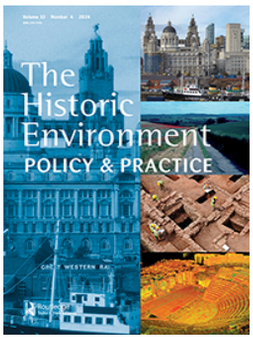

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Introducing Heritage Connectedness: Connections to People, Nature and Place Across Time are Associated with Wellbeing and Environmentalism

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ABSTRACT

Humans have a deep desire for connectedness. A sense of relationship with heritage potentially stands as an important form of connectedness that matters for both personal and planetary wellbeing. Exploring the concept of heritage connectedness is the overarching aim of this paper. Focus groups and interviews were used to understand what heritage connectedness means to people. Then, using a new heritage connectedness measurement approach, a large-scale survey of over 1400 adults was used to explore the relationship between local heritage connectedness and mental wellbeing and environmentalism. The analysis also included measures of social and nature connectedness, and established socio-demographic correlates, to benchmark heritage connection effects. The results showed that the novel concept of heritage connectedness can be defined and that it is associated with mental wellbeing, to levels similar to, or greater than, accepted benchmarks. Links to environmentalism were also found. Heritage connectedness is proposed as a construct worthy of further study, with the potential for significant contributions to our understanding of how connectedness affects wellbeing and environmentalism.

KEYWORDS

Heritage; wellbeing; environmentalism; connectedness

Introduction

A sense of relationship with heritage potentially stands as a form of connectedness that[1] matters for both personal and planetary wellbeing. Humans have a deep desire for connectedness, and it is a fundamental pillar in health and wellness.[2] As social animals, connectedness for humans is typically focused on social connections, yet it is known that connection to local nature can buffer against the effects of social isolation,[3] increase pro-sociality[4] and be an important aspect of hedonic and eudaemonic wellbeing, this is 'feeling good' and 'functioning well'.[5] Social and natural connections can combine to enhance wellbeing.[6] More recently, the concepts of

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'One Health'[7] and 'Planetary Health'[8] have emerged, which recognise that humans are embedded within the natural world and that a fundamental factor in human wellbeing is a healthy planet. Such models stress the importance of connectedness with people and the more-than-human.

The bond between individuals and their local surroundings is a form of more-than-human connectedness, with a 'sense of place' being found to relate to both wellbeing and environmental stewardship.[9] While the historic dimensions of place are considered to play a key role in shaping place attachment, particularly in relation to a sense of place identity,[10] there has been limited exploration into the broader notion of heritage in forming bonds with a place. Heritage incorporates and extends the concept of place to include relations with the past that can help place individuals in the present.[11]

Countering Authorised Heritage Discourse

A concept of 'heritage connectedness' stands at odds with the idea of Authorised Heritage Discourse [AHD] which has shaped the development of heritage research for two decades. Smith[12] formulated and defined AHD broadly as the decisions that govern the management of heritage sites. AHD favours experts' opinions of what is 'valuable' to be preserved and safeguarded for the future and constructs a site's heritage values. In this context, heritage values refer to the meanings and beliefs that individuals or groups of people confer on heritage. The experts' privileged decision-making position rejects ideas of heritage as associative and fluid, thus disregarding various communities' experiences and practices. To legitimise this process, AHD has to construct a material reality for itself leading to an overemphasis on architectural and built environments that need to be preserved for future generations.[13] To construct these processes and representations, AHD is institutionalised through organisations such as UNESCO and ICOMOS, influencing heritage policies internationally through initiatives such as the World Heritage Convention and charters like the Venice Charter, produced to define heritage.

AHD legitimises and regulates historical and cultural narratives, resulting in an exclusive version of heritage. The monument, object or place merges with the cultural and social values and narrow connotations of heritage. Subsequently, the monuments or material objects become the heritage rather than the values or meanings associated with the place. This confines the dominant understanding of the heritage concept to 'the past' and disconnects it from the present.[14] In other words 'heritage' is to be defined more closely in line with the impressions it has of the past, as opposed to the impressions it may leave in the present".[15]

The impressions of the past take shape in a series of 'universal' heritage values which are to be held worldwide. Many now argue against their universalism,[16] shifting the focus to the fluid social values of heritage that are embedded in experience and are culturally specific.[17] Fluidity is dependent both on the people who engage with established heritage values and the personal relationship they have with the location. This is linked to a 'collective attachment to place that embodies meanings and values that are important to a community or communities',[18] thereby covering sense of identity, distinctiveness, belonging, memory, oral history and the cultural practices associated with the historic environment.

Heritage Connectedness

In this paper, we explore the notion of 'local heritage connectedness' – a bond that encompasses relations with place and time, present and past, and the array of tangible and intangible aspects of heritage. Recent reviews on heritage and wellbeing have identified psychological benefits in relation to visiting or living near historical natural spaces,[19] participating in cultural and mental health interventions or conservation activities in historic spaces, and engaging with historical objects, places or imagery, which align with but are distinct from place attachment.[20] As well as emotional and cognitive benefits, heritage sites and engagement are associated with a stronger sense of place, community, belonging and attachment which brings wellbeing through stronger identity and social integration.[21]

The wellbeing benefits that result from exposure to historic spaces and engagement with historic objects and heritage-related activities are well recognised,[22] but the role that a *subjective* sense of relationship with heritage might play in wellbeing has received far less attention. Studies of nature connectedness have found that a person's subjective sense of relationship with nature is a better predictor of wellbeing, than simply living near or visiting natural spaces.[23] As yet, there has been little exploration into the idea of 'heritage connectedness' as a similar construct – a relatively stable (though malleable) quality of relationship with heritage that may bring wellbeing benefits in its own right, and maximise the benefits gained from any exposure or engagement with heritage. As a form of connectedness, it seems feasible that it is the relationship itself that matters for wellbeing.

