
A Matter of Difference: Karen Barad, Ontology and Archaeological Bodies

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*This article explores the implications of adopting Karen Barad's agential realist approach in archaeology. We argue that the location of Barad's work in quantum physics and feminism means it is uniquely placed to inform the ontological turn currently gaining favour for understanding the materiality of bodies. We outline Barad's approach using a comparative reading of Sofaer's book *The Body as Material Culture* and Barad's *Meeting the Universe Halfway*. To illustrate, we think through Barad's key concepts of 'phenomenon', 'intra-action' and 'apparatus' in relation to specific archaeological bodies; New Zealand Maori chevron amulets, Argentinean La Candelaria body-pots, Pacific Northwest Coast stone artefacts and Nuu-chah-nulth ceremonial objects. Barad's theory transforms the way we understand and think these object bodies. In particular, her relational ontology, which contrasts with a conventional binary separation of matter and meaning, produces difference in a new way; a difference which facilitates analyses conceptually unthinkable in conventional representationalist terms.*

Biological and cultural determinism are both instances of misplaced concreteness — i.e., the mistake of, first, taking provisional and local category abstractions like 'nature' and 'culture' for the world and, second, mistaking potent consequences to be preexisting foundations. (Haraway 2008, 6)

An ontological turn is underway. From Michel Foucault, Judith Butler and Elizabeth Grosz, to Bruno Latour, Marilyn Strathern and Eduardo Viveiros de Castro worldviews are being discarded in favour of worlds. But so far these new ontological approaches have shed more light on the power of norms and ideals to come together with practices to create worlds than on the weight of the material to create worlds. Even the recent volume *Thinking through Things* — where the focus specifically rests on artefacts, objects and things — is primarily concerned with the relationship between material things and discourse, between objects and the claims people make for those objects (Henare *et al.* 2007). Somehow the weight of material worlds remains just off-stage. But perhaps we should not be surprised by this; after all, the influential writ-

ers leading the ontological turn are primarily philosophers, anthropologists and sociologists. The weight of the material world is not their core business. In this article we examine the implications for archaeologists of the radical rethinking of ontology and bodies offered by Karen Barad. Writing as a feminist and a physicist, the material is central to and inescapable in Barad's work. For her, and for us, the material is core business.

For some time we have been working to articulate a relational social archaeology informed by feminist theory (Alberti 2001; 2002; Gosden & Marshall 1999; Marshall 1998; 2000; 2013). We are not of course alone in this endeavour — our work sits with a broad corpus of archaeological writing which calls for a shift toward more relational approaches to the social and material. Archaeologists are employing a wide variety of theoretical perspectives and draw on a range of theorists to this end — from Latour and Whitehead to Deleuze and Harman (Alberti *et al.* 2011; 2013; Conneller 2011; Dolwick 2009; Fowler 2013; Hodder 2012; Ingold 2007a,b; Jones 2012; Lucas 2012; Olsen 2010; Olsen *et al.* 2012; Webmoor & Witmore 2008; Witmore

2012). Alongside this there has been a renewed focus on the active involvement of materials, whether fully relational in approach or a type of modern essentialism in which part of the material is beyond relationships (Olsen 2010; see Harman 2009). It is no surprise that archaeologists have sought inspiration from these thinkers, some of whom were drawn upon by post-processual approaches, but now their work is being examined for its ontological implications (Jones & Alberti 2013). Largely rooted in Latour's (1993) critique that questions of epistemology have hidden and justified unsustainable ontological divides, the relationship between the material and the social has shifted from a type of dialectic to that of ontological parity in which neither one (discourse) nor the other (matter) has precedence. Terms such as 'symmetrical archaeology' (Olsen *et al.* 2012) or 'entanglement' (Hodder 2012) capture the importance given to the non-human, to things, as equal partners in the creation of social worlds. Equally, the reformulation of matter or materials as ontologically variable rather than a fixed backdrop to human action has motivated others to explore how past practices produced or opened up qualitatively different worlds. Materials are seen to be experientially, conceptually and technologically present in relation to specific technological practices and against a timeless set of properties accessible to any old 'analyst' (Conneller 2011, 8; Jones 2012). Contemporary work in political ecology, archaeology and anthropology has introduced notions such as 'vital materiality' (Bennett 2010), 'force' (Hodder 2012) and 'flux' (Ingold 2013) to indicate the movement inherent to life. The coming together of things usually kept separate in the conventional categories of the social and material, or of life and matter, is encompassed by notions of networks or assemblages. Assemblages are open-ended, finite and heterogeneous collections of entities not divided on ontological grounds. They are not specified prior to analysis, against the conventional ideas of framework and context (Bennett 2010; Fowler 2013; Jones & Alberti 2013; Latour 2005; Lucas 2012).

This work has accompanied an unabashed return to philosophical realism. 'Relational realists' and others consider the traditional subject matter of both the sciences and humanities to be equally real (Barad 2007; DeLanda 2006; Fowler 2013; Olsen *et al.* 2012). In common with these approaches we return to the importance of materials, not from a mechanistic position, but to a form of realism without material determinism. Our general concern is to challenge substance ontology as the primary means of understanding worlds and to question a humanocentric concept of relations. There are particular reasons why we draw on Barad rather

than other theorists. To us, genealogy matters. The location of Barad's ideas in feminist theory, especially the work of Donna Haraway and Judith Butler, brings notions of bodies and language to a central position. Moreover, matter and discourse conceptualized as inherently relational mean that politics and histories occupy an even more prominent position in analysis. In our work we have found Barad's insights emancipatory because she gives us both a conceptual framework and an accompanying language which enables us to speak by re-formulating difference. The centrality of indeterminacy in her work, and a vocabulary of words and concepts, enables us to bring our ideas to language. Read with hindsight we can see in our early efforts a struggle with words — a struggle to find appropriate and accessible language with which to articulate the transformative, feminist approach to archaeological bodies we are trying to envisage. This problem is not of course new to feminist theorists who have long fought to articulate a notion of the feminine thought in its own terms (Baker 1997; Irigaray 1985; 1990). Moreover, Barad's careful working through of the process by which things come into existence as a consequence of relating and her clear dismantling of representationalist logic in relation to scientific practice point the way to specificity in understanding both practice and interpretation in archaeology.

Alberti began his journey into relational archaeology with Minoan art (Alberti 2001; 2002). Drawing on Butler's theory of performativity he suggested that we could better understand Minoan bodies as both one and many rather than male and female — a unified body open to making in many forms. While the degree of bodily mutability possible in Alberti's formulation is much greater than cultural constructivism would allow, his argument still hinges on a materially grounded body. While the ontological distinction between bodies and clothing, nature and culture, is challenged, Alberti nonetheless locates difference in the subject, arguing for the existence of multiple subject positions. A move to study body-pots from northwest Argentina, however, led Alberti to questions of ontology and a critique of representationalism (Alberti 2007; Alberti & Marshall 2009; Alberti *et al.* 2011). At stake here was not the relationship between a representation of a body and a purported real, lived body, but the ability to take seriously the assertion, formulated as a ceramic vessel, of a material equivalence between very different kinds of bodies. The specific corpus of body pots is from the La Candelaria culture of first-millennium AD northwest Argentina (Fig. 1). The pots, mostly collected and occasionally excavated from within or beside large burial urns of adults and children, are found across a dispersed area, but cen-



Figure 1. Complex zoomorphic ceramic body-pot. Museo Arqueológico El Cadillal, Tucumán Province, Argentina. (Photograph: Benjamin Alberti.)

tred on the sub-Andean *yungas* of Tucuman and Salta provinces, Argentina. Amazonian ethnographies are clear that shamanism and creatures whose existence is asserted in pot form populate a world ontologically other to ours. This has been described as ‘multinaturalism’: there are potentially as many worlds as there are species of things but all species interpret the world in the same way (Viveiros de Castro 1996; 1998; 2010). The approach known as perspectivism sees the world of bodies in Amazonian ethnographies as one in which the potential for and fear of transformation are constantly present. Bodies are not self-evident but are brought about and stabilized by affects and practices. To change affects is to change bodies; to change bodies is to change worlds. If human bodies and pot bodies are being treated in equivalent ways in the archaeological record of La Candelaria, as they appear to be, then the fantastic forms of the pots can be explained as attempts to subjectivize and therefore fix them, in the same way that body practices do (Alberti 2007; Alberti & Marshall 2009). What remains of representationalism once the apparently represented becomes the actually present?

