

Institution: Bournemouth University		
Unit of Assessment: 15		
Title of case study: Reframing Stonehenge: improving the visitor experience and mental wellbeing, bringing economic benefit to the heritage sector, and preserving the landscape		
Period when the underpinning research was undertaken: 2001-2020		
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:
Professor Timothy Darvill Dr Vanessa Heaslip	Professor of Archaeology Associate Professor of Nursing	1991 – current 2002 – current
Professor Kate Welham	Professor of Archaeological Sciences	2001 – current
Period when the claimed impact occurred: 2013-31 December 2020		
Is this case study continued from a case study submitted in 2014? No		
<p>1. Summary of the impact (indicative maximum 100 words) Research by Bournemouth University (BU) to revolutionise understandings of Stonehenge and its environs has resulted in:</p> <ul style="list-style-type: none"> • new interpretations that underpin the creation of engaging presentations in the new visitor centre, which achieved record attendance figures of 1,346,177 people in its first year, and increased amount of time spent by visitors at the site; • economic benefit to English Heritage, which relies on Stonehenge to support more than 400 other sites; • heritage management organisations using BU's insights to inform discussions on the siting of the proposed A303 tunnel to best preserve the wider archaeological landscape; • an innovative project that used unique access to the site to improve mental wellbeing, with more than 79% of participants reporting a positive response. 		
<p>2. Underpinning research (indicative maximum 500 words) Stonehenge is the world's best known, most intensively studied prehistoric monument, richly deserving of its World Heritage Site (WHS) status. However, at the beginning of the 21st century, academic understanding of the site was fraught with problems and gaps, whilst its presentation to the public lagged far behind the insights emerging from academic research. Over the last 20 years, BU has conducted world-leading research to improve this situation through a sustained relationship with the Stonehenge WHS. Five interconnected projects underpin this case study:</p> <ol style="list-style-type: none"> a. Stonehenge WHS Archaeological Research Framework (SRF) (Darvill) b. Strumble-Preseli Ancient Communities and Environment Study (SPACES) (British Academy, 2010) (Darvill) c. Stonehenge Riverside Project (SRP) (AHRC funded GBP498,241, 2006–10) (Welham, co-director, with PI, Parker Pearson, UCL) d. Stones of Stonehenge Project (SoS), 2010-current, (Welham, co-director, with PI, Parker Pearson, UCL). e. Human Henge, 2016–19, Heritage Lottery Fund, (Darvill, Heaslip in partnership with The Restoration Trust). <p>The SRF [R1] has guided research in the Stonehenge landscape since its publication in 2005. Despite repeated investigations throughout the 20th century, key relationships between different parts of the monument remained unclear. Permission to excavate inside the circle is seldom granted, and thus new investigations conducted by Darvill and Geoffrey Wainwright (President, Society of Antiquaries of London) [R2] in response to the framework agenda presented a crucial opportunity to improve understanding of the sequence of construction.</p> <p>Stonehenge can only be fully understood in its wider context – and the SRP looked beyond the stone circle to investigate the surrounding monumental landscape. This work filled important gaps regarding the existence of a processional route through this 'landscape of the dead',</p>		

including the landmark discovery of previously unknown monuments, such as the 'Bluestonehenge' stone circle, approximately 1.6km from Stonehenge [R3].

People have often been conspicuous by their absence from the Stonehenge narrative. The recognition of settlement activity and discovery of Neolithic houses at Durrington, contemporary with the Stonehenge sarsens, has provided compelling new insights regarding those who built the monument and given renewed prominence to people in the presentation of the Stonehenge story [R3]. Welham's contribution focused on mapping, recording and geophysical surveys - components fundamental to the project.

The SPACES and SoS projects operated on an even wider scale, by locating and contextualising the primary source of Stonehenge's famous bluestones [R4, R5]. They revealed that stone quarrying at Carn Menyn, Carn Goedog and Craig Rhos-y-felin, South Wales had been carried out for thousands of years by the time the bluestones were quarried. The discovery of their source provided new insights into their significance to the people who built Stonehenge. Darvill's SPACES project also suggested the stones may originally have been associated with the perceived healing power of local waters [R5], and were brought to Stonehenge for that reason, drawing prehistoric visitors to the site throughout the monument's use.

Darvill and Heaslip combined the 'Healing Hypothesis' with further research into the wider role of therapeutic places in the past [R5] in the Human Henge (HH) project, which examined whether a creative exploration of historic landscape could achieve measurable, sustained positive health and wellbeing outcomes for people with mental health conditions. Heaslip, a specialist health professional, assessed the results, using internationally recognised metrics – the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS). In 2019 HH was nominated for a prestigious Shanghai Archaeology Forum Prize.

