emphasize multiplicity and diversity variously through Deleuzo-Guattarian notions of rhizome, nomadology and becoming (Fox and Alldred, 2019: 3)

Things, objects, artefacts and stuff in fact are problematic terms, which are used variously and sometimes interchangeably by different scholars describing the material world (see, for example, discussions in Ingold, 2010; Knappett, 2010; Malafouris and Renfrew, 2010: 3–4; Miller, 2010; Preda, 1999). Heidegger (1971: 172) famously described a thing as a gathering, picked up by Ingold (2013: 85) as 'a coming together of materials in movement. To touch it, or to observe it, is to bring the movements of our own being into affective correspondence with those of its constituent materials.' Knappett (2010) highlights how the distinction between objects and things has been teased out by various scholars (see, for example, Brown, 2001; Preda, 1999; Ingold, 2010: 3–5). While an object is something that

is viewed by a knowing (human) subject, it is externalized and objectified, Knappett (2010: 82) describes a thing as 'ambiguous and undefined'. Knappett notes, however, that these terms in fact are interchangeable, and that there is fluidity between them, contingent upon the perspective of the viewer. We maintain that from a New Materialist perspective this focus on objects/things perpetuates the separation between humans and the rest of the material world. Indeed, although Bennett's discussion of vital materiality begins with *thing*-power (our emphasis) – 'the curious ability of inanimate things to animate, to act, to produce effects dramatic and subtle' (p. 6), she uses this concept to drill down to the 'materiality of which we are composed' (p. 12), recognizing that humans/things are a 'heterogeneous compound of wonderfully vibrant, dangerously vibrant, matter' (p. 13).

Quantum physicist Karen Barad (2003, 2007) questions the conceptual validity of the thing as a basic entity; instead, drawing upon the work of Niels Bohr, she offers a relational ontology, arguing that phenomena are co-produced via intra-actions (for archaeological applications of this approach see Govier, 2017, 2019; Marshall and Alberti, 2014; Steel, 2019). Barad's agential realism disputes the Cartesian cut and postulates that things as basic entities do not exist (Barad, 2003, 2007): 'It is through specific agential intra-actions that the boundaries and properties of the "components" of phenomena become determinate and that particular embodied concepts become meaningful' (Barad, 2003: 815). We will revisit how archaeologists might engage with Barad's phenomena below.

Thus, Witmore's focus on things is tangential to the New Materialisms, where the emphasis is consistently on matter, 'its brute "thereness"' (Coole and Frost, 2010: 7; see also Barad, 2003, 2007, 2010, 2012; Bennett, 2010; Conneller, 2011) and on materials (Bennett, 2010; Conneller, 2011; Drazin and Küchler, 2015). Even Bennett's discussion of thing-power, as noted above, is rooted in matter. Rather than things per se, the New Materialisms highlight the vibrancy and vitality of matter (Bennett, 2010), challenging culturally contingent perspectives that define them as passive, inert, something to be acted upon and made meaningful (Bennett, 2010; Coole and Frost, 2010: 7–15; see also Olsen, 2010: 84). Following Barad (2003: 817), we would argue that the material world (that is to say, the worlding world), is made up by flows of agency, 'an ongoing open process of mattering'. The significance of matter flows for archaeological interpretation has been picked up by Joyce and Gillespie (2015: 9), who comment that 'matter is always in flux and can only be followed . . . This perspective requires new analytical models of movement or flow in archaeology', something we will return to later.

Representation and distance

> How did language and culture come to be more trustworthy than matter? (Barad, 2003: 801)

As noted above, the focus on things reflects an anthropocentric tendency to objectify and represent the world, whereas the New Materialisms, drawing upon Posthumanist writings, specifically and intentionally move away from these 'doctrines of representation' (Haraway, 1992: 313), which serve to distance humans from the material world (Attala and Steel, 2019; Coole and Frost, 2010: 2). Returning to Heidegger, his understanding of a thing as a gathering, explored through his example of a jug, is partly based on the Old

