

Institution: University of Sheffield
Unit of Assessment: 17A - Geography, Environmental Studies and Archaeology: Archaeology
Title of case study: Cultural, economic and political impacts resulting from the discovery of Ice Age Cave Art at Creswell Crags
<p>1. Summary of the impact</p> <p>Following their discovery of <i>in situ</i> Ice Age cave art at Creswell Crags, on the Nottinghamshire/ Derbyshire border, the Sheffield team led by Dr Paul Pettitt initiated a multi-faceted programme to increase academic, public and media awareness of the site. This has led to increased visitor numbers to the site (providing economic benefits and increasing public awareness and understanding of Ice Age Britain), leading to the viability and construction of a new visitor centre and other site developments, and ultimately to the site gaining World Heritage Foundation status.</p>
<p>2. Underpinning research</p> <p>Creswell Crags is a Scheduled Ancient Monument and Site of Special Scientific Interest and is recognised internationally for the wealth of Palaeolithic archaeology and Pleistocene palaeoenvironmental evidence preserved in the sediment fills of a series of caves and fissures. In 2003 a team of researchers led by Dr Paul Pettitt (University of Sheffield, 2003-12) discovered engravings on the walls of three of the caves at Creswell Crags, and subsequent research demonstrated that these artworks dated to the last Ice Age approximately 14,000 years ago. The engravings are the only known <i>in situ</i> art from this time period in Britain.</p> <p>Discoveries made at Creswell Crags over the last 140 years inform our understanding of palaeoenvironments and human behaviour during the last Ice Age. In 2003 Pettitt initiated the investigation of the art at Creswell based on previous research which had identified human occupation at the site. Leading a team that included Sergio Ripoll (Universidad Nacional de Educación a Distancia, Madrid) and Paul Bahn (independent researcher), Pettitt discovered figurative and abstract engraved marks on the walls of Church Hole cave at Creswell. These sensational discoveries of Britain's only examples of Ice Age cave art prompted a programme of further research into the palaeolithic archaeology of Creswell Crags by Sheffield, led by Pettitt, and Chamberlain (a Trustee at Creswell Heritage Trust), that is ongoing (Kuykendall).</p> <p>Before the discoveries of engravings on the cave walls at Creswell Crags there were only two isolated instances known from Britain of Palaeolithic figurative art in the form of bone figures. The research conducted by Pettitt and colleagues in the Creswell caves has documented twelve decorated and engraved panels with 16 figures in Church Hole, together with additional individual figures located in Robin Hood Cave and Mother Grundy's Parlour. The designs depicted exhibit close similarities to art found in caves in Western and Central Europe, demonstrating direct links between the late Upper Palaeolithic cultures in Britain and their counterparts amongst the Late Magdalenian cultures that reoccupied the Northern European Plain approximately 25,000 years ago. The research led by Pettitt has enormously enhanced the importance of Creswell Crags as a site that not only documents the subsistence strategies of the Late Magdalenian hunters but also provides evidence of their beliefs and ritual practices.</p> <p>To fully investigate and analyse the cave art and to extend and enhance the findings, excavations were undertaken by Pettitt, and collaborations initiated with Roger Jacobi (Palaeolithic specialist, British Museum, deceased) and Michel Lorblanchet (CNRS, France) to provide a comparison to European cave art and for authentication and international recognition of this important find. Continued research included further exploration of the caves for other examples of cave art, excavations at Church Hole and the dating of the finds recovered which was supported by grants to Pettitt of over £130K. This also funded the 2004 conference <i>Creswell Art in European Context</i> and publication of the conference by Oxford University Press. The discovery of the cave art and the results of the follow-up research were published in leading international academic journals [R2,R4, R5,R6] as well as in academic books [R1,R3] and in popular and local archaeological journals.</p>
<p>3. References to the research</p> <p>R1. Bahn, P. & Pettitt, P. (eds) 2009. <i>Britain's Oldest Art. The Ice Age Cave Art of Creswell Crags</i>. Swindon: English Heritage.</p> <p>R2. Bahn, P., Pettitt, P. & Ripoll, S. 2003. Discovery of Palaeolithic cave art in Britain. <i>Antiquity</i> 77: 227-231.</p>

Impact case study (REF3b)

