Gardening time

Monuments and landscape from Sardinia, Scotland and Central Europe in the very long Iron Age

Edited by Simon Stoddart, Ethan D. Aines & Caroline Malone
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with contributions from
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On the cover: Cut out reconstruction of a broch flanked by two reconstructed Nuraghi, reconsidered by Lottie Stoddart.

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Edited for the Institute by Cyprian Broodbank (Acting Series Editor).
Chapter 5  Memories, monumentality and materiality in Iron Age Scotland  
Louisa Campbell  
Social landscapes and memories 37  
Northern landscapes in the Roman Iron Age 39  
The lowland brochs 39  
Lowland broch depositional trends 41  
Wider settlement depositional trends 43  
Discussion 43  
Conclusion 45

Chapter 6  Rooted in water: the Scottish island-dwelling tradition  
Robert Lenfert  
Presence in the landscape 47  
A ‘wide-angle view’ of islet use in Scotland 48  
Living on water – revisited 49  
Deconstructing defence 49  
Crannogs, prehistoric belief systems: ceramic and metalwork deposition 50  
Island dwellings and the concept of monumentality 52  
Island dwelling use and reuse in the archaeological record 53  
Loch Olabhat, North Uist, Western Isles 53  
Dun an Sticer, North Uist, Western Isles 54  
Eilean na Comhairle, Islay: a prehistoric crannog fit for a medieval king 54  
Buiston 56  
Ederline and Loch Awe 56  
Returning to (un)familiar places 57

Chapter 7  Remembering Nuraghi: memory and domestication of the past in nuragic Sardinia  
Mauro Perra  
The archaeological data 59  
Models of Nuraghi 60  
Other votives 61  
The votive context 61  
Conclusion 64

Chapter 8  Revisiting Glenelg a century after Alexander O Curle: reconstructing brochs in treeless landscapes  
Tanja Romankiewicz & Ian Ralston  
Curle’s excavations 65  
The archaeological evidence for post holes within brochs reconsidered 67  
Timber sources in deforested landscapes – the environmental record 70  
Alternative reconstructions 72  
From timber sources to models of social organization 73

Chapter 9  Beyond the Nuraghe: perception and reuse in Punic and Roman Sardinia  
Alfonso Stiglitz  
Examples of reuse of Nuraghi 76  
The archaeology of reuse 79  
Who reused the Nuraghe? 81  
Conclusion 82
**Chapter 10**  The Nuraghe’s life in the Iron Age  
**CARLO TRONCHETTI**  
The changed use of *Nuraghi* in the Iron Age  
The *Nuraghe* as a symbol of memory  
Conclusion  

**Chapter 11**  Monumentality and commemoration at a Late Neolithic henge site in Scotland 
**REBECCA K. YOUNGER**  
Monuments, memory and archaeology  
Henge monuments in Scotland  
Commemoration  
Forteviot  
Heterotopias and imagined landscapes  
Conclusion  

**Part II**  Landscape time  

**Chapter 12**  Walking across the land of the Nuraghi: politics of memory and movement in central-western Sardinia during the Bronze Age  
**GIANDANIELE CASTANGIA**  
Bronze Age evidence in the Sinis region  
GIS analysis  
Concluding remarks  

**Chapter 13**  Memory as a social force: transformation, innovation and refoundation in protohistoric Sardinia  
**ANNA DEPALMAS**  
The funerary context  
The religious and ceremonial context  
Iconographic information  
Conclusion  

**Chapter 14**  Burial locations, memory and power in Bronze Age Sardinia  
**LUCA LAI**  
$^{14}$C-based evidence for the use of natural caves for burial  
Short outline of Bronze Age burial site types by phase  
Power, memory and burial locations  
Conclusion  

**Chapter 15**  Memory and movement in the Bronze Age and Iron Age landscape of central and southeastern Slovenia  
**PHILIP MASON**  
Memory and movement in the Late Bronze Age  
Memory and movement in the Early Iron Age landscape  
Conclusion  