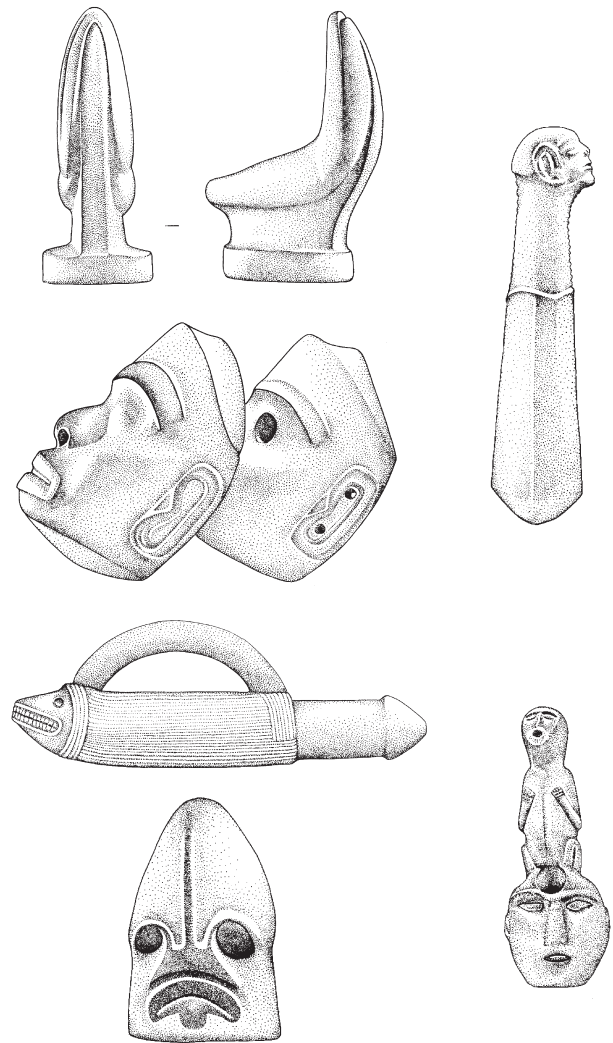


Figure 2. Prehistoric stone artefacts from the Pacific Northwest Coast. Clockwise from top left: slope-handled maul, 23 cm high; club, 46 cm long; seated human figure bowl, 19 cm high; pile driver in the form of a dog-fish head 39 cm high; club, 34 cm long; pair of stone masks with open and closed eyes, 23 cm high. (Drawings by Kathryn Knowles from photographs in Duff 1975. Figure by Penny Copeland.)

Marshall has been puzzling over the challenges posed by Pacific Northwest Coast artefacts (Gosden & Marshall 1999; Marshall 1998; 2000; 2008b). Initially, it was an assemblage of stone artefacts brought together and evocatively described by Wilson Duff that caught her attention (Duff 1975; Marshall 2000), in particular the compelling way these artefacts collapsed male and female, sex and gender, function and meaning (Fig. 2). Duff’s account of these objects is powerful, subtle and appreciative, but is not entirely successful in its

attempt to take these artefacts seriously in all their complexities, from their tangled iconographic assertions to the choice of stone as the medium through which to speak and act. As Duff reached beyond representationalist thought to fully engage with the collapse of Western categories asserted by these objects he was pulled back into binary divisions. He failed to solve the problem that if you start by dividing the world into two kinds of body, in this case male and female stone bodies, you cannot then escape this division. Instead you are condemned to endlessly refine and redefine the relationship between separate irreconcilable worlds. However insightfully this is done, and Duff's account is exceptional, interpretation is held fast within that binary, limited by the concepts and language of representationalist thinking. Marshall (2000) drew out these contradictions in Duff's account showing how they undermined the radical potential of his ideas, then using Grosz's (1994) concept of volatile bodies and her imagery of the two-sided but continuous Möbius strip she tried to think the artefacts yet again, working with rather than against their transformational agency. But somehow the full weight of these extraordinary stone worlds still feels unrealized; there is more to understand here.

We argue that by reconsidering these artefacts using Barad's agential realist approach, by starting with her assumption of ontological unity rather than with a binary separation, it will be possible to know them, to think them, in new and unexpected ways. Similarly, understood as 'phenomena' the Argentinean pots can be both bodies and pots — not hybrids but themselves.

Barad's book *Meeting the Universe Halfway* focuses directly on the relationship between meaning and matter, ideas and the physical world — the nub of what we do as archaeologists. How, she asks, does matter, in its specific material formations such as bodies, artefacts and objects come together with actions, doings, practices in the world, and with the abstracted norms, ideals, regulatory regimes of discourse, to mutually produce and reproduce each other? What exactly is the nature of their productive, agential, entanglement?¹ In what follows we explore Barad's answers to these questions and evaluate their power to open new ways to think and do archaeology. It is important to make clear that we are not proposing a methodological corrective to current archaeological approaches to bodies and materials. More fundamentally, Barad's work questions how bodies as a generalized category of material-discursive things are produced as specific ontologies so that bodies can exist in diverse ways. Her work is directed to the generation of new concepts, new philosophy, new thought;

it is not 'about the critique of existing knowledges' (cf. Grosz 2011, 77).

What follows is divided into two sections. We begin by outlining Karen Barad's central theory of agential realism, in which she collapses any *a priori* division between matter and meaning, and between different kinds of matter — human/non-human, animate/inanimate. Barad argues matter and discourse are mutually and performatively produced, so no fundamental distinction between different forms of matter is possible. We have chosen to do this by reading Barad through Joanna Sofaer's important work *Bodies as Material Culture*. Sofaer's reworking of osteological bodies as forms of material culture is compelling because it promises an elegant circumvention of the problematic binary divide of nature/culture, science/social in relation to bodies, and it has quickly become influential (e.g. Agarwal & Glencross 2011; Bolger 2008; Sørensen 2006). However, while Sofaer's analogical extension of material-culture analysis to skeletal human bodies side-steps the problematic nature/culture divide, she cannot resolve it because she is unable to satisfactorily reconfigure the relationship between matter and discourse. In her account discourse is merely held in abeyance by a plastic yet essentialist notion of matter. As we outline below, the tensions between doing away with the nature/culture division and needing to at least selectively retain it is especially evident in Sofaer's discussion of sex and gender.

In Barad's approach these tensions can be resolved because matter itself is practice-based. There is no ontological distinction between animate and inanimate bodies or between gender and sex; they are the same kind of 'thing'. Each comes into determinacy, or concrete specificity, in the form of 'phenomena', to use Barad's term, as the result of different material-discursive practices, or 'apparatuses of bodily production', where bodies are understood in the general sense (Barad 2007, 145–6). Barad's concepts of 'phenomenon' and 'apparatus of bodily production' reformulate all bodies, not just the biological, as complex entanglements whose properties or attributes are products or effects of phenomena rather than pre-existing those phenomena. Attributes therefore refer to the phenomena in their becoming and are not intrinsic to the objects themselves. The unity of all archaeological bodies — human and non-human, animate and inanimate, skeleton and fleshed social body — is effected in Barad's approach by their ontological equivalence, not because they are brought into analogical relationships. Here we self-consciously stick with the concept of body, as reformulated by Barad, rather than go with the more inclusive-sounding notion of 'phenomenon'.

In one sense, these are all 'bodies'. By continuing to use the term 'body' we are not reifying a notion of body (as separate from mind, and so on). Our debate is situated within the archaeology of bodies. Revitalizing rather than eradicating the concept ensures histories of feminist struggles over bodies are part of the continued redeployment of the term. We favour this usage rather than the apparent neutrality of the more general term 'phenomenon'.

