

# Offa's Dyke Journal



Volume 3

Edited by Howard Williams and Liam Delaney

## Aims and Scope

*Offa's Dyke Journal* is a peer-reviewed venue for the publication of high-quality research on the archaeology, history and heritage of frontiers and borderlands focusing on the Anglo-Welsh border. The editors invite submissions that explore dimensions of Offa's Dyke, Wat's Dyke and the 'short dykes' of western Britain, including their life-histories and landscape contexts. *ODJ* will also consider comparative studies on the material culture and monumentality of frontiers and borderlands from elsewhere in Britain, Europe and beyond. We accept:

1. Notes and Reviews of up to 3,000 words
2. Interim reports on fieldwork of up to 5,000 words
3. Original discussions, syntheses and analyses of up to 10,000 words

*ODJ* is published by JAS Arqueología, and is supported by the University of Chester and the Offa's Dyke Association. The journal is open access, free to authors and readers: <http://revistas.jasarqueologia.es/index.php/odjournal/>. Print copies of the journal are available for purchase from Archaeopress with a discount available for members of the Offa's Dyke Association: <https://www.archaeopress.com/>

## Editors

Professor Howard Williams BSc MA PhD FSA (Professor of Archaeology, University of Chester)  
Email: [howard.williams@chester.ac.uk](mailto:howard.williams@chester.ac.uk)

Liam Delaney BA MA MCIfA (Doctoral Researcher, University of Chester)  
Email: [1816919@chester.ac.uk](mailto:1816919@chester.ac.uk)

## Editorial Board

- Dr Paul Belford BSc MA PhD FSA MCIfA (Director, Clwyd-Powys Archaeological Trust (CPAT))
- Andrew Blake (AONB Officer, Wye Valley Area of Outstanding Natural Beauty (AONB) Partnership)
- Christopher Catling MA FSA MCIfA (Secretary, The Royal Commission on Ancient and Historical Monuments of Wales)
- Dr Clare Downham MA MPhil PhD (Reader in Irish Studies, Institute of Irish Studies, University of Liverpool)
- Dr Seren Griffiths MA MSc PhD FSA MCIfA (Senior Lecturer in Public Archaeology and Archaeological Science, Manchester Metropolitan University; Honorary Research Associate, Cardiff University)
- David McGlade BA DMS (Vice-Chairman, Offa's Dyke Association)
- Professor Keith Ray MBE MA PhD FSA (Honorary Professor, School of History, Archaeology and Religion, Cardiff University)
- Dr Rachel Swallow BA MA PhD FSA (Visiting Research Fellow, University of Chester; Honorary Fellow, University of Liverpool)
- Astrid Tummuscheit MA (State Archaeological Department of Schleswig-Holstein, Germany)
- Dr Kate Waddington, MA, PhD, FSA (Senior Lecturer in Archaeology, School of History, Law and Social Sciences, Bangor University)
- Frauke Witte Dipl. Prähist. (Curator, Museum of Southern Jutland (MSJ))

Submissions: [odj@chester.ac.uk](mailto:odj@chester.ac.uk)

Copyright © 2022 Authors

Front cover: Stained glass created by Stephen Bradley for the Offa's Dyke Centre to commemorate the 50th anniversary of the Offa's Dyke Path in 2021 (Copyright: the Offa's Dyke Association). Cover and logo design by Howard Williams and Liam Delaney.

# Offa's Dyke Journal

Volume 3 for 2021

Edited by Howard Williams and Liam Delaney



University of  
Chester

# Offa's Dyke in the Landscape: Comparative Size and Topographical Disposition as Indicators of Function

David A. Humphreys

*Despite the large volume of published work on Offa's Dyke there is no settled conclusion as to its original purpose. Many different and often conflicting theories exist, most of which can be put into three broad categories: defensive, political and economic. It is generally accepted that the monument's disposition relative to the adjacent topography is significant for interpretations of purpose. In this article, field survey and GIS mapping techniques are applied with respect to the comparative size and topographical disposition of a stretch of central Offa's Dyke in order to examine its utility as a defensive structure. This allows a re-evaluation of claims by Hill and Worthington (2003), among others, that the route of Offa's Dyke was designed to optimise outlook by following the west facing brow of hills, or more generally to 'command' the western landscape. Evidence reported here shows that central Offa's Dyke does not consistently prioritise western views. Instead, it was positioned in such a way as to often obscure westerly vistas, despite the opportunity to optimise such an outlook by relatively minor route adjustments. On the basis of the evidence reported, discussed in the context of the wider literature, it is concluded that central Offa's Dyke should be interpreted as a physical obstacle rather than a defensive fortification. After a brief consideration of alternative theories of purpose it is suggested that Offa's Dyke was most likely built with economic and political, rather than defensive, functions in mind. It is postulated that control of trade provides a plausible context for its construction.*

*Keywords:* borders, dykes, linear earthworks, Mercia, Offa's Dyke, Powys

## Introduction

Williams-Freeman (1915) observed that 'there is indeed no problem of field archaeology more difficult to solve than the interpretation of banks and ditches'. This is particularly apparent with Offa's Dyke which, due to its great length runs through many geographically diverse regions with varying levels of elevation. Running for around 60 miles, the central section of Offa's Dyke is the longest continuous earthwork in Britain. Most often associated with the late eighth-century Mercian ruler King Offa, Offa's Dyke is conjectured as positioned in the western borderlands of Mercia (Hills and Worthington 2003).

At the time of Offa's reign (AD 757–796), the inhabitants of what is now called Wales identified themselves as 'Britons', stressing their Brythonic cultural origins or, from at least the sixth century AD, the Cymry; a name which distinguished them from the more Romanised cultures to the east (Jackson 1963). By the second half of the eighth century, the Cymric peoples to the west of this part of Offa's Dyke fell under a polity commonly referred to as the Kingdom of Powys.

There is reason to believe that populations of both Cymric and Anglo-Saxon descent lived on both sides of the Dyke at the time of its construction (Ray and Bapty 2016: 226), and we can anticipate there were periods of peace and even cooperation between fluctuating kingdoms and territories. Nevertheless, considering the particularly turbulent nature of the Powys/Mercian relationship and the fact that the most continuous stretch of Offa's Dyke is positioned between these two kingdoms, this article focuses on a central stretch of the earthwork, specifically the area near Llanfair Hill (SO 25304 78775), to consider its utility.

Theories about the practical functions of the linear monument fall into three broad categories:

- defensive: to act as a military installation against incursions, ranging from smaller raiding parties to larger-scale military forces;
- political: to articulate and manage the border or frontier zone between adjacent kingdoms;
- economic: to operate as a barrier for channeling goods for the purposes of controlling monopolies or taking duties.

Among those arguing for a defensive function, Hill and Worthington (2003: 120) asserted that '... the chosen line always attempts to take a position where there is a clear view to the west, even when this means moving slightly away from the direct line'. They emphasise this point with an illustrative figure showing the dyke was placed to 'curve round the west-facing slope of a hill to keep the view into Powys'. This type of generalisation is perpetuated elsewhere in the literature. For example, Malim and Hayes (2008) cite Hill and Worthington and state: 'Offa's Dyke was carefully sited to give strategic advantage by maintaining views to the west at all times'.

In their extensive and detailed analysis, Ray and Bapty (2016: 3) sometimes postulate Offa's Dyke's positioning in terms of 'vantage points', suggesting that Hill and Worthington's determination of a defensive purpose has become '... orthodox despite being founded upon a problematic evidence base...'. They also assert that future studies should integrate modern mapping techniques such as viewshed analysis with field-based investigation in order to discern more carefully between potential alternative interpretations (Ray and Bapty 2016: 153, 401).

This article reports such an approach which Ray and Bapty advocate, with a view to critically examining aspects of Offa's Dyke's defensive utility. Empirical evidence on size and topographical disposition provides landscape perspectives which contradict generalisations such as those of Hill and Worthington (2003). This evidence is presented and then discussed with reference to literature for and against a defensive function. Alternative theories are then briefly considered, and functions more compatible with the evidence are postulated.

