

Institution: University of Sheffield		
Unit of Assessment: C-15 Archaeology		
Title of case study: Transformed national understanding of science and archaeology in Wales in the Welsh language		
Period when the underpinning research was undertaken: 2012–2017		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Katie Hemer	Senior Lecturer in Bioarchaeology	2012–present
Period when the claimed impact occurred: August 2013–2020		
Is this case study continued from a case study submitted in 2014? N		
<p>1. Summary of the impact (indicative maximum 100 words)</p> <p>The novel insight generated by Hemer’s osteological research into early medieval Wales and her commitment to communicating this knowledge has enabled the promotion of the study of scientific subjects in the Welsh-language. She has generated research stories suited for dissemination via TV, public events, and through online learning media. By contributing to the S4C series Corff Cymru and its online spin-offs, (the first of its type for S4C), Hemer’s research has been used to close the gap in Welsh-language science programming identified by the Science Advisory Council. She has become the public face of this programming whilst also promoting and encouraging citizen involvement and interest in the archaeology of Wales.</p>		
<p>2. Underpinning research (indicative maximum 500 words)</p> <p>The period of history following the end of Roman rule in Britain is often referred to as the ‘Dark Ages’. However, if we look to the archaeological record, it becomes apparent that such a term is a misnomer, for we are presented with a wealth of evidence reflecting the everyday lives of those early medieval communities including the clothes they wore, the food they ate, the settlements they inhabited, and how they dealt with life and death. Central to our understanding of this period has been the excavation of Anglo-Saxon cemetery sites from England. However, the contemporaneous burial record from Wales, and the scientific analysis of those excavated cemetery populations have long seemed to offer much potential to archaeologists but have been overlooked by researchers. The presence of ordinary burials, and those of women and children, as well as men, adds to the record provided by more richly furnished burials like those found in England. Hemer recognised and embraced the potential for research into early medieval Welsh cemetery populations, including at St Patrick’s Chapel in Pembrokeshire (R1). This work provided a unique opportunity to both add to the archaeological record and engage public audiences with a previously neglected area of Welsh archaeology. Hemer’s osteological, biomolecular, and funerary archaeological research in Wales, conducted at the University of Sheffield and supported by a British Academy Postdoctoral Fellowship (R2), has not only shed light on the health status and dietary practices of those ‘Dark Age’ populations (R3), it has also provided evidence for a significant breakthrough in our understanding of long-distance migration to Western Britain, in particular, Wales. Using the study of skeletal remains, Hemer has shown this practice was not, as previously thought, restricted only to Anglo-Saxon England (R4), and that the movement of people may have been facilitated by the on-going trade of luxury items</p>		

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imported through a network of interconnectivity between east and west. That people moved alongside the transportation of such material has been woefully overlooked until now. Hemer's research also challenges an androcentric model of past population mobility by identifying the extent to which women and children migrated into Western Britain during the post-Roman period (R5). Her research exploits novel isotope-based approaches for gathering evidence of transhumance and successive phases of relocation and residence (R6). This helps to explain the key role of child migrants in medieval economies, religious practice, the construction of identity, and pan-familial social structures (R5), but not at the expense of advocating for the importance of childhood narratives in the study of Welsh identity in the past. Hemer's research has situated 'the child' in Wales within a growing discourse around early medieval childhood more broadly (R5).