There is evidence to support this proposal. Studies on the benefits of heritage engagement highlight the key importance of affective, identity and experiential aspects of heritage engagement.[24] The place-identity model of heritage highlights the role of place in providing cues for an individual's past-self and features that can support an individual's self-image.[25] Wellbeing benefits are facilitated through a person establishing a link between themselves and the history of a landscape, through heritage supporting a sense of belonging or anchoring in a place and/or social group, and through engagement with historic objects that trigger memories and emotional connections to oneself and other people.[26] Rather than testing the impact of specific moments of contact with heritage, here we examine whether people experience a more enduring sense of connectedness with heritage that is associated with wellbeing. If so, this would suggest a new line of enquiry into heritage connectedness as a psychological state and/or trait.

If heritage connectedness is a psychological characteristic of a person, it follows that it may shape how they engage with the social and natural world, as well as with heritage itself. Previous work has suggested links between heritage experiences, nostalgia and pro-environmental behaviours,[27] and appreciation of heritage can play an important role in sustainability strategies.[28] Furthermore, Swensen[29] builds on the concept of 'affective landscapes and atmospheres'[30] to consider the psychology of heritage places and how affect motivates behaviour. Of interest, therefore, is whether a sense of local heritage connectedness is associated with pro-environmental behaviours, nature and social connectedness, and the relative importance of heritage connectedness compared with these other more established measures of connectedness.

This paper is an initial investigation into local heritage connectedness and its association with wellbeing. As an exploratory exercise, we adapted an existing connectedness scale to measure local heritage connectedness. Focus groups and interviews were used to understand people's responses to the scale and their sense of what heritage connectedness means. A survey was used to explore the scale's relationship with other variables focused on people and places within a 5-min walk of participants' houses. Given the local scope of this study, and to encourage a focus on a place-based heritage (rather than ancestral heritage), the study asked people to rate their sense of connection to local heritage. The key research questions were:

(1) What is people's understanding of local heritage connectedness?
(2) Is local heritage connectedness associated with mental wellbeing?
(3) Is local heritage connectedness associated with environmentalism?

The analysis included measures of social and nature connectedness to benchmark any heritage connection effects, and for subsequent development of a wider theory of the importance of connectedness to people, place and nature. The analysis also included established socio-demographic correlates of wellbeing and environmentalism to further benchmark associations with heritage connectedness.

Materials and Methods

Interviews and Focus Groups: Understanding and Self-Rating Local Heritage Connectedness

Participants

Three focus groups were held with National Trust volunteers in July – August 2024 ($N = 15$, 8 females, 7 males). While data on age and ethnicity of participants was incomplete, the average age of those who provided their age was 70.

Interview participants were recruited at a Festival of Archaeology event, at a 'heritage connectedness' stall set up in a marquee. Eight interviews ($N = 9$) were carried out, with one couple jointly taking part in an interview. Participants ranged in age from 31 to 80+ (average 54 years), with 3 females and 7 males.

Data Collection

Following ethical approval and informed consent, focus groups were held at National Trust properties. They lasted between 66 and 81 min for a total of 3 h 37 min (average 72 min). Each interview was audio- and video-recorded, with the videorecording used to accurately identify speakers and interpret any references to the tactile materials used in the session. Semi-structured interviews were held in the corner of a marquee at the Festival of Archaeology and were audio-recorded. Interviews ranged in length from 3 to 22 min (average 11 min).

Focus groups and interviews were semi-structured. Participants were given a copy of the Inclusion of Local Heritage in Self (ILHS) scale (see below) adapted for the study and asked to indicate which set of circles best represented their relationship with local

heritage. They were then asked about their experience of completing the scale (how they found answering it, why they answered as they did), and what local heritage and heritage connection meant to them. Focus group participants were also asked about their experiences of feeling connected with heritage (not discussed in this paper). All data were transcribed verbatim.

Data Analysis

Data were analysed using procedures from thematic analysis.[31] Focus groups and interviews were analysed inductively and iteratively using a mix of digital (NVivo) and manual methods. The focus of analysis reported in this paper was a realist content analysis of participants' ease of answering the scale and how they made sense of the question, and identification of key themes in how participants talked about a sense of feeling connected with heritage.

Survey: Associations of Heritage Connectedness with Other Forms of Connectedness, Wellbeing and Environmentalism

Participants

Following ethical approval and having given consent, we used a convenience sample of adults in the English Midlands, North-West and Welsh borders. An online questionnaire was issued to participants ($N = 1{,}823$) in August 2022. Of those participants, 45% were males and 55% females, with 72% married or living as married. Age ranges were 18–24, 1.4%; 25–34, 10.4%; 35–44, 14.2%; 45–54, 16.1%; with 57.9% aged 55 years or over. Our estimation sample ($n = 1{,}376$) included all respondents who had valid responses to all the predictor variables used in the analysis.

Measures

Environmental Behaviours. Pro-nature Conservation Behaviour Scale[32]; 3-item Willingness to Sacrifice (i.e. for the environment) subscale [33]; Pro-environmental action: Single item 'I always consider the environmental impacts of my behaviour and my behaviour is influenced by this' with 5-point scale, strongly disagree to strongly agree.

Wellbeing. Warwick-Edinburgh mental well-being scale (WEMWEBS)[34]; 10-item short form of the Depression Anxiety and Stress Scale (DASS-42)[35]; Personal Growth subscale of Ryff's Psychological Wellbeing Scale[36]; Office for National Statistics (ONS) items for life satisfaction, happiness, worthwhile life and anxiety.

Connectedness Measures. Connectedness measures were based on the Inclusion of Other in Self scale (IOS),[37] which measures the strength of interpersonal relationships through the concept of interconnectedness and the inclusion of an *other*.[38] The scale is a simple graphical tool consisting of seven pairs of circles conventionally coded 1–7, with a progressively increasing degree of overlap, with one circle labelled 'self' and the second circle labelled 'other'. Respondents are asked to rate their relationship with their partner. Adaptations of this visual scale were used for connectedness with nature, local heritage and neighbours. *Nature connectedness*, using the Inclusion of Nature in Self scale based on the IOS,[39] asked respondents to rate the interconnectedness between themselves

(labelled self) and nature. *Social connectedness* asked 'how interconnected are you with your neighbours' (self-neighbours). *Local heritage connectedness* asked '*How interconnected are you with your local heritage? Please select the Venn diagram below which best describes your relationship with your local heritage. The further apart the circles are the less interconnected the relationship. The greater the overlap of the circles shows a more interconnected relationship.'* The seven circle pair options were labelled 'me' and 'heritage'.