## Method

### *Comparative size*

Profiles of three separate Anglo-Saxon period dykes were created using a Garmin TOPCON GPSMAP survey device to record coordinates and elevations along transect lines which began and ended at least a metre beyond the point where the earthwork reached the natural elevation of the landscape. Data was collected at every noteworthy elevation change along each survey line. In addition to that part of Offa's Dyke which forms the focus of this report, East Wansdyke in Wiltshire and Devil's Dyke in Cambridgeshire were surveyed for comparative purposes as part of a more extensive study (Humphreys 2016). The coordinates for the profile locations are indicated in the Figure 1 caption.

In comparing the sizes of banks and ditches, questions of erosion, slumping and in-fill must be taken into consideration especially when considering height and depth. The extent to which original dimensions are preserved depends on the nature of the sub-soil used for its construction and the extent of post-construction human activity. Both of these features have been recognised as relatively favorable for the preservation of Offa's Dyke in the stretch under consideration. Here, in the Clun Forest of Shropshire north of Knighton, the earthwork crosses high plateau country comprised of upper Silurian shales. This landscape has historically sustained only a sparse human occupation. Offa's Dyke has consequently retained relatively good preservation in this area (Fox 1955: 125–126; Ray and Bapty 2016: 18). Nevertheless, despite these advantages, some level of erosion and in-fill will have occurred, and while the original height of the bank can only be estimated; excavation evidence invariably reveals some natural ditch in-fill in such earthworks. In this context the overall breadth of the structure, including bank and ditch, is regarded as less vulnerable to change and, for our purposes more reliable than vertical measurements as a basis of comparison of different dykes. This point is most clearly apparent in areas where Offa's Dyke is badly preserved, such as near Chirk Castle where, on the basis of excavation evidence, a monumental earthwork is revealed to have existed on what is today fairly flat terrain subject to post-medieval landscaping (Belford 2019). Dimensions of Offa's Dyke's profile (Figure 1) are provided in Table 1.

### *Topographic disposition*

In order to investigate the topographic disposition of central Offa's Dyke, landscape transects from a relatively well preserved 2km stretch in the vicinity of Llanfair Hill, Llanfair Waterdine, Shropshire, were established wherever a 5m interval OS contour line intersected the earthwork. Each of these 14 transects provides a 1km profile either side of Offa's Dyke.

To further investigate, ArcGIS was used to create viewshed maps from points on the bank corresponding to two of the transect points (T8 and T11). In this case a data set credited on Figures 3 and 4 with 5m resolution and 1.5m offset has been applied to create

Table 1. Dimensions derived from the two survey transects across central Offa's Dyke.

	Left Transect	Right Transect	Average
Vertical distance from bank apex to lowest point of ditch (m)	3.43	3.32	3.38
Horizontal distance from bank apex to lowest point of ditch (m)	6.28	5.93	6.11
Bank height above ground level (m)	2.54	2.42	2.48
Ditch depth below ground level (m)	1.37	1.40	1.39

maps showing how much of the landscape is visible from specific locations, with visible areas shaded blue. The viewshed images add a further dimension to the transects, revealing what proportion of the surrounding landscape was visible from points along the earthwork. These techniques allow objective assessment to corroborate or refute Hill and Worthington's (2003) generalisation that the monument is always optimally positioned for a western outlook.

Additionally, viewshed maps were created at alternative adjacent points near to Offa's Dyke's actual location. These points were chosen for comparative purposes, to objectively demonstrate more strategically optimised positions which would have provided more extensive outlooks than the Dyke's actual route. The coordinates of all the points from which the viewshed maps are projected are provided in the figure captions.

Viewshed techniques have been used for various structures in Britain, both linear earthworks, such as the Antonine Wall (Hannon 2018), and non-linear monuments, such as various Roman encampments, forts and communication structures along the northern frontier (e.g. Dycka 2016; Murphy *et al.* 2018; Jones 2020). In relation to Offa's Dyke specifically, Murrieta-Flores and Williams (2017) have used viewshed analyses to examine the landscape in the vicinity of the Pillar of Eliseg, a Cymric monument thought to be related to both Offa's Dyke and Wat's Dyke (see discussion) and Delaney (2020) has reported ongoing work involving a range of digital analyses of the landscape.

## Results

### *Comparative size*

In the area of study, central Offa's Dyke consists of an earthen bank on the eastern side, and a ditch from which the bank's building material was taken on the western side. Results of the GPS surveys of three dykes are shown in Figure 1. Most noticeable is the relatively small size of central Offa's Dyke compared to the other surveyed linear earthworks attributed to the Anglo-Saxon period; East Wansdyke, and Devil's Dyke.

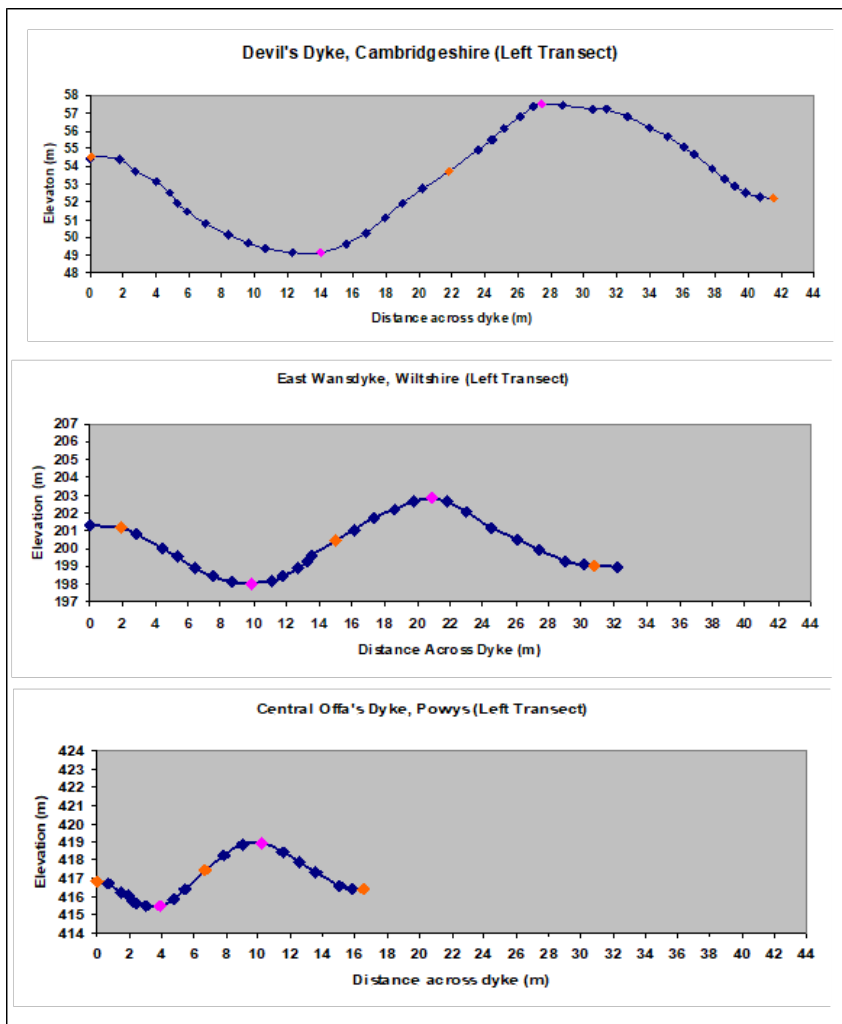


Figure 1: Same scale profiles of three Anglo-Saxon period dykes. Purple represents the points at which the bank reaches its greatest height and the ditch reaches its greatest depth. Orange represents the points at which the bank and ditch begin and end. Key statistics are shown in Table 1. (Central Offa's Dyke: SO 25304 78775; Devil's Dyke: TL 60350 60481; East Wansdyke: SU 04944 66041)

For our current purposes it is sufficient to recognise that the differences in comparative size between the three surveyed dykes are enough to indicate clearly different scales of impendence and utility. While much of the literature on Offa's Dyke emphasises the large size of the monument, the focus is normally on length. In contrast, Figure 1 shows that in section central Offa's Dyke is a comparatively small structure when considered in relation to other such linear earthworks. This must at least raise questions on its utility as a primarily defensive structure. While not in itself sufficient to reach conclusions on function, comparative size, especially when considered in relation to other evidence reported and discussed below, constitutes an arguably significant line of evidence.