- R3. **Pettitt, P.**, Bahn, P. & Ripoll, S. (eds) 2007. *Palaeolithic Cave Art at Creswell Crags in European Context*. Oxford: Oxford University Press.
- R4. **Pettitt, P.** and Pike, A. 2007. Dating European Palaeolithic cave art: progress, prospects, problems. *Journal of Archaeological Method and Theory* 14: 27-47. doi: [10.1007/s10816-007-9026-4](https://doi.org/10.1007/s10816-007-9026-4)
- R5. Pike, A.W.G., Gilmour, M., **Pettitt, P.**, Jacobi, R., Ripoll, S., Bahn, P., and Muñoz, F. 2005. Verification of the age of the Palaeolithic cave art at Creswell Crags, UK. *Journal of Archaeological Science* 32(11): 1649-1655. doi: [10.1016/j.jas.2005.05.002](https://doi.org/10.1016/j.jas.2005.05.002)
- R6. Ripoll, S. Muñoz, F., Bahn, P. and **Pettitt, P.** 2004. Palaeolithic cave engravings at Creswell Crags, England. *Proceedings of the Prehistoric Society* 70: 93-105.

Evidence for Research Quality: *Antiquity* is an international peer-reviewed academic journal that has an impact factor of 1.43 (one of the highest citation ratings for a journal that publishes primarily humanities research). *Journal of Archaeological Science*, with an impact factor of 1.89, is the premier international peer-reviewed journal for science-based archaeology. *Journal of Archaeological Method and Theory* is an international journal with a 2-year impact factor of 1.79. *Proceedings of the Prehistoric Society* is a distinguished peer-reviewed journal with international readership and serves as the preferred medium of publication for many of the most important archaeological discoveries in Britain. Paul Pettitt obtained grants from Leverhulme (£112K), BA (£10K), and NERC (analysis) to undertake further field research and analysis on cave art.

4. Details of the impact

The original discovery of the cave art and subsequent dissemination and use of the findings was a product of the symbiotic link between the University of Sheffield and Creswell and close collaboration between the two units. The University of Sheffield has maintained a close and continuous involvement with archaeological research at Creswell Crags since 1976. In 1990, it was one of the founders of the Creswell Heritage Trust (CHT), the charitable organisation that manages and interprets the natural and cultural heritage of Creswell Crags and its caves. The University nominates a representative member to the Council of Management of the Trust and provides archaeological advice to the officers of the Trust. Several past and present staff of the Heritage Trust, including the Director, were trained at the University of Sheffield and they continue to maintain close links with the University, and since 2008, 3 students have been tour guides [S1].

Raising awareness of Creswell Crags and improving public understanding

The cave art discoveries in 2003 proved to be a turning point for Creswell Crags. The initial far-reaching media coverage generated by the discoveries has been built upon by deliberate efforts by Pettitt and Chamberlain to disseminate their research locally, regionally and internationally, to raise public understanding of Ice Age Britain and cave art, to involve the local community in their local historic environment, and to support the CHT in turning Creswell into one of the UK's leading prehistoric archaeological attractions. Pettitt built upon his research by writing a popular book *Britain's Oldest Art: the Ice Age Cave Art of Creswell Crags* (2009, English Heritage) which aimed to present the cave art in its national and international context to a general readership. The book has sold over 1500 copies and was shortlisted for the best Archaeology book in the British Archaeological Awards 2010 [S2]. Following its coverage in international journals the research was published in regional archaeological journals, such as *Transactions of the Thoroton Society of Nottinghamshire*, disseminating the results to a local and more diverse audience. The project still continues to raise interest in the press and popular magazines such as National Geographic (28 Oct 2010, readership of >9 million and translated into 36 languages) [S3], Minerva (front cover Jan/Feb 2010, circulation 10,000) and BBC History magazine (Aug 2009, readership 69,000 in 2010, also featuring in their online magazine www.historyextra.com). The opening of the visitor centre featured in the Daily Telegraph on 8 Sept 2009 (readership 790,000) and in Current Archaeology Nov/Dec 2009 (circulation 17,000).