Socio-Demographic Variables. We operationalised socio-demographic factors using binary categorical measures of sex (male, $N = 811$, versus female, $N = 1{,}012$); marital status (living with a partner, $N = 1{,}308$, versus not living with a partner, $N = 511$); children (living with children in household $N = 408$, versus not living with children in household, $N = 1{,}415$); social grade (A/B/C1 $N = 1{,}390$, versus C2/D/E, $N = 433$); labour market status (in employment, $N = 930$, versus not in employment, $N = 893$); and age (18–54, $N = 767$, versus 55+, $N = 1{,}056$). These function as covariate controls, and some further function as established benchmarks.

Analytical Approach

The clustered nature of the sampling was accounted for in our analyses by the inclusion of sampling area as a categorical independent variable in our regressions. We regressed mental health measures against heritage connectedness with estimates adjusted for a range of socio-demographic factors. To enable comparison of relationships between heritage connectedness and mental health across the different mental health measures, given that the estimation sample sizes available for different mental health measures varied, we also ran the regression analyses using only those cases with data available on all the outcomes, but these are not included as there was little difference (see Table S1).

An equivalent set of regression analyses with estimates adjusted for a range of socio-demographic factors was carried out for pro-environmentalism outcome measures, that is measures of behaviours and actions that individuals take to protect and preserve the environment. Analyses again used all available cases for each specific outcome after establishing only trivial differences with a sample with data on all outcomes (see Table S1).

After assessing the correlations between heritage connectedness, nature connectedness and social connectedness, two approaches were taken to compare observed relationships between heritage connectedness and both mental health and pro-environmentalism, with relationships between both nature connectedness and social connectedness and mental health and pro-environmentalism:

(1) We used each of nature connectedness and social connectedness as the independent variable of interest in place of heritage connectedness in regression models of mental health and pro-environmentalism. The relative strengths of these relationships show how closely each is associated with mental health and pro-environmentalism.
(2) We regressed mental health and pro-environmentalism against heritage connectedness in combination with, firstly, nature connectedness, and secondly, social

connectedness, and finally in combination with both nature connectedness and social connectedness to show the association of each form of connectedness when the other form(s) are held constant.

Results

Interviews and Focus Groups Results: Understanding and Self-Rating Local Heritage Connectedness

Understanding the Question

Overall, participants were able to complete the ILHS scale without much difficulty and reported that it was straightforward to answer. There were no issues with the use of the circles (bar one participant who suggested that two sets of circles were visually very similar to each other) or the term 'interconnectedness'. The main clarification question asked was around the definition of 'local', and participants were then asked how they would interpret it. Most referred to the village/town or city that they lived in, or places 'easy to travel to' or 'anywhere within a day's range'. There was a clear distinction between connection to local heritage and specific heritage sites or other regions in the country. For example, some participants reported feeling very connected to the heritage at the National Trust site where discussions were taking place, but less connected with the heritage local to where they lived. Overall, the responses suggested that a question about connection with local heritage leads to responses about a person's sense of relationship with the area near where they live and that connectedness with local heritage is distinct from a sense of connectedness with other places and other elements of heritage.

Scoring Connectedness

Participants shared their reasoning behind their score, and the factors they considered in coming to a decision on a score. One of the key factors for deciding on a score was the proportion of time spent engaging with heritage places and activities, in relation to other activities such as time with family or work. Some explained that while they felt strongly connected with heritage, they would not pick the completely overlapping set of circles because they had other things in their lives that were important.

The second factor that was highlighted as a basis for choosing a score was knowledge and interest. When explaining why they had chosen the score they did, participants often referred to what they 'knew' about local heritage. For instance, some explained they were members of local history societies, or that they had a strong interest (or less interest among those who scored themselves lower) in their local community history. A third, and related, factor was the length of time spent living locally. Those new to an area described having less knowledge and thus a weaker sense of connection. Respondents referred to a sense of identification with local heritage as part of their justification for their score, with accounts for scores bound up with who they were as a person.

Heritage Connectedness

People's descriptions of what heritage meant to them included a range of tangible and intangible aspects (broadly cultural, architectural and natural features) as well as a more

abstract sense of what heritage is and its relevance for people – broadly, things we inherited from the past that are important today. A number of examples of heritage were offered – from National Trust properties and estates through to the ordinary and everyday informal heritages.[40] Many were keen to highlight that heritage was 'not just buildings'. From a content analysis of specific examples of heritage offered by participants, five main categories were identified:

(1) People (ancestors, kings and queens, workers, butchers, community)
(2) Culture (ways of life, agriculture, skills and trades, songs, religion, slavery, folklore, summer solstice, food)
(3) Places (buildings, landscapes, towns and villages, regions, countries, family homes)
(4) Objects (artefacts, clothing, crafts, trees, machines)
(5) Historic events (war, invasions, discoveries, stories)

Participants' descriptions revealed the overlap between these categories – for example, a historic house (place) and the things inside it (objects) are also cultural artefacts (who gets to live there, skills used in creating furniture or dry-stone walls) and natural spaces (the surrounding land), with stories of place bound up with historic events and processes.

Participants emphasised the subjective aspects of heritage. Heritage was about how they felt, and what they thought. It shaped their relationships with other people and the world around them. Heritage was personal, emotional and meaningful, which distinguished heritage from history. While they referred to objects, places and people beyond themselves in describing what heritage 'is', it was the personal and subjective experience of these that was seen to matter. Participants described cognitive, emotional and behavioural aspects of a sense of relationship with heritage, suggesting that heritage connectedness can be understood in terms of how people think, feel and act in relation to heritage.

The cognitive dimension of heritage connectedness (see Table 1) includes people's knowledge of, and understanding about, heritage. Those who reported a strong sense of connection often explained this in relation to knowing facts and stories about a place, or past events, or a group of people (family, community, or nation), whereas lack of

Table 1. Dimensions of heritage connectedness from the content analysis.