High German etymology of the word; 'specifically a gathering to deliberate on a matter under discussion, a contested matter' (Heidegger, 1971: 172); this ostensibly suggests the discursive practices that separate and distance. Furthermore, he discussed scientific representations and, like the later New Materialists, he noted that within these scientific representations 'The thingness of the thing remains concealed, forgotten. The nature of the thing never comes to light, that is, it never gets a hearing' (p. 168); nonetheless, he is adamant that 'the jug remains a vessel whether we represent it in our minds or not' (p. 165). Representationalism continues to be perceived as a problem by Posthumanists (Haraway, 1992) and New Materialists (Anderson and Harrison, 2010; Attala and Steel, 2019: 6–7; Barad, 2003, 2007; Coole and Frost, 2010). Barad (2003: 804, 2007: 137) for example, reviews discursive practices, the assumption that the material world is inert, waiting to be represented by people, and is distinct and separate from these representations, questioning why people's symbolic and linguistic depictions of the world are prioritized over the physicality of matter. This, she suggests, is born of a mindset embedded in Cartesian notions of separateness (p. 807). She highlights the tripartite structure of representationalism, comprising the represented (the known 'reality'), the representation (knowledge) and the, by definition separated, 'knower' (the 'thinking subject' doing the representation) (Barad, 2007: 46–47). In doing so, she demonstrates how representations create an ontological gap between knowledge and the world. From a Baradian perspective therefore, 'neither discursive practices nor material phenomena are ontologically or epistemologically prior . . . neither has privileged status in determining the other . . . matter and meaning are mutually articulated' (p. 152).

Therefore, rather than privileging humans as knowing rational beings who act upon, represent and ascribe the world with meaning (Barad, 2003, 2007; Coole and Frost, 2010: 2), the New Materialisms recognize that people are composed of and equally are part of the substantive matter of the world; they are co-constituted matterings. Fayers-Kerr, working with the Mun peoples of south-western Ethiopia, discusses somatic interactions with mud and clay, and describes the consubstantiality between the body and environment as a 'fluency between persons, substances and place' (Fayers-Kerr, 2019: 123–124). She evidences how earths mediate between kin, often facilitating sociality through touch, actively enabling cleansing, healing and solidarity with the ancestors (p. 118). Ethnographies, such as the *net of Maya* in North India (Lamb, 2000) and hydrocentric infants in the Amazon (Rahmen, 2015), repeatedly highlight the fluidity, porosity and relationality of matter, questioning the separation of people from the environment.

In *Things Are Us*, Witmore (2018) makes a similar statement about the positioning of humans within the material world; we, however, would push this further to emphasize the blurring of boundaries between humans and substance (see Govier, 2019). Human bodies are 'a seeping, shedding, porous affair mobilizing within an influencing matrix of materials . . . *people (are) matter'* (Attala and Steel, 2019: 4, original emphasis). The material world and raw physicality of matter, therefore, goes beyond people, the things crafted by humans, and even beyond the substances used to craft these (Conneller, 2011; Drazin and Küchler, 2015) to the 'common materiality of all that is' (Bennett, 2010: viii) – the very atoms and particles that make up the world (cf. Barad, 2003, 2007). The New Materialisms recognize these co-creative dynamics of materials and bring to the fore 'the very physicality of material interactions' (Attala, 2017a: 79); that is to say, it highlights

'how matter comes to matter' (Barad, 2003: 823) and firmly embeds humans as part of these matterings.

Things are assemblages

Returning to Witmore (2014), his first proposition explores the notion of assemblage, a concept that underpins much of New Materialist thought (Bennett, 2010; DeLanda, 2016; Deleuze and Guattari, 1980). But, for the archaeological community, this concept of assemblage needs to be unpacked because of the slipperiness of the terminology. The term assemblage is embedded in the archaeological mindset, with a very specific meaning (Conneller, 2017: 183; Hamilakis and Jones, 2017: 72; Lucas, 2017). The basic concept taught to new practitioners of the discipline is of:

> A collection of artefacts that can be considered a single analytical unit. The size of an individual assemblage varies considerably. (Bahn, 1992: 34)

> Artefacts from a particular period which typically appear together. Also used to describe a collection of materials, for example animal bones from a particular site (Grant et al., 2002: 308)

Marshall and Alberti (2014: 31) view this as a 'representationalist way of thinking . . . which defines the assemblage and sits apart from it' (see also the discussion of representationalism above). These archaeological understandings are categorized by Witmore (2014: 207) as 'normative definitions . . . [of] artifacts juxtaposed in site-specific configurations within archaeology'. Indeed, within cultural historical approaches to the discipline prevalent in the mid-20th century, an assemblage was used to define an archaeological culture from the objects repeatedly found together (Douglas Price and Knudson, 2018: 114). Nonetheless, a more dynamic archaeological interpretation and understanding of these 'combinations of artifacts in context' is put forward by Douglas Price and Knudson (2018: 114) who offer multi-scalar assemblages from a region, to a site, to even an activity (see also Harris, 2014a: 84, for multi-scalar approaches to communities and assemblages).