A wide-ranging programme of public engagement activities was implemented to ensure that local, regional and national communities have been kept fully informed and engaged with the importance of the cave art finds within their context. For example, Pettitt and Chamberlain gave invited lectures, based on their research of the recent discoveries, to general audiences at meetings of regional archaeological societies (e.g. Plymouth and District Archaeological Society, Oct 2010, (86 attendees), a workshop and tour of the excavations and art with the Yorkshire Archaeology Society on July 2012 (17 members plus guests) and a day funded by HLF Ice Age

Journeys at the Craggs (22 attendees). They also contributed to national and local events such as the ICOMOS summer event at Creswell Craggs Trust (June 2013, 25 participants), the annual CBA Festival of Archaeology 2009 (250 delegates, featured in Culture24's Top Picks), a CBA members' weekend trip to Derbyshire and Creswell (14 Sept 2012, 68 visitors) and a series of 'Family Learning Ice Age Camps', funded by Derbyshire County Council and CHT were organised on four days through the summer 2013 (free of charge) [S4]. During 2009, University of Sheffield archaeology students gave public tours of the Craggs and their archaeology, produced and sold booklets and created posters for the general public, thereby increasing public knowledge of the site and finds, and improving public understanding of Ice Age Britain.

In addition to an increasing number of school groups, in the last two years, student groups from Bochum, Mainz and several UK universities have been guided around the Craggs by the Sheffield team. In 2012, Creswell Craggs were runners up in the Big Draw Award Ceremony at the Courtauld Institute of Art, London [S1]. Their entry 'The Big Cave Draw', was organised at Creswell and led by artist, Georgina Bell, who encouraged children to produce their own Ice-Age art inspired by the cave paintings, using primitive technology, engaging children by participating in early history.

The Creswell cave art has had a significantly diverse popular appeal. A succession of recent popular radio and television programmes have incorporated the art into their content, including *The Drawings on the Wall*, presented by George Nash (BBC Radio 4, 3 February 2008 – quarterly R4 listeners 9.5M), *Arturart*, presented by Arthur Smith (BBC Radio 4, 7 April 2009, quarterly R4 listeners 9.9M), *Digging for Britain* (Alice Roberts, BBC TV, 26th August 2010 (online 16 September 2010), 2.34M viewers - rated 6th for BBC2 for that week) and *A History of Ancient Britain*, presented by Neil Oliver (BBC 2 TV, February 2011, 3.2M viewers - barb.co.uk) [S5]. It has even been featured in walkers' and ramblers' pages, e.g. in the Guardian 'Travel/go walk - Nottingham's cave art' web page (Guardian web site has ~3 million hits per day).

Building a new museum and visitor centre

The large increase in visitor numbers due to the Ice Age discoveries and subsequent efforts to raise media and public interest, led to a state-of-the-art new museum and visitor centre being built during 2009, funded by £4.2M Heritage Lottery funding. Chamberlain (as Trustee) was a key advisor on the application to the Heritage Lottery Fund and the ice age discoveries by Pettitt, in particular the rock art, feature strongly in the application. The visitor centre uses the research findings of Pettitt and Chamberlain to provide exciting exhibitions and permanent educational displays that use archaeological finds from the site to tell the story of Ice Age Britain. It has also hosted exhibitions with other educators such as the British Museum, Natural History Museum, Manchester Museum, and others. The British Museum has worked with the Creswell Craggs team to facilitate the building of the new museum and to effect long term loans of British Museum material [S6]. One broader impact of the museum is that it will assist with the wider regeneration of North East Derbyshire and North Nottinghamshire. Since its opening in 2009 total visitor numbers to the new centre have exceeded 200,000 [S1].

To further facilitate visitor viewing of the cave art in 2010, CHT (with Chamberlain on the CHT board involved in planning and infrastructure enhancements) obtained £93,000 of grant aid from a consortium of local development agencies and environmental funds to install a permanent walkway to the visitor centre, and a viewing platform that enhances the visitor experience when viewing the cave art in Church Hole. This investment in new infrastructure led to a £38,000 grant in 2011 from Nottinghamshire County council matched by £38,000 from Derbyshire Council, to run the visitor centre and education programme [S7]. The education programme and new and extended facilities, including exhibition spaces, has enhanced the viewer experience and allowed more of the story of the cave, the art and the background to the discoveries to be displayed, enhancing cultural understanding of the finds.