In the second section, we explore Barad's approach more deeply by employing it to rethink New Zealand Maori chevron amulets. We show how archaeological analysis premised on the unity of archaeological bodies, the basis of Barad's approach, dissolves entrenched conceptual obstacles while opening new avenues for interpretation. Apparently incommensurate, fundamentally incompatible ways of thinking about objects, such as the tension between thinking amulets as archaeological artefacts and assemblages, versus thinking them as Maori *taonga*, treasures, is no longer an *a priori* analytical barrier. In Barad's world, we can think chevron amulets as both artefacts and *taonga* without paradox or conflict because difference is no longer essential to the object; it is specific to and an effect of analysis. Difference is not fundamental and not therefore prior to analysis, it is produced in the analytical process.

In the conclusion, we return briefly to our work on archaeological object bodies from northwest Argentina and the Pacific Northwest Coast of America to show how Barad's insights, conceptual framework and vocabulary make possible a clearer and deeper account of our argument that artefacts, in this case stone clubs and body-pots, are not in themselves stable, enduring or fixed but instead act to effect stability — although their actions are contingent and performative. Following Barad, we further argue that human and artefact bodies are fully, ontologically relational, releasing us from the strictures of binary tensions and presumptions of *a priori* incompatibility among apparently competing interpretations. Difference is transformed because difference emerges differently. It is no longer absolute, locked into a specific perspective on the world; it is a material-discursive effect of analysis itself.

Agential realism proposes an ontologically different conceptual framework for thinking rather than a new epistemology or theoretical approach. It lays out a position which we can choose to adopt as our conceptual starting point for analysis, but it does not offer a theory or method which we can pick up and apply. Our purpose in this article is therefore to explore the potential implications for archaeology of Barad's agential realist position by adopting her

starting assumption of the ontological unity of matter and meaning, and by implication therefore the ontological unity of all archaeological bodies, human and non-human. We are then able to explore where her ideas might take us in terms of their implications for archaeological understandings of our world. The prize, we argue, is a richer, more inclusive, archaeology.

Section 1 - The materiality of bodies in archaeology: views from Barad and Sofaer

In what follows, we outline Barad's approach by reading it in conjunction with, and to some extent against, Sofaer's work on osteological bodies as material culture (Sofaer 2006; 2011; 2013). We have chosen a comparative reading to introduce Barad's work in order to highlight what is distinctive and exciting about Barad's approach from an archaeological point of view. In drawing out key differences between Barad and Sofaer we are able to locate our discussion in bodies understood in their broadest sense — from scientific matter to cultural objects — a distinction that we, Barad and Sofaer all take issue with, but for different reasons and to different effect. The comparison enables us to highlight Barad's theorization of all bodies — not just the human — as material-discursive effects of practices which are themselves materially discursively constituted.

Barad and Sofaer are both striving to re-theorize matter as active. They start with essentially the same question: how can we produce a unified notion of bodies that incorporates our best scientific knowledge, with our best social theories, in such a way that the agency of bodies is not effaced by discourse? However, in answering this question they build from different assumptions. Where Barad's account starts from an assumption of onto-epistemological unity through practice, Sofaer is working from an assumption of essential difference between body and representation. Ultimately, Barad refuses any ontological distinction between a body, what happens to that body, and what is asserted about that body. In contrast, Sofaer's account rests on precisely those differences — between the material and discourse — which are then mediated by practice. Practice animates bodies and leaves material traces on those bodies, traces which are then read and understood through discourse and as the mark of discourse. Practice and discourse are therefore agential, though they act in different ways. Matter, however, is not; it is effective in purely developmental ways. In contrast, for Barad there is no separation between body, practice and discourse; they are all produced as effects of becoming and are therefore all fundamentally agential. To highlight this critical contrast, we

begin with Barad's critique of representationalism, showing how her ideas are positioned in relation to Sofaer's work. We then outline Barad's solution to the problem of incorporating matter's agency, namely her ontologized notion of body in the concepts of 'phenomenon' and 'apparatus of bodily production'. Importantly, the result is not relativism and loss of objectivity but a different conceptualization of the objective referent of scientific practice.

Sofaer's account

To move us beyond the separation of human bodies from material culture, a division which renders the archaeological human body oddly static and fixed, Sofaer argues we must take the plasticity of the material body seriously, including the plasticity of the skeletal body. She refigures the body as a process of materialization in which a body, including its skeleton, is constantly modified in response to a 'lifetime of culturally defined activities' (Sofaer 2006, 77). Each body, including its skeleton, is progressively marked and modified by cultural, gendered and age-specific activities such as carrying heavy loads on the head or with a tumpline across the forehead, head-shaping, foot-binding, consumption of different foods producing different body chemistry, or long periods spent in fixed postures such as kneeling to grind grain or paddling a canoe (Sofaer 2006, 82–3, 106). Recognition of bodily plasticity, acknowledging the particularity of each body, and focusing on the ways bodies are modified over time refigures the body as cultural and allows it be treated like other forms of material culture. Sofaer is thus arguing for the unity of archaeological bodies, human, non-human and inanimate, in two ways. Firstly, that they are all subject to, and at least to some extent products of, comparable cultural processes and practices; and secondly, because objects and bodies become one in the action of making and using objects, there is a mutual making and modifying of human and object bodies (Sofaer 2006, 80, 84; see also Hodder 2012). In sum, Sofaer is broadening the category of archaeological body, arguing we can know it and its materiality better as material culture and in this way we can understand how a body affects and is affected by practices.

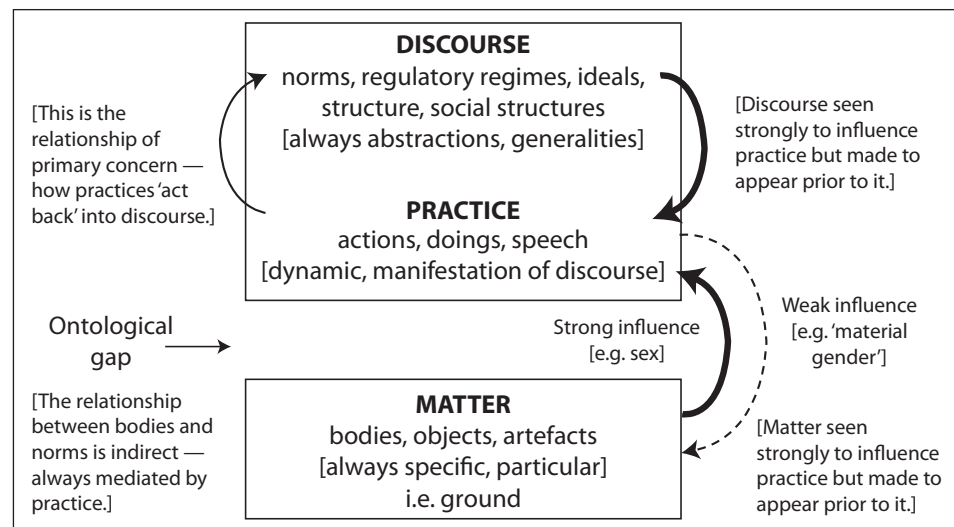
For Sofaer, bodies — both human and object — are marked by discourse through practice, understood as human-based activity, intentional or otherwise. In essence, discourses or norms are sedimented or materialized in and through bodies and material culture, which, in turn offer constraints or limits to discourse. Discourse is understood as a foundational term for generalized social norms — it constitutes our world through practice, operating through and

on the medium of material culture, of which the body is an example. The developmental process, 'sees the incorporation of cultural norms into the body' (Sofaer 2006, 78–9), so skeletal changes result from biological processes of growth and aging acting in conjunction with social practices such as carrying out gendered everyday tasks. We therefore see the 'impact' of social practices, including 'gender as social institution', in their shaping of the body (Sofaer 2006, 113).

