The Significance of Others:  
A Prehistory of Rhythm and Interspecies Participation

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Abstract
The understanding of relations that bound humans and animals together during prehistory is undergoing a radical transformation in archaeology from broadly economic to social models. A reconsideration of the role of material culture in the production of social worlds is integral to these new approaches. The following article argues, however, that it is unhelpful to begin with separate human and animal domains that are mediated by symbols and material signifiers. Instead a plea is outlined for an integrated approach to species cohabitation and coevolution that focuses upon situated assemblies of material bodies and the intra-action of all participants within these spaces. It is suggested that scales of rhythm serve to regulate these intra-actions. Using examples from the Danish Mesolithic and the British Bronze Age, particularly of swan hunting and horse riding, this article shows how archaeology may be ideally equipped to articulate these phenomena, and for defining the varied and dynamic means by which species get along as significant “Others” in local contexts of cohabitation.

Keywords
Mesolithic, Bronze Age, cohabitation, intra-action, rhythm, zooarchaeology

Introduction
The relationships of humans to animals in prehistoric societies have traditionally been interpreted through ecological and economic perspectives that while illuminating have, through their dominance, prohibited alternative insights. More recently, alternative approaches towards the relationships connecting humans and animals under differing socio-historical circumstances have emerged, advocating forms of integrated or transferable kinship (e.g., Ray & Thomas, 2003; Russell, 2007), interactive negotiation of power relations (e.g., Argent, 2010; Armstrong Oma, 2010), fluidity across boundaries of personhood (e.g., Conneller, 2004), and co-production of social worlds (e.g., Jones, 2009; Orton, 2010).
Elsewhere material objects have increasingly become recognized not only as expressions of social norms but also as active in their making (e.g., DeMarrais et al., 2004; Fowler, 2004; Brown & Walker, 2008; Alberti & Bray, 2010; Olsen, 2010; Alberti et al., 2011; Hodder, 2012). These are important developments for archaeological engagement with the material past, foregrounding the relations that constitute animals, humans, and objects. This article hopes to build upon these works by reflecting upon the emergence of conceptual boundaries in archaeological narratives, and thereby aiming to erode the divisive hyphen in studies of prehistoric “human-animal” relations.

The intellectual background to these ideas stems from diverse critiques concerning normative practices in science and in particular Haraway’s (2003, 2008) exploration of localized patterns of interspecies participation, whereby “species” is used as a preferred node for studying the cohabitation of partners, diverse and often unequal, in the unfolding network of “lifeworlds”. Using examples from the Danish Mesolithic and the British Bronze Ages (Figure 1), we consider how multiple layers of rhythm serve as common ground and structuring principals for the possibility of varied forms of interspecies participation at different times and places.

Figure 1. Locations of sites mentioned.
Eroding the Human-Animal Hyphen

A core challenge to accounts of significant otherness is the combined analytical and tacit perpetuation of the human-animal duality. Zooarchaeological studies are traditionally reductionist in their attitudes toward animals (Armstrong Oma & Birke, this issue). Presented as homogenized species populations from a domain largely passive to the human world, animals’ importance is understood in terms of available resources or raw calorific yields. Recent attempts to escape such strictly economic pursuits have sought to consider fauna as participants in life (e.g., Gifford-Gonzales, 1991; Marciniak, 1999). However, problems arise by layering social relations upon data, because in both cases the hyphen dominates. Here the conceptual boundaries of species emerge from measurement against preconceived scientific categories upon which are bestowed economic or symbolic meanings by human causation.

