Research Article

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Motorways of Prehistory? Boats, Rivers and Moving in Mesolithic Ireland

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Abstract: This article presents a critical review of the way inland navigation is constructed in the archaeological literature as an essential component of mobility in Mesolithic Ireland, with a particular focus on boats and rivers. Against a scarce background of direct archaeological and environmental evidence, a content analysis of the academic discourse highlights a dominant processual approach structured around three themes: seafaring and pioneering "events"; boat technology and performance; broad generalisations about the land- and waterscape. It is argued that such a narrative could be usefully revisited by adopting a small-scale, high-resolution approach that would explore human and material agency and integrate analogy as a method.

Keywords: Mesolithic, Ireland, boats, rivers, agency

1 Introduction

At a recent conference, a speaker opened their presentation with the statement that rivers were "the motorways of prehistory," and the easiest way to travel for Ireland's first visitors. Minutes later, willing to please the crowd with a humorous anecdote, they recounted without any hint of irony how the flow of a well-known Irish river proved too strong for their small surveying *motorboat*, making the intended mapping of the river bottom incomplete.

Such a disconnect between big-scale archaeological constructions and the physical reality of rivers is characteristic of the archaeological discourse on inland navigation in Mesolithic Ireland (c. 8000–4000 BC), and it has to be replaced in its archaeological context: that of the inconsistent availability of data on the postglacial evolution of Irish *rivers* until the end of the Mesolithic, and on the *boats* that might have travelled them.

This article summarises a research project that aimed to critically investigate the narratives constructed against this background of scarce *material evidence*, by exploring the variety of their content – what was said, but also what was not said. The present text details the *methodology* used to develop a critical review of the literature on Mesolithic inland navigation in Ireland and Scotland, which is firmly embedded in discourse analysis studies. *Results* are then organised thematically around three categories that emerged from the analysis of the collected data – *transitions*, *boats*, and *agency* – that are strongly underpinned by a male-dominated, processual framework. A *conclusion* briefly outlines some suggestions for future research.

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2 Boats and Rivers in the Mesolithic of Ireland: Material Evidence

Ireland became an island before the end of the last Ice Age – between c. 16000 and 14000 years BP (Edwards & Craven, 2017, p. 206). This implies that its Mesolithic inhabitants have reached it by boat (e.g. Woodman, 1986, p. 34); nevertheless, direct archaeological evidence for Mesolithic boats in Ireland is so far inconclusive. Two flat pieces of timber discovered in a poor state of preservation in Drumnafern and Brookend, both in Co. Tyrone, have been identified as remains of Mesolithic logboats by Dunlop and Barkley (2016, p. 15). However, significant issues regarding indirect radiocarbon dating in Drumnafern, and with the very tentative identification of the Brookend timber as a boat in the original sources (Fry & Department of the Environment for Northern Ireland, Environment and Heritage Service, 2000; Mallon & Ericsson, 2008, 2011), do not support this interpretation. Another few pieces of timber retrieved in a riverine or coastal context have been radiocarbon-dated to the late Mesolithic (O'Sullivan, 2001, pp. 71–72) or the Neolithic (Fry, 2000, pp. 50, 68, 77, 91, 92), but their identification as boats or the dating itself is also problematic. Therefore, the oldest logboat identified beyond any doubt in Ireland remains the late Neolithic–Early Bronze Age "Lurgan canoe" (Kastholm, 2015, p. 1356), whereas the Catherinefield fragment of logboat, dated to c. 2000 BC (Mowat, 1996, p. 18), is the most ancient specimen recorded in the British Isles.

Taphonomy is at the heart of an ongoing debate over the possible use of composite boats by Mesolithic communities in Ireland and Europe. The existence of lighter vessels made of a wooden structure covered in animal skin or tree bark "is difficult to assess in the absence of direct archaeological evidence" (Callaghan & Scarre, 2017, p. 367). In the Irish context, Breen and Forsythe similarly suggest the presence of both logboats and boats made of seal skin based on geographical comparisons and ethnographic analogies but acknowledge that "suggestions as to what types of boats were used … remains conjectural" (Breen & Forsythe, 2004, p. 28). As discussed below, the nature and validity of such analogies play a critical part in the archaeological debate.