In Sofaer's account, as in other practice-based and performative theories such as those of Judith Butler, Pierre Bourdieu, Michel Foucault and Marshall Sahlins, discourse in the form of norms and ideals is incorporated into the material, and is instantiated through practices that take up the material (Fig. 3). Practice plays a mediating role between discourse and matter. However, the reach of practice is uneven — it is strongly determined by discourse, but to some extent it also acts back to modify norms and regulatory regimes. This is possible because practice and discourse enjoy a common ontological status, as is the case with Butler's notion of performativity or Sahlins' structure of the conjuncture. But practice and discourse are ontologically distinct from matter in the terms of these theories. This difference creates an ontological gap across which only a weak relationship (of matter 'constraining' discourse/practice or discourse/practice 'inscribing' matter) can be sustained because they are essentially independent modes of being. Sofaer needs this separation, the ontological gap, because for her it protects the material from potential effacement by discourse. The role of matter in this account is to provide a material basis, or ground, for practice and to provide limits to discourse. Bodies are the foundation and boundaries for subsequent change brought about by human practice. The materials of the body and biological change also act back, impacting the creation of social categories through practice: 'As with other forms of material culture, the body does not just reflect cognitive systems and social practices, but is actively involved in their formation and structuring' (Sofaer 2006, 113). Because of its peculiar ontological status the material (bodies, objects, matter) strongly influences and is the ultimate referent of practice but is only weakly influenced by practice, putting up a roadblock to runaway discourse. That is, matter holds discourse to account indirectly through practice.

To illustrate, consider the sexing and gendering of a body. Sofaer's position is that gender emerges as practices which shape the body's development in differential ways (e.g. male versus female activities). In contrast, sex is given in the body and serves as the referent for gender, either as a categorical corporeal 'background' or as a set of material potentials that resist,

Figure 3. *The ontological structure and fields of influence in practice-based and performative theories (e.g. Bourdieu (1977), Butler (1993; 2004), Sahlins (1981; 1984), Sofaer (2006; 2013). Matter 'constrains' practice which 'acts back' into norms, but norms only weakly influence matter via practice.*



constrain and enable gender. Sex then is the referent or ground for osteological difference, one of the 'features of the skeleton' (Sofaer 2006, 90), and is specifically 'of the skeleton', of the material, and only weakly and indirectly effected by discourse through practice. Even though gender is always implicated in the body, both body and sex provide a pre-existing ground for gender. Gender is not reducible to sex, but cannot be countenanced without it (Sofaer 2006, 114). Sofaer is clear that while both sex and the skeletal body are material, neither is purely natural nor simply social; they refer to elements of change in the materiality of bodies that are beyond the control or volition of humans.

Sofaer's concern is not to reduce sex to gender, the material to the discursive, or bodies to material culture — her fear is the potential absorption and effacement of the material (sex, age and other body truths) by discourse.

It is argued that, because sex can be fluid it is a produced representation rather than real, and that a binary division of sex into male and female is a regulatory ideal that is the product of discourse [...] the process of sexing bodies thus produces sex, which does not exist prior to its description [...] suggesting that observable differences between men and women are some sort of mirage or that osteological determinations do not form a useful axis of analysis. (Sofaer 2006, 95–6)

An unresolved tension thus arises in Sofaer's argument between wanting to do away with 'difficulties arising from the separation between bodies and objects and their repetitive linkage with nature and culture' (Sofaer 2006, 115), and her perceived need to retain a separation, especially between sex and gender, to enable the natural and the social to be divided for analysis (Sofaer 2006, 100). In Sofaer's

account human bodies and material culture, like sex and gender, are analogically linked because they are subject to similar processes and practices (Sofaer 2006, 87). But they remain fundamentally different kinds of thing because they are ontologically different: sex is material and ultimately beyond discourse; gender is practice-materialized norms. While there is a unification in the processes acting on human and object bodies maintaining a clear distinction between human bodies and material culture, between sex and gender, is necessary in Sofaer's account because it is only by holding them apart that she can establish and articulate a productive relationship between the two. Ultimately, norms are able to cash in on matter's evidential status by embedding gender via practice into the plastic body, a process enabled by the differentiating capacity of a background sex and manifest in Sofaer's concept of 'material gender'.

Barad's account

As other theorists of things do, particularly those troubling gender, Barad sets her sights on representationism as a key culprit in dividing the world into at least two ontologically distinct camps — words (discourse) and things. She cuts a wide swath in her critique, but, drawing from Joseph Rouse, she argues that both scientific realism and social construction accounts rely on representationalist logic in which the relationship between words and things is a correspondence one (Barad 2007, 48). By working through a modified performative theory, 'posthumanist performativity', focused on how discursive practices are related to material phenomena, Barad develops her theory of 'agential realism' which argues for a causal rather than correspondence relationship between discursive practices and material things (Barad 2007, 44–5, 49).

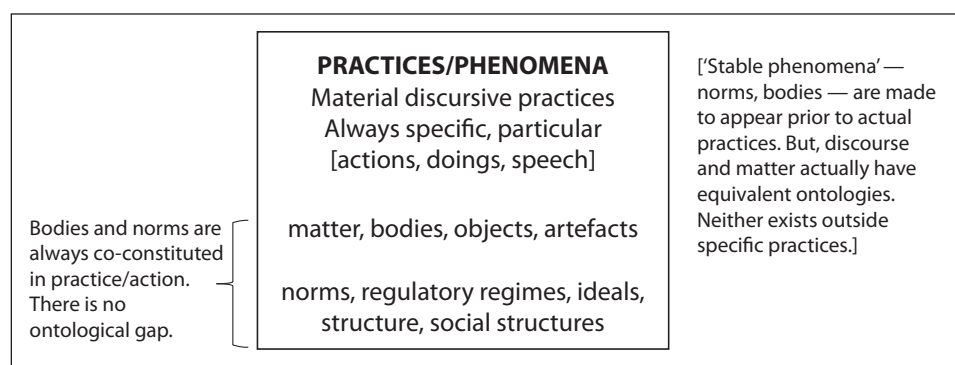


Figure 4. Closing the ontological gap in Barad's agential realism.

In representational logic, representations (and hence knowledge) either directly reflect objects and properties of nature or they reflect the actions of animating agents that construct — inscribe meaning onto — such objects (Fig. 3). Practices are bracketed off from the object, and the knowing/animating agent is always external to the relations described. The ontological gap between discourse/practice and the material world produces the eternal problem of how to reconcile object and referent. In such formulations determining the relationship of matter to meaning is seen as an epistemological question, and practices simply mediate knowledge and our agential engagement with the material. Hence, for example, the status of sex as a pre-given ontological category is still assumed in Sofaer's account. Sex can be plastic, variable, or changeable across the lifecourse, and variously 'picked up on' as relevant, but no matter how much you stretch its plasticity sex, as a category, necessarily pre-exists discourse and practice.

The ontological shift that grounds Barad's theory and her critique of representationalist logic is her presumption that we live in a dynamic world which is constantly in motion, rather than in a world which requires animating agents to initiate action or change (Fig. 4). Matter itself is active. In very general terms, matter is considered a becoming, not a property or quality which inheres in things or agents. Matter's dynamic becoming is of itself agential. The key, according to Barad (2003; 2007), is that the world is inherently ontologically and semantically indeterminate rather than pre-given. What she tries to specify in her theory is not how agents animate the material but how determinacy is established. By what mechanisms, she asks, do 'things' come into determinate, intelligible, and stable existence and meaning? Her answer is that both matter and meaning are materialized together through practice. There is no ontological gap. Matter and meaning are openly and directly fully engaged.

Barad draws inspiration from quantum physicist and philosopher, Niels Bohr. Bohr's notion of

the phenomenon highlights a key movement in her work — from epistemological to ontological concerns. Bohr insisted that when a scientific experiment takes place, for example when a measurement is taken of a quantum phenomenon using a specific apparatus, the 'objective referent' and result of the experiment is not the supposedly inherent properties of the object being measured; it is the measuring device (or apparatus) and the object being measured taken as a single, indivisible phenomenon. In other words, the apparatus does not measure and register an inherent property of a pre-existing entity. Rather, the specific material arrangement or setup of the measuring device in conjunction with the object produces the physical parameters of the object measured — the result. If you change the apparatus a different object is produced (Barad 2007, 141–6). Following Bohr, theoretical concepts are quite literally embodied in the experimental apparatus; they are inseparable.