**Part III**  Multiple time  

**Chapter 16**  The reuse of monuments in Atlantic Scotland: variation between practices in the Hebrides and Orkney  
**NIALL SHARPLES**  
Twentieth-century encounters with monuments  
Landscape in the Western Isles  
Northern landscapes  
Conclusion  

vii
Chapter 17  The nuragic adventure: monuments, settlements and landscapes
ALESSANDRO USAI
Nuraghi and nuragic societies 152
Nuraghi and landscapes: colonization, exploitation and the first nuragic crisis 153
Nuragic settlements and landscapes: reorganization and consumption of resources 155
Degeneration and dissolution of the nuragic civilization 157
Conclusion 158

Chapter 18  Changing media in shaping memories: monuments, landscapes and ritual performance in Iron Age Europe
PETER WELLS
Memory 159
Memory, monuments and the performance of ritual 159
Patterns of change – Early Iron Age burial: ritual performances for individuals and their monuments in the landscape (800–450 BC) 160
Patterns of change – community rituals and new kinds of memory: Early and Middle La Tène (450–150 BC) 162
Patterns of change – increasing engagement with the wider world: Late La Tène (150–25 BC) 163
Interpretation 164
Conclusion 165

Chapter 19  Cultivated and constructed memory at the nineteenth-century cemetery of Cagliari
HANNAH MALONE
The Bonaria cemetery of Cagliari 167
The collective memory 168
A stratigraphy of memory 169
The cemetery as expression of social change 172
Conclusion 173

Chapter 20  morentur in Domino libere et in pace: cultural identity and the remembered past in the medieval Outer Hebrides
JOHN RAVEN & MARY MACLEOD RIVETT
The background 175
The archaeology 177
Discussion 180
Questions 181
Conclusion 183

Chapter 21  Memory and material representation in the Lismore landscape
SIMON STODDART, CAROLINE MALONE, DAVID REDHOUSE, MARY-CATE GARDEN, MATTHEW FITZJOHN & MEGAN MEREDITH-LOBAY
Cycles of time 186
Interrogating the third cycle 187
The fourth cycle 188
The fifth cycle 189
Conclusion 189

Chapter 22  Nuragic memories: a deep-seated pervasive attitude
ALESSANDRO VANZETTI
Gardening time is not without counterpoints 191
Sardinia seen by a non-Sardinian anthropologist 192
Sardinian archaeology seen by a non-Sardinian archaeologist 193
Memory of ancient places of Sardinia: major medieval break 193
First millennium BC breaks 194
Modern ‘museification’ and ‘memorification’ of the Sardinian heritage 195
Conclusion 198
Chapter 23  Endnote: gardening time in broader perspective 201

ETHAN D. AIRES & SIMON STODDART

Theoretical approaches to memory 202
The impact of literacy? 203
A hard-wired time depth to memory? 203
The importance of context for memory 203
Memory in archaeological studies 205
The materiality of monuments 206
The afterlife of monuments 207
Conclusion: monuments for memory 207