Assemblages from a New Materialisms perspective, however, have a very different flavour; these derive from the writings of Deleuze and Guattari (1980) and reflect a particular epistemological tradition. Deleuzian assemblages comprise a heterogenous group of entities that might include social and cultural structures as much as physical bodies, both human and nonhuman. 'An assemblage actively links these parts together by *establishing relations between them*' (DeLanda, 2016: 2, emphasis added). In Anglophone epistemologies, our grasp of the notion of assemblage developed by Deleuze is hindered by our understanding of his original French term – *agencement* (DeLanda, 2016: 1), which means the processes of organization, ordering or arrangement. According to DeLanda this term encapsulates not only a collection of entities, but equally, and significantly, the process of these things coming together; thus, 'assemblages emerge from the interactions between their parts' (p. 21). Bennett (2010: 23) describes assemblages as 'ad hoc groupings of diverse elements, of vibrant materials of all sorts . . . living, throbbing confederations'. There is, moreover, inevitably flux and flow in an assemblage, to quote

Bennett, an 'assemblage is always open ended' (p. 24) and in a constant state of becoming (see also Harris, 2014a: 90). Our own research suggests that archaeologists should consider moving beyond the empirical physicality of a material archaeological assemblage (as outlined above) to think how these might be reframed to incorporate other human–nonhuman and material–immaterial confederacies (see, for example, Hamilakis, 2017; Harris, 2014a). Archaeologists therefore might engage with a 'doing and an effecting by a human–nonhuman assemblage' (Bennett, 2010: 28), at the same time understanding that human agency should not be prioritized (p. 121).

We agree with Witmore that the New Materialist concept of an assemblage is something that the archaeologist can engage with, and indeed many are already doing so (most recently Fowler, 2017; Hamilakis, 2017; Harris, 2014b, 2017; Jones, 2017; Steel, 2018). However, there is a tension between his propositions one and three, 'things are assemblages' and 'things are things'. We would also contend that 'things are assemblages' is ontologically problematic, collapsing as it does 'differentiated things' (Olsen and Witmore, 2015: 191) as entities and collections of entities. We acknowledge that it is possible to consider a single artefact as an assemblage; that is to say as flows (or entanglements) of matter coming together, as has previously been articulated by Harris (2014b: 331–2), who explores the flow of relations occurring on a single pot as an assemblage to describe this becoming. The relevance of the assemblage in this example is situated in the fact that it merged and emerged in a particular point in time, the distinct capacities of clay, temper and water provoking, enabling or equally constraining the potter's actions – earthy matter and humans co-producing the material world. Moreover, this assemblage is still unfolding when the archaeologist excavates the pot and in doing so becomes part of the assemblage (Harris, 2014b: 334). For Harris there is always movement, always becoming and, in this respect, he views the assemblage as being distinct from Latour's more static ANT (Harris, 2014b: 332; contra Witmore, 2014: 208–210).

Equally, Witmore's third proposition is etymologically problematic. Witmore notes the derivation of the word thing from the Old German word *ding* and that it 'denotes gathering' (Witmore, 2014: 206; see also Heidegger, 1971: 172), which he explicitly equates with *assemblage*. We question the elision between these concepts, coming as they do from epistemologically distinct stables, which as Leach (2016: 346) comments: 'is the difference between Heidegger's decidedly static notion of 'Being' – or indeed the 'being of Being' – and Deleuze and Guattari's more fluid, dynamic concept of 'becoming'.