As for rivers, Turner et al. deplore "the relative dearth of Irish fluvial research to date" (Turner, Macklin, Jones, & Lewis, 2010, p. 189) in comparison to the growing body of work published on lakes and bogs. Nevertheless, a few generalisations can be drawn: Gallagher (2019) identifies a relative vertical and horizontal stability of many Irish rivers – they still run in the same valleys as they did 10,000 years ago; however, they were more sinuous than the straighter channels we know today. At a shorter range, little is known about the *behaviour* of streams through the Mesolithic, but it is critical to apprehend how different they were from contemporary rivers. Indeed, since the nineteenth century, "Various activities, such as embankment construction, river straightening and diversion, (…) lake storage" but mostly "the deepening and widening of the river channels" (Bhattarai & O'Connor, 2004, p. 787) have dramatically altered the natural behaviour of pre-drainage rivers. In contrast, it is reasonable to consider that the boundaries of Mesolithic rivers were extremely "fluid" (Edgeworth, 2011, p. 20), constantly reacting to volume variations by covering and uncovering their floodplain and affecting vast expanses of the landscape. In turn, the focus of activity identified in low-lying land, river valleys and lake shores in the Early and particularly the Late Mesolithic (Woodman, 2015, p. 240 *et sqq.*) implies that hunting-gathering communities must have integrated this fluidity into their daily lives.

This relative absence of data on boats and rivers in the Mesolithic of Ireland affects the scale and level of resolution at which the topic is being discussed; nevertheless, things are being said and narratives are being constructed on the subject. A methodology adapted to the collection and processing of the available literature is therefore required to perform a meta-analysis of the archaeological discourse. Such methods are less familiar in an archaeological context, but they are standard in discourse analysis studies.

3 Methodology

The research was based on a Comprehensive Literature Review approach (Onwuegbuzie & Frels, 2016, p. 48 *et sqq.*) and a Qualitative Content Analysis with some elements borrowed from Glaser and Strauss' Grounded Theory (see Cho & Lee, 2014, p. 4 *et sqq.*). The aim was to collect and analyse *research outputs* to summarise their content – i.e. what is said, but also what is not said, the academic literature being the object or data in the research

and not its theoretical backbone. Rather than simply collating and reading sources, the objective of this systematic strategy was to enhance the *contrast* in the sources' content, aiming at saturation rather than exhaustiveness or any sampling guideline Saturation was reached when additional references did not bring any new perspective on the topic (internal saturation) and pointed to sources already known (external saturation).

Data were collected by mining three search engines via a closed list of keywords (Mesolithic AND Ireland AND boat/river/mobility):

i. UCD OneSearch: the search engine attached to UCD Library's catalogue.
ii. Academia and ResearchGate.
iii. excavations.ie: the website which "contains summary accounts of excavations carried out in Ireland – North and South – between 1969 and 2018" (www.excavations.ie).

As a control measure, the bibliographies of relevant articles were used to try and identify publications that would have been missed by this online data-mining process. Analysis was performed following the Qualitative Content Analysis method (e.g. Cho & Lee, 2014) applied inductively: there was no preestablished knowledge of the material, but the content to be extracted was explicit – as opposed to subtext or implied meanings. The aim was to identify and organize what is said about boats, rivers and mobility in the Irish Mesolithic into themes and patterns, in the form of categories that emerged from the analysis and coding of the texts themselves into units of meaning.

Saturation was reached in the early stages of the analysis – i.e. new sources did not bring any new content. Therefore, the research strategy was extended to include Scotland. It shares with neighbouring Ireland an absence of direct archaeological evidence of Mesolithic boats, while academic work focusing on or integrating Scottish rivers (Warren, pers. comm.) in prehistory enhanced the potential for diversity in the archaeological discourse.

The total of all keyword searches yielded an estimated 1,200 non-duplicate hits for "Ireland" and "Scotland," but for most results the articles had little to no link to the topic. Of 91 relevant results, 31 related to Ireland, 23 to Scotland, 9 to both, and 28 to a different or wider geographic area. Some results that fell out of the predefined geographical or chronological criteria were sparingly included in the analysis, as they provided a relevant background.

4 Results and Discussion

Three thematic clusters have emerged from the analysis: the discourse on inland navigation in Mesolithic Ireland and Scotland is focused on transitions (1), on boat technology (2), and on abstract generalisations regarding the landscape (3).

4.1 Transitions: Mariners, Pioneers, and the River Less Travelled

The first pattern that can be observed is a strong focus on *pioneering* journeys polarised either at the beginning of the Early or at the end of the Late Mesolithic. The semantic field presents navigation as a key element of colonisation – e.g. "colonisation by boat" (Little et al., 2017, p. 224) and "first settlers" (Woodman, 2015) in Ireland; "boats and pioneer settlement" in Scotland (Bonsall, Pickard, & Groom, 2013) – and rivers as the obvious routeways into an unfamiliar landscape.