References 209
Index 239


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Figures

0.1 David Trump.
0.2 Euan MacKie.
1.1 The two principal areas covered in the text and the location of the two other articles.
2.1 Dry stone building techniques.
2.2 Thrumster broch skeletal chronology.
2.3 Broch terminology.
3.1 Location of Caithness and distribution of broch sites.
3.2 Survey of Nybster broch ‘village’.
3.3 Aerial view of the broch at Nybster, Auckengill, Caithness.
3.4 General view of the cellular building, OB2, at Nybster, during excavation.
3.5 General view of the Nybster rampart during excavation.
3.6 View of the galleries at Thrumster broch, during excavation.
3.7 Excavation of human and animal remains in the Whitegate mural cells.
4.1 The Late Iron Age settlement (Phase 6) at Broxmouth.
4.2 House 2, showing the (Phase 1) burial adjacent to the northern entrance post hole.
4.3 House 4, through its five major structural stages.
4.4 Paired artefactual deposits.
4.5 The orthostat and slab.
5.1 Lowland brochs with Roman material culture.
5.2 Querns integrated into Broxmouth hillfort.
6.1 The submerged causeway leading to Dun Ban, Grimsay.
6.2 Largely intact prehistoric pottery from the lochbed surrounding Hebridean crannogs.
6.3 Examples of prominent ‘monumental’ islet architecture.
6.4 Dun an Sticer, North Uist.
7.1 Alghero, Nuraghe Palmavera.
7.2 Sorradile, Su Monte.
7.3 Villasor, hoard of Su Scusorgiu.
7.4 San Vero Milis, Serra Is Araus: Nuraghe model.
7.5 Mont’e Prama, Cabras: warrior.
8.1 Map of Scotland showing location of Glenelg.
8.2 Stratigraphy of the accumulated ‘mass in the interior’.
8.3 Profile of the interior of Dun Troddan.
8.4 Curle’s photograph from 1920 compared to the situation as extant in September 2012.
8.5 Reconstructions of Culswick, Shetland, and Ness broch, Caithness.
9.1 Archaeology of reuse: map of Sardinia.
9.2 S’Urachi, San Vero Milis.
9.3 S’Urachi, clay statue of Bes.
9.3 S’Urachi, clay statue of a black man.
10.1 Discovery sites of Nuraghe models.
10.2 Nuraghe models.
10.3 Nuraghe models.
10.4 Nuraghe models.
10.5 Reconstruction of the necropolis of Cabras, Mont’e Prama.
11.1 Transcription of cropmarks of prehistoric monument complex at Forteviot.
11.2 Plan of Forteviot Henge 1.
11.3 Schematic diagram showing henge monuments as temporal heterotopias.
12.1 Nuraghe Losa of Abbasanta.
12.2 Sinis landscape, Sardinia.
12.3 Nuragic sites in Sinis.
12.4 Cumulative viewshed analysis results.
12.5 Cost-path analysis results.
13.1 Single tower tholos Nuraghi.
13.2 Plan of Su Nuraxi di Barumini, and the Nuragic village huts of Serra Orrios-Dorgali.
13.3 Nuragic tombs.
13.4 Nuragic springs, wells and models.
13.5 Nuragic statuary and models.
14.1 Map of natural caves in Sardinia yielding MBA-EIA AMS dates.
14.2 Chart of calibrated range of dates for Sardinian MBA-EIA cave burial contexts.
15.1 Late Bronze Age and Early Iron Age settlements and cemeteries in central Slovenia.
15.2 The Late Bronze Age and Iron Age centre at Novo mesto.
15.3 The Iron Age centre at Vinji ovh.
15.4 The Late Bronze Age and Iron Age centre at Kučar near Podzemelj.
16.1 Chambered tomb and monumental roundhouse at Pierowall Quarry, Westray, Orkney.
16.2 Chambered tomb at Skelpick, Strathnaver, Sutherland.
16.3 Plan of the The Howe.
16.4 Chambered tomb and wheelhouse at Clettraval, North Uist.
16.5 Chambered tomb at Unival, North Uist.
16.6 Chambered tomb at Loch a’Bharp, South Uist.
16.7 A view of Loch Olibhat, North Uist.
16.8 The location of brochs and settlements on South Uist.
17.1 A simple Nuraghe: Zuras (Abbasanta).
17.2 A complex Nuraghe: Orolo (Bortigali).
17.3 An unfinished Nuraghe: Codina ’e s’Ispreddosu (Norbello).
17.4 A compact nuragic settlement with the Nuraghe in the middle: Pidighi (Solarussa).
17.5 A nuragic settlement made up of isolated blocks with the Nuraghe on its edge: Bruncu Mäduli (Gésturi).
18.1 Map of principal sites mentioned in the text.
18.2 Schematic plan of the Hochdorf burial chamber.
18.3 Schematic sketches of sites of memory-generating performances.
19.1 Cagliari, Bonaria cemetery, monument to Antonietta Todde Pera.
19.2 Map of Cagliari marking the location of ancient tombs.
19.3 Cagliari, Bonaria cemetery, main chapel.
19.4 Cagliari, Bonaria cemetery, monument to Enrico Serpieri.
19.5 Cagliari, Bonaria cemetery, monument to Giuseppe Todde.
20.1 Location map.
20.2 ‘Borg’ and ‘bara’ place names.
20.3 Dun Mhulan and Loch na Beirghe.
20.4 Dun Carlabhagh (Carloway).
20.5 Reconstruction of Dun an Sticer.
21.1 Lismore: viewsheds from Neolithic cairns.
21.2 Aerial view of Tirefour (Tirefour) under excavation.
21.3 Lismore: views from brochs.
21.4 Lismore: location of medieval castles.
21.5 Lismore: modern identity and monuments.
22.1 Trends in number of visitors of the main archaeological museums and sites in Sardinia.
22.2 Demographic trend Sardinia compared to Sassari, Macomer and the Valle dei Nuraghi municipalities.
22.3 Average GDP per person of Sardinia and of selected Italian regions.
22.4 Sardinia: municipalities with the highest and lowest average income per person.