The integrated approach to the monument as a component of the wider ritual landscape, coupled with Bayesian approaches to radiocarbon dating, has enabled the delineation of a new chronology for the sequence of human activity at Stonehenge. The old three-phase model has now been replaced with a five-phase model of much greater detail and reliability than was previously possible [R6]. This work is critical, as: *'It is from this firm platform that Stonehenge can begin its new era of communication with the public at large'* [R6, editor].

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

All the research papers below were subject to peer-review.

R1: Darvill, T. (2005), *Stonehenge World Heritage Site. An archaeological research framework*. Bournemouth and London: Bournemouth University & English Heritage.

<http://eprints.bournemouth.ac.uk/9689/>

R2: Darvill, T. and Wainwright, G. (2009), "Stonehenge Excavations 2008," *Archaeological Journal* 89: pp1-19. <https://doi.org/10.1017/S000358150900002X>

R3: Parker Pearson, M., Pollard, J., Richards, C., Thomas, J., Tilley, C. and Welham, K. (2020), *Stonehenge for the Ancestors: Part 1*. Leiden: Sidestone Press.

<https://www.sidestone.com/books/stonehenge-for-the-ancestors-part-1> (Copy available.)

R4: Parker Pearson, M., Pollard, J., Richards, C., Welham, K., Casswell, C., French, C., Schlee, D., Shaw, D., Simmons, E., Stanford, A., Bevins, R. and Ixer, R. (2019), "Megalithic quarries for Stonehenge's bluestones," *Antiquity* 93: pp45-62. <https://doi.org/10.15184/aqy.2018.111>

R5: Heaslip, V., Vahdaninia, M., Hind, M., Darvill, T., Staelens, Y., O' Donoghue, D., Drysdale, L., Lunt, S., Hogg, C., Allfrey, M., Clifton, B. and Sutcliffe, T. (2020), "Locating oneself in the past to influence the present: Impacts of Neolithic landscapes on mental health well-being," *Health & Place*, 62:102273. <https://doi.org/10.1016/j.healthplace.2019.102273>

R6: Darvill, T, Marshall, P, Parker Pearson, M. and Wainwright, G. (2012), "Stonehenge remodelled," *Antiquity* 86: pp1021-40. <https://doi.org/10.1017/S0003598X00048225>

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

Enhancing visitor experience and understanding

In 1997, the facilities at Stonehenge were described as a '*national disgrace*' in Parliament, and in 2009 the WHS Management Plan called them '*grossly inadequate*', noting that, without an understanding of the history, origin and context of the monument, visitors could not fully comprehend its significance. In 2011, English Heritage (EH) published its objectives for a new

visitor centre as part of the 2010-15 WHS Strategy for Interpretation, Learning and Participation ([English Heritage](#), 2011). The new centre opened in December 2013 with better interpretation of the stones, improved access to the surrounding landscape, and a coherent, accessible chronology to underpin new displays and provide a clear context for other presentations. BU provided key guidance, data, interpretations and artefacts, comprising:

- information for the 'Wessex Timeline', a new, large-scale infographic running the length of the visitor centre, presenting the new chronology of Stonehenge;
- digital plans for building full-size replicas of Neolithic houses;
- text, images, video, models, CGI reconstructions and physical artefacts for the exhibitions, all of which draw on the Wessex Timeline;
- updated content for the official Stonehenge website, guidebook, map, audio-tour, display cases, and information panels.

EH credited BU's research with a key role in the new visitor centre, stating that, as well as enhancing understanding of the monument, it also underpinned approaches to presenting the Stonehenge site and managing the surrounding landscape [E1]. It confirmed that new insights gained from the SPACES and SRP projects have had '*profound implications*'. '*The SRP... has been instrumental in redirecting attention of the public to the wider landscape... [while] the monuments and settlement at Durrington Walls... introduced a human scale and connection.*' This enabled the new interpretation to answer important questions about the people who built Stonehenge, where they lived and what their lives were like, presenting '*a much more nuanced and intriguing narrative, which maintains attention on the wider archaeological landscape.*' [E1].

Visitors agree about the significance of BU research: responses to an independent evaluation of the visitor centre in 2014 confirmed 70% of 300 visitors surveyed about the new content [E2] strongly agreed they better understood the dates of the building of Stonehenge, its construction over time, the source of the stones, its place in the landscape, its relationship to the river and other structures and the changes in that landscape. Responses included: '*[It was] the first time I had the link with the human settlements*' and '*[I realised] how big the whole area is and the importance of the river*' [E2]. The survey also indicated improved knowledge of the new time sequence, with a further 88% of respondents strongly agreeing with the statement: '*I have found out that the Stonehenge landscape changed over a 2,500 year-long prehistoric period and includes features from three different periods - before Stonehenge, the time of Stonehenge and after Stonehenge was built.*' [E2].