This assumption is not discussed critically despite the absence of information and data about "ethnographically known hunter-gatherers moving into terra incognita" (Kelly, 2003, p. 44). It is problematic at two levels: first, the implicit construction of a single colonising event is debatable, as "Scouts probably were basic components of the process of human expansion, and their function was to acquire geographic and subsistence information" (Borrero, 2015, p. 46). Second, the fact that "'wild' boar was probably imported to the island by Mesolithic colonists, and appears to have been managed by those communities" (Warren, 2015, p. 2) indicates

that Mesolithic hunter-gatherers had indeed a very early knowledge of the resources available on the island. This knowledge was likely built progressively through multiple, if not routine, journeys.

Except about the colonisation process, little is offered on riverine navigation as part of the existence of the hunter-gatherer communities, their way of life suspended in a universal and timeless background (e.g. O'Sullivan & Royal Irish Academy & Discovery Programme, 1998, p. 53 *et sqq.*) dramatically disrupted by Neolithic settlers. In contrast, s*eafaring* is a ubiquitous motif in the archaeological discourse on Mesolithic inland navigation. Against Warren and Westley's cautious reminder that, "once Mesolithic populations were established, … they certainly did 'explore the interior of the country'" (Warren & Westley, 2020, p. 74), two-thirds of the relevant articles are dedicated explicitly (e.g. Cooney, 2004; Warren, 2000), exclusively (e.g. Cummings, 2017, p. 26; Noble, 2010, p. 127 *et sqq.*) or principally (e.g. Cobb & Gray Jones, 2018, pp. 375, 378; Finlayson, 1998, pp. 29, 47) to maritime navigation, with an emphasis on Late Mesolithic coastal settlement, activities and the importance of the sea for hunter-gatherers in Ireland and Scotland.

This trend is influenced by the archaeological and academic material available on the late Mesolithic of coastal Scandinavia (e.g. Rönnby, 2007). Despite Conneller and Warren's argument that "what we have in Britain [and Ireland] is not a poorly preserved record of material that was once identical to Scandinavia (…)" but "evidence of an entirely different suite of practices" (Conneller & Warren 2006, p. 10), the risk is real for Scandinavian archaeology to be considered as a proxy for navigation in the Mesolithic of Ireland and Scotland (e.g. Bang-Andersen, 2003; Engen & Spikins, 2007, p. 26 *et sqq.*). A clear example can be found in the claim that "the best available parallel for the use of logboats in Mesolithic Scotland is provided by the underwater excavation of part of a settlement of the Ertebølle structure" (Mowat, 1996, p. 128).

4.2 Boats? What Boats?

Our analysis confirmed the suggestion that "The development and the use of log and skin boats to traverse coastal and inland waterways during the Holocene particularly for Mesolithic and Neolithic periods is a key theme across the British Isles" (Bicket & Tizzard, 2015, p. 658). In the absence of direct evidence for Mesolithic boats, the gap is filled with known contemporary examples *in a different place* (e.g. Conneller, Milner, Taylor, & Taylor, 2012, p. 1005 *et sqq.*) or by drawing on indigenous material present *at a later date*. More specifically, the Irish *currach* (e.g. Rowley-Conwy, 2011, p. 439), and mostly the Arctic Umiak, have been mobilised as material-ethnographic proxies for Mesolithic hide boats as early as the middle of the twentieth century (Clark, 1947, p. 86), and more recently under the influence of Scandinavian archaeology (e.g. Mithen et al., 2015, p. 412; Schmitt, 2013). These inferences are not presented as such, and their epistemological validity is not discussed. More generally, a systematic and explicit methodology is absent in "the existing scholarship on Arctic watercraft," which

> is primarily focused on boats' constructional details and performance characteristics. In those rare occasions when an attempt is made to provide a larger context or theoretical framework, the emphasis, as a rule, is on diffusion of technological trends and environmental adaptation (Anichtchenko, 2016, p. 64).