A key example is the wave-particle duality paradox, 'the perplexing fact that light and matter exhibit both wave and particle behaviours', properties conventionally considered mutually exclusive (Barad 2007, 123). In Barad's reading of Bohr, there is no paradox because the specific physical properties of the apparatus used to measure matter, an electron, produces the specific properties of the electron *within that phenomenon*. Since the apparatus needed to show how an electron acts as a wave is different to that needed to show how an electron acts as a particle, there is no paradox — they are different phenomena. That is, there are no independent, individual objects (in this case electrons) with pre-determined properties: determinacy is locally resolved as part of specific phenomena. As such, there are no on-going determinate 'things', only contingently determinate 'things-in-phenomena' (Barad 2007, 128).

'Things', then, never pre-exist their relating and the specific form and qualities of the things produced will depend on the material conditions that produce them. From this position two important points follow.

First, things cannot interact, because interaction supposes at least two pre-existing entities that can come together in some way. By definition this is not possible in Barad's formulation. She describes her relating of things-in-phenomena, an internal process of differentiation, as 'intra-action'. Second, difference cannot be intrinsic to things. Like other properties it cannot transcend the phenomena of which it is an effect. As such, phenomena, not objects, are ontologically primal. The objective referent for properties, boundaries and also difference is the phenomenon, not the thing being measured. While Bohr was working at a scale where the quantum effect was clearly visible, Barad argues that the general principle that there is no fixed referent for the properties measured holds at all scales. For her, and for the application of her work in archaeology, this point is crucial.

Ultimately, Barad considers Bohr's theory too static and overly concerned with questions of epistemology to enliven the ontology of matter, so she turns to Foucault and Butler. Both understand discourse as productive and practices as the means through which regulatory discourses produce particular types of subjects and particular types of bodies. Barad agrees with Butler (and Sofaer) that the enforced passivity of matter and its subjugation to discourse in contemporary theory constitutes a key problem in understanding matter and bodies; 'language has been granted too much power', she claims (Barad 2003, 801; 2007, 191; Butler 1993, 9; 2004, 217). Butler's work, building on Foucault, interrogates the way regulatory regimes, particularly norms, produce disciplined/ideal and therefore 'normal' bodies from the plurality of forms taken by matter. A norm is by definition a generalized abstraction so actual bodies in their specificity cannot be, or ever fully embody, the norm/ideal — it is approachable by infinitely divisible degrees of closeness, but never fully attainable. Bodies in their mattering are always particular, specific, qualified instances of those norms; bodies can occupy a norm in myriad ways but each occupancy is always 'positioned somewhere between the norm and its failure' (Butler 2004, 74). For Barad, what is lacking in Butler and Foucault (and most archaeologists would concur) is a sense of how the actual matter of bodies is inseparable from — and productive of — the on-going process of their materialization; but this is where Bohr comes back in.

The crucial step in Barad's combined reading of Bohr, Butler and Foucault is her shift from Bohr's 'physical conditions' to 'material discursive practices' to designate the specific configuration of an apparatus. In a recent article on human pheromones, Sieben (2011, 267) describes the way heteronormativity is brought

into being through the creation of 'experimental settings [...] which combine sex-specificity with heterosexuality and reproduction'. Through a very clear application of a Baradian approach she demonstrates that what we understand as pheromones are not simple bodily products but products of the engagement of bodies within specific research practices. Crucially, though, whether and how pheromones work is poorly understood, as experiments consistently fail to produce consistent or significant results. Sieben's explanation is that the material/chemical element is itself resistant to a stable outcome within the terms of heteronormative discourse and practice. As a result pheromones simply do not, as such, exist. We would do better, Sieben argues, to talk of 'pheromonal effects' as 'phenomena'. These effects are produced within the engagement of researcher, discourse, experimental apparatus and chemical components. And, under the dictates of current practices and discourses, the effects fail to produce stable phenomena.²

To illustrate Barad's move archaeologically we pick up the osteological sexing example. As in Sieben's pheromone example, the apparatus for sexing a bone is no longer limited to the physical conditions, in this instance the callipers, but includes all relevant 'material discursive practices' — the person measuring the skeletons, the environmental laboratory conditions, the economic and political practices that impinge on the lab, the norms encoded in the reference tables of measurements, and so on. All are parts of the 'apparatus of bodily production' which bring into determinacy a specific sexed bone and skeleton. The intra-action, or phenomenon, of measuring the bone makes determinate the properties and boundaries relevant to the determination of the concept of sex in that specific case, but these properties (male, female, indeterminate) do not belong to the bone but rather to the intra-action or phenomenon of bone and apparatus. They are not inherent in the bone itself.

Distinguishing between specificity, stable phenomena and fixity is crucial to understanding Barad's move. Stable phenomena in Barad's terms are those that can be faithfully repeated — are reproducible through iteration. The measurement of bone architecture to produce a specific effect or outcome such as sex or age is one example. The measurement (phenomenon) simultaneously produces the categorical norms of sex and assigns a specific bone or skeleton to those categories. The measuring process and the resulting identification (iteration) produce anew the categories of sex and age. Repeated iterations of the phenomenon produces increasingly stable effects, both specific (female aged 35–40 years) and categorical norms. These effects, however, never transcend

indeterminacy beyond the moment of intra-action. The skeleton is never defined by, or reducible to, the phenomenon or any of its effects. Properties, such as sex, do not travel with the bone or skeleton independently of the phenomenon through which they are produced because the bone is only one element of the phenomenon which produces a determination of sex. Barad's phenomena in intra-action produce specific effects; if the phenomenon can be repeatedly brought together and the components separated out through intra-action in the same way, those effects become stable and 'objective' (Barad 2007, 119). However, specificity cannot be fixed and specificity never becomes fixed. So the skeleton never relinquishes its agential potential to be an element in any subsequent intra-action, although the effects of one intra-action may (and often will) become an element in another intra-action.

Gender is an effect produced by intra-action in phenomena in the same way as sex (or age), and it therefore has the same ongoing indeterminacy and the same potential as sex to become stable. Like sex, the properties of gender are not inherent to bones, skeletons, bodies or discursive ideals. Gender categories or norms, and their local instantiations (iterations) are mutually produced in the material-discursive practices of performative intra-action in phenomena. Matter does not determine what gender is produced; nor does matter merely define limits to the gender produced, as Sofaer suggests. Matter in its specificity is one among many constitutive agential elements of an intra-action and of any productive outcome, including both gender and sex. In Barad's agential realism Sofaer's worry that the body may become merely a mirage created by discourse does not — cannot — arise; it is actually unthinkable because the material — body, skeleton, object — is always an element in a specific instance and therefore process by which a discursive category is produced. So, just as gender is always material, sex can never become a discursive mirage, because the material and the discursive are inseparable in practice.

At heart, it is the formulation of the problem that is limiting. Contemporary models of matter in archaeology, even those like Sofaer (2006; 2013) that provide an account of the material, are limited by an ontology that requires a separation of substance from meaning, and as a consequence need to fix selected properties as intrinsic to substance/matter. Sofaer addresses the problem of privileging discourse over the material, but in reversing the terms she imports a different version of the same problem from material culture. In Barad's agential realism, based in the ontological equivalence of human, non-human

and inanimate bodies as instantiations of different sets of material-discursive practices, or phenomena, fixity is neither an objective nor a desirable outcome. It is not even an ontological possibility. An analytical process is always open-ended because any category or instantiation can only exist ontologically in the moment in which the elements to be specified crystallize out through intra-action. Both categories and instantiations are indeterminate because they are inherently dependent on the context and each other for their existence and properties — 'phenomena are real physical entities or beings (though not fixed and separately delineated things)' (Barad 2007, 129). In other words, Barad's 'apparatuses of bodily production' produce difference differently.