Economic impact of increased visitor numbers

Our discovery of, and subsequent research on, the rock art has been of direct financial benefit to the Trust, allowing longer opening hours and a dedicated team of educators to be employed. Since the discovery of the rock art, and publication of the findings by Pettitt, CHT have organised regular dedicated Rock Art tours to show off the discoveries and subsequent research findings from Pettitt's excavations. So while total visitor numbers slightly decreased in 2009-10 due to the recession, the number of rock art tours has increased with 9,000 undertaken between 2008 and 2013, generating a total income £54,610 for the Trust, with >£15,000 in the financial year 2011-

2012. The director of Creswell, attributes this to '*the increased interest in the cave as a result of Paul Pettitt's research and excavation at Church Hole and the involvement of the excavation team in the public programmes*' [S1].

Other business and government sectors that have benefited in terms of economic growth or cultural development from the cave art discoveries include the local private sector (shops and cafes) and local authority tourism organisations through increased tourism in the area. Using visitor figures and surveys and economic data provided by the Bolsover District Council for the local district, CHT has calculated that the total economic impact for the year 2012-13 in terms of total spending was in excess of £750,000, which included local, day and overnight visitors who stayed in the local area [S1, S7]. This is in addition to the national-level income generated by the sale of TV and radio broadcasts to other networks, and papers by media organisations. The research has also had a far-reaching impact beyond the heritage sector – for example, it featured in the Royal Society *Many Hands* festival and exhibition Nov 2011-Jan 2012 with 18,000 visitors [S8].

Supporting CHT to gain World Heritage Status for the site

Following the cave art discoveries Pettitt and Chamberlain were invited to formulate a site Research Strategy and co-authored this document. Due to their ongoing research at Creswell, in 2010, they also collaborated with CHT in the preparation of an application for World Heritage Status. Both Pettitt and Chamberlain, as members of the World Heritage Steering group advised the Department of Culture, Media and Sport (DCMS) on the Technical Evaluation, in particular advising about the value of the site and the contribution the resource makes towards outstanding universal value. The application was approved in March 2011 and Creswell is now a Tentative World Heritage Site. Having the vision to become a World Heritage Site has had a major impact on the investment in developing the site, particularly physical infrastructure improvements (sewage works relocation, road diversion, centre development, enhanced visitor access and interpretation). The WHS strategy has resulted in £17 million investment to date. These investments and the income raised (above) have a greater significance as the Bolsover area, in which Creswell falls, is in the 'top' 18% of English local authority areas in the 2010 English Index of Multiple Deprivation. Other impacts include increased community pride and identity with local heritage. The aspiration to become a WHS has increased visitor numbers indirectly through the improvements detailed above.

The impact of the research on Archaeological policy and operating guidance

The site was pivotal to the development of the English Heritage commissioned Palaeolithic Research Framework; Pettitt, P., Gamble, C. and Last, J. (eds.) 2008. *Research and Conservation Framework for the British Palaeolithic*. London: English Heritage & The Prehistoric Society. This document sets out the key operating practice which identifies areas of strategic research and conservation that should be taken forward in the coming years. The recommendations laid out in this document will inform future planning and research practices in relation to all Palaeolithic sites and is used widely in the profession.

Summary

Overall, these benefits are global in their reach – tentative World Heritage Status is recognised internationally – as well as being significant at the local, regional and national level. The economic benefits are measurable and substantial at the local and regional level, and the contribution of the cave art to education and public understanding is demonstrable through its prominence in nationally broadcast programmes.

5. Sources to corroborate the impact

- S1. The Director, Creswell Heritage Trust, to corroborate visitor numbers, impact of ice age art, contribution of Pettitt and Chamberlain to funding/WHS status, and economic impact
- S2. English Heritage, publications department for numbers of books published.
- S3. http://news.nationalgeographic.co.uk/news/2004/08/0818_040818_ice_age_caveart.html
- S4. Plymouth and District Archaeology Society can confirm attendance at event.
- S5. BBC (for listening/viewing figures) barb.co.uk and readership of BBC magazines
- S6. British Museum can confirm use of Sheffield research in displays and co-exhibitions with Creswell.
- S7. Derbyshire or Nottinghamshire County Councils for confirmation of investment/tourism.
- S8. <http://royalsociety.org/events/2011/many-hands/> for exhibition information.