As an example, Bang-Andersen's processual argument rests exclusively on general considerations on environmental constraints, technological-functional interpretations of lithic material, and most importantly, on a "common-sense" assessment of boat performance: "Even today one must ask oneself, what would I chose if I want to paddle along the outer coast of Norway – a log boat or an *umiak*?" (Bang-Andersen, 2013, p. 83). This casual reliance on illustrative analogies is underpinned by an adaptive, utilitarian logic: facing comparable environmental conditions as eleventh century Thule Inuit populations, the Mesolithic colonisers of Scandinavia must have developed a solution similar to the Umiak. The skin boat is also praised as technologically more complex and superior to the humble, unrefined logboat, reflecting the processual inclination towards evolutionary interpretations.

These orientations and limitations are part of a wider archaeology of boats and navigation with its distinct network of academics and experts: as a practice and an academic discipline, maritime/underwater archaeology appears to be still partly trapped in its own masculist construct as an "action-man archaeology" of engineering feats, dangerous journeys and colonisation (Ransley, 2005, p. 625). From her own experience within the discipline, Ransley deplores that

> our dominant discourse is about the physical not the social. These are the legitimate fields of interpretation. Again, the appropriating male gaze: objectifying, measuring and surveying. All of which results in an essentially reductive approach to past maritime cultures" that excludes "the small scale, the social and the unexplored. (Ibid., p. 626)

This implicit use of *comparative* reasonings – between types of boats, between environmental contexts – frames the subject into a contest for the most technologically advanced, the fastest, the most prestigious (Tolan-Smith, 2009, p. 155), the most seaworthy – in short: of the *best* boat. It is also a discourse on the exceptional, that constructs a leapfrog adaptation made of transitions and unchartered territories, of unprecedented events and rare achievements, of muscular entrepreneurship and innovative engineering. By contrast, few authors envisage navigation as a routine activity embedded in the Mesolithic way of life on the coasts (Adams, 2001, p. 303), and even less so inland (Warren, Little, Stanley, McDermott, & O'Keeffe, 2009, p. 30): habitual, effortless, secure – it is too *plain sailing* to be of interest.

This *superlative* archaeology also performs a typological restriction: in the Mesolithic of Ireland, navigation was either by logboat, universally considered as the boat of (second) choice most likely used on lakes and rivers, or by the more sea-worthy hide boat. By contrast, the potential for Mesolithic boats to have been constructed of reeds – well adapted to lakes and slow-flowing rivers and to local resources and technologies, and equally supported by indirect archaeological evidence and ethnographic examples in Ireland (Mac Cárthaigh, 2008, p. 598 *et sqq.*) and elsewhere – is absent from the academic material.

4.3 Not Seeing the Wood for the Logs: Scale, Physicality, and Agency

Inland waterways are assumed to be the obvious ways to move around in the Mesolithic. Some authors merely allege the existence of inland navigation (e.g. Bicket & Tizzard, 2015, p. 645), while others consider it important (e.g. Finlayson, 1998, p. 47), with Fredengren comparing rivers to "lifelines running through the landscapes" (Fredengren, 2002, p. 138). It is also presented as *easier* than moving through woodland, with the Mesolithic landscapes of North-Western Europe being described as entirely covered with "dense" (e.g. Spikins, 1996, p. 88) forests forming a barely penetrable, "heavily wooded" (O'Sullivan & Royal Irish Academy & Discovery Programme, 1998, p. 45) landscape.

By contrast, waterways are presented as the *easy way*, with a river/road equivalence implicitly embedded in concepts such as "systems" or "networks" (e.g. Haughey's prehistoric "network of wetland highways," 2013). Such concepts impose a cartographic perspective "from above" where rivers are presented as interconnected, multidirectional webs enabling and directing Mesolithic mobility, or even dictating socio-political structures such as "clan territories" (Spikins, 1996). Physical bodies of water are reduced to their symbolic representations – from flowing rivers to lines on the map – and rarely problematised as physical and cultural agents, with rivers being "the 'dark matter' of the archaeological landscapes" (Edgeworth, 2011, p. 26).

And yet it is possible to spot a discrete awareness that navigating rivers *might not have been that easy after all*. Firstly, rivers in their diversity share one characteristic: "On inland rivers with no tidal effects, the current is a unidirectional hydraulic current downstream, and can be used for travel in one direction only" (Millar, 2002, p. 33). Paddling upriver is a technical, slow, and arduous exercise in the most favourable situations, and often impossible the rest of the time. Secondly, the topography of rivers – their depth, width, length, sinuosity, nature of their banks and bottom – is incredibly varied. As a consequence, "differences in altitude, numerous rapids and waterfalls and relatively-long overland stretches divide the topography of the watercourse into several zones that were navigable by boat (…)", these zones being "defined by the topography and the stretches of water where boats could be used" (Nymoen, 2008, p. 10). Third, as discussed in the introduction, rivers of

Ireland today have little to do with their Mesolithic counterparts in their behaviour, and "the impression of an intact environment is mistaken" (Odgaard, 2007, p. 25); more specifically, cumulative interventions on the landscape have dramatically reduced their chronological and spatial dynamism.