Throughout the reporting period, repeated, high-profile, national and international media coverage of BU's research on Stonehenge has driven global public engagement with the monument and new visitor centre. BU research has been featured directly in outlets such as ABC Australia, BBC, *Daily Mail*, *Washington Post* and Sky News, with an estimated total global news reach of well in excess of 10,630,000 [E3a]. In 2015 Welham's bluestone research featured in 383 outlets worldwide [E3b], while in 2018 Darvill appeared in a Discovery Channel documentary on the healing stones, with an estimated audience reach of 2,360,703 unique visitors [E3c]. In 2018-19 Welham's research was part of an international exhibition: *Stonehenge: Beyond the Mystery* that began in Belgium (53,045 visitors) and went on to reach audiences in museums across the USA [E3d].

Providing economic benefits to the local area and the heritage sector

When the new visitor centre opened, visitor numbers immediately increased the following year (2014) by 8% to 1,346,177, and it became the UK's third most visited paid-for tourist attraction [E4a]. In subsequent years this rise in visitors has continued, peaking at 1,604,248 in 2019 [E4b].

EH recognises that '*the much-improved visitor experience has enabled us to reach a very significant proportion of British residents and overseas visitors*' and '*resulted in an increase in the amount of time people spend at Stonehenge*' [E1]. The 2014 Visitor Survey indicates that, after a visit to the new visitor centre, 68% of respondents strongly agree they would like to explore the wider Stonehenge landscape whose importance our research has stressed [E2].

EH also notes that: *'Visits [to Stonehenge] also have a very significant impact on the local economy of Wiltshire.'* [E1]. To put this in context, Historic England describes the heritage sector as *'an important source of economic prosperity and growth'*, estimating its value to the south west region alone to be GBP2,800,000,000 ([Historic England](#), 2019), while the specific financial benefits of world heritage sites to the UK (of which Stonehenge is the second most popular in Britain) is estimated at GBP85,000,000 per annum ([Heritage and the Economy](#), 2019, p.39).

Stonehenge also plays a significant economic role for EH as a whole, and thus, *'The improved offer underpins the role the site plays in generating income for EH which supports the conservation and public access to hundreds of other sites in England.'* [E1]. This is confirmed by the 2014 Visitor Survey which shows that, after a visit to the new centre incorporating our work, 79% of respondents strongly agree they would like to visit other EH properties [E2].

Preserving the landscape for future generations

BU's agenda-setting research continues to feed into the future management and preservation of the Stonehenge landscape. EH acknowledges that the Stonehenge WHS Archaeological Research Framework produced by Darvill in 2005 *'continues to frame enquiry'* [E2], and our body of work is a core component of the latest WHS Management Plan [E5]. One of the key priorities in the plan has been to *'improve the interpretation and enhance the visitor experience of the wider landscape'*. This has been underpinned by BU's SPACES and SRP projects, which demonstrated the importance of taking a broader landscape-based view of the site.

Darvill sits on the A303 Scientific Committee, formed in 2017 to provide specialist advice to the A303 Amesbury to Berwick Down Heritage Monitoring and Advisory Group, comprising EH, Historic England, National Trust and Wiltshire Council [E6a]. Our understanding of the extent and distribution of archaeological features in the wider landscape has thus been instrumental in negotiations with Highways England on the course of the planned tunnel and rerouting of the road [E6a, E6b].

Improving mental wellbeing

Darvill's research into the potential healing properties of the Stonehenge bluestones in the past inspired an interest in how this could be used to promote mental wellbeing in the present. Collaboration with researchers at BU interested in marginalised communities, heritage NGOs and mental health charities led to the creation of 'Human Henge' (HH), a structured programme of therapeutic activities on the site to improve mental wellbeing. This 10-week programme of activities taking place both in the stone circle and wider landscape was delivered three times between 2016–18 for a total of 35 local participants with chronic mental health problems.

In a WEMWBS-based survey of participants, 79.3% reported a positive impact on their mental health, which increased throughout the programme and also continued a year later (88.2% confirming this) [R5]. Many credited the programme with providing increased optimism and confidence, inner strength and improved interaction with others. Participants specifically referred to feelings of connection with ancestors who had inhabited the site, reconnecting with their community, and engaging with the research: *'[Darvill's] knowledge [was] much appreciated.'* [E7].

For some, the programme also provided a better insight into their mental health issues, and improved strategies for managing them. *'It's broken down my social anxiety, my understanding of them has opened up... I think coming here and being with people, is breaking down the barriers... you can get trapped up in making the world so small.'* [R5]. *'As someone who spent two years unable to go out, Human Henge has saved my life.'* [E8].