Tables
5.1 Southern brochs and souterrains – depositional contexts.
12.1 Cumulative viewshed analysis results.
12.2 Cost-path analysis results.
14.1 AMS dates from Sardinian MBA-EIA cave burial contexts.
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Simon Stoddart
A tribute in honour of Giovanni Lilliu
(1914–2012)

Anna Depalmas

Remembering Giovanni Lilliu may seem an easy task. One might think that it is only necessary to list his rich scientific bibliography and to describe his great work over the course of nearly a century, as a university professor and archaeologist. However, a simple listing of his achievements would not transmit the true importance of his work. He not only illuminated the prehistoric archaeology of Sardinia, but also used it to establish the idea of a Sardinian epic which he connected to the modern world.

Prehistory was the choice of his field of study – rather than the predominant exaltation of the Roman era and classicism of the time –, and this had its origins in his study under Ugo Rellini at Rome. He graduated in 1938 and worked as Rellini’s assistant until 1942, when he returned to Sardinia to take up the position of Professor of Historical Archaeology and Geography at the University of Cagliari. From 1942 to 1958, he taught various subjects – Paleoethnology, Geography and the History of Religion – and in the latter year became a Full Professor and was appointed to the Chair of Sardinian Antiquity at the University of Cagliari. From 1944 to 1955 he also worked for the Superintendency of Sardinian Antiquity.

He held many posts in his long academic career. He was for a long time, and on various occasions, dean of the Faculty of Letters, Director of the Institute of Archaeology and Arts, Director of the School of Specialization in Sardinian Studies and Editor of the Journal carrying the same name (Studi Sardi), and, in 1990, he was elected a fellow of the Academy of Lincei of Rome. In his later years, he remained a very active Professor Emeritus at Cagliari University.

In 1936, while he was still a student, he published his first work on Su Nuraxi di Barumini. This was his birthplace, and throughout his life he maintained a close and almost embodied connection with the village. This also led him to carry out his most important archaeological work in the landscape of his birth. Indeed, between 1951 and 1956, he worked on excavating an artificial hill there, which was found to cover the nuragic complex of Su Nuraxi di Barumini. This was the first excavation conducted in Sardinia using a stratigraphic methodology to establish a time-line for the nuragic period, and it became a benchmark for later investigations and chronological research. His work at Barumini formed the basis for a series of fundamental papers on Sardinian proto-history, from I nuraghi. Torri preistoriche di Sardegna (The Nuraghi, prehistoric towers of Sardinia) in 1962 to Civiltà nuragica (Nuragic civilization) in 1982.

He was the first to study many of the themes that he investigated in depth during his long scientific career and many of these were only studied for the first time in the first half of the twentieth century. The chronology of proto-Sardinian civilization was one