3. References to the research (indicative maximum of six references)

- R1.** Shiner, M., **Hemer, K.A.** and Commeau, R. (2019). 'The St Patrick's Chapel Excavation Project: Public Engagement with the Rescue Excavation of an Early Medieval Cemetery in South West Wales' in Williams, H., Wills-Eve, B., & Osborne, J. (eds). *The Public Archaeology of Death*. Equinox Publishing, Sheffield. Available from HEI by request.
- R2.** **Hemer, K.A.** (2012-15). British Academy Postdoctoral Fellowship "East meets West: Mobility and cultural contact between the Mediterranean and western Britain in the early medieval period, c.400 – 800 A.D".
- R3.** **Hemer, K. A.**, Lamb, A. L., Chenery, C. A., & Evans, J. A. (2017). A multi-isotope investigation of diet and subsistence amongst island and mainland populations from early medieval western Britain. *American Journal of Physical Anthropology*, 162(3), 423–440. <https://doi.org/10.1002/ajpa.23127>
- R4.** **Hemer, K. A.**, Evans, J. A., Chenery, C. A., & Lamb, A. L. (2013). Evidence of early medieval trade and migration between Wales and the Mediterranean Sea region. *Journal of Archaeological Science*, 40(5), 2352–2359. <https://doi.org/10.1016/j.jas.2013.01.014>
- R5.** **Hadley, D.M.** and **Hemer, K.A.** (eds.). (2014). *Medieval Childhood: archaeological approaches*. SSCIP Monograph 3. Oxford, Oxbow, which includes **Hemer, K.A.** (2014). 'Are we nearly there yet? Children and migration in early medieval western Britain', in Hadley, D.M. and Hemer, K. A. (eds.). *Medieval Childhood: archaeological approaches*. SSCIP Monograph 3. Oxford, Oxbow, pp. 131-144. ISBN: 9781782976981. Available from HEI by request.
- R6.** **Hemer, K.A.** and Evans, J.A. (2018). 'The contribution of stable isotope analysis to the study of childhood movement and migration', in Crawford, S., Hadley, D.M., and Shepard, G. (eds.) *The Oxford Handbook of the Archaeology of Childhood*. Oxford University Press Handbook. <https://doi.org/10.1093/oxfordhb/9780199670697.013.27>

4. Details of the impact (indicative maximum 750 words)

Science TV programming in Welsh

Hemer's unique approach to the archaeology of Wales garnered the attention of Welsh language TV producers, Boom Cymru, who were looking for content for a new science-themed series (Corff Cymru). This was the first series of its type for broadcast on the Welsh-language

channel S4C and a direct response to concern from the Science Advisory Council that although world-class research was being conducted in Wales, there was little broadcast on the subject (S1). The lack of resources for science in Welsh and difficulty recruiting science teachers to Welsh-medium schools has also been documented by Estyn, the government inspectorate for education and training in Wales, indicating that this programming could be used to raise awareness of the quality of research in and about Wales and address a significant resources gap (S1). Hemer's speciality in bioarchaeology made her an obvious choice for the producers, who were seeking to address an identified opportunity in S4C's cultural mission. These were:

- to deliver factual programming
- bring novel and relevant science based historical research to a broad demographic of the Welsh-speaking audience,
- support independent Welsh TV productions
- contribute to internationally significant activities to increase and improve Welsh language use, and Wales' position in the world (S2).

Through her insights into the study of the human skeleton and the analysis of historic populations from Wales (R4, R5) Hemer provided Boom Cymru with both the overarching story for the production, Corff Cymru, as well as detail for individual episodes. Research utilising historical and archaeological evidence on the biology of the human body enabled Boom Cymru to focus on themes such as how the body works, and the genetic ancestry of the modern Welsh population. As an authoritative, young, female, Welsh-speaking scientist, she was also offered the role as presenter. This combination enabled the producers to enrich Welsh cultural identity while promoting engagement with science in the Welsh language, and responded to the concerns of the Science Advisory Council and the mission of S4C.

Series 1 (2013) and 3 (2016) focussed on Hemer's research. Series 1 'The Organs', featured her work on early medieval skeletal remains from Wales, osteological and migratory stable isotope analysis from Llandough in South Glamorgan and work on the Viking Age burials from Llanbedrgoch on Anglesey (R4). Series 3 'The Body Through the Lifecycle' was built around her research into child skeletons to explore the development of the non-adult skeleton and the degeneration of the adult skeleton.

Corff Cymru reached more than 210,000 Welsh-speaking viewers across the UK (151,000 in Wales, the remainder in the rest of the UK) and rated consistently at 80% for viewer appreciation (S3). Viewing figures equate to approximately 25% of the Welsh speaking audience and are comparable to key Welsh cultural events such as the National Eisteddfod, (S3) eight days of competitions and performances, considered the largest music and poetry festival in Europe. Positive feedback provided by the public (S4), contributors and the Factual Commissioner (S4C) resulted in Boom Cymru submitting the series for a 2013 BAFTA Wales Breakthrough Award. Nominations are bestowed to emerging professionals who have contributed to well produced work of significant impact (S5). In addition, Corff Cymru was a significant financial success for Boom Cymru who reported an increase in revenue between 2013-14 and recommissioned the show for two additional series and a one-off special (S2). All three series continue to be made available for Welsh viewers, via scheduled broadcasts and the Clic Catchup service, reaching audiences of 58,000 for repeat programming and 15,000 for S4C's service for Welsh language learners Dal Ati (S2, S3).