Heritage Connectedness Dimensions	Examples	Quotes
Cognitive	Knowledge Values Identity	If you understand about the people that lived before you, you understand more about yourself. Knowing the history of your own local area, and it means a lot to me because I am interested in my local history. It's like a sense of place as well, isn't it? If you've got a bond somewhere, you know, what's gone before and how you fit within that.
Emotional	Wellbeing Affective states Fascination Compassion	If I'm having a bad day emotionally it helps me to come here History . . . is just a load of dates (. . .) the heritage is the things that make us emotional It hurts so much when they [world heritage sites] are attacked. Like Stonehenge was. I found that very difficult to take.
Behavioural	Visits Research Engagement Volunteering	[volunteering at NT site] is the most important outside home activity that I do" . . . if I'm going out, where do I go and what do I do. Do I go to a shopping centre? No. Do I go to a National Trust property? Yes.

knowledge was often given as a reason for a lower score. Cognitive aspects of connectedness also included valuing heritage and appreciating the relevance of heritage for the present and the future and recognising the importance of heritage on who one is and what one's place in the world is. In this way, heritage connectedness was associated with a sense of meaning in life.

The emotional dimension of heritage connectedness involved feelings of enjoyment, interest, fascination and care. Participants described the feelings of pleasure they got from engaging with heritage in various ways (e.g. researching or visiting a heritage site). Connecting with heritage was driven by feelings of curiosity and fascination and resulted in positive emotional experiences with both tangible and intangible heritage. There was also a sense of feeling emotionally connected with past peoples, and feelings of empathy and compassion.

Behavioural elements of heritage connectedness included spending time finding out about heritage, visiting heritage sites and helping to conserve and protect heritage. Those who reported feeling a strong sense of connection spent a lot of time in heritage-related activities, such as extensive research, sharing heritage information with others, visiting heritage sites, dressing up in heritage clothing, joining archaeology and local history groups, and volunteering. A focus of much of this activity was on helping conserve and protect heritage and helping other people learn about and value heritage.

Survey Results: Associations of Heritage Connectedness with Other Forms of Connectedness, Wellbeing and Environmentalism

The mean score for nature connectedness was 4.30 (SD = 1.567) and for connection to neighbours was 3.04 (SD = 1.569). The mean score for heritage connectedness was 3.11 (SD = 1.582) with the mean by various demographic groups shown in Table 2. This shows HC tends to be higher in older adults, C2DE social grades and widows. Table 3 shows weak correlations between the three connectedness measures.

Table 2. Variation in mean level of heritage connectedness across various demographic groups. This shows HC tends to be higher in older adults, C2DE social grades and widows.

Demographic	Mean	N	Std. Deviation
Sex			
Male	3.16	655	1.551
Female	3.07	811	1.606
Age			
18–34	2.60	174	1.553
35–44	2.84	206	1.491
45–54	2.86	243	1.462
55+	3.36	843	1.598
Social Grade			
ABC1	3.07	1144	1.523
C2DE	3.26	322	1.769
Marital Status			
Married/Civil Partnership	3.13	889	1.545
Living as married	3.12	171	1.671
Separated/Divorced	3.23	119	1.623
Widowed	3.53	70	1.808
Never Married	2.80	215	1.525
Total	3.11	1466	1.582

Table 3. Correlations between the three connectedness measures showing weak correlations between the three connectedness measures.

	Connection to nature	Connection to neighbours	Connection to local heritage
Connection to nature	1		
	1401		
Connection to neighbours	.217**	1	
	1369	1497	
Connection to local heritage	.392**	.368**	1
	1350	1440	1466

** $p < 0.01$

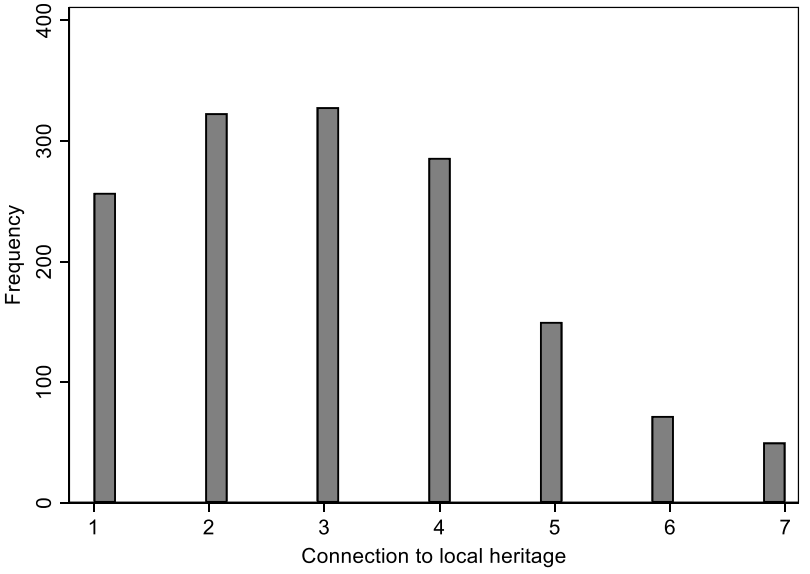

Figure 1. Distribution of heritage connectedness scores with 7 being most interconnected.

The distribution of heritage connectedness scores is shown in Figure 1.

The regressions of mental health against heritage connectedness and socio-demographic factors in Table 4 show heritage connectedness was a significant predictor of wellbeing, life satisfaction, eudemonia (i.e. meaning in life), happiness, personal growth, depression, anxiety and stress, but not anxiety. These were at similar or better levels to benchmark factors of living with a partner, social-economic classification and employment status. The regressions of pro-environmentalism against heritage connectedness and socio-demographic factors Table 5 show heritage connectedness was a significant predictor of nature conservation behaviours and pro-environmentalism to a level generally better than sex and social grade. Both sets of regressions included gender; presence of children under 16 years old in the household; age 16–54 years old versus 55 plus; and sampling area.