Section 2 - A Baradian approach to archaeological bodies: Maori chevron amulets

We now turn from human bodies, osteological and skeletal, to artefact bodies, beginning with New Zealand Maori chevron amulets. Reading the amulets through Barad, our knowledge of these objects emerges as so many effects, or different accounts, all equally and inherently material-discursive in their specificity. Although these accounts differ from one another they are ontologically equivalent and therefore, like the wave and particle behaviour of electrons, can inform each other despite being understood as incommensurable in conventional representationalist terms. Possibilities for the analytical engagement of difference rest on ontological equivalence, not commensurability. That is, two accounts do not need to be reconciled. Instead, they must be understood to be as equally real as each other. Furthermore all accounts, however different, are valid *in respect of the specific configuration of the apparatuses with which they are produced*. The test of validity is not a general one. A claim to validity does not depend on taking up an objective position outside of an analysis — outside of a phenomenon; validity is a specific and concrete effect of a specific analysis and its apparatus of bodily production (phenomenon). The specificity of the account produced and its validity ensures both accountability and openness with respect to other accounts. The representationalist position, that objectivity is a condition for validity, produces as an effect of itself the threatening doppelgänger of Sofaer's free-floating discursive — a claim to either calls forth its partner.

Approximately 15 chevron amulets have been recorded — the number depends on how they are defined (Fig. 5). None have been recovered in the context of formal excavations or been subject to scientific

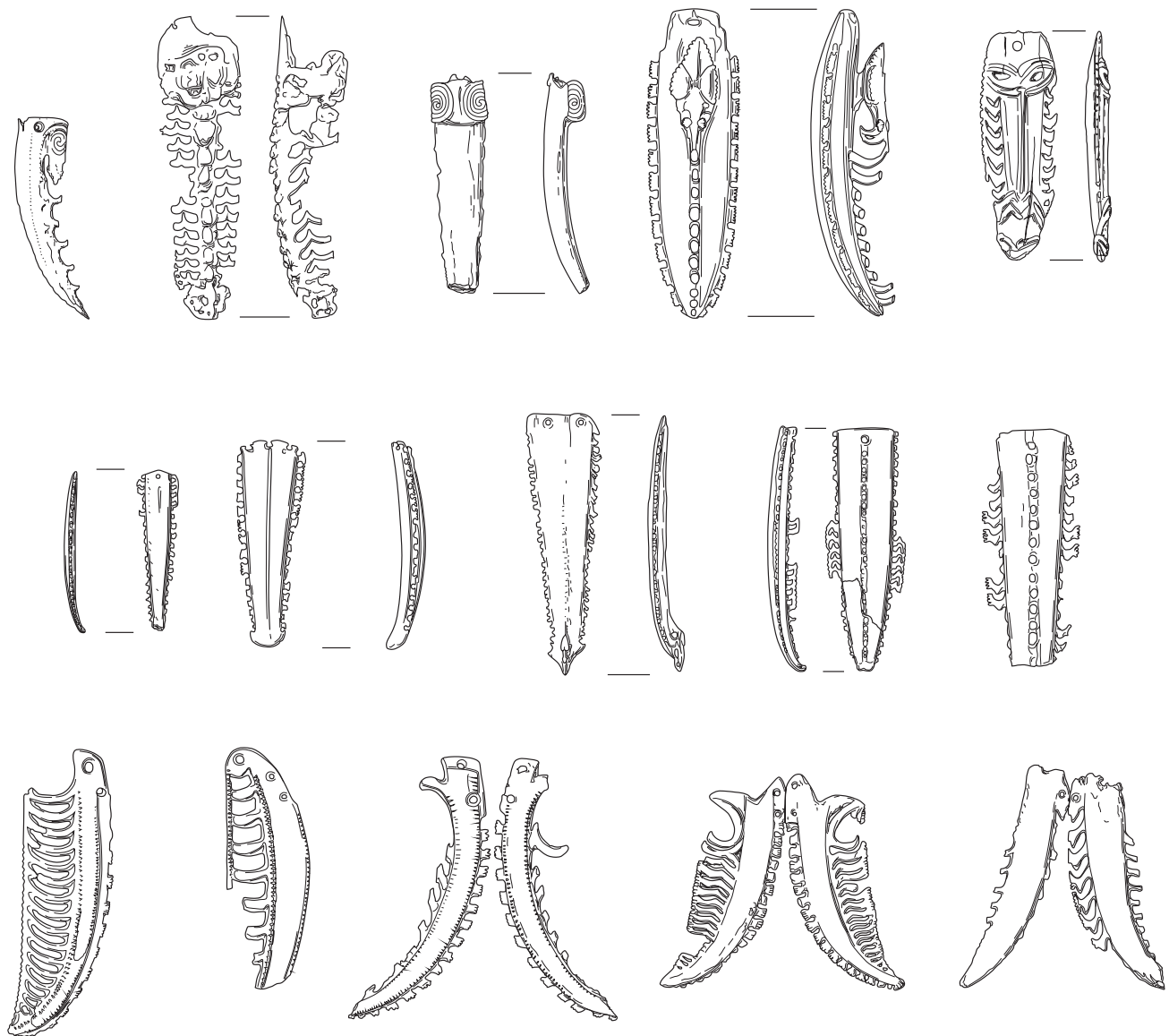


Figure 5. Fifteen New Zealand Maori chevron amulets made from whale tooth. The Lake Grassmere amulet is on the far left of row two. (Drawn by Penny Copeland from figures and photographs in Mead 1984 and Skinner 1974.)

scrutiny such as radiocarbon dating. So, archaeologically speaking, all we know is the general location in which each amulet was found, and scraps of contextual information which survive from accounts given by the people who found them. These suggest most amulets came from single isolated burials.

The age of the amulets is uncertain. New Zealand was first colonized some 600–800 years ago by people from the central Pacific. The amulets are not found outside New Zealand and are not present in any known site dated to the initial period of colonization. Nor are they present in the distinctive late Maori

assemblages of 300–400 years ago. Captain Cook and other European newcomers arriving in the late 1700s observed only a simple version of the amulet, a form which lacks chevrons and is known as a *rei-puta* (Fig. 6). It is therefore assumed that the chevron amulets are an indigenous artefact form which emerged some time after initial colonization, were manufactured and used for a brief period — several hundred years at most — and fell out of use before the emergence of Maori society as described by European newcomers in the eighteenth century (Mead 1984; Prickett 1999, 26; Skinner 1974).



Figure 6. Elaborately tattooed Maori chief, possibly Te Kuukuu, wearing a rei-puta amulet of whalebone with incised eyes. (Drawn by Penny Copeland from a photograph of the pen and wash portrait by Sydney Parkinson 1769; see Salmond 1991, 225.)

If amulets are bodies, do they have sex and gender?

In Barad's account, all bodies — human and artefact included — are ontologically equivalent. A specific Maori chevron amulet and the category 'Maori chevron amulets' are both bodies, both phenomena, brought about through specific apparatuses of bodily production. In contrast, under conventional archaeological logic, peculiar things happen if we superimpose the categories of amulet and body. Both are material entities; but each interacts differently with discourse and practice.

Conventionally, Maori chevron amulets comprise an archaeological category, a type or class of object defined and united by the presence of designated elements: whale tooth; drilled suspension hole/s; chevrons. Inclusion in the category, chevron amulet, requires the conjunction of a specific material, function and style element. We generally acknowledge that such analytical categories are discursive archaeological constructs, analytical moves. Consequently, naming and categorizing a specific artefact form, chevron amulet, does not presume this category was recognized in the past. We also acknowledge that such categories are plastic — they

can be stretched and modified. For example, can *rei-puta* be included in the category 'chevron amulet' despite their lack of chevrons? Can objects with minimal chevrons, the same general form, sometimes with a suspension hole, but made in stone rather than whale tooth ever be included (there are several of these)? What are the limits of category stretch? At what point does a category break? We do not require a set answer to this question because the elements and categories under consideration are in representationalist terms social-discursive constructs. In the same way categories of gender are reserved for the socially and discursively defined actions which shape human bodies. So like gender the categories employed to analyse material culture objects, such as a chevron amulet, are not material even though they may refer to material properties and have material effects. In this representationalist sense a chevron amulet could be said to 'have gender'.

But skeletal bodies also have sex. The osteological measurements or properties recorded on a bone or skeleton and used to assign sex, *as well as* the categories of sex themselves (male, female) are all understood to be material and intrinsic to the skeletal body — in a representationalist account both property and category are material and intrinsic. Sex emerges as a unique analytical step introduced to enable analysis of skeletal bodies to be grounded in the material because when it comes to human bodies unequivocal limits must be placed on category stretch, precisely because of the categories' involvement in the iteration of powerful societal norms. For amulets and other material culture, understood as produced exclusively through human action, through social-discursive practices acting on the body, there is no equivalent to the 'sexing' process. They do not have sex because there is no need for it. If a category is stretched to breaking, a new category can be introduced. In the absence of sex the analytical process employed for material culture is fundamentally different to the conventional osteological analysis of skeletons. Sofaer's analogy, the body as material culture, is a one-way street — while bodies can be material culture, objects cannot be (skeletal/human) bodies. This, for us, is a critical limitation.

Some chevron amulet phenomena

In Barad's agential realism the material cannot be separated from the discursive, and the object of analysis cannot be separated from the apparatus or agencies of observation (Barad 2007, 118). Effects cannot float free of a body whether skeleton or object; but neither are those effects located in the body or object as a fixed presence. The critical difference lies in what is held

apart and what is understood to be inseparable. In a representationalist approach, the analytical apparatus is held to be separate and distinct from both a specific instantiation, and a category. For Barad, instantiation (a particular chevron amulet) and category (chevron amulet) are co-produced as material-discursive effects, although they are separate and different effects, and both are inseparable from the apparatus which produces them (Fig. 4). In this case the apparatus would include whale tooth, suspension hole, chevrons, measuring tools, theoretical assumptions and ideas, so the materiality of bodies is always productive and agentive within an analysis (phenomenon). Amulet bodies are agentive.

Consider, for example, the Lake Grassmere amulet with its numerous but very tiny chevrons (Fig. 5). Although very worn and damaged it is apparent that the chevrons were never carved with the well-defined limbs, feet/hands or toes/fingers present in some other amulets. In representationalist terms we have an 'imperfect' instantiation of the norm 'chevron', but sufficiently chevron-like to count. In Barad's terms the quality 'chevron-ness' does not reside in the object but in the phenomenon, the coming together of object, measuring apparatus and practice establishes through intra-action whether an object is, or is not, a specifically *chevron* amulet. Neither the named entity 'amulet' nor the named entity 'chevron' reside in the object, even though the object is a material-discursive component of the effects 'chevron' and 'amulet'. The Lake Grassmere amulet cannot be a more or less imperfect example of the category/norm 'chevron amulet' because category and amulet are co-produced. The category cannot stand apart from the amulet because category and amulet are effects of the same properties within the specific phenomenon. A different amulet with different properties co-produces a category differently.

The Lake Grassmere amulet was found on a coastal sandpit 'in immediate association with moa bones' (Skinner 1974, 78). Moa are a large flightless bird hunted to extinction before the arrival of Cook in AD 1769, so the amulet must have been buried at least 300 years ago. In this observation a number of specific material-discursive elements are intra-actively brought together: the amulet, the moa bones, assumptions about their burial association; dating records of moa bones; to name but a few. Each component is an effect of and comprises other phenomena in their own right. Brought together they comprise the apparatus or phenomenon which produces the observation that the Grassmere amulet is at least 300 years old. This date is not an intrinsic property of the amulet, brought to light by an apparatus; the date is an effect of the

phenomenon understood as the intra-action of all its material-discursive elements.

Some assemblage phenomena

Objects comprising an archaeological assemblage are conventionally treated as variations on a theme, a representationalist way of thinking which presumes the existence of a discursive prototype, norm or ideal which defines the assemblage and sits apart from it. The norm creates a boundary composed of qualifying characteristics dividing the objects included from those excluded. Qualifying characteristics are materialized in and understood to be intrinsic to objects. This is a direct extension of the process by which a single body or amulet is defined and it similarly rests on the separation of a free-floating discursive norm/category from materialized instantiations. Additionally, the assemblage itself is ontologically different from its component objects and from the norms/qualifying criteria defining them — all are separate and do not touch. Because the discursive qualifying characteristics are materialized in specific amulets, and they are understood to be intrinsic to those objects, they are made to appear material. As a result, both qualifying characteristics and objects of an assemblage appear to precede both the defining norm, and their enclosure within its boundaries as an assemblage (Butler 2004, 48).

In a representationalist formulation objects can move into and out of an assemblage if the boundary characteristics shift. For example, if we define our amulet assemblage on the basis of whether an object has a carved face rather than chevrons, the *rei-puta* in Figure 6 would be included, most of the amulets in Figure 5 would be excluded, and a different assemblage would be created. Openness is premised on the discursive basis of the norm. In practice (through analysis) the free-floating discursive category is 'grounded' in its identification with specific material bodies. In other words the analytical process acts to bind the discursive category to its selected material instantiations making the category itself appear material and fixed. In practice discursive openness acquires fixity as instantiation becomes one with the norm closing the loop of signification. With repeated iteration the ideal overtakes and precedes the objects it supposedly defines (Butler 2004, 42). The doppelganger returns.

With Barad things happen differently. No such slide toward fixity is possible. The amulets comprising an assemblage are neither variations on a theme, nor various interpretations of an ideal object type: the 'world is not populated with things that are more or less the same or different from one another' (Barad 2007, 136). Each amulet is a specific material-discursive effect of the intra-action of object and apparatus of

bodily production. So too, an assemblage is a specific material-discursive effect of the amulets included (themselves phenomena) and the apparatus of production including discursive norms. An assemblage of amulets is ontologically equivalent to both the objects and the norms which bring it into being — object, assemblage, norm are co-produced; all touch. No one element can precede another.

Like a specific amulet, an amulet assemblage can be more or less stable, but it can never be fixed. Stability emerges with iteration. An object/assemblage is stable if it can be repeatedly produced with confidence. As with specific amulets, production of a specific assemblage of chevron amulets remains located in the intra-action of which it is an effect, not in the assemblage. An assemblage is always a material-discursive becoming so cannot slip from the discursive to the material no matter how often it is reproduced; it does not change register from the merely categorical to the actually real if repeated often enough. Because a separation between the material and the discursive cannot be opened it is not possible for one to consume the other.

The nature of difference: amulet, artefact, taonga

Chevron amulets are more than archaeological artefacts, they are Maori *taonga*, commonly understood as highly prized objects or treasure (Mead 1984, 21). *Taonga* can include songs, stories, texts, documents, rights and even living persons, and today they may encompass objects, property and ideas which originate in European society.

A *taonga* might equally be a historic whalebone weapon, the Maori language, a native plant or a body of knowledge; distinctions between the material and the ephemeral are not relevant here. Nor are ideas about animate versus inanimate entities; women and children may be exchanged as *taonga*, and *taonga* such as woven cloaks are often held as ancestors or instantiations of ancestral effect. (Henare 2007, 47)

Taonga transcends Western divisions between matter and meaning, human and non-human, material and discursive, Maori and *pakeha* (non-Maori), so it is untranslatable in conventional representationalist thought and language. As Henare (2007, 56) stresses *taonga* ‘more than simply “representing”, “signifying” or “embodying” ancestral efficacy and power, are it in specific form’. In short, *taonga* is incommensurable with representationalist ontology and by implication a chevron amulet cannot ‘be’ both an archaeological artefact and a *taonga* in much the same way that an electron cannot ‘be’ both a wave and a particle. In representationalist terms, artefact and *taonga* are fundamentally incommensurable.

Clearly, this creates problems for archaeologists who wish to draw on *taonga* to deepen their understanding of objects such as chevron amulets, and more generally for archaeologists who want to draw on oral histories and other Indigenous knowledge forums to broaden archaeological interpretations (Alberti 2007; Alberti & Marshall 2009; Damm 2005; Fredriksen 2011; Marshall 2008a; Smith & Wobst 2005; Zedeño 2009). Marshall’s (2006) suggestion that these contradictions can be sustained within archaeological accounts as long as different forms of knowledge are interpreted in their own terms before attempting any form of synthesis partially anticipates Barad’s resolution. We return briefly to Bohr. His solution to the paradox of wave-particle duality was the indeterminacy principle. Light and matter, he argued, exhibit wave or particle behaviour depending on the apparatus used to measure them, not because these effects are inherent properties. Chevron amulets are similarly indeterminate. They come into determinacy, are produced as artefacts or *taonga*, under specific conditions — not in any general or universal way. Just as both the wave and particle behaviours of electrons can inform us about their various natures, so too both artefact and *taonga* can inform us about the nature of chevron amulets, if we retain an understanding of artefact and *taonga* as produced by specific and different apparatuses of bodily production.

A chevron amulet recovered by chance from an isolated beach can, when thought in Barad’s terms, be both *taonga* and archaeological artefact because neither artefact-ness nor *taonga*-ness is intrinsic to the amulet. We can think/produce amulets in archaeological terms, and we can think/produce them as *taonga*. When we locate production in the practice/intra-action of specific phenomenon, rather than in the object, these contradictions dissolve. Irreconcilable contradiction is an effect of fixing the defining properties within the object so self-sameness is a given of the object as material, and of locating difference outside the object in discourse. In Barad’s world we can think chevron amulets as both archaeological artefacts and as *taonga* without paradox or conflict. But we cannot collapse them into one another or combine them into a unified notion of amulet. Neither an object nor an assemblage is ever a fixed, singular entity. Each instantiation is unique, specific and particular. Some are very stable and others only fleeting. In other words, amulets can be produced as various distinct effects which although different do not constitute a hierarchy of knowledges and do not demonstrate a somewhat faithless acquiescence to an ethic of multiple modes of knowing. Each is an open and different way of being a chevron amulet that does not precede, eclipse or consume other ways of being.

To conclude this discussion of amulets we turn briefly to the burdens representationalist contradictions can impose upon Maori lives. For Maori, such contradictions are more than a matter of intellectual debate; they must be lived and accommodated in whatever ways may be necessary to sustain 'a livable life' (Butler 2004). As Henare points out 'Maori clearly participate in more than one register of value — that which produces commodities as well as that which is peopled by *taonga*' (Henare 2007, 50). She illustrates this in reference to Maori claims against the New Zealand government under the terms of the 1840 Treaty of Waitangi.

The inferred paradox is this: if the basis of Wai 22 and other Maori claims is an appeal to tradition — the enduring salience of principles, practices and beliefs held in common with ancestors — then how can Maori claim special rights over things that are the commoditized products of global capitalism? How, in other words, can they participate simultaneously in what appear as two distinct — even antithetical — cultural perspectives, one distinctively Maori, the other quintessentially Western? (Henare 2007, 61).

For Maori, chevron amulets can be both artefacts and *taonga* — it is a question of negotiating difference in everyday life rather than cause for ontological crisis. A Baradian approach locates such a crisis in Western representationalist thought; a Western imposition on Maori people. She offers a fundamentally different basis for negotiating difference which allows amulet, artefact, assemblage and *taonga* to 'be' and remain 'open', unbounded, because all are brought into being by specific configurations of apparatus or phenomena. Each is always becoming; never done with; does not even presume to completion as it is always 'available' to further becoming in other phenomena. It is this fundamental openness, this always becoming-ness, which renders a Baradian object, in this case a chevron amulet, a potentially powerful tool in the ongoing struggle to build livable lives amid the conflicts of complex modern worlds.

Conclusion

Maori chevron amulets, Argentinean body-pots and Northwest Coast stone bodies are not propositions specifying relationships between real bodies and represented bodies — whether male, female, animal, human, stone, pot, mask or other — but explorations of how it is possible for such bodies to 'be' otherwise. In their different ways, these artefacts are telling us that matter and bodily forms are unstable and subject to repeated transformation. For example, two stone masks one with open and one with closed eyes are not two things, but two indivisible effects (Fig. 2), perhaps

comparable to the wave and matter effects of electrons. It is not possible to pin bodies down, to fix them in any specific materialized form, because while all bodily forms are concrete and material, they are also entirely contingent. The unstable, contingent worlds of these objects cannot be thought in the concepts and language of representationalism.

Through our examples we offer a fundamental critique of the widespread assumption in archaeology that material things provide stable referents for unstable ideas, categories, concepts or social relations; that objects make the discursive material and thereby stabilize and fix inherently unstable discursive entities (Alberti 2007, 211). We turn this assumption on its head. By collapsing human and object bodies within the production of specific artefact forms, amulets, body pots, stone clubs, masks we show how such body forms are neither self evident nor fixed — they are contingent and inherently transformable. So matter, including sex, does not exist in the representationalist sense that it is commonly presented to us (Alberti 2007, 216). We argue that artefacts act to stabilize, bring to specific determinacy, inherently unstable ideas, relations and categories but are not in themselves stable or fixed. Furthermore, objects do not define categories of bodies, nor do they stabilize meanings by making them material; rather they are concrete but contingent outcomes of engagements in worlds where persons, bodies and relations are inherently unstable (Alberti 2007, 220; Marshall 2008b, 31).

Karen Barad's agential realism emerges from her struggle as a feminist and nuclear physicist to comprehend the nature of matter in all its apparent contradictions and at all scales of analysis, from subatomic particles to gendered technologies and work practices. As feminists and archaeologists we also seek to hold onto and make sense of archaeological worlds in all their dimensions and apparent contradictions. The many types of bodies discussed here work with her notion of the ontological equivalency — the entanglement — of material-discursive practices in quite different registers, from the osteoarchaeological phenomena of body, sex and gender, to Maori chevron amulets as artefactual 'bodies', and finally to two sets of object-bodies from Argentina and the Pacific Northwest. Each form of body elaborates in a different way what might happen if we were to begin analysis from an assumption of ontological unity; if we were to work through Barad's contention that each is a phenomenon — a body — brought to determinacy and some kind of stability through intra-action.

Barad's open-ended ontology reformulates matter and meaning, ideas and the material world. In doing so she reformulates difference, allowing appar-

ent contradictions to be, and making it possible to draw into analysis ideas, bodies, theories and matters which would otherwise be kept apart, held separate as incommensurable. We are no longer obliged endlessly to define and refine a meaningful relationship between matter and meaning, sex and gender, human and non-human, past and present, because difference is not premised on separation. The ontological unity which underpins Barad's approach means difference emerges as an effect of engagement, of analysis, transforming our task as archaeologists. We are very much part of the knowledge we produce, knowledge that is the intra-active outcome of our interventions. And, just as Sandra Harding (1986) and Allison Wylie (2007) have argued from a feminist position but with an epistemological register, objectivity is not sacrificed but enhanced: it is fully ontologically and epistemologically realized in each encounter with past/present bodies and worlds.

Notes

1. Barad is heavily influenced by Donna Haraway (1997; 2008).
2. Science and Technology Studies authors have for some time argued for the involvement of scientific practice in the creation of its objects (Latour & Woolgar 1986; Mol 2002). The difference is, perhaps, that Mol's 'perspectivalism,' for example — multiple, competing ontologies, produced by 'constantly shifting contexts of knowledge' — refers to the ways in which a patient stitches together a singular reality out of a set of incompatible realities (Strathern 2009, 153–4). Barad (2007), however, argues that realities and knowledge are effects of the practices of measuring — these are not perspectives on a singular world.

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