*Topographic disposition*

Figure 2 shows the fourteen topographical transects crossing the stretch in the vicinity of Llanfair Hill. It is clear from these that the westward outlook varies considerably, sometimes offering a clear 1km view but more frequently obscured, to an extent shown on the x axes of the transects.

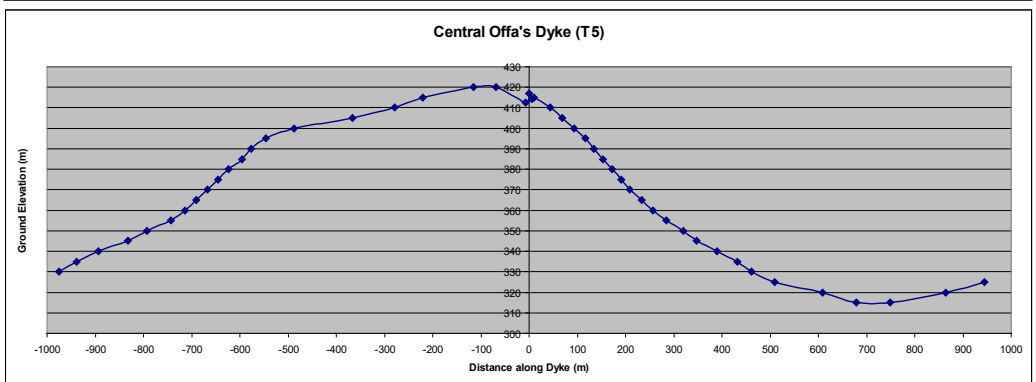
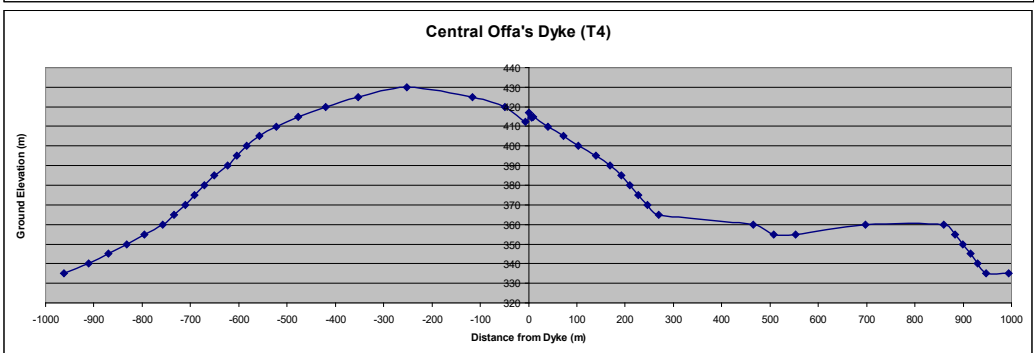
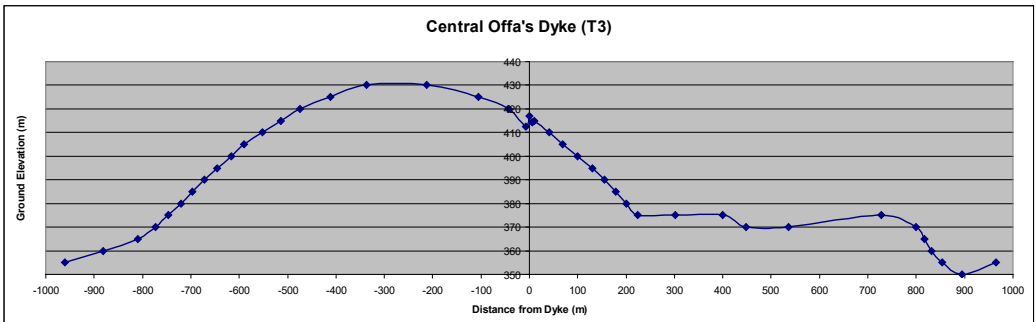
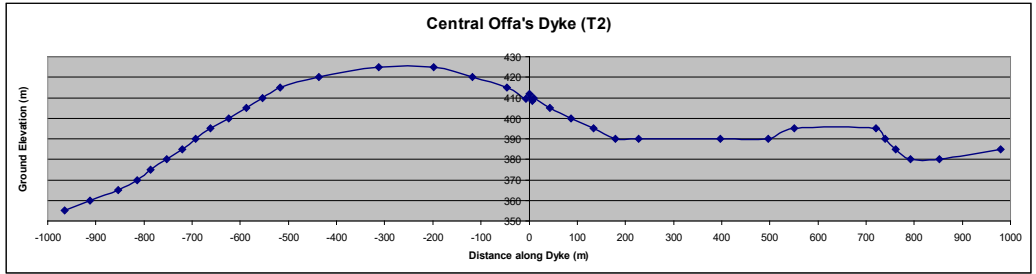
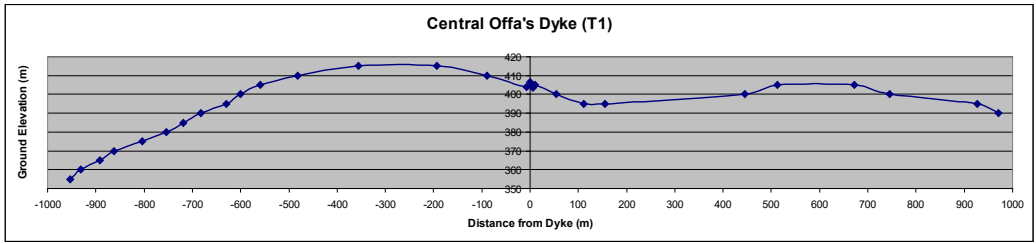
These transects illustrate the importance, in terms of outlook, of the relationship between the land profile immediately adjacent to the dyke and that further away. T5, for example, shows a position where the elevations of both the adjacent and more distant western landscapes fall away in a relatively consistent gradient (and then flatten), such as to provide a full 1km view. This represents an actual case of Hill and Worthington's (2003: 120) figurative representation of the Dyke positioned on the 'brow' of a hill, which they assert is the norm. However, collectively the transects show that this relative disposition of Offa's Dyke and the landscape was not prioritised. For example, in T6–T10 the dyke is positioned on the opposite 'brow' of the hill, giving an eastern outlook, and in T11–13 the earthwork can be described as on the top of the hill. In this latter case it should be noted that such a position, across the top of a relatively flat-topped hill, also obscures the western landscape which falls away below the line of site. The implications of these land profiles in relation to the purposes of Offa's Dyke are considered in the discussion.