The regressions of mental health against heritage connectedness, nature connectedness and social connectedness in Table 6 show heritage connectedness tended to explain a little more variance in mental wellbeing than established metrics of social and nature

Table 4. Regressions of mental health against heritage connectedness and socio-demographic factors showing heritage connectedness was a significant predictor of wellbeing across groups, other than anxiety.

Dependent Variable	Heritage Connectedness	Partner[a]	A/B/C1[b]	Employed[c]
Wellbeing	β = 0.201	b = 1.548	b = 2.171	b = 1.380
	$p < 0.001$	$p = 0.006$	$p < 0.001$	$p = 0.017$
		$N = 1{,}380$; $F(9, 1370) = 23.02$, $p < 0.001$; $R^2 = 0.131$, Adj. $R^2 = 0.126$		
Life Satisfaction	β = 0.146	b = 0.603	b = 0.414	b = 0.378
	$p < 0.001$	$p < 0.001$	$p = 0.003$	$p = 0.006$
		$N = 1{,}456$; $F(9, 1446) = 15.54$, $p < 0.001$; $R^2 = 0.088$, Adj. $R^2 = 0.083$.		
Eudemonia	β = 0.161	b = 0.444	b = 0.353	b = 0.432
	$p < 0.001$	$p = 0.001$	$p = 0.010$	$p = 0.001$
		$N = 1{,}445$; $F(9, 1435) = 18.00$, $p < 0.001$; $R^2 = 0.101$, Adj. $R^2 = 0.096$.		
Happiness	β = 0.124	b = 0.331	b = 0.335	b = 0.211
	$p < 0.001$	$p = 0.019$	$p = 0.026$	$p = 0.149$
		$N = 1{,}455$; $F(9, 1445) = 11.50$, $p < 0.001$; $R^2 = 0.067$, Adj. $R^2 = 0.061$.		
Personal Growth	β = 0.151	b = 0.389	b = 1.259	b = 0.232
	$p < 0.001$	$p = 0.049$	$p < 0.001$	$p = 0.255$
		$N = 1{,}440$; $F(9, 1430) = 10.11$, $p < 0.001$; $R^2 = 0.060$, Adj. $R^2 = 0.054$.		
DAS	β = −0.070	b = −0.953	b = −1.393	b = −0.713
	$p = 0.009$	$p = 0.014$	$p = 0.001$	$p = 0.075$
		$N = 1{,}337$; $F(9, 1327) = 18.97$, $p < 0.001$; $R^2 = 0.114$, Adj. $R^2 = 0.108$.		
Anxiety	β = −0.034	b = −0.137	b = −0.140	b = −0.049
	$p = 0.194$	$p = 0.429$	$p = 0.446$	$p = 0.784$
		$N = 1{,}449$; $F(9, 1439) = 11.87$, $p < 0.001$; $R^2 = 0.069$, Adj. $R^2 = 0.063$.		

N = All available cases by outcome. DAS = Depression, Anxiety and Stress. [a]versus not living with a married or cohabiting partner; [b]versus social grades C2/D/E; [c]versus not employed or self-employed full- or part-time.

connectedness across most outcomes, other than life satisfaction, happiness in comparison to social connectedness and personal growth where nature connectedness explained more.

The regressions of pro-environmentalism against heritage connectedness, nature connectedness and social connectedness in Table 7 show heritage connectedness tended to explain less variance than nature connectedness, but more than social connectedness. Tables 6 and 7 regressions included sex; social grades A/B/C1 versus C2/D/E; living with a married or cohabiting partner versus not; employed or self-employed full- or part-time versus not; presence of children under 16 years old in the household; age 16–54 years old versus 55 plus; and sampling area.

It is best to avoid comparing coefficients for connectedness-es in the models where they are included simultaneously since that involves the assumption of zero mediation processes. However, this analysis produces similar results to the single regressions with regression of mental health against heritage connectedness, nature connectedness and social connectedness in Table S1 showing heritage connectedness tended to be a better predictor of wellbeing items, other than life satisfaction, happiness in comparison to social connectedness and personal growth where nature connectedness was stronger. Performance against mental health items of DAS and anxiety was less convincing. Similarly, the regression of pro-

Table 5. Regressions of pro-environmentalism against heritage connectedness and socio-demographic factors showing heritage connectedness was a significant predictor of nature conservation behaviours and pro-environmentalism.

Dependent Variable	Heritage Connectedness	Female[a]	A/B/C1[b]
Civic Conservation Behaviour	β = 0.255	b = 0.913	b = 1.248
	$p < 0.001$	$p = 0.002$	$p = 0.001$
	$N = 1{,}256$; $F(9, 1246) = 13.50$, $p < 0.001$;		
	$R^2 = 0.089$, Adj. $R^2 = 0.082$.		
Gardening Conservation Behaviour	β = 0.227	b = 2.594	b = 0.539
	$p < 0.001$	$p < 0.001$	$p = 0.209$
	$N = 1{,}340$; $F(9, 1330) = 24.47$, $p < 0.001$;		
	$R^2 = 0.142$, Adj. $R^2 = 0.136$.		
Pro-environmentalism	β = 0.149	b = 0.076	b = 0.119
	$p < 0.001$	$p = 0.153$	$p = 0.069$
	$N = 1{,}420$; $F(9, 1410) = 4.42$, $p < 0.001$;		
	$R^2 = 0.028$, Adj. $R^2 = 0.021$.		
Pro-environmental Action	β = 0.193	b = 0.159	b = −0.008
	$p < 0.001$	$p = 0.002$	$p = 0.899$
	$N = 1{,}450$; $F(9, 1440) = 7.74$, $p < 0.001$;		
	$R^2 = 0.046$, Adj. $R^2 = 0.040$.		

N = All available cases by outcome. [a]versus male; [b]versus social grades C2/D/E. Note: all regressions included living with a married or cohabiting partner versus not; employed or self-employed full- or part-time.

environmentalism against heritage connectedness, nature connectedness and social connectedness in Table S2 again show heritage connectedness tended to explain less variance than nature connectedness, but more than social connectedness.