Indeed, Witmore (2014) conflates the very different linguistic concepts of the German *ding* (a gathering or assembly), the French *agencement* (the processes of arranging or organizing) (Abbots, 2017: 25–26; Anderson et al., 2012: 171, n.1; Ingold, 2017: 13; Nail, 2017: 22; Phillips, 2006), and the English word *assemblage*. Geographer Phillips (2006) suggests a way of cutting this terminological Gordian Knot by returning to the original French term *agencement*. For the most part, however, archaeologists have chosen to engage with the terminology of assemblages to denote relationality between entities (for example, Bahrani, 2001: 117–118; Conneller, 2017; Hamilakis, 2017; Hamilakis and Jones, 2017; Harris, 2014a, 2017; Lucas, 2017). Even so, given the very distinct nuances separating the words assemblage and *agencement* in the original French – and in particular because of the potential archaeological confusion (see above) – we are

increasingly favouring the use of *agencement* when describing this type of relational ontology from a Deleuzian perspective, as has already been done effectively by Van Dyke (2018), who uses *agencement* over assemblage in her discussion of the flows of pilgrimage in New Mexico.

While Deleuzian *agencement* describes the flows of entities into and out of relationships, it does not fully address *how* these groupings of components emerge. In contrast, Barad's (2003, 2007) agential realism, which considers things as phenomena, goes some way to elucidating how relationships emerge, indeed that nothing exists unless it is in relationship. We would argue that this approach has great potential for exploring material relationality in the archaeological record, and indeed note that it already has had some impact (Govier, 2017, 2019; Fowler and Harris, 2015; Marshall and Alberti, 2014; Steel, 2019).

Things don't exist?

Barad (2003) questions the conceptual validity of the thing, emphasizing relationships rather than distinct entities. She contends that things are not separate bounded entities, but are in-phenomena (p. 817) – they emerge from the intra-actions of matter. According to Barad, 'in an agential realist account, matter does not refer to a fixed substance; rather, matter is substance in its intra-active becoming – not a thing but a doing, a congealing of agency' (p. 336). Rather than looking at relationships between fixed, static, bounded entities, she encourages us to consider the continuous materialization and ongoing becomings of intra-acting matter, which intermingle to co-produce the material world. Indeed, a Baradian approach emphasizes that nothing exists that is not in relationship; relationality is a given in the material world. For a discipline which has traditionally been thing-focused (Olsen, 2010; Olsen and Witmore, 2015; Witmore, 2014), this approach is ontologically challenging (Govier, 2019: 24; see also Alberti et al., 2011). Even so, it is worthwhile considering how the archaeological landscape shifts when we embrace a Baradian approach to the material world. Marshall and Alberti (2014), for example, adopt a Baradian approach to understand Maori chevron amulets from New Zealand. They explore how the amulets are both *taonga* and artefact for the Maori. *Taonga* can be both physical and ephemeral; they are ancestral power rather than a representation of it and this challenges traditional Cartesian thinking (p. 32). Barad's relational ontology however, creates conceptual space for both without negating the possibility of either as 'neither artefact-ness nor *taonga*-ness is intrinsic to the amulet' (p. 32).

We have previously explored Barad's agential realism through the intriguing entanglements of substances in the Neolithic in the Near East (Govier, 2017, 2019; Steel, 2019), which we argue represent matterings – the ongoing merging and co-mingling of diverse matter (including humans) rather than a more traditional anthropocentric understanding of human imposition of will and agency over *things*. Indeed, an agential realist approach recognizes that agency emerges from intra-actions of matter and thus 'agency is cut loose from its traditional humanist orbit. Agency is not aligned with human intentionality or subjectivity' (Barad, 2007: 177). Here, we want to explore the implications of an agential realist approach for our understanding of the archaeological record.

Archaeologies that matter

Excavators unearth materials in the process of materialization. Rather than viewing these as static snapshots of past human action frozen in time (Binford, 1983: 19–20, 23–24), or otherwise as connected assemblages or *agencement*, we would prefer to view these ongoing material engagements as intra-actions. The dynamic properties of the archaeological record as it is formed and transformed over time – traditionally described as taphonomic process, or Schiffer's (1996) natural formation processes (N-transforms) – is firmly embedded in archaeological interpretation. To bridge the divide between theory and practice we propose that this might profitably be viewed from an agential realist perspective. We suggest, for example, that intra-actions (the biological, chemical and physical processes at a molecular, or even quantum, level – the very alchemy of matter) – help us to understand the ephemeral nature of organic remains in the archaeological record and thus to reveal where *things* were. The missing post in a post-hole, the impressions of textiles and basketry on platforms at Çatalhöyük, the body voids from Pompeii: considering all these as things-in-phenomena articulates their presence, while ongoing intra-actions with surrounding matter (the matrix of the archaeological record), explain where they have gone.