Community education and social care in Wales

As well as ending a lengthy absence of Welsh-language science programming (S1), the series has been used to support Welsh-language teaching on scientific terminology by Dal Ati. The bilingual organisation Social Care Wales' Dementia Hub also uses a production edit to teach carers how activities incorporating art can enrich the lives of people living with dementia (S6). This goes beyond the original vision for the series, and makes it available to a demographic of viewers who did not previously access this material (S6).

In addition to Corff Cymru, Rondo Media commissioned an episode of Cynefin on Hemer's work with Dyfed Archaeological Trust on St Patrick's Chapel in Pembrokeshire. This long-standing relationship between researcher and Trust (which includes her appointment as a Trustee) has sought to fulfil their mission of advancing the education of the Welsh public in archaeology, and the commissioned programme is the latest collaboration which fulfils this aim (R1). Past projects have included exhibitions (e.g. about St Patrick's Chapel in St David's Cathedral, 2015) and public outreach (e.g. guided tours) around live archaeological excavations (R1). Bilingual outreach, led and facilitated by Hemer, as part of the St Patrick's Chapel project owed its success to being embedded within the local community (many St David's residents joined the excavation as volunteers) and "stimulating 'grassroots' community interest in local history" (S7). The producer of Cynefin said that Hemer's expertise in the excavation of St Patrick's Chapel was "*invaluable to me as the program producer in researching and preparing the item*", and that her "*willingness to contribute on camera to talk about her work as an archaeologist and the research she has undertaken excavating in the chapel greatly enriches the item*" (S8).

The research environment for archaeology in Wales

Hemer's research reputation and expertise on Welsh archaeology in particular led to her co-authoring the 2017 Research Framework for the Archaeology of Early Medieval Wales (S9). This publication sets the national agenda for future archaeological research in Wales, in both academic and commercial contexts. Through the Research Framework, Hemer's knowledge of the early medieval funerary landscape of Wales and her expertise in the scientific study of Welsh skeletal populations (R3-R5) has informed the direction of research undertaken on cemetery sites/populations in Wales, identified aspects of the funerary record which require further research, and argued for the need to incorporate the excavation of Welsh sites and associated post-excavation analyses into larger, funded research projects. As such, it is considered to be the go-to document for those engaged in archaeology in Wales (including academics, commercial companies and the public alike), and is published on the Research Framework for the Archaeology of Wales website. Since publication, the Framework has been cited c.170 times in books, academic journals, and commercial reports (S10).

5. Sources to corroborate the impact (indicative maximum of 10 references)

- S1.** Corroboration from a Member of the Science Advisory Council, email correspondence and weblink. Estyn report, 2017 (<https://www.estyn.gov.wales/node/13730>).
- S2.** S4C: statement on factual programming in the Welsh language, statement from Producer, Boomerang Corff Cymru, statement from S4C Annual Report 2013-2014 (page 25) and Corff Cymru financial information 2013-2016.

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- S3.** Emails from Viewer's Hotline Officers, on behalf of S4C and Dal Ati. Viewing Figures provided by S4C via email. Welsh speaking population numbers.
- S4.** Positive viewer feedback about Corff Cymru. Twitter feed; examples and weblinks.
- S5.** BAFTA Award nomination criteria for Breakthrough award.
- S6.** Statement made by Social Care Wales confirming the use of Corff Cymru in training carers.
- S7.** Feedback from a member of the public volunteering on the excavation at St Patrick's Chapel, Pembrokeshire.
- S8.** Confirmation of Hemer's contribution to radio programme from the Producer, Rondo Media.
- S9.** Research Framework for The Archaeology of Early Medieval Wales C. A.D. 400–1070 (Edwards, N., Davies, T., and Hemer, K.A. 2017). IFA Wales/Cymru.
<https://archaeoleg.org.uk/documents2016.html>
<https://archaeoleg.org.uk/pdf/refresh2016/earlymedrefresh2016.pdf>
- S10.** Policy Document "Research Framework for the Archaeology of Early Medieval Wales", examples of academic journal, book citations and Google Scholar references.