Discussion

The bond between individuals and their local surroundings is a form of connectedness, which can include a sense of connection with heritage local to where they live. The present research has shown that people are able to make sense of the concept of local heritage connectedness and rate the strength of their sense of interconnectedness using a simple graphical scale. People's descriptions of a sense of connection with heritage include cognitive, emotional and behavioural dimensions similar to other forms of connectedness.[41] The cross-sectional survey results showed that local heritage connectedness was distinct from social and nature connectedness and that it predicted various aspects of mental health and wellbeing at similar or better levels to benchmark factors of relationship status, social grade and employment status. All forms of connectedness, social, nature and heritage, had positive relationships with mental wellbeing. The analysis of pro-environmentalism also suggested that connection to local heritage had a link to nature conservation behaviours and pro-environmental behaviours, although less than nature connectedness.

What is People's Understanding of Local Heritage Connectedness?

The concept of heritage included both tangible and intangible heritage, involving people and culture, places, objects and events of the past, relevant for today and the future. Descriptions of a sense of connectedness with heritage included cognitive (knowledge

Table 6. Regressions of mental health against heritage connectedness, nature connectedness and social connectedness: single predictors of interest. Showing heritage connectedness tended to explain a little more variance in mental wellbeing than established metrics of social and nature connectedness across most outcomes.

Dependent Variable	Heritage Connectedness	Nature Connectedness	Social Connectedness
Wellbeing	$\beta = 0.255$	$\beta = 0.124$	$\beta = 0.171$
($N = 1{,}265$)	$p < 0.001$	$p < 0.001$	$p < 0.001$
	$F(9, 1255) = 22.71$, $p < 0.001$;	$F(9, 1255) = 18.38$, $p < 0.001$;	$F(9, 1255) = 20.65$, $p < 0.001$;
	$R^2 = 0.140$; Adjusted $R^2 = 0.134$	$R^2 = 0.117$; Adjusted $R^2 = 0.110$	$R^2 = 0.129$; Adjusted $R^2 = 0.123$
Life Satisfaction	$\beta = 0.151$	$\beta = 0.109$	$\beta = 0.169$
($N = 1{,}330$)	$p < 0.001$	$p < 0.001$	$p < 0.001$
	$F(9, 1320) = 14.94$, $p < 0.001$;	$F(9, 1320) = 13.21$, $p < 0.001$;	$F(9, 1320) = 15.91$, $p < 0.001$;
	$R^2 = 0.093$; Adjusted $R^2 = 0.086$	$R^2 = 0.083$; Adjusted $R^2 = 0.076$	$R^2 = 0.098$; Adjusted $R^2 = 0.092$
Eudemonia	$\beta = 0.151$	$\beta = 0.119$	$\beta = 0.160$
($N = 1{,}321$)	$p < 0.001$	$p < 0.001$	$p < 0.001$
	$F(9, 1311) = 18.92$, $p < 0.001$;	$F(9, 1311) = 15.44$, $p < 0.001$;	$F(9, 1311) = 17.27$, $p < 0.001$;
	$R^2 = 0.115$; Adjusted $R^2 = 0.109$	$R^2 = 0.096$; Adjusted $R^2 = 0.090$	$R^2 = 0.106$; Adjusted $R^2 = 0.100$
Happiness	$\beta = 0.138$	$\beta = 0.123$	$\beta = 0.163$
($N = 1{,}330$)	$p < 0.001$	$p < 0.001$	$p < 0.001$
	$F(9, 1320) = 11.99$, $p < 0.001$;	$F(9, 1320) = 11.45$, $p < 0.001$;	$F(9, 1320) = 13.18$, $p < 0.001$;
	$R^2 = 0.076$; Adjusted $R^2 = 0.069$	$R^2 = 0.072$; Adjusted $R^2 = 0.066$	$R^2 = 0.082$; Adjusted $R^2 = 0.076$
Personal Growth	$\beta = 0.165$	$\beta = 0.223$	$\beta = 0.126$
($N = 1{,}316$)	$p < 0.001$	$p < 0.001$	$p < 0.001$
	$F(9, 1306) = 9.71$, $p < 0.001$;	$F(9, 1306) = 13.56$, $p < 0.001$;	$F(9, 1306) = 7.98$, $p < 0.001$;
	$R^2 = 0.063$; Adjusted $R^2 = 0.056$	$R^2 = 0.085$; Adjusted $R^2 = 0.079$	$R^2 = 0.052$; Adjusted $R^2 = 0.046$
DAS	$\beta = -0.074$	$\beta = -0.069$	$\beta = -0.047$
($N = 1{,}235$)	$p = 0.008$	$p = 0.012$	$p = 0.094$
	$F(9, 1225) = 17.98$, $p < 0.001$;	$F(9, 1225) = 17.98$, $p < 0.001$;	$F(9, 1225) = 17.45$, $p < 0.001$;
	$R^2 = 0.117$; Adjusted $R^2 = 0.110$	$R^2 = 0.116$; Adjusted $R^2 = 0.110$	$R^2 = 0.114$; Adjusted $R^2 = 0.107$
Anxiety	$\beta = -0.038$	$\beta = -0.019$	$\beta = -0.052$
($N = 1{,}328$)	$p = 0.170$	$p = 0.493$	$p = 0.060$
	$F(9, 1318) = 11.71$, $p < 0.001$;	$F(9, 1318) = 11.54$, $p < 0.001$;	$F(9, 1318) = 11.91$, $p < 0.001$;
	$R^2 = 0.074$; Adjusted $R^2 = 0.068$	$R^2 = 0.073$; Adjusted $R^2 = 0.067$	$R^2 = 0.075$; Adjusted $R^2 = 0.069$

Table 7. Regressions of pro-environmentalism against heritage connectedness, nature connectedness and social connectedness: single predictors of interest. Showing that heritage connectedness tended to explain less variance than nature connectedness, but more than social connectedness.