Awareness of this reality remains theoretical and is not reflected in the academic discourse. Experimental archaeology has generated many reports detailing the construction process of logboat replicas. While subjected to a profusion of desk-based performance calculations, they were then at best cursorily tested in real life (e.g. Gregory, 1997) – the most thorough trial that could be found was that of an "experimental logboat" having averaged a speed of 4.5 km/h over "15 min", led by "an extremely fit paddler" on "a calm lake, with no current" (Fry & Department of the Environment for Northern Ireland, Environment and Heritage Service, 2000, p. 22). This focus on the object ignores what it does to its user and to the river, but also what they do to it. Constructing Mesolithic navigation calls for an integration of multiple *agencies*: that of the object, of its human user, and of the physical world. At this point, it is also relevant to underline that the pioneering narrative appears to dilute the agency of Mesolithic hunter-gatherers through time, from brave explorers of the ninth millennium to passive observers of the Neolithic "colonisation" (Rowley-Conwy, 2011, p. 439).

Despite some serious reservations "against the use of logboats on small tributaries of lakes and larger rivers" (Mainberger, 2017, p. 9), the dynamic nature of rivers fails to influence the discourse on Mesolithic navigation. Within the academic boundaries of the Irish Mesolithic of Ireland, only Woodman mentions in passing that "the presence of water as a means of communication (…)" is a "variable factor depending on direction of travel, rate of flow in the river (…)" (Woodman, 1978, p. 170).

Problematising this desk-based construction of static rivers can bring us closer to Kador's promise of "a truly mobile perspective of people's journeys" (Kador, 2007, p. 38), and can provide some unexpected support to the contention that Mesolithic hunter-gatherers were actively modifying their environment and inhabiting the woodlands (Warren, 2003). The physicality of rivers forces us to acknowledge that not all rivers were navigable, not all the time, not in all directions (across/down/up), and not uninterruptedly. Therefore, we must also conclude that land passage was a significant component of Mesolithic mobility, not only as the *alternative* to inland navigation – e.g. river absent, (temporarily) unsuitable for navigation or flowing in the wrong direction but also as its *necessary condition*. Be it to tow a heavy logboat upriver or to carry a lightweight hide boat between two navigable stretches by portage (e.g. Odgaard, 2007, p. 24 *et sqq*), river navigation as an alleged routine way of travelling could not have existed without routine land passages, which suppose in turn an ability to create and maintain paths; paradoxically, by taking the trope of the impenetrable forests seriously through the angle of riverine mobility, we must conclude that forests were in fact not impenetrable at all.

5 Conclusion

If mesolithic communities were managing their environment, merely postulating the existence of "paths, tracks and trails along watercourses" and the "significance of fording points used during overland journeys" (Kador, 2007, pp. 37, 38) to design large-scale mobility models and networks on maps would risk falling back into static narratives. The short- and long-term dynamism of rivers affected how Mesolithic hunter-gatherers moved, but also how we must conceive their mobility and the physical world entangled with it. Droughts, floodings, erosion and sedimentation can make a path obsolete or destroy it, they can make a ford impassable or create a new one, they can open new river channels or an oxbow lake. Rather than points and lines fixed in the landscape, fords and paths should be considered as possibilities in a world of practices.

Such an "archaeology of flow" (Edgeworth, 2011) at the human scale could clear a path towards a social archaeology of the Mesolithic. We are encouraged to focus on mobility as a practice at the scale of the microregion and as a narrative integrating multiple agencies, and to be aware of the "risks of using analogy (…): that we reduce our understanding of potential human diversity" (Warren, 2018, p. 428). Against a *grounded* perspective of the Irish Mesolithic where people are "isolated" on lacustrine islands (O'Sullivan & Royal Irish Academy & Discovery Programme, 1998, p. 59) and watery landscapes are "liminal" (Andrews & Roberts, 2012), a thorough examination of how communities, be they hunter-gatherers or not, live *on and with* water – how

rivers and lakes are deeply entangled with their world rather than kept at its margins – could help us shift our perspective towards "an 'aquatic' cultural landscape" (Mainberger, 2017, p. 13).

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