Participants noted a reconnection to place established through exploring their local area and landscape, one person reporting: *'[HH] helped me connect with local people socially and local places with happy memories. Feeling more connected with Wiltshire and feeling like I have a*

place to be/belong in Wiltshire [R5]. The WHS agreed that the project *'promotes the WHS as a whole, not just isolated monuments'* and *'suggests ways in which people can harness the potential of the WHS landscape to manage their own wellbeing.'* [E9].

HH has demonstrated the contribution archaeological research can make to the wellbeing agenda, the UN's Sustainable Development Goal 3. Its impacts have been widely shared by opinion and policy makers:

- The 2019 HH conference was attended by 80 researchers, practitioners and consultants working across the arts, heritage, wellbeing and inclusion agendas. It was opened by Alex Coulter, the Director of Arts Health South-West (part of National Alliance for Arts, Health and Wellbeing) and the Secretariat of the All-Party Parliamentary Group on the Arts, Health and Wellbeing (APPGAHW, chaired by Ed Vaizey MP).
- HH was featured as a case study in the 2019 APPGAHW Round Table on Heritage, Health and Wellbeing [E8].
- HH forms part of the evidence used by the Heritage Alliance in its 2020 report: *'Heritage, Health and Wellbeing'*, [E10]. This uses the evidence to make agenda-setting proposals for the heritage, health and care sectors, heritage commissioners, and five policy recommendations for UK government. These include promoting *'the power of heritage in policy making'* with respect to these agendas, and recommending a *'joint strategy to promote heritage, culture and the arts as significant non-clinical contributors to the health and wellbeing of the nation'* [E10].

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

E1: English Heritage. (2021). Letter to Kate Welham, 11 January.

E2: Shaw, P. (2014). *An Independent Evaluation Of The Interpretive Offer At The Stonehenge Visitor Centre, Three Months After Opening*. English Heritage.

E3: E3a: Kantar. (2020). Analytics January 2016 – December 2020.

E3b: BU Press & PR Team. (2015) Email detailing 383 media clips, 11 December.

E3c: Agility PR Media Monitoring. (2020). Discovery Channel: Audience reach.

E3d: Museum, G., (2019). *Past Exhibitions - Gallo-Romeins Museum Tongeren*. [online]

Available at: <https://www.galloromeinsmuseum.be/en/exhibitions/voorbij-2> [Accessed 29 January 2021].

E4: E4a: Association of Leading Visitor Attractions. (2021). ALVA: 2014 *Visitor Figures*. [online]

Available at: <https://www.alva.org.uk/details.cfm?p=605> [Accessed 8 February 2021].

E4b: Association of Leading Visitor Attractions. (2021). ALVA: 2019 *Visitor Figures*. [online]

Available at: <https://www.alva.org.uk/details.cfm?p=610> [Accessed 8 February 2021].

E5: Simmonds, S. and Thomas, B. (2015). *Stonehenge, Avebury and Associated Sites World Heritage Site Management Plan 2015*. [online] pp. 42, 50, 52-54, 103. Available at:

http://www.stonehengeandaveburywhs.org/assets/2015-MANAGEMENT-PLAN_LOW-RES.pdf [Accessed 29 January 2021].

E6: E6a: A303scientificcommittee.org.uk. (2021). ABOUT US - A303scientificcommittee. [online]

Available at: <http://a303scientificcommittee.org.uk/about-us> [Accessed 20 January 2021].

E6b: Hansard, (2018). *Stonehenge: Proposed Road Alterations*. [online] Available at:

<https://hansard.parliament.uk/commons/2018-06-05/debates/308BEB84-061C-40D1-AC59-B69970FFE894/StonehengeProposedRoadAlterations> [Accessed 20 January 2021].

E7: Willis, J. (2018). *Why And How Does The Human Henge Support Participants Wellbeing?* Willis Newson. CONFIDENTIAL

E8: All Party Parliamentary Group on Arts, Health and Wellbeing. (2019). *'Heritage, Health and Wellbeing Round Table'*. *Minutes of All Party Parliamentary Group on Arts, Health and Wellbeing meeting 15 July 2019*, Committee Room 1, House of Lords.

E9: BU Stonehenge Research Impact Assessment Response Pro Forma, received July 2019.

E10: The Heritage Alliance, (2020). *Heritage, Health And Wellbeing*. [online] The Heritage Alliance. P. 43. Available at: https://www.theheritagealliance.org.uk/wp-content/uploads/2020/09/Heritage-Alliance-AnnualReport_2020_Online.pdf [Accessed 20 January 2021].