Dependent Variable	Heritage Connectedness	Nature Connectedness	Social Connectedness
Civic Conservation Behaviour ($N = 1,153$)	$\beta = 0.280$ $p < 0.001$ $F(9, 1143) = 14.36$, $p < 0.001$; $R^2 = 0.102$; Adjusted $R^2 = 0.095$	$\beta = 0.322$ $p < 0.001$ $F(9, 1143) = 18.78$, $p < 0.001$; $R^2 = 0.129$; Adjusted $R^2 = 0.122$	$\beta = 0.101$ $p = 0.001$ $F(9, 1143) = 4.98$, $p < 0.001$; $R^2 = 0.038$; Adjusted $R^2 = 0.030$
Gardening Conservation Behaviour ($N = 1,227$)	$\beta = 0.256$ $p < 0.001$ $F(9, 1217) = 25.03$, $p < 0.001$; $R^2 = 0.156$; Adjusted $R^2 = 0.150$	$\beta = 0.359$ $p < 0.001$ $F(9, 1217) = 38.07$, $p < 0.001$; $R^2 = 0.220$; Adjusted $R^2 = 0.214$	$\beta = 0.114$ $p < 0.001$ $F(9, 1217) = 16.23$, $p < 0.001$; $R^2 = 0.107$; Adjusted $R^2 = 0.101$
Pro-environmentalism ($N = 1,302$)	$\beta = 0.150$ $p < 0.001$ $F(9, 1292) = 4.08$, $p < 0.001$; $R^2 = 0.028$; Adjusted $R^2 = 0.021$	$\beta = 0.217$ $p < 0.001$ $F(9, 1292) = 7.92$, $p < 0.001$; $R^2 = 0.052$; Adjusted $R^2 = 0.046$	$\beta = 0.071$ $p = 0.013$ $F(9, 1292) = 1.66$, $p = 0.093$; $R^2 = 0.012$; Adjusted $R^2 = 0.005$
Pro-environmental Action ($N = 1,327$)	$\beta = 0.208$ $p < 0.001$ $F(9, 1317) = 8.04$, $p < 0.001$; $R^2 = 0.052$; Adjusted $R^2 = 0.046$	$\beta = 0.335$ $p < 0.001$ $F(9, 1317) = 20.02$, $p < 0.001$; $R^2 = 0.120$; Adjusted $R^2 = 0.114$	$\beta = 0.053$ $p = 0.063$ $F(9, 1317) = 2.15$, $p = 0.023$; $R^2 = 0.015$; Adjusted $R^2 = 0.008$

and understanding), emotional (affect and feeling) and behavioural (action and engagement) dimensions which were personally meaningful. We can understand heritage connectedness as an individual's sense of relationship with heritage that shapes how they think about, feel towards and engage with heritage. Participants were able to rate the strength of their sense of local heritage connectedness using a simple graphical scale. Self-ratings of local heritage connection were determined primarily on time spent engaging with heritage places and activities, time in the local area, and knowledge and understanding of local heritage.

Is Local Heritage Connectedness Associated with Mental Wellbeing?

Heritage connectedness was a significant predictor of wellbeing, life satisfaction, eudemonia, happiness, personal growth, depression and anxiety (as measured on the DAS scale), but not the ONS measure of anxiety, at levels similar or better than accepted benchmarks. This finding supports previous research finding links between sense of place and heritage sites and wellbeing.[42] However, the findings go beyond previous work in showing that the *subjective* sense of relationship with heritage is associated with wellbeing benefits. Moreover, heritage connectedness tended to explain a little more variance in mental wellbeing than social and nature connectedness across most outcomes, providing a strong case for its inclusion in One Health models that stress the importance of connections for wellbeing.[43] This finding opens the possibility of improving wellbeing through increasing exposure to and engagement with heritage, as has been done with nature connectedness interventions in recent years.[44]

Is Local Heritage Connectedness Associated with Environmentalism?

The analysis showed that local heritage connectedness was a significant predictor of nature conservation behaviours and pro-environmentalism. As one might expect, it explained less variance than nature connectedness, but explained more than social connectedness. This suggests that a closer relationship with local heritage is associated with a sense of care and compassion for the natural world. Broadly, relationships motivate behaviours as argued by Lengieza et al. in relation to nature connectedness.[45]

The Importance of Connectedness to People, Place and Nature

If people relate to heritage in ways that parallel relations with nature and people, it is possible that it is the relationship itself that matters for wellbeing and behaviour rather than heritage places, objects and activities.[46] The present research suggests that "heritage connectedness" is a similar sort of construct to nature and social connectedness, offering a sense of connectedness that brings wellbeing and behavioural benefits. With social and natural connections combining to enhance wellbeing,[47] the present work suggests the important addition of heritage connectedness, aligning with One Health models that emphasise interactions and connections. The findings also support the importance of relational worldviews that emphasise interconnectedness, including with the more than human world, for a sustainable and just future.[48]

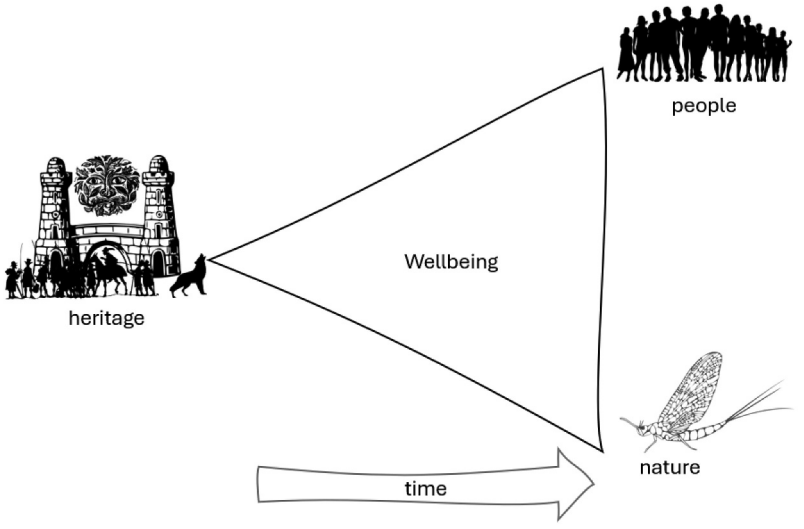

Figure 2. The connectedness space: People, nature and place across time for wellbeing.