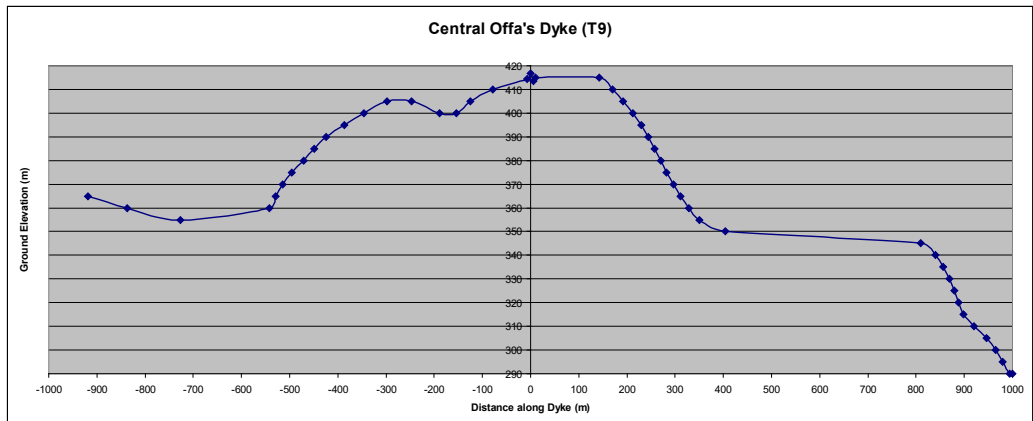
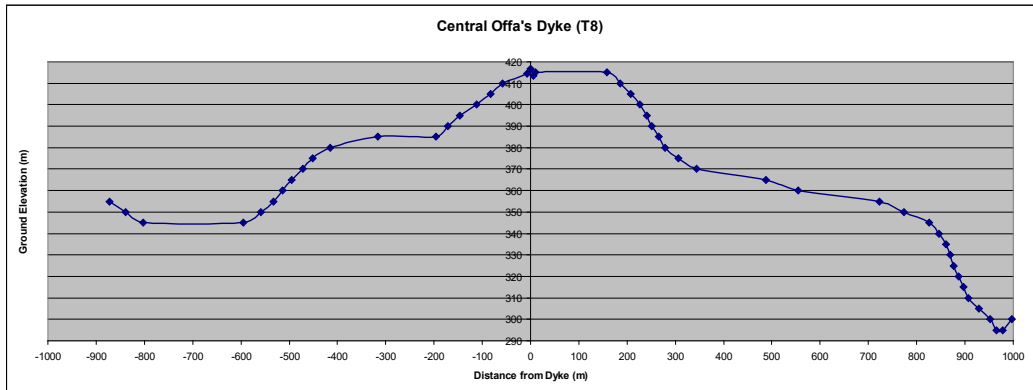
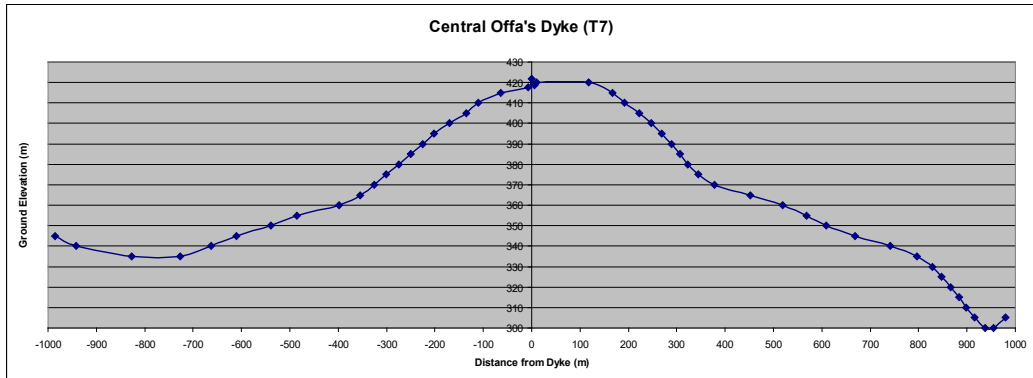
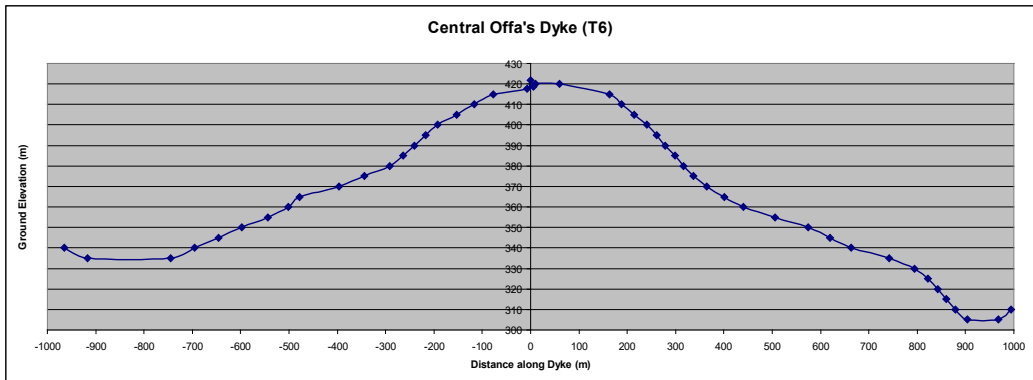
In terms of the conclusions that can be drawn from the viewshed maps, it is only necessary to note that, whereas the topography of the area makes the achievement of complete outlooks a complex challenge, the T8 (Figures 3a and b) and T11 (Figures 4a and b) viewshed maps exemplify the earthwork's sub-optimal positioning in terms of outlook, and shows that small adjustments to its route would have markedly improved the position. This evidence, combined with the Figure 2 transects, is incompatible with generalisations claiming Offa's Dyke consistently prioritised a western outlook on the western brow of hills. This is particularly stark when compared to the superior outlooks available from points along the Antonine Wall, also obtained from viewshed analysis (Jones 2020).

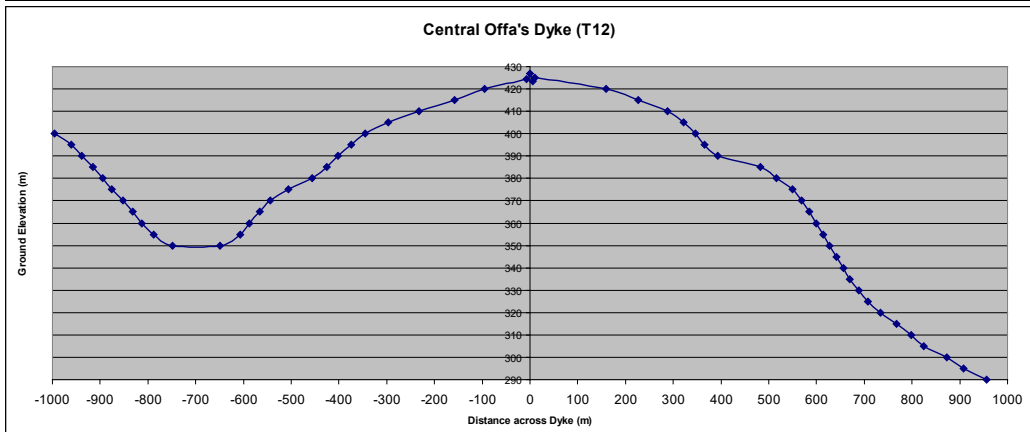
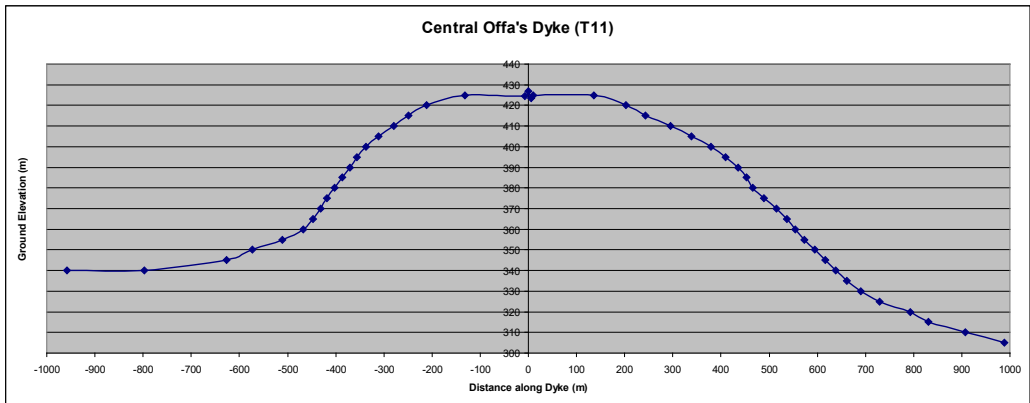
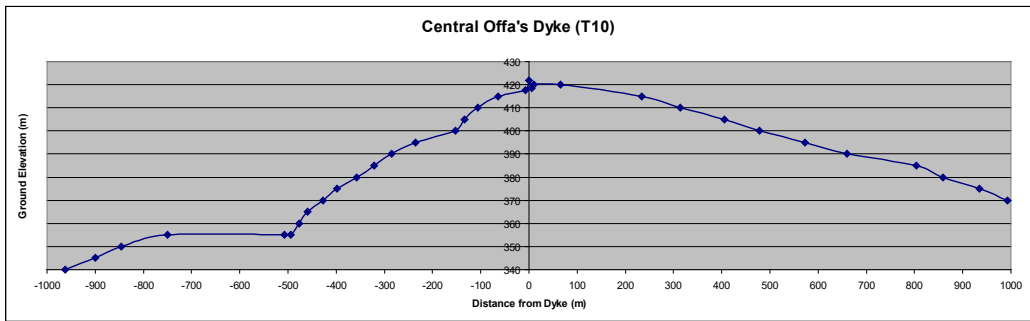
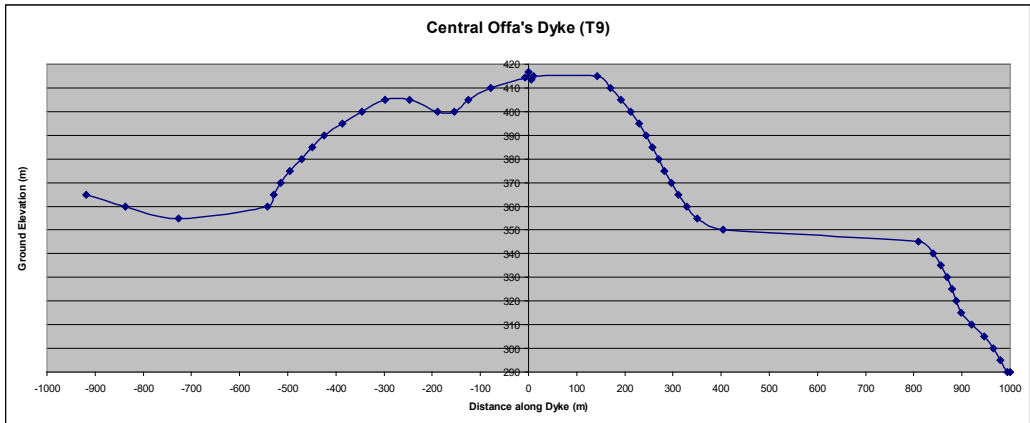
## Discussion

