Chapter 5

In the fringes, at the twilight: Encountering deer in the British Mesolithic

Ben Elliott

Abstract

The relationship between people and deer has been a persistent theme within British Mesolithic Studies since the early twentieth century, and has been approached from a range of economic, ontological, cultural and chronological perspectives. Yet our understanding of the ways in which deer and people interacted has been undermined by a failure to recognise the plasticity of deer behaviour in different environments, and the variability of social contexts in which they might be encountered. This paper will seek to address this by considering the current body of knowledge concerning the ecology and behaviour of Cervus elaphus (Red deer), Capreolus capreolus (Roe deer) and Alces alces (Elk), and model the actions of these species within a range of different British Mesolithic environments. In doing so, it will create a platform for new discussions of the relationship between people and deer, in a way that affords the actions of the animals themselves an unprecedented level of agency.

Introduction

Historically, cervids have played a central role in the study of the British Mesolithic (Finlay 2000; Elliott 2015). Early analyses of fauna recovered from cave sequences often relied on the distinction between Rangifer tarandus (Reindeer) and Cervus elaphus (Red deer) as a key biostratigraphic marker for the transition from the Pleistocene to the Holocene (Burkitt 1926), and the role of red deer antler within the technological repertoires of Britain’s Mesolithic inhabitants has also been noted from an early stage in the conceptualisation of the period (Munro 1908; Bishop 1914; Burkitt 1926; Clark 1932). The initial excavation of Star Carr (Clark 1954) and the subsequent use of this assemblage to pursue a bio-economic approach to the study of the British Mesolithic (Clark 1972) placed further emphasis on the role of red deer.
problems with the ‘special relationship’

The dominance of red deer within the British Mesolithic has been critiqued by Finlay (2000), who notes the heavily gendered nature of these hunting-based narratives, and the apparent attention that this ‘special relationship’ receives. The dominance of the ‘boys and arrows’ imagery within Mesolithic literature is identified as the process responsible for the marginalisation of women and children within these discourses. Finlay’s work raises a key issue for British Mesolithic studies, which needs addressing if the field is to progress. Whilst there is no inherent gender bias in studying the relationship between people and red deer, the material evidence that archaeologists refer to when analysing this relationship inevitably leads to a focus on hunting activities. The recovery of red deer skeletal remains, often showing signs of hunting traumas and butchery, is direct evidence for the practice of hunting. Simultaneously, the use of un-shed antler to produce material culture also infers the hunting of deer, and embeds this firmly within chaîne opératoire narratives of antler technology.

The problem can be tackled from a number of angles. Bevan (2003) stresses the importance of ethnographic accounts which demonstrate the role of women and children in hunting activities, thus implicitly raising the profile of women at Star Carr, and more generally within these established narratives of human and deer interaction. Alternatively, Cobb (2005) highlights the ways in which contemporary Western attitudes towards sexuality underpin all concepts of gender roles in our narratives of the British Mesolithic – and thus challenges modern assumptions concerning women and the hunting.

Beyond these gender-biases, previous approaches to people and deer in the British Mesolithic have also been critiqued from a series of ontological perspectives. Conneller (2004; 2011) cites the work of the anthropologist Viveros de Castro (1998) on perspectivist ontologies as new ways of exploring the fragmentation and reassembly of red deer bodies at Star Carr. She uses this non-Western approach to personhood to explore how materials derived from animal remains might be used to actively define human and animal identities at the site. Overton and Hamilakis (2013) note that
analyses of animal remains focused on subsistence and the exploitation of animals as economic resources are inherently anthropocentric; and are underpinned by Cartesian distinctions between culture and nature, which are unlikely to have relevance within prehistoric societies. Following these critiques, several authors (Conneller 2011; Elliott 2013; Brittain and Overton 2013; Overton and Hamilakas 2013; Overton 2016) have pursued more detailed descriptions of animal ecology and behaviour as a means to afford the actions of animals themselves a higher degree of agency within zooarchaeological and material-culture based discourses.