Figure 2 attempts to capture these relationships, highlighting what might be termed a "connectedness space" between people and nature and their shared past. The figure highlights the need to facilitate connections between people and nature, plus people and heritage, for wellbeing and a sustainable future. Connections, be they social, natural or to heritage, need to be present and available; it helps for them to be local. Without local social connections people can become lonely and having nature nearby can boost well-being and physical health. Like the ecology of the Earth, everything is related and as conscious, storytelling, social beings that include heritage. Broadly connectedness is essential for life and the health and wellbeing of that life.

Of course, as with the relatively recent construct of nature connectedness, there is a need for further research to understand heritage connectedness. A research agenda can be guided by the development of nature connectedness research. This will involve definitions and metrics, developing heritage connectedness interventions and thereby by exploring causal links to wellbeing. Design frameworks akin to the pathways to nature connectedness[49] can be developed to inform programme, place, and even societal attempts to develop connectedness to heritage.[50]

Limitations

The focus groups and interviews explored people's understanding of local heritage connectedness, and it should be noted that the focus groups were with National Trust volunteers with an average age of 70 years old. Similarly, interviewees, with a wider age range, were recruited at a Festival of Archaeology. This limited, and enthusiastic, sample will have a particular view and understanding of heritage. This will skew the understandings and limit generalisability There is a need for research on heritage connectedness with those less engaged with heritage. However, for an initial understanding of the concept, the participants were able to provide rich and detailed insights into personal and emotional connections enthusiasts have with

heritage. The focus groups and interviews are balanced by a wider survey of the public. However, it should be remembered that the analysis was based on cross-sectional data which limits causal conclusions, even though the analysis attempted to model the time precedence requirement (that a cause must precede an effect). Further, it should also be noted that the convenience sample used differs from a nationally representative sample, in particular, 55% of our sample were aged 55 and over, compared to 31% of the UK population.

Conclusion

Using a systematic approach, a novel concept of heritage connectedness is proposed, justified and defined as a distinct form of connectedness, with common dimensions, cognitive, emotional and behavioural. A robust dataset and analysis are then used to identify associations to mental health and wellbeing, to levels well worth exploring further. At a time of environmental crises, the links to positive environmental behaviours should also be considered. Overall, heritage connectedness provides an approach that has the potential for significant influence, with the wider results highlighting how connectedness is a foundation of feeling good and functioning well.

Notes

1. Connectedness refers to the sense of relationship or bond that individuals feel towards something, such as heritage, nature, or other people. It encompasses the emotional and psychological ties that contribute to personal and planetary wellbeing.
2. Holt-Lunstad, "Social Connection," 23; and Martino, Pegg, and Frates, "The Connection Prescription," 11.
3. Cartwright, White, and Clitherow, "Nearby Nature 'Buffers'," 15.
4. Mei et al., "Nature Contact Promotes Prosociality," 96.
5. Pritchard et al., "Nature Connectedness and Eudaimonic Well-Being," 21.
6. Henderson et al., "Shared Time in Nature," 102343.
7. Adisasmito et al., "One Health," 18.
8. Whitmee et al., "Safeguarding Human Health," 386.
9. Rajala and Sorice, "Sense of Place on the Range," 44; and Scannell and Gifford, "Place Attachment," 51.
10. Devine-Wright and Lyons, "Remembering pasts and representing places," 17; and.
11. Hawke, "Local Residents Exploring Heritage," 1.
12. Smith, *Uses of Heritage*.
13. See note 12 above.
14. Smith, "Deference and Humility," 33–50; and Smith, "Class, Heritage and the Negotiation of Place."
15. Waterton, "Whose sense of place?" 311.
16. Díaz-Andreu, "Heritage Values and the Public," 4; Jones, "Wrestling with the Social Value of Heritage," 4; Jones and Leech, "Valuing the historic environment"; and Parga Dans and Alonso González, "Sustainable tourism," 74.
17. Jones, "Wrestling with the Social Value of Heritage," 4.
18. See note 17 above, 22.
19. Historic England, "Heritage and Society 2019".
20. See note 9 above.
21. Gallou, "Heritage and Pathways to Wellbeing," 3; and Pennington et al., *The Impact of Historic Places and Assets*.
22. Gallou, Uzzell, and Sofaer, "Perceived place qualities," 3.

23. Martin et al., "Nature Contact," 68.
24. See note 21 above.
25. Twigger-Ross and Uzzell, "Place and identity processes," 16.
26. See note 21 above.
27. Wu et al., "Greening in Nostalgia?" 28.
28. Skoglund and Svensson, "Discourses of Nature Conservation," 13.
29. Swensen, "Strengthening Subjective Links to Nature," 13.
30. Anderson, "Affective," 78.
31. Braun and Clarke, "Reflecting on Reflexive Thematic Analysis," 11.
32. Barbett et al., "Measuring Actions for Nature," 12.
33. Stern et al., "A Value-Belief-Norm Theory," 81–97.
34. Tennant et al., "The Warwick-Edinburgh Mental Well-Being Scale," 5.
35. Halford and Frost, "Depression Anxiety Stress Scale-10," 38.
36. Ryff, "Happiness Is Everything," 57.
37. Aron, Aron, and Smollan, "Inclusion of Other in the Self Scale," 63.
38. See note 37 above.
39. Schultz, "Inclusion with nature," 61–78.
40. Barrere, 2016; and Ireland et al., 2024.
41. Tam, "Concepts and measures," 34.
42. See note 21 above; and See note 20 above.
43. See note 6 above.
44. Sheffield, Butler, and Richardson, "Improving Nature Connectedness," 14.
45. Lengieza, Aviste, and Richardson, "The Human – Nature Relationship," 15.
46. See note 45 above.
47. See note 6 above.
48. IPBES, *Transformative Change*.
49. Lumber, Richardson, and Sheffield, "Beyond Knowing Nature," 12.
50. Richardson et al., "Applying the Pathways," 16.

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Ethics

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