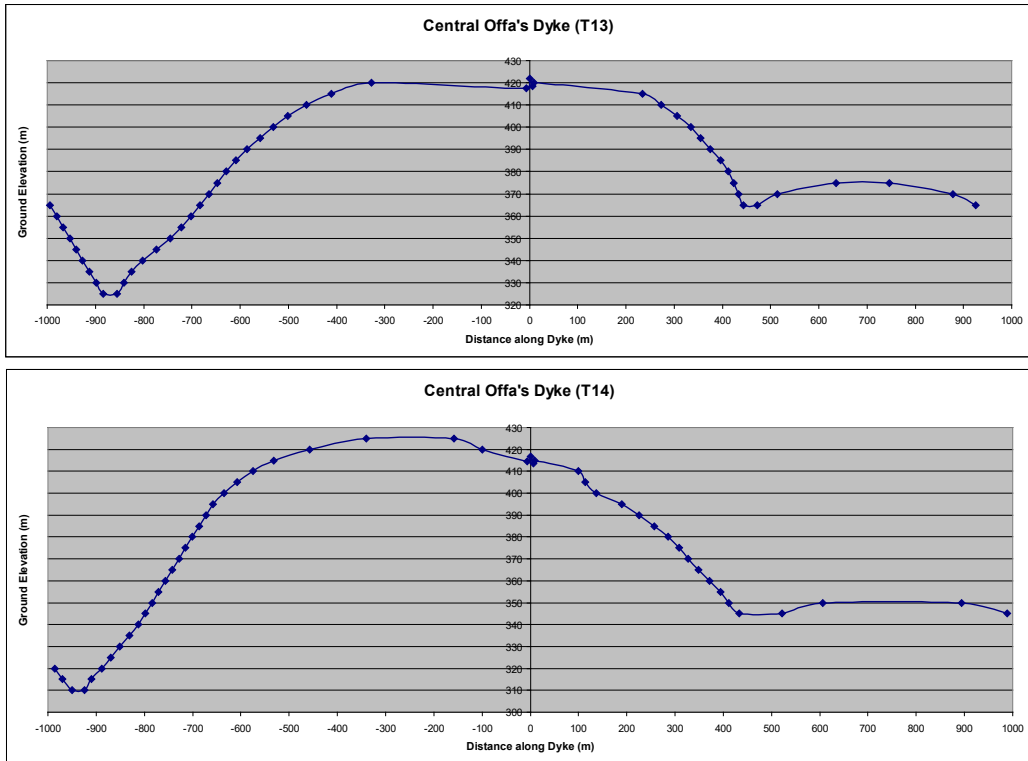
In so far as Offa's Dyke represents a rational and organised response to prevailing circumstances, its form will have a relationship to its function, and physical size in profile represents one aspect of the evidence available to inform theories of its intended purpose. In fact, for other dykes there are many references in the literature examining size

Figure 2 (opposite and following pages): Elevations on both sides of a two-kilometre stretch of central Offa's Dyke at fourteen transect locations from points where the dyke crosses a 5m interval OS contour. The dyke profile in the centre of the transects is a simplified version of the GPS dyke survey showing bank height at the same x and y scales as the topographical profile. The western landscape is shown on the right.









in profile as an indicator of purpose. For example, it has been suggested that the large size of Devil's Dyke (Figure 1) relates to the threat of a full-scale military offensive; in this case perhaps by Mercia against the rival Anglo-Saxon Kingdom of East Anglia (Thackray 1980). Nevertheless, other structural aspects of a Dyke should be considered in a balanced assessment, not least including archaeological evidence for revetments and palisades.

While excavations have sometimes revealed stone and boulder materials at the base of Offa's Dyke, in reviewing such findings, Ray and Bapty (2016 184-188) interpret the evidence mostly in terms of construction practices rather than as the remains of significant widespread revetment construction. In support of a defensive function, Hill (1991, 125) postulated the existence of palisades, walls and pathways on top of the bank. However, in this respect also it is of interest that no actual material evidence of palisades or other structures normally associated with linear defensive structures, such as watch towers, signal stations, roads for the movement of defensive forces, or walkways along the top of the bank have been found (Bell 2012: 107; Hill and Worthington 2003: 125). The latter authors recognised the absence of such evidence as 'one of the main archaeological problems concerning any understanding of Offa's Dyke', nevertheless Hill (1991) observed that 'with or without a wall or palisade...the dyke would have been a very considerable barrier'. However, as is argued below, the utility of Offa's Dyke as a barrier does not necessarily imply a defensive function, especially when other objective evidence is brought to bear, not least on disposition in the wider topography.

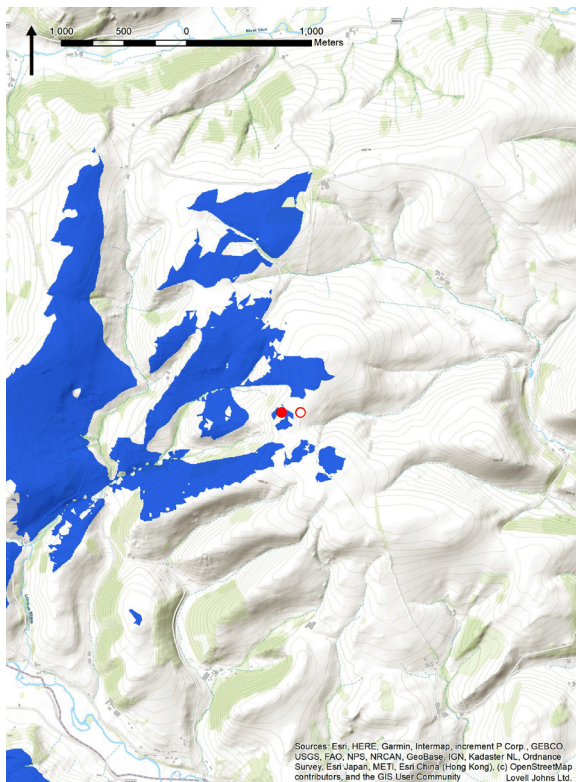


Figure 3: Viewshed maps showing (a: above) the visible landscape from a marked point located on the bank of central Offa's Dyke at Transect 8 (SO 25301 78993) and (b: below) from a near-by point located adjacent to the dyke (SO 25150 78993). The visible landscapes are represented by the blue shaded areas. For each map the red filled circle marks the point from which the viewshed is determined.

### Arguments for and against a defensive function

The classic theory about the intended function of the dykes of early medieval Britain is that they were built for defensive purposes, more specifically to act as fortifications against incursion. The earliest reference is in the medieval source, *The Chronicle of the Princes*. In this text Offa's Dyke is referred to as a defensive structure built by Offa of Mercia to help him better withstand attacks from the 'British' kingdoms to the west (Williams 1860: 9). Hill and Worthington (2003) and Grigg (2018) among others, observing that the earthwork would have required major investment and a strong motivation, argue that it was the consequence of a decision by the Mercian monarch to protect the western boundary of his lands with a fixed defence.