Recognizing humans as matter that matters (see Barad, 2003: 803), we should also reflect on their various materializations in the archaeological record. Frequently, archaeologists are confronted by 'the minerality of . . . bones' (Bennett, 2010: 10), while the soft tissues have decomposed and disappeared; whereas the flesh, skin and hair of bodies intra-act differently within the tannin-rich, anaerobic and waterlogged conditions present in the peatlands of northern Europe. Here, the remarkable preservation of the bog bodies captures the familiar surfaces and horizons of fleshy, hairy humans. It is the very properties and capacities of the range of vital materials that make up the human body (p. 11) that determine how they emerge as phenomena in the archaeological record.

Archaeologists similarly attribute much of the formation of the archaeological record (for example, artefact scatters, buildings and burials) to human agency – Schiffer's (1996) cultural formation processes, or C-transforms. The distinction between N- and C-transforms inevitably embeds a binary in the interpretation of the formation of the archaeological record (see, however, Lucas, 2012). Instead, using an agential realist approach, we would propose these to be phenomena, the physical properties of which, and how they intra-act(ed) with the surrounding archaeological matrix, account for their ongoing presence. This perspective, moreover, irons out the ontological separation of nature and culture, making symmetry redundant, and recognizes how humans are one of many relational matterings in the worlding world. For example, we might note the repeated combinations of certain types of materials at the Neolithic site of Çatalhöyük in central Anatolia. Materials in the process of materialization include animal bone tools embedded in lumps of pigment, frequently associated with burials within the North Area 4040 (Çamurcuoğlu, 2015: 37, 42, 152; Govier, 2017; Patton and Hager, 2014: 242). Similarly, we would draw attention to the intriguing example of intra-acting materials and human bones at Early Natufian el-Wad. Here several of the burials were found wearing elaborate dentalium headdresses, described as sticking, adhering or affixed to the skull, and bird bone pendants adhering to the crown of the head (Wyllie and Hole, 2012:

710–711). The shell and bone adornments appear to have become as one with the skull through the putrefaction of the flesh and hair and emerging as phenomena. These mergings and minglings of human–nonhuman matter are, we deduce, more than the original intentionality of the people who conducted the burial rites (Schiffer's C-Transforms), but also illustrate the vitality of calcareous matter. The properties of shell and bone provoked their co-ossification resulting in this unusual phenomenon.

Embracing sensorial archaeology, Steel (in press) has explored the unique sunken room (103) at Arediou, a Late Bronze Age Cypriot farmstead, and how the smashed sherds of a range of drinking vessels and figurines evidence the intermingling of bodies and aromatic, medicinal or psychoactive substances – potentially instigating altered states in their human correspondents. Through embracing a more-than-human perspective, we can see how bodies mesh, 'assimilate' and become-with through consumption practices (see Attala, 2017b: 139). The Base Ring juglet in-phenomena with the (also present) imported Mycenaean shallow bowl, the sipping-human and precious liquids caused effects of vital interest to the archaeologist; the concept of the phenomena encourages us to think through the unique agencies and causalities that emerge from such intra-actions.

An agential realist approach would frame the relational ontology of these materials (including the human bodies that collected and placed them) as phenomena. Equally, we would consider the archaeological investigation unearthing these things-in-phenomena as a further mattering, drawing attention to how the archaeological materials emerge from the ground into the air and begin to intra-act with different matter; as such, we would contend that the apparent volatility of archaeological finds, the objects we perceive as decaying, crumbling and falling to dust and requiring conservation to survive, as coalescing, intra-acting materials rich in complex emerging agencies and causalities. A Baradian approach thus frames the archaeological record, and indeed the wider environment, as things-in-phenomena and firmly positions humans as part of the material world. This perspective illustrates how matter and substances come together in material entanglements and should not be thought of as 'independent objects with inherent boundaries and properties' (Barad, 2003: 815).

We contend that the examination of such combinations of materials as phenomena holds archaeological value as it allows us to reconsider the mobilizations of matter as becomings, as processes that carry greater meaning than the sum of their parts. This ontological shift from things to matter (see Barad, 2003), focusing on the materiality of the archaeological record, also allows us to develop a more practical, physical engagement with the past. It draws attention to the vitality and capacities of different materials (Bennett, 2010; DeLanda, 2006; Drazin and Küchler, 2015), including the substance of the human body (Attala and Steel, 2019). While this approach acknowledges how these phenomena may be co-created by humans, equally it recognizes how they are informed by biological and mineralogical processes. The intra-actions producing the archaeological record emerge from these materializations, which in turn inform the narratives archaeologists produce. Following Barad (2003: 801), we argue that current archaeological representation – typically of past praxis, long-forgotten ideologies and ephemeral social structures – creates distance between the archaeologist and the materiality of the

archaeological record (Attala and Steel, 2019: 4), while focusing on material processes (including past human actions) as intra-actions allows matter 'to actively matter' (Barad, 2003: 809).

Concluding remarks

In this article, we have explored the intellectual territory of the New Materialisms with a specific emphasis on the work of Karen Barad and its potential uses for the archaeologist. We would emphasize the importance of this discussion, as the 'turn-to-matter' is increasingly gaining ground in the wider social sciences (cf. Fox and Alldred, 2019) and influencing the ways in which people think about the world. This intellectual approach calls into question human exceptionalism born from Cartesian ontologies of separation and as a corollary the emphasis placed on how *we* represent the world. Instead, the New Materialisms embed humans, *as matter*, within the wider environment, or worlding world.

One of our aims has been to query Witmore's individual slant on the New Materialisms discourse; in particular, we dispute his overemphasis on *things*. Witmore explores 'things as things', but it is unclear what he means by this term. Our own reading of the literature surrounding things, entities, objects, stuff and phenomena suggests that these words need to be rigorously supported both ontologically and epistemologically. Moreover, we would stress that things are not the cornerstone of the New Materialisms. These instead attend to the brute materiality of matter, rather than the more problematic representation of things. The New Materialisms thus encourage us to move from thingification to the more fluid concept of matterings.

One area highlighted by Witmore that has been adopted by archaeologists is the Deleuzian assemblage or *agencement*, as developed by Bennett (2010) and DeLanda (2006, 2016). While we agree that this approach has great value for the archaeologist, we would encourage careful consideration of the terminology. This should not be thought of simply as a 'gathering' or *collection* of entities; it is a dynamic, open-ended becoming of matter (Harris, 2014a). *Agencement* certainly allows us to think about relationships between human and nonhuman entities; however, we would like to draw attention to an alternative approach that we have found inspiring, which likewise engages with entanglements of matter – Barad's agential realism. Rather than thinking of the world as being made up of bounded entities (things!), we have sought to illustrate the usefulness of thinking about the materialization of the archaeological record as things-in-phenomena, which we argue allows us to move beyond the 'Cartesian habit of mind' (Barad, 2003: 807) implicit in the traditional archaeological discourse.

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ORCID iD

Louise Steel https://orcid.org/0000-0002-4063-3609

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Author biographies

Eloise Govier MA, MLitt, PhD is an artist conducting practice-led research in the fields of archaeology, anthropology and education. Her work has been exhibted internationally and her research interest focus on material interactions in the past and present. She lectures in anthropology and archaeology and the University of Wales Trinity Saint David (Lampeter) and is a Fellow of the Higher Education Academy. Recent publications include "Do your follow? Rethinking causality in archaeology" in *Archaeological Dialogues* (2019).
Address: University of Wales Trinity Saint David, Lampeter, SA31 3EP, UK.
Email: e.goiver@uwtsd.ac.uk

Louise Steel is Professor of Near Eastern Archaeology at the University of Wales Trinity Saint David and a Senior Fellow of the Higher Education Academy. Her research interests focus on the entangled relationships of people and the material world and more recently she has engaged with materiality and the application of the new materialisms in archaeology. She is series editor of Materialities in Anthropology and Archaeology, University of Wales Press, and is co-editor of *Body Matters: Exploring the Materiality of the Human Body* (2019), as well as the author of *Materiality and Consumption in the Bronze Age Mediterranean* (2012), and *Cyprus Before History: From the First Settlers to the End of the Bronze Age* (2004).