The current interest in animal behaviour and the gender-biases of hunting-based narratives creates an opportunity to address the relationship between people and deer from a new angle. Whilst material evidence doubtlessly demonstrates that deer were hunted at various times in the Mesolithic, little consideration has been given to the ways in which people and deer may have interacted in non-hunting contexts. The archaeological record attests that humans and cervids lived alongside each other within a series of varied environments for millennia during the Mesolithic, and it seems implausible to suggest that every encounter between these species would have resulted in hunting, killing and butchery of an animal. Through the consideration of the ecology and behaviour of red deer, roe deer and elk within Mesolithic environment types, a concerted attempt can be made to develop archaeological narratives that go beyond hunting. How often did people encounter deer when not actively hunting, and were these encounters more likely in specific environments or locations within a landscape? Does the behaviour of deer allow their presence to be determined without a direct sighting, and how does this vary seasonally and between species? This approach affords the animals themselves a substantial degree of agency and also has the potential to break free of the heavily gendered imagery of the traditional ‘boys-and arrows’ motifs that characterise much of the extant literature, and leave other forms of gender neglected and marginalised.

**Red deer, roe deer and elk in the British Mesolithic**

The recovery of skeletal remains from a limited number of archaeological sites attests to the presence of red deer, roe deer and elk during the period. Radiocarbon dating has established that both red and roe deer were continuously present throughout the Mesolithic. The evidence for elk is more contested, with older models noting the lack of elk remains from archaeological sites that post-date the Early Mesolithic. Traditional interpretations ascribed this disappearance of elk to a combination of over-hunting, ameliorating climatic conditions, a loss of habitat and genetic isolation from mainland Europe due to the rising sea levels and the submersion of Doggerland (Clutton-Brock 1991). However, recent AMS dating of material recovered from non-archaeological contexts (Kitchener and Bonsall 1997) now suggest that elk persisted in refugia populations throughout the period – presumably in the more northern latitudes and high altitudes, which produce favourably cool environments (Yalden
Coarse-scale ecological models (Maroo and Yalden 2000) suggest that, even when isolated from Europe, Britain would have been capable of supporting a population of c. 64,617 elk, c. 832,793 roe deer and c. 1,253,613 red deer during the Mesolithic.

The physiology of red deer varies between sexes and throughout an individual’s life-cycle, but the basic body shape is shown in Figure 5.1. Modern British red deer males (stags) grow to a shoulder height of 107–137 cm, whilst females (does) are slightly shorter at 107–122 cm (The Deer Initiative 2008a). Body mass is known to vary in different contexts. In twentieth-century Britain, red deer stags are known to grow to a maximum live-weight value of around 150 kg, with equally large hinds being roughly one-third lighter (Carne 2000, 11). Roe deer are notably smaller, with a shoulder height of 60–75 cm (Carne 2000, 13), and an average live weight of 25 kg for males (bucks) and 23 kg for females (does). Roe deer physiology displays much less environmental plasticity in comparison to red deer – even animals living in controlled, optimal conditions rarely obtain a live weight of 30 kg (Geist 1998, 306). Elk are the largest member of the cervid family, reaching shoulder heights of 2–2.3 m (Whitehead 1993, 244) with an unusual physiology in relation to other species. Through the study of North American populations, mean live weights of around 530 kg have been calculated for mature adults, but individuals can obtain weights of up to 700 kg (Geist 1998, 254).

In terms of diet, red deer favour flowering plants, foliage and browse, and tend to focus feeding at a height of 1.6 m above ground, producing a characteristic pattern of damage on browsed foliage (The Deer Initiative 2008b). Gerbert and Verheyden-Tixier’s (2001) review of primary studies into red deer stomach contents demonstrates a...
wide-ranging diet, generally dominated by four principal groups. These include grasses and sedges, Calluna (Heather) and Vaccinium (Berries), leaves of deciduous trees, and shrubs and conifers (Gebert and Verheyden-Tixier 2001, 194). Considerable variation between populations living in different environments demonstrates a substantial element of plasticity and adaptability in red deer dietary behaviour (Gebert and Verheyden-Tixier 2001, 196). Clutton-Brock and Albon (1989) observed Highland deer populations in Scotland feeding in six to ten bouts of activity, interspersed with rest and rumination periods, with total grazing time amounting to 10–12 hours per day.

Elk diet consists of highly nutritious low-toxin foliage and browse. Submerged and aquatic plants also play an important role in the diet of elk, especially during the spring and summer months, leading to a concentration of elk in wetland areas during this time of the year (Albright and Keith 1987). These foods are believed to be an important source of minerals, which is essential for the synthesis of new tissue and the re-establishment of body mass during the summer. During the winter, elk will also exploit mineral licks (Geist 1998, 226). Food scarcity in winter leads adult elk to break sizeable branches and stems in search of the living plant tissue within (Geist 1998, 237). They are also capable of rearing up on their hind legs, or pulling trees down, to access new growth in the canopy – which may have originally stood up to 6 m above ground level (Whitehead 1993, 224). Due to the toxic nature of many of the plant species available in the environments that elk inhabit, they actively favour newly growing forage that has not reached the stage of maturity required to produce toxins (Geist 1998, 226).

Elk have been described as ‘concentrate feeders’, in that they roam in search of pockets of food and, once located, remain in these areas until the forage resources are totally exhausted. This strategy has implications for the mobility of individual elk as they stay confined to these areas when they are exploiting them and do not ‘roam’ from them, but between them (Geist 1998, 225). When faced with higher quality browse resources, elk become more mobile and active in their foraging but less intensive of their exploitation of one set resource (Sæther and Reidar Andersen 1990).

Roe deer diet shares several similarities with that of elk, both being noted to switch between concentrate feeding strategies in the summer months to high-fibre foraging in the winter (Geist 1998, 302). It is also characterised by a favouring of early succession plant communities (Geist 1998, 303) and a subsequent attraction to areas affected by localised ecological or anthropogenic disruption. The smaller stature of roe deer limits the height of browse that these animals are able to exploit, and as such the feeding damage of roe deer tends to be focused around 1.2 m above ground level (The Deer Initiative 2008b).

The behaviour and physiology of cervids changes throughout the course of the year (Figure 5.2). All species of deer grow antlers, clean them of velvet at the end of the growing period and then shed them. The mating (or rutting) season also varies between deer, as do the gestation periods, calving and seasonal coat changes.
The social structure of red deer changes on a yearly cycle, corresponding with hormone-driven reproductive behaviour. Mature males will separate themselves from females and young for the majority of the year, and during this separation matriarchal and patriarchal groups coexist amicably, moving around daily ranges with degrees of overlap. This pattern transforms during the rut, when males become aggressively territorial and compete for the right to breed with females. Competition between the males is played out through roaring, parading, trotting alongside one another and
5. In the fringes, at the twilight

finally rushing, where stags lower their antlers and charge towards each other in a contest of strength (Clutton-Brock et al. 1982, 105–117).

Red deer behaviour also varies in accordance with environmental conditions. Animals living in open conditions and at high altitudes are known to aggregate into large herds of up to forty individuals, and migrate between upland to lowland in the autumn and spring (Clutton-Brock et al. 1982, 227–229). However, when inhabiting more forested landscapes, red deer do not form the larger groups seen in the open. In the mixed forest and agricultural landscapes of southern Sweden, Ahlen (1965) found that the modal group size for females consists of two to three mature does and one to two young, whilst stags are most commonly found to move in isolation.

Roe deer have an intricate social structure that is dictated by the delayed impregnation of does during the autumn and early winter. One key factor of roe deer social structure is the establishment of both male and female territories in the spring, as a precursor to the summer rut (Geist 1998, 304). Bucks become gradually more aggressive and intolerant of other deer as their antlers develop during the winter (Geist 1998, 313). By spring they actively begin to compete for territories that offer good feeding grounds and cover from predators (Carne 2000, 14). These areas are established through visual markings and scenting. During the establishment of these territories, young, weak or older males are often displaced and forced to exploit less favourable habitats for the remainder of the rut. These disorientated and exposed individuals subsequently become vulnerable to predation (Geist 1998, 311).

Following the rut, the enforcement of territories loosens somewhat, and deer revert to a solitary lifestyle in forested areas and form herds in open environments (Geist 1998, 305). Occasionally, however, there is a resumption of rutting behaviour by some males during October in the ‘false rut’ – thought to be linked to hormonal changes. Following the casting of antlers, bucks become much more passive and coexist more peacefully and in closer proximity to other bucks and does. This coexistence is interrupted by the birth of fawns during May/June and the re-establishment of territorial behaviour on the part of the does.

Elk are, for the most part, solitary foragers that can roam up to 130 km from their place of birth and still return (Geist 1998, 225). They form herds only in very snowy conditions and on open ground (Geist 1998, 227). Individuals establish home ranges between 200–400 hectares in size, although considerable overlap between these ranges has been observed (Albright and Keith 1987). Studies of elk populations in Newfoundland have concluded that elk prefer to exploit different areas of the home range seasonally, with high-fibre twigs and bark being sought in more densely forested areas during winter and aquatic resources being sought in the summer. They also select specific roaming routes to coincide with rough terrain as a deterrent for would-be predators, and rarely cross large areas of open ground (Geist 1998, 225). At the beginning of the rut, yearling elk are driven away from their mothers and establish their own home ranges in adjacent territories (Geist 1998, 227).
During the rut, males (bulls) compete for breeding rights through dominance displays:

... the bull approaches slowly, tips its antlers left and right, and calls in rhythm with its steps. The hair on the back of the neck, croup and withers is raised a little; the ears slightly lowered. The approach is not direct, but at a tangential angle. Eye aversions by both bulls at close ranges appear to ‘display’ the antlers in profile. A bull may also tip its antlers in rhythm with its steps when walking after a female. The dominance display may be interrupted by horning of bushes by one or both partners. (Geist 1998, 239)

Following the rut, bulls become less aggressive and return to their usual movements through the home range. Although they do not live in close groups, neighbouring elk will signal to each other through roaring when a threat is perceived. This noise is notably different to the calls of other deer, and sounds much more like that of a large carnivorous mammal than an ungulate (Geist 1998, 237). Female elk (cows) become territorial immediately before birth, selecting areas of rich forage such as creek mouths with abundant aquatic plants as nursery ranges. Other elk will be driven away from these areas (Geist 1998, 228). Following birth, cows can become highly aggressive if disturbed – much more so than the bulls during the rut (Geist 1998, 224) – and will attack any perceived threats by flailing with the front legs, kicking with the hind legs and goring with antlers (in the case of bulls) (Geist 1998, 235).

Three British classics
Since the pioneering work of Clark, Godwin and Walker in the 1940s, British Mesolithic Studies have been characterised by the consistent integration of archaeology and palaeo-environmental research. This tradition has provided evidence for a rich and dynamic series of environment types that were present across Britain during the period, and which responded to changes in climate, the influx and disappearance of new floral and faunal species, the ongoing development of interstadial soil formation and human action. However, relating archaeological material directly to specific environment types has proven notoriously difficult. Factors such as the differential rates of preservation for different types of environmental evidence, sampling biases and the multi-scalar temporal ranges that many palaeo-environmental techniques work at (Spikins 1999) make it difficult to contextualise specific episodes of human activity to any one of the environmental types evidenced within the regional record. Due to these difficulties, this paper will use three case study types, selected based on their prominence within the literature concerning the British Mesolithic, to consider the character of non-hunting encounters between people and deer.

Birch-pine ‘Pre-Boreal’ environments
Due to the prominence of Star Carr within the Mesolithic cannon, much academic attention has previously focused on the exploitation of birch-based environments of
the pre-boreal period (Walker and Godwin 1954). These are often viewed as transition communities that were able to colonize the rapidly warming areas of Britain during the initial stages of the Holocene. They are characterised by scrub vegetation, featuring spaced and open areas of Juniperus (juniper), Betula (birch) and Salix (willow) trees and underlying grasses (Walker et al. 2003). In southern Britain, high pine pollen values show a balanced pine/birch woodland, whilst more sporadic pine values in samples from northern England and Scotland have been interpreted as more birch-dominated areas with occasional stands of pine. High Corylus (hazel) pollen values in samples from northern England and Scotland indicate that hazel also formed a significant component of the initially expanding birch-pine forest communities in the higher latitudes of northern England and Scotland (Godwin 1975, 457). Low background pollen levels of Quercus (oak) and Ulmus (elm) are present across Britain, indicating their minor role in the composition of these birch-pine forests. A similar pattern is noted for Alnus (alder), although with higher levels in west-central Scotland, indicating a more prominent role in forest composition within this localised area (Godwin 1975, 459).

Within these birch-pine woodland environments, elk would enjoy a variety of food resource, and an abundance of understory cover over which to evade predators. Both birch and pine are known to play a prominent role in the diet of elk, particularly during the winter (Sæther and Andersen 1990), and so elk can be expected to have inhabited these environments, albeit at the relatively low population densities that are observed in elk today. As a consequence, the chances of a direct encounter between people and elk may have been quite low within birch-pine woodlands. Yet the tracks and markings that elk create may have advertised their presence to the people who also moved through these environments, leading to an indirect form of people/elk encounter. The distinctively large tracks, wallows, damage to high-level vegetation and characteristic grunts and roars of the species would have meant that, even at low densities, elk would have advertised their presence within these birch-pine landscapes. Seasonal variations in elk behaviour, such as an increase in wallowing and roaring during the autumn rut, the rubbing of velvet from newly grown antlers in late summer, the shedding of elk antler in mid-winter and the appearance of elk calf prints during mid-spring to mid-summer time would have varied the nature of these tracks throughout the year. The nature of direct encounters may also have varied, with increased levels of aggression from bulls in the autumn and cows in mid-spring to mid-summer in correspondence to the rut and calving seasons respectively.

Red deer would have also found open birch-pine woodland conditions favourable. In these conditions dispersed and small social units would have enjoyed cover from the elements and an abundance of diverse food resources. As such, large body sizes may have been obtained by red deer living in these conditions. The potential abundance of these large ungulates within the birch-pine woodland of Mesolithic Britain may have led to more frequent direct encounters with people. The nature of these encounters may have changed throughout the year, with males becoming increasingly aggressive during the rut, whilst females become particularly flighty and elusive during the initial
stages of pregnancy in early winter. As well as direct, face-to-face encounters between people and red deer, the distinctive tracks and markings created by the activities of red deer may also have allowed people to observe their presence within birch-pine woodland through indirect encounters. Tracks and mid-level browse damage to flora, as well as the calls of the animals themselves, would have alerted people to the presence of red deer. Similarly to that of elk, the nature of these indirect human/red deer encounters would have varied seasonally. The roaring and marking of trees associated with the rut would be confined to autumn, the appearance of removed velvet to late summer, whilst doe tracks would vary during pregnancy and fawn tracks would have appeared after the early summer. Shed red deer antler would also have been accessible in late winter/early spring.

Roe deer living within the birch-pine woodland would have benefited from the open nature of the forest composition, and consequent abundance of shrubs and understory browse. The territorial behaviour of roe deer would lead to the regular dispersal of individuals within these types of environments, although their reclusive nature may have resulted in a low frequency of direct encounters with people. However, the behaviour of these animals would create a distinctive suite of tracks and markings that would have alerted humans to their presence. Low-level browse damaged vegetation and tracks would have been visible throughout the year, but the demarcation of territories by tree marking, distinctive buck barking and the creation of scenting scrapes in the early summer would have also been visible to those inhabiting the birch-pine woodland areas during the Mesolithic on a seasonal basis. The behavioural changes of the rut would also result in the creation of the iconic chase tracks around certain trees and shrubs, whilst this late summer period would also be marked by an increase in the calling of does and bucks and fights between competing bucks. Shed roe deer antler would have been accessible in late autumn/early winter.

**High altitude peat moors**

Palaeo environmentalists have long noted the advent of peat formation in the Early Holocene in high altitude areas of Britain (Simmons 1996; 2001, 39), with the steadily ameliorating climate mooted as a trigger for peat-forming conditions to occur in areas where water collects. It has been suggested that further intervention would be required for peat to form on convex slopes, and that fire may have been used to remove deciduous tree cover and increase the quantities of water present in the soil. Although the role of human agency within the occurrence of upland fires has been debated (Simmons 1996; Brown 1997), the subsequent peat deposits gave rise to specific communities of vegetation, which Simmons describes as:

heather moors, accumulating more humus and becoming seasonally waterlogged (with underlying soil and ongoing gleying) and invaded by wet-tolerant sedges and Sphagnum, cotton-sedge mires, Sphagnum bogs, open hazel and birch scrub with a variety of wet-tolerant ground flora species and a high proportion of dead trees. (Simmons 2001, 40)
The occurrence of these open moorland environments would have had a profound influence on deer behaviour. It could be argued that these colder, high-altitude environments offered favourable conditions for refuge elk populations during the warmer lowland climes of the Atlantic climatic optimum. However, moorland environments would not offer the types of tree-based browse favoured by elk. Additionally, elk avoid travelling through open landscapes due to the lack of cover and opportunities to escape predators in adverse terrain. Consequently, it may have been less likely for people to encounter elk in these open moorland environments.

Analogies with modern populations suggest a different behavioural response from red deer. Red deer are known to inhabit heather moorland in Britain today. However, the exposed nature of moorland can lead to a reduction in the body size of individual animals (Clutton-Brock et al. 1982), and exploitation of open landscapes over mixed forests tends to occur as a result of a shortage of the high-quality browse, or as of a product of population pressure (Clutton-Brock et al. 1982). Consequently, the nature of human/red deer encounters on open moorland may have varied throughout the Mesolithic. When red deer populations existed at higher densities, individuals may have spent more time grazing on the forbes associated with the heather environments. As a consequence, these red deer may have had lower body masses than animals living in adjacent forested areas. At other times in the Mesolithic, when predation or disease drove local red deer populations down, it would have been less common to encounter these animals in a moorland context.

Modern-day roe deer populations generally avoid open moorland environments (Cornelis et al. 1999). This is due to a combination of factors – principally a lack of cover from predators, exposure to the elements and a general scarcity of preferential browse (de Nahlik 1987, 169). However, the occurrence of scrub and open birch woodland conditions at higher altitudes in the Mesolithic period may have allowed roe deer populations to exist throughout the year. Year-round roe deer presence may have therefore have been restricted to these specific areas of high-altitude peat moor environments. There is also the possibility that roe bucks that were unable to secure territories before the rutting season may have been driven into unfavourable peat moor areas, and thus became a seasonal presence in these areas.

**Mixed deciduous woodland**

The environment most commonly associated with Mesolithic Britain is that of the mixed deciduous forest, or ‘wildwood’. In broader prehistoric narratives, this is often portrayed as a static and stable climax community that covers the majority of the British Isles during the Mesolithic period. However, palaeo-environmental data has shown variations in the composition of these forests and in particular the dominant tree species at certain locales (Simmons 1996, 13). Oak, lime, ash and alder have all been observed to be dominant tree species within the mixed deciduous forest communities at different points in time and space during the Mesolithic (Godwin 1975, 464; Bennet 1989;
Simmons 2001). More recent approaches to reconstructing Mesolithic environments have tended to view these deciduous climax woodland as 'mosaic' forests (Brown 1997). This has been prompted by the acceptance of the limitations of pollen analysis in giving high-resolution data on the density, layout and age of trees within a forest community (Clare 1995). As an alternative, palaeo environmentalists have looked to in situ plant macrofossil remains recovered from submerged peat deposits at coastal locations (Clapham et al. 1997), and also buried below alluvial floodplain deposits (Brown and Keough 1992). These have revealed an uneven distribution of tree species within mixed deciduous woodlands, with dense stands of older trees being surrounded by areas of thinner, more open distributions of younger trees and shrubs. Small openings in the forest canopy are also noted to occur (Clare 1995).

Deer behaviour within these mosaic woodland habitats has some implications for the ways in which people may have encountered and interacted with them during the Mesolithic. These types of conditions would offer feeding opportunities and understory obstacles for elk, but their patchy distribution could lead to quite specific responses in foraging strategies and movements. Areas of more open woodland and clearings may have been avoided by elk, as they lack the obstacles required to evade predators. Instead, elk may have restricted their movements to denser areas of forest. Their preference for difficult terrain could lead to the establishment of set routes that elk followed through the Mesolithic woodland in search of food resources, resulting in a concentration of tracks and markings along these routes. The distribution of these denser areas of closed woodland may have been particularly important for cows during calving, as cover and browse are essential resources for the early, sedentary stages of the calf’s life. This could lead to higher chances of human/elk encounters in such areas, and even make these types of habitats a danger to people during the fiercely territorial period of calving during the spring and early summer.

However, elk behaviour may have varied in response to openings within the forest canopy. As noted above, the growth of plant communities associated with clearings do play an important role within the diet of elk, and so these clearings may have attracted individuals into areas that they would not otherwise frequent. As such, there may have also been a higher chance of people directly encountering elk at the edges of forest clearings and in the initial stages of their re-growth, due to improved levels of visibility in these environments.

Red deer behaviour within the mixed deciduous woodland may have been similar to that expected within birch-pine or boreal woodland habitats. The preference for browsing on forbes may have resulted in both male and female red deer being attracted towards more open areas of forest and small clearings, and as such there being a higher chance of direct people/red deer encounters at these locales.

Roe deer would also have thrived in these mixed deciduous woodland habitats. The quality of territories within this habitat varied in terms of its ability to provide browse and cover, and so the level to which territoriality was displayed may have varied within the forest itself. In particular, the new growth communities associated
with areas of clearings may have been particularly attractive, and as such the focus of tree marking, scent scraping and barking during the spring.

As in other habitats, the elusive nature of roe deer behaviour may have meant lower chances of direct encounters between people and roe, although their presence would have been attested through their tracks, sound and impact on browse flora. Less favourable areas of forest, with little understory cover or browse, may have been inhabited more seasonally by the displaced bucks during the late spring and summer rutting season. In these areas, the lack of cover would have potentially increased the chances of direct encounters between people and roe deer due to increased visibility within these environments.

Conclusions

The above discussion of deer behaviour demonstrates the rich levels of detail that current research into the behaviour and ecology of modern-day cervid populations can offer archaeologists who wish to understand how people may have coexisted within environmentally varied Mesolithic landscapes. There is the potential here to generate more nuanced and balanced accounts of human and deer relations that stress the character and frequency of human/animal encounters – points of contact both direct and indirect – that help to underpin both individual and collective understandings of animals within a landscape. These three case study ‘types’ are by no means exhaustive, and there is further scope to model deer behaviour within a much wider range of Mesolithic environments. Whilst this style of narrative does little to directly challenge the problematic gender-biases associated with hunting in twenty-first-century Western society, by shifting the focus away from such activities they implicitly create more inclusive accounts of the relationship between people and deer. Accounts such as these highlight the significance of animals in the lives of people who were not involved in hunting for whatever reason – as well as providing a vital context for the hunting encounters that did occur.

However, there are limits to this approach. A fundamental assumption here is that animal behaviour observed today can be taken as a direct analogy for animal behaviour in the deep past. This is far from certain, and the plasticity of cervid behaviour in response to the introduction of new predators in North America highlights the complex historical and ecological factors that can govern dietary habits and patterns of movement (e.g. Laudré et al. 2001). There are also issues with the reconstruction of past environments, and the integration of archaeological data within these models in areas that lack organic preservation and in-situ archaeological material. As such, these accounts remain ‘floating’ – describing possible encounters within landscapes without being able to tie these to specific times and places with any level of accuracy or confidence. The absence of hunting in these accounts is also problematic. As outlined in the introduction, there is direct evidence for these practices within the archaeological record, and this is not referred to or discussed here.
These factors necessitate a specific role for accounts such as these within Mesolithic research. We cannot ignore the growing body of knowledge concerning animal behaviour emerging from biological sciences – and this can prove a rich source of detail for our understanding of how people and animals interacted within environmentally diverse Mesolithic landscapes. These accounts should therefore be used as a starting point for discussions of the relationship between people and animals; the underlying context within which future discussions of hunting practices can be situated, and considerations of the social interactions between people and deer can be built from. This approach cannot replace the explicit critique of contemporary attitudes towards hunting, and the implications these have more generally for archaeological narratives concerning hunter-gatherers. However, they can work alongside these critical discourses to demonstrate that interactions between people and deer were diverse, multi-faceted and driven, in part, by the actions of animals themselves.

**Bibliography**


Munro, R. (1908) *On the Transition between the Palaeolithic and Neolithic Civilizations in Europe*. *Archaeological Journal* 65, 205–244.