According to Stenton (2001: 214), in the early years of the eighth century, the Cymric kingdoms were going through a general

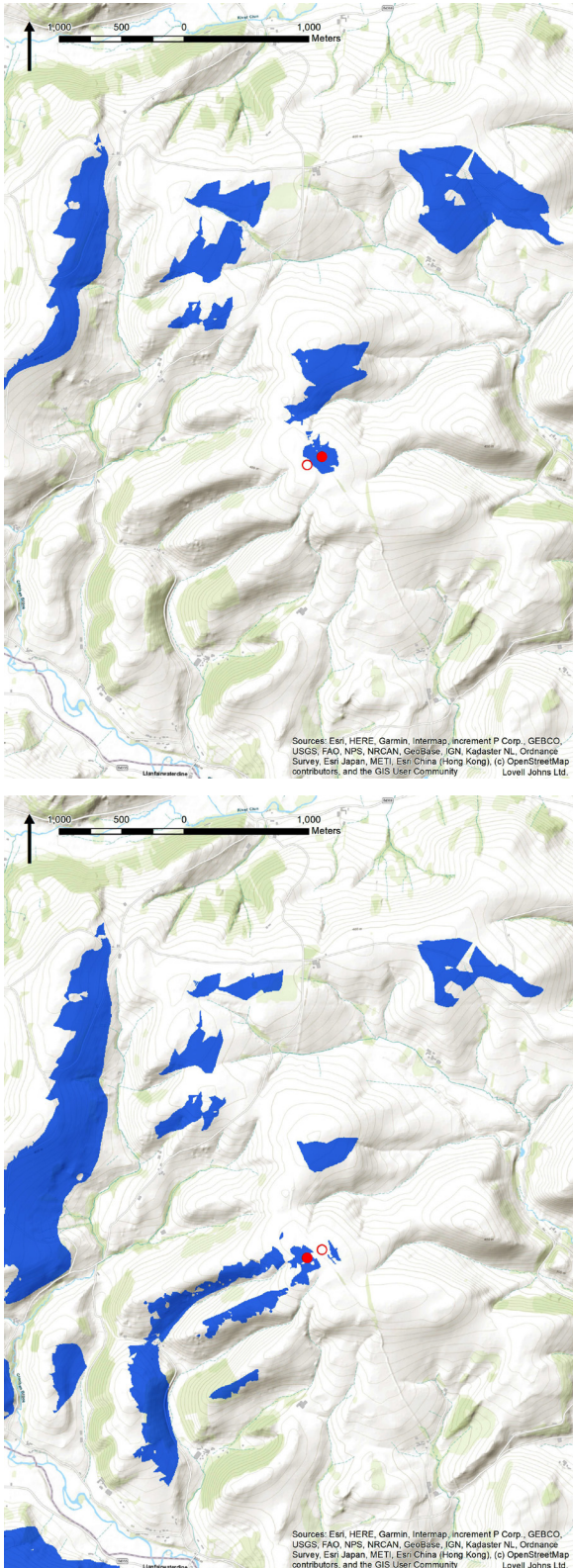


Figure 4: Viewshed maps showing (a: above) the visible landscape from a marked point located on the bank of central Offa's Dyke at Transect II. (SO 25455 78571) and (b: below) from a near-by point located adjacent to the dyke (SO 25336 78504). The visible landscapes are represented by the blue shaded areas. For each map the red filled circle marks the point from which the viewshed is determined.

revival and, as a result, incursions into Mercian territories had become more frequent and aggressive. Offa responded to these with a famously violent invasion, followed by the construction of the Dyke. Similar to Hill and Worthington, he points out that for more than seventy miles, the Dyke's visible remains rarely fail to command a view of the territories to the west.

When examining the arguments in favour of a defensive function, it is important to note that this category does not necessarily imply that the dyke was built to act as a barrier against larger-scale military incursion, as has been asserted for Devil's Dyke. Bell (2012: 106) suggests that, despite being ineffective against larger forces it could have been designed to hinder the movements of smaller parties, particularly in the case of large-scale cattle rustlers. Hill (2012: 86) accepts this as a potential function also suggesting that longer linear earthworks such as Offa's Dyke could have been

designed to act as early warning systems against incursions using beacons or lookouts positioned along the earthwork.

Conversely, Ray (2020: 122) has expressed scepticism of the cattle raiding theory, pointing out that according to contemporary Anglo-Saxon sources, it was not a uniquely Cymric act. Rather it was an activity conducted by the communities living on both sides of the monument. Additionally, he emphasises that the greater share of cattle crossing the border would have been moving into Mercia, due to the larger number of markets in the more populace lowland Anglo-Saxon territories. This movement of cattle into Mercia will be considered further below, in the context of alternative theories of purpose.

Bell (2012: 106) and Belford (2017: 83) have argued that linear earthworks would be too long to adequately garrison with the resources available to Anglo-Saxon kingdoms at the time. In contrast to Hadrian's Wall, the larger Anglo-Saxon dykes lacked signal stations, defensive towers and roads to facilitate movement. Furthermore, Bell (2012: 106) suggests that while shorter dykes like Bokerly Dyke (Dorset) and Grey Ditch (Derbyshire) would have been easier to build and garrison, they would also have been unable to significantly hamper a determined interloper. Squatriti (2002: 22) goes further, estimating that even the far larger and better organised Carolingian army of the time would have been unable to adequately garrison Offa's Dyke.

Luttwak (1984: 68–69), when considering the frontiers of the Roman Empire, emphasised this point in relation to all linear structures, arguing that even if it was possible to adequately garrison them, linear earthworks are unsuitable to act as fighting platforms against attacks of significant size. He asserts that a primarily defensive purpose would make their construction 'wildly irrational' due to the massive cost and effort required for inevitably inadequate results. This argument can potentially be applied to the Anglo-Saxon kingdoms to a greater degree, due to their smaller economies and different administrative systems when compared to the Roman Empire (Luttwak 1984: 68). Similarly, Davies (2007: 63) and Williams (2019: 49) also support the argument against a defensive purpose for dykes, believing that Offa's Dyke was incapable of acting as a physical barrier and was too long to be adequately garrisoned.

The question of a defensive function for Offa's Dyke relates also to more general questions of Anglo-Saxon defensive strategy. Richards (2009: 165) points out that Offa was one of several Mercian kings who may have invested in the founding of a network of fortified towns or burhs (see also Bassett 2008). In Mercia, the earliest of these settlements could date back to the late eighth century during Offa's reign. This challenges the view that works such as Offa's Dyke were built with an intended defensive function. Instead, in response to quick raids by the Powys Cymry (akin to later Viking incursions), fortified settlements might have been an increasingly effective strategy.



Notwithstanding these various arguments, almost all writers on the subject have recognised that Offa's Dyke's position and how it relates to the surrounding topography are key physical aspects providing insights into its purpose (e.g. Brooke 1963; Stenton 2001; Zaluckyj 2002; Hill and Worthington 2003; Ray and Bapty 2016). This general acceptance of the significance of the dyke's disposition derives from a rational expectation of a direct relationship between the Dyke's form and function: the legitimate expectation that the function of the Dyke must be reflected in its physical characteristics. As such, although disposition relative to the landscape is recognised as of considerable importance as a line of evidence, objective analysis of this matter remains sparse.

However, notable among studies of the dyke in its landscape is that of Murrieta-Flores and Williams (2017) who use digital terrain analysis including viewshed mapping to examine the visual connectivity between key sites in the vicinity of the Cymric monument: the Pillar of Eliseg. Those authors examine the significance of visual connectivity from various positions and in various directions allowing surveillance not just to the west but between strategic positions around the dyke, including from the west to east. This analysis is significant in that it suggests a frontier strategy more sophisticated than that envisaged by a simpler consideration of the dyke in isolation, and marks a step beyond earlier considerations of whether (for example) the disposition of the dyke might be such as to optimise views along its length rather than to the west. As such, it develops the evidence base for the proposition in Ray and Bapty's examination of the dyke as representing part of a more general frontier strategy possibly associated with a westward expansion of the Mercian hegemony (Ray and Bapty 2016: 362–364).