The strength of the human-animal hyphen is such that histories focus upon the progressive emancipation of humanity over its animality. For example, in his influential article, Ingold (1994, 2000) argued for a history of changing “terms of engagement” from “trust” in hunting societies to “domination” in societies practicing pastoralism. Although aiming for a narrative of coevolution, in which neither trust nor domination was more or less advanced than the other (Ingold, 1994, p. 16), the transition was presented as unidirectional, irreversible, and specific to either hunter or pastoral societies. This temporal maneuver has been questioned from a prehistoric standpoint. For example, Armstrong Oma (2010) has suggested that spatial arrangements within house units of agro-pastoralist societies of the Scandinavian Bronze Age display a large investment into practices of caring that were integral to situated trust shared by humans and different animal species. Here the theme of cohabitation offers possibilities for alternative histories of interspecies participation.

A source of contention arising from this brief discussion is that the concepts of “human” and “animal” present themselves as predetermined and fixed; we argue that within a prehistory of interspecies participation it is the boundaries and expression of these concepts themselves that is at issue. This is not a reductive claim that specialized faunal analyses that observe and quantify anatomical traits of identifiable species are incorrect. However, their accountability to normative scientific concepts is problematic for questions concerning ontology because such narratives are promissory of established conceptual boundaries, such as nature and culture, human and animal, animate and inanimate. Our concern here is focused upon the emergence and persistence of the duality between animal and human domains through this practice of measurement. Hence, there is a serious challenge for archaeologists to explicitly question their own normative concepts that reify categories of difference.
Interspecies Participation

An alternative history of interspecies participation begins with the premise that normative forms of knowledge and the boundaries of concepts measured against those norms are neither static nor preconceived in advance of interaction, but instead they emerge together through intra-action (Barad, 2007; Rouse, 2002). Here “intra” is used in place of “inter” to emphasize the emergent nature of boundaries, as intra-action takes place within assemblies of bodies (material phenomena) through which local configurations of the world are contested, embodied, and transformed. This resists understanding terms of engagement as the result of a transition to novel behavioral systems, such as pastoralism or hunting, and instead suggests that differing configurations of the terms of engagement such as trust and care may emerge through the assembly of material bodies, and in doing so adjusting the boundaries and the possibilities for future boundaries that differentiate conceptual domains.

Species are therefore neither equivalent nor pre-formed with conceptual boundaries distinguishing one from an “Other” (Kohn, 2007). A prehistory of interspecies participation is therefore a focus on the negotiation and interpretative labor within ludic spaces that simultaneously bind and part species, where material bodies are not mediators between species but organs internal and integral to interspecies participation (Haraway, 2008, pp. 249-263). It is crucial to note that a focus on interspecies participation accepts the existence of boundaries, but it claims that they are uncertain, emergent, and potentially fluid in practice. Therefore, consideration of the ways in which past communities of species defined their connective tissues must also consider how and why different species can and do get along, cohabit, and co-evolve under changing terms of engagement, and how they might be approachable through the archaeological record.

A prehistory of interspecies participation advocates dynamic narratives of living-with and becoming-with, and it is grounded on the premise that unravelling from a complex tension of otherness are the issues of what is and what it is to be an agent in a social and material world. The challenge is to decipher the common ground shared by species whose distinctiveness, or “otherness”, is less easily defined or certain in practice. It is within these politics of diversity that the understanding of interspecies participation is most important, “in vulnerable, on-the-ground work that cobbles together non-harmonious agencies and ways of living that are accountable both to their disparate inherited histories and to their barely possible but absolutely necessary joint futures” (Haraway, 2003, p. 7). In other words, species are bonded in “significant otherness” (Haraway, 2003, p. 16).
With the hyphen eroded and boundaries now less certain, little remains for analytical bridges to cross. Practice is situated and concepts are mutable, but this is not an open-ended free-for-all. Interspecies participation is regulated by the dynamic push and pull of consensus through intra-active engagements of material bodies within a flow of rhythms. Rhythms are multiple, situated, layered, and permeate place, time, and action (Lefebvre, 2004). They are integral to the conferment of duration, sensation, and emplacement, and bodies may both effect and be affected by rhythms (Edensor, 2010, p. 5).

The following case studies explore rhythm as common ground through which species cohabit. In the first study, multiple species are connected through varying fields and layers of rhythm, particularly synchronicity and the immediacy of attunement. In the second study, the relational nature of conceptual boundaries and the situated rhythms of cohabitation are highlighted through the cyclicity and distal nature of seasonality.

**Horse Riding in the British Bronze Age**

During the Late Bronze Age in Britain, from around 1100 BC the first demonstrable evidence for riding may be found, including harness equipment alongside a gradually rising horse population, although rarely in more than 5% of site faunal assemblages dominated primarily by cattle, sheep, and pigs. Nonetheless, the symbolic capital of horses visibly increases with the burial of semi-articulated bodies, the deposition of crania in pits and ditches, and the placement of dismembered limbs in watery places. While other species are afforded similar treatment, the appearance of harness equipment for traction and riding signifies a distinct practical identification with horses.

The Late Bronze Age in Britain is characterized by diversification, with new architectural spaces, practices, and material objects emerging from a novel delineation of conceptual boundaries drawn around particular activities (Brück, 2007). As a new and unusual phenomenon, riding may be regarded as one of these activities, an interspecies participative engagement and bodily encounter different from any previously experienced.

Riding required a new formulation of embodied knowledge, whereby both rider and horse initiate a form of attuning to a common flow or rhythm. Game (2001) describes this rhythm as entrainment through mutual trust in which “individuals, human and horse, and species, are forgotten” (p. 4). Similarly, Patton (2003) has explored the hermeneutic potency generated in the entrainment of horse and rider through nonverbal communication. He notes how the subtle physical signs employed in the direction and movement of the
horse succeed because of their integration within “a larger, somatic framework of interspecies communication [...] embedded within a larger sensory field of touch, pressure, body contact, and attitude, including eye contact” (Patton, 2003, p. 96). Patton (2003) identifies harness equipment as integral to the nature of the sensory field connecting horse and rider, adding to the vocabulary of bodily signage and thereby increasing the degree of mutual trust and confidence. Rather than representing a transition from a relation of trust to one of domination in the Late Bronze Age, the harness facilitates the rhythm of mutual trust between rider and horse.

Harnesses were made from multiple assemblies of materials and components at different times and different places, often including bronze ring fittings, leather or rope straps, decorative buckles, and bone or antler cheekpieces. The latter were used in pairs, and they held either side of the horse’s head so as to position an organic mouthpiece—or bit—enabling subtle command of movement during riding (Britnell, 1976; Longley, 1980; Figure 2). At least 26 possible antler cheekpieces have been found from Late Bronze Age contexts, each carved from the beam or tine of red deer antler, often highly polished and incised with circular or crosshatch motifs, and with horizontal and transverse perforations. These encapsulated a particular aesthetic as well as novel utility at a time of increasing social stratification, thereby displaying and objectifying

Figure 2. Examples of European Bronze Age antler cheekpieces with organic bits from (1) Corcelettes, Switzerland, and (2) Montale, Italy (modeled after Munro, 1890, p. 525).
both horse and rider, and serving as tangible material organs for negotiating interspecies relations and one’s position in the world.

To briefly illustrate the intra-active potency of harness equipment in the context of the British Bronze Age, an example is sought from an assemblage recovered from the multi-period site of Flag Fen in the fenlands of northern Cambridgeshire (Figure 3). Here an elaborate timber causeway was constructed over several hundred years (c. 1350-900 BC) conjoining two gravel landforms separated by a watery fen basin and passing through an enormous oval timber platform. Interpretation of these structures is varied, but significant midden debris and the deposition of important items of material culture into the waters, including metal weaponry and adornment, clearly indicate that this was a location that attracted large assemblies of people, materials, and species (Pryor, 2001; Pryor & Bamforth, 2010). Across this landscape the faunal assemblage was dominated by cattle (70%), but around the causeway horses were represented by at least 11 individuals comprising over 6% of the faunal population.

Available data indicate that these were mature (up to 20 years) by comparison to cattle and sheep (18 months to 3 years). Horses were not just meat, and at least one who had reached his or her twentieth year had suffered from spovin (Hooper, 2010), a degenerative joint disease that enflames the hock joint of the hind leg, resulting in considerable pain and eventual immobility.

Figure 3. The Bronze Age landscape of the Flag Fen basin.
Increasingly unable to carry out manual tasks, it is likely that particular care was invested in this animal until his or her death.

Three antler cheekpieces have been found during excavations around Flag Fen’s timber causeway (Brittain, 2010; Figure 4). Although red deer antler is a strong hard-wearing material suitable for items placed under repeated stress or exertion, its use was not just a functional choice, and deer appear to have been more than just a useful resource. At least two shed antler crowns at Flag Fen suggest that deer were unlikely to be hunted for their antlers; this is supported by the faunal assemblage in which less than 1% was represented by red deer. Red deer dwell in familial groups of up to 15 members with the male stag living away from the group until the annual rutting season when he returns to favored territory. Antlers are shed in the spring, and their collection likely followed close observation of the herds (Legge, 1981, p. 100). Clutton-Brock (1984) has made the intriguing suggestion that antlers may have been collected from specific stags each year. In any case, the collection of antlers required detailed knowledge and careful planning alongside synchronization with the rhythmic seasonal movement of the herds.

Figure 4. Cheekpieces excavated at Flag Fen, Cambridgeshire (photo by M. Brittain).
The rhythms, time, and movement engaged in the collection of antlers was just one of multiple rhythms layered in the material assemblies that comprised harness equipment. Moreover, they may conceivably have involved passage through extensive distances, travelling across diverse landscapes and frequented places. For example, a bronze strap fitting with a distinctive triple-“toothed” face was found on the “shoreline” of the watery basin at Flag Fen, just meters from the timber causeway (Boughton, 2010). There are few comparable examples, except from a hoard of bronze harness fittings documented from Parc-y-Meirch in north Wales (Sheppard, 1941). Almost 250 km lies between the two sites, but isotope signatures tell us that cattle were also herded across comparable distances to and from Flag Fen in a seasonal drove overlapping with summer and autumn birthing of calves both locally and in the more distant upland environments (Henton, 2010). Perhaps horses were a part of this wayfaring, ridden along the drove or connected through specialized breeding sites.

As novel interspecies participation in the Bronze Age, horse riding appears to be an important facet of sites of intra-action, layering multiple rhythms of entrainment and attunement, synchronicity, and seasonality. The material forms, substances, and assemblies of bridle equipment were significant connective tissues not only for the participative encounter between horse and rider but also in the engagement with red deer and cattle in particular across later Bronze Age landscapes.

Swan Hunting in the Danish Mesolithic

The small Late Mesolithic site of Aggersund in North Jutland, dated to between 4500 and 4000 BC, has been interpreted, through zooarchaeological analysis, as a winter site used by predominantly mobile communities for the intentional and specialized, but not exclusive, hunting of whooper swans (*Cygnus cygnus*; Mohl, 1978; Grigson, 1989; Overton, 2011). Remains of whooper swans (Figure 5) have been recovered from many Late Mesolithic coastal sites in Denmark, including middens, settlements, and burials (Grigson, 1989). At Vedbæk there is a child who had been buried in a grave upon the wing of a whooper swan, testifying to the social value generated by these birds (Albrethsen & Brinch Petersen, 1976). As in the first case study, the following explores the situated characteristics and rhythms of engagement, further expressing the value of a nonrepresentational approach to interspecies participation.

Whooper swans are a migratory species that summer in Russia and Iceland and repeatedly travel to the same sites in Britain and southern Scandinavia for winter. Each year, as temperatures decrease and the days became shorter, these
swans would temporarily inhabit Aggersund, which is still used by whooper swans today. Upon arrival the flock would engage in their own specific diurnal feeding rhythms (Brazil, 2003, p. 244), moving between roosting sites on water and, tide permitting, a number of terrestrial feeding sites or marine resources, simultaneously engaging with one another using physical gestures and a wide range of calls in a dynamic and cacophonous swirl. Over the winter the swans would alter the timing of their daily movements according to shifting photoperiods, adapting to changing lengths of day and daily fluctuations in the temperature and weather (Brazil, 2003, pp. 262-274). Finally, at the end of the winter, the swans’ flocks would depart in skyward streams, possibly joined by other groups overwintering along the coastlines of the Limfjord.

Today, knowledge of whooper swan migration, subsistence, and behavior is informed by ornithological, biological, and geographic scholarship. Of course these frames of knowledge are incompatible with Mesolithic worldviews. We must instead ask how practices of hunting affected the intra-activity of human and swan participants at Aggersund during the Mesolithic.

Human tracking and hunting requires attuning with the temporal and geographic rhythms of prey, often in a manner distinctive from one’s own habitual patterns (Hamilakis, 2003, p. 240). This is not simply a shift from one abstract rhythm to another, but it is a synchronization of distinct human and swan rhythms brought together into cohabitation within situated intra-action.
On the surface, the impetus is found in human decision-making concerning hunting and attunement required for its success; however, it is the knowledge attained from past intra-actions of the repeatability of the swan’s timing and place of arrival that form the basis for motivation. The synchronization of the human and swan rhythm is not just happenstance, but it is formed through practices of anticipation and preparation extending far beyond the immediate chase and kill. For example, human occupation of Aggersund followed departure from a larger and more perennial dwelling place (Price, 1983, p. 768), necessitating strategic planning prior to the hunting of swans, including preparation for travel across landscapes, the fresh knapping of stone tools for weaponry and butchery (Figure 6), and the attainment of necessary nutritive materials, perhaps requiring the hunting and gathering of other species (hence engaging with other modes of attuning and intra-action).

This might imply that there is recognition of swans as sentient by these communities in the Mesolithic and perhaps also as individuals undertaking their own preparation and journeying to Aggersund. Either way, multiple fields of intra-actions within human preparations and movements may be considered as anticipation of, and perhaps invocation for (e.g., Nadasdy, 2007), swans’ arrival at Aggersund. After all, it was the swans’ ancient migratory passage and assembly that was at stake in these practices.

Practices of preparation may have elicited understandings of swans engaging in their own distinct life rhythms, displaying an Otherness that is relational and yet not clearly definable. Mutual journeying, arrival to and departure from Aggersund may have also highlighted the significance of this Otherness as humans and swans emerge through intra-action bound together by similar

Figure 6. Lithic technologies from Aggersund (modeled after Anderson, 1978, pp. 32-33).
ways of attending to the world, their bodies attuned to the pulsing rhythms of place and encounter. For example, the hunt would require the hunter to move about the landscape, to follow and to stalk, in ways distinctive to swans. Whooper swans’ diurnal feeding rhythms involved movement throughout the Aggersund landscape with regularity, feeding on a host of different resources at specific times (Brazil, 2003, p. 244). Tracking and stalking through these spaces permitted synchronicity and regulated the rhythmic ballet of the hunt across paths and places, through a sensory field of varying times, light, temperatures, and weather extremes, simultaneously disclosing situated boundaries of alterity. However, while they are situated, these boundaries are also fluid; cohabitation discloses parallels in practices of consumption in which evidence suggests that certain botanical species gathered along the inter-tidal zones of the Aggersund environs were ingested by both humans and swans (Brazil, 2003; Kubiak-Martens, 1999).

With intra-action across multiple assemblies of materials and spaces there is a pulse and flex of conceptual boundaries that mark human and swan species. Distinctions are carved and concealed, and the significance of Otherness is situated against the alignment of tempo, place, and practice. Life unfolds.

Conclusion

Archaeology is exploring new ways to utilize its considerable resources for revealing diverse and multivariate forms in human-animal relations; but, we have argued, adherence to this hyphen that simultaneously binds and parts these two concepts is founded upon a duality that is preformed prior to engagement within a material world. This is not simply an interpretative exercise of representations that stabilizes a subject-object separation of distinct human and animal worlds, but it is promissory of the ontological boundaries of these concepts themselves. Narratives of prehistory have tried to overcome these difficulties by wrapping the hyphen in a blanket of meaningful inscription or by lengthening, shortening, and bending the hyphen as a display of shifting conditions of power. But the hyphen is not only preserved in each case; it is reified and strengthened. If this hyphen or any hyphen is to have legitimacy then it must be through investigation—often experimental—of the layers of intra-active situations through which concepts and their boundaries emerge, oscillate, and mutually transform one another.

Traditionally archaeology has been concerned with the changing character of human life represented by material residues. In the last 20 years, under the schism of poststructuralist and feminist critiques, archaeology has shifted its focus to unfolding meaning within human lives. We argue that interspecies
participation is part of a broader way of thinking that does not privilege narratives of past human subjectivity. We consider all participants within situated practices as being significant Others within a complex intra-active sensory field. Our analytical frame has been equally diverse, working across broad scales of distant geographies and temporal spectrums, contrasting each with equal measurement against a background flow of rhythms. Here rhythm is understood as integral to our current analyses, and it is also considered equally significant within intra-active engagement through which different species emerge and live together in a shared world.

However, cohabitation is not automatically comfortable or harmonious; it requires serious labor. Moreover, partners are rarely equal, and situated practices refine and redefine connections and the position of participants within assemblies of material bodies. Aggersund and Flag Fen may be thought of as contact or collision zones in which cohabitation is vulnerable and balanced upon hermeneutic labor, and from which it is difficult to assess either species’ contribution (Haraway, 2008, p. 242). Ultimately, whooper swans were hunted, killed, butchered, and consumed in the Danish late Mesolithic, and it was horses, not humans, who wore harness equipment in the British late Bronze Age. And yet at the same time neither swans nor horses were simply resources relinquished to a multitude of human needs.

It is in the ludic everyday spaces of hunting and riding, for example, in the intra-active combination of humans and swans, and humans and horses (as well as cattle and red deer within other situated practices) where “there is always immanent potential for new possibilities of life” (Harrison, 2000, p. 498). This is coevolution: “an emergent process of cohabitation” (Haraway, 2003, p. 30). However, new possibilities do not emerge through the mediation of a material world appended to a surface of the “social.” The promise of the hunt and its success, swan migratory patterns and assembly, and the attunement of rhythmic synchronization are all enmeshed in the preparatory practices of stone tool manufacture, stone procurement, the continuity of knowledge practices across generations, and so on. Similarly, harness equipment did not mediate the rider’s control of the horse, but it was integral to the intra-active participation in which assemblies of bodies combined “to produce rhythms that neither could achieve independently” (Edensor, 2010, p. 7). And again, the broader context of movement and tracking was equally affective for red deer and cattle to which the connective tissue of the horse harness equipment has been suggested.

There is a challenge, therefore, to articulate wider spheres of prehistoric life within local expressions of participation and the intra-actions of bodies, entangled and mutually affective. As a point of experiment we have explored
comparisons of two diverse practices in relation to their respective times and places. Other treatments and “terms of engagement” might prove to be more appropriately efficacious.

Finally, regard for interspecies participation does not involve asking what it is to be animal or to be human, past or present; it involves asking who or what counts as an actor in the production of lifeworlds. It is important for archaeology that this engages with utmost seriousness the contemporary claims of intelligibility regarding that which is nature and that which is culture. Indeed, this might venture towards a question appropriate to the politics of diversity: What sort of species do we aspire to be?

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Notes

1. There is considerable debate regarding horses in Britain prior to the later Bronze Age and whether indigenous species existed feral or if species were reintroduced from the Continent after a possible absence of over 5,000 years (see Bendrey, 2012).

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