Notwithstanding these advances, a primary purpose of this article is to counter the specific and persistent idea that the dyke is always positioned to optimise western views, from which it is inferred that it served as a defensive structure to counter threats from Powys. Consistent with the present work, Zaluckyj (2002) points out that while much of Offa's Dyke was built on high ground, in many places there are positions of greater elevation only a short distance further into Mercian territory. She argues that if a defensive function was the primary motivation, the builders will have made sure that the Dyke controlled the highest ground to maximize its defensive effectiveness (Zaluckyj 2002: 181). However, as with other authors (such as Noble 1981: 62; Lieberman 2010: 24) who have noticed this phenomenon in the field, the assertion is either anecdotal and/or subjective, in the sense that little systematic analysis has been attempted. Consequently, different authorities reach different conclusions. For example, Hill and Worthington (2003: 120, as quoted above) asserting consistently defensively optimised positioning and Zaluckyj asserting the opposite.

The work reported here represents a small step in improving the evidential objectivity on this question. It shows that references to the dyke 'commanding' the western landscape (Stenton 2001: 212) or always following the west-facing brow of hills to ensure a clear outlook over Powys (Hill and Worthington 2003: 120) are misleading generalisations.

Offa's Dyke, rather than providing a consistently optimal outlook, in fact follows a route which frequently obscures the view of the western landscape. Furthermore, it is also shown how small route adjustments could have provided a more strategically effective outlook: evidence which challenges the credibility of a primarily defensive function.

### Other theories of purpose

If not defensive, what may have been the primary function of central Offa's Dyke? When examining strictly political theories, that is to say, boundary marking, it is important to consider the fact that early medieval borders were less clear cut than they are today. Sovereign states were not initially marked by well-defined boundaries and as a result a king's power existed as spheres of influence around certain key royal institutions (Abulafia and Berend 2002: 109). As kingdoms became more organised, their rulers started to put more emphasis on clearly separating the territories, populations and resources to which they had sovereign rights. Increasingly defined borders served to strengthen the level of control (Donnan and Wilson 1999: 15, 48), allowing greater centralisation and influence throughout a kingdom. Defined borders can therefore be seen as marking a stage in the development of the kingdoms that emerged after the fifth-century Roman abandonment of Britain.

Lieberman (2010: 24) for reasons similar to Zaluckyj (2002) claims Offa's Dyke to have been intended as a physical marker of Mercia's western boundary. Consistent with the present findings, he observed that the earthwork often appears to ignore more defensively advantageous positioning. Similarly, Bell (2012: 107) argues that while ineffective as defensive structures, linear earthworks could have been intended to act as previously negotiated boundary lines. Moore (2005: 25) also favours this theory, claiming that the Powys frontier was the territorial limit of consistently effective Mercian kingship. Jones (1976: 16), Fox (1955: 279) and Peers (2012: 138) provide geographical and historical evidence for a negotiated settlement and a political function for the dyke. This is arguably supported by both the earthwork's relatively small size and apparent indifference to the strategic opportunities of the landscape through which it traverses, both of which are reported here.

However, although central Offa's Dyke is, in profile, a relatively small structure (Figure 1), its dimensions are greater than would be necessary simply to mark a border. How might this be explained? An alternative, theory, not incompatible with a political boundary mark, is that the earthwork was built with economic functions in mind. Specifically, by acting as a barrier to the transportation of goods, Offa's Dyke could channel such movements to gates for the purpose of imposing tolls and taxes (Fox 1955: 204; Zaluckyj 2002: 186; Moore 2005: 28). By controlling access to Mercia, the earthwork would serve to facilitate secure trade and taxation for the Mercian state (Malim 2007; Hayes and Malim 2008).

It is postulated that Offa's Dyke may also have served to protect local monopolies on certain goods such as wool. The general idea of wool trade across borders is supported by contemporary textual evidence of the trading of woolen textiles well beyond a local range, including even exports to Frankish territories in mainland Europe (Banham and Faith 2014: 118). This theory is further advocated by Malim (2020: 192) who emphasises the effectiveness of early medieval dykes at impeding the movements of horses and wheeled vehicles, the result being the restriction of trade to strategically beneficial gateways.

More general work on the nature of the Anglo-Saxon economy is also relevant to economic interpretations of Offa's Dyke. Much like the rest of early medieval Europe, the greater part of the Anglo-Saxon population were peasant farmers who subsisted on their own produce, while also often having obligations to a landlord. As a result, agriculture was the dominant basis of the economy, with other industries like manufacturing playing relatively minor roles (Banham and Faith 2014: 2). Evidence suggests that Anglo-Saxon farmers were much less inclined towards extensive crop production than their Romano-British predecessors. It appears that they spent less time on arable cultivation and there is environmental evidence of a bias towards livestock husbandry and away from cereal production (Banham and Faith 2014: 141–142).

Archaeological evidence shows the range of livestock, with cattle and sheep dominating the bone record for the whole of the Anglo-Saxon period (Hamerow 2012: 156). Of these there are indications that the greatest value was put on cattle which were also seen as symbols of power and wealth (Hodges 2012: 54). This is effectively shown by the fact that the notion of theft in Anglo-Saxon law was focused primarily around cattle, and that cattle, property and wealth were related concepts in Old English (Banham and Faith 2014: 2, 86–87). The value of cattle in Anglo-Saxon society is additionally shown in clauses in the Laws of Ine, which in addition to dealing specifically with cattle theft, also address the crime of harboring stolen cattle (Attenborough 1963: 51). In this context with the gradually improving breeds and husbandry of the middle Anglo-Saxon period, the movement of stock for trade increased (Hamerow 2012: 166).

Another factor related to this increasing trade was the development of new proto-urban settlements from the seventh century onwards. This type of settlement, referred to as *wics* in medieval texts, have been described as large semi-permanent markets rather than foci of secular or church government (Hodges 2012), and it has been suggested that they lay at the centre of increasingly elaborate regional economies (Naismith 2012: 32)

In this context it is questionable why control of the movement of livestock has not received more attention as a possible function for Offa's Dyke, especially in light of the many drover's trails along which cattle were moved from the Cymric highlands to lowland markets in Anglo-Saxon territory (Banham and Faith 2014: 14; 196–198; Ray 2020: 122, but see Malim 2007). Colyer (1976) described in detail the habit of bringing cattle down from



Figure 5: An old cattle drover's trail running along the west side of central Offa's Dyke in the study area. The trail is on the left with modern wire fences on either side (Photo: David A. Humphreys)

Cymric Kingdoms into Mercia for fattening and sale. This trade involved long-established drover's tracks, many of which are still apparent in the landscape today.

Colyer (1976: 42–43). describes one of these trails running through a gap in southern Offa's Dyke near Spoad Hill, Shropshire. He further points out the existence of an agreement dated AD 926 between the West Saxon King Athelstan and the borderland Dunsætae people concerning border arrangements across the River Wye. This document, the 'Ordnance concerning the Dunsætae', refers to cattle trails on both sides of the river and establishes the existence of a legitimate cattle trading relationship across the border from at least the eighth century. Although further south than our current study area, this evidence demonstrates the significance and organisation of this trade at the time of Offa.

The use of 'ditched enclosures' to control the movement of cattle in the middle Anglo-Saxon period (Hamerow 2012: 89) also supports the view that the dyke would have provided an effective obstacle to the movement of cattle. No doubt many of the currently known old drover trails were established after construction of the dyke. Nevertheless, the fact that they deflect along the Dyke towards breaches, rather than simply passing

over it corroborates its effectiveness as a barrier to the movement of livestock. In this context, it is of interest that a track running along the west side of central Offa's Dyke at the point of the profile survey (Figure 5) is known to be an old drover's trail (Smith 2013: 107–110). The fact that this trail runs alongside the earthwork further suggests its effectiveness as a barrier to the cross-border movement of stock.

## Conclusions

The primary purpose of this article has been to question the evidentially problematic orthodoxy that central Offa's Dyke was constructed by Mercia as a military defence against Powys (Ray and Bapty 2016: 3): In particular, the aim was to challenge the generalisation exemplified by Hill and Worthington (2003: 120) that 'the chosen line always attempts to take a position where there is a clear view to the west'. To this end, topographical analysis inconsistent with such statements is reported. While the current study should be seen as only a precursor to more extensive GIS-based research, it nevertheless demonstrates the utility of such approaches anticipated by Ray and Bapty (2016).

On the basis of the field survey and topographical evidence reported here, it is argued that central Offa's Dyke was not optimised either in position or size to provide an effective barrier to aggressive incursion. This conclusion, examined in the context of the published literature, suggests that central Offa's Dyke should be interpreted primarily as an obstacle rather than a defence. As such, it would have served as an effective barrier to traders and drovers using ox carts or driving cattle to market.

The two basic functionally significant features common to most early medieval dykes are that they are in effect obstacles to movement and that they are built in border areas. For both the Anglo-Saxon kingdoms and Cymric communities, as today, borderlands do not present one challenge, but many. Multiple and complex motivations for different dykes are likely to have existed suggesting that each dyke requires separate study and interpretation. For central Offa's Dyke the evidence presented here is consistent with a primarily economic function which is in turn compatible with theories that the earthwork's route was informed by a political border situated in a frontier zone. In any event the results of the present work are inconsistent with a primarily defensive function.

## Acknowledgements

Thanks to Dr Stuart Prior, University of Bristol for valuable advice and to two anonymous reviewers for their constructive criticisms of an earlier draft. The views expressed in this article are the author's responsibility alone.

## Bibliography

- Abulafia, D. and Berend, N. 2002. *Medieval Frontiers: Concepts and Practices* Aldershot: Ashgate.
- Attenborough, F.L. 1963. *The Laws of the Earliest English Kin*. New York: Russell and Russel.
- Bassett, S. 2008. The middle and late Anglo-Saxon defences of western Mercian towns, in S. Crawford and H. Hamerow (eds) *Anglo-Saxon Studies in Archaeology and History* 15. Oxbow Books: 180–239.
- Banham, D. and Faith, R. 2014. *Anglo-Saxon Farms and Farming* Oxford: Oxford University Press.
- Belford, P. 2017. Offa's Dyke: a line in the landscape, in T. Jenkins and R. Abbiss (eds) *Fortress Salopia*. Solihull: Helion: 60–81.
- Belford, P. 2019 Hidden Earthworks: Excavation and Protection of Offa's and Wat's Dykes. *Offa's Dyke Journal* 1: 80–95.
- Bell, M. 2012. *The Archaeology of the Dykes: From the Romans to Offa's Dyke* Stroud: Amberley.
- Brooke, C. 1963. *The Saxon & Norman Kings* London: Batsford.
- Colyer, R.J. 1976. *The Welsh Cattle Drivers*. Cardiff: University of Wales Press.
- Davies, J. 2007. *A History of Wales* Harmondsworth: Penguin Books.
- Delaney, L. 2020. Digitising Offa's Dyke: Investigating Affect, Agency and Power. Conference presentation at the European Association for Archaeologists conference session: Establishing Boundaries: Linear Earthworks, Frontiers and Borderlands in Early Medieval Europe, 26 August 2020.
- Donnan, H. and Wilson, T. 1999. *Borders: Frontiers of Identity, Nation and State* Oxford: Berg.
- Dycka, M. 2016. To see and to be seen – the Antonine Wall in the context of spatial analysis. *Studia Hercynia* XX/2: 40–66.
- Fox, C. 1955. *Offa's Dyke: A Field Survey of the Western Frontier-Works of Mercia in the Seventh and Eighth Centuries A.D.* Oxford: Oxford University Press.
- Grigg, E. 2018. *Warfare, Raiding and Defence in Early Medieval Britain*. Ramsbury: Robert Hale.
- Hannon, N. 2018. *The Hidden Landscape of a Roman Frontier: A LiDAR Survey of the Antonine Wall, World Heritage Site*. Unpublished PhD dissertation, University of Canterbury, UK)
- Hamerow, H. 2012. *Rural Settlements and Society in Anglo-Saxon England*. Oxford: Oxford University Press.
- Hill, D. and Worthington, M. 2003. *Offa's Dyke*. Brimscombe: The History Press.
- Hill, D. 2000. Offa's and Wat's Dykes. *Offa's Dyke Journal* 2. 141–159.
- Hill, P. 2012. *The Anglo-Saxons at War 800–1066*. Britain: Pen & Sword.
- Hodges, R. 2012. *Dark Age Economics*. London: Bloomsbury.
- Humphreys, D.A. 2016. *A Physical Typology of British Saxon Dykes*. MPhil dissertation, University of Bristol.
- Jackson, K. 1963. *Language and History in Early Britain*. Edinburgh: Edinburgh University Press.

- Jones, J.B. 1976. *Offa's Dyke Path*. Leeds: The Countryside Commission.
- Jones, R.H. 2020. The curious incident of the structure at Bar Hill and its implications, in D.J. Breeze and W.S. Hanson (eds) *The Antonine Wall Papers in honour of Professor Lawrence Keppie*. Roman Archaeology 64. Oxford: Archaeopress: 86–95.
- Lieberman, M. 2010. *The Medieval March of Wales*. Cambridge: Cambridge University Press.
- Luttwak, E.N. 1984. *The Grand Strategy of the Roman Empire*. Baltimore: The John Hopkins University Press.
- Malim, T. 2007. The origins and design of linear earthworks in the Welsh Marches, *Landscape Enquires, Proceedings of the Clifton Antiquarian Club* 8: 13–32
- Malim, T. 2020. Grim's Ditch, Wansdyke, and the ancient highways of England: linear monuments and political control. *Offa's Dyke Journal* 2: 160–199.
- Malim, T. and Hayes, L. 2008. The date and nature of Wat's Dyke: a reassessment in the light of recent investigations at Gobowen, Shropshire, in S. Crawford and H. Hamerow (eds) *Anglo-Saxon Studies in Archaeology and History* 15. Oxford: Oxbow: 147–79.
- Moore, D. 2005. *The Welsh Wars of Independence*. Brimscombe: Tempus.
- Murphy, K.M, Gittings, B, and Crow, J. 2018. Visibility analysis of the Roman communication network in southern Scotland. *Journal of Archaeological Science* 17: 111–124.
- Murrieta-Flores, P., and Williams, H. (2017). Placing the Pillar of Eliseg: movement, visibility and memory in the early medieval landscape. *Medieval Archaeology* 61(1): 69–103. DOI: 10.1080/00766097.2017.1295926
- Naismith, R. 2012. *Money and Power in Anglo-Saxon England*. Cambridge: Cambridge University Press.
- Noble, F. 1981. *Offa's Dyke Path*. Powys: Offa's Dyke Association. Knighton, Powys.
- Ray, K. 2020. The discomfort of frontiers: public archaeology and the politics of Offa's Dyke. an interview with Keith Ray, in K. Gleave, H. Williams and P. Clarke (eds) *Public Archaeologies of Frontiers and Borderlands*. Oxford: Archaeopress: 117–147.
- Ray, K. and Bapty, I. 2016. *Offa's Dyke: Landscape and Hegemony in Eighth-Century Britain*. Oxford: Windgather Press.
- Richards, J.D. 2009. The Scandinavian presence, in J. Hunter and I. Ralston (eds) *The Archaeology of Britain*. London: Routledge: 265–283.
- Smith, W. 2013. *The Drover's Roads of the Middle Marches*. Herefordshire: Logaston Press.
- Squatriti, P. 2002. Digging ditches in Early Medieval Europe, *Past and Present* 175: 11–65.
- Stenton, F. 2001. *Anglo-Saxon England*. Oxford: Clarendon Press.
- Thackray, D.W.R. 1980. The Defensive Linear Earthworks of East Anglia with Particular Reference to Anglo-Saxon Settlement. Cambridge: University of Cambridge, Unpublished PhD.
- Williams, J. 1860 (ed. and trans.). *The Chronicles of the Princes of Wales*. Cambridge: Cambridge University Press.

Williams, A. 2019. Offa's Dyke: 'the stuff that dreams are made of'. *Offa's Dyke Journal* 1: 132–157.

Williams-Freeman J.P. 1915. *An Introduction to Field Archaeology as Illustrated by Hampshire*. London: Macmillan.

Zaluckyj, S. 2002. *Mercia, the Anglo-Saxon Kingdom of Central England*. Hereford: Logaston Press.

---

David A. Humphreys, Museum of London Archaeology (MOLA).

Email: davidhumphreys218@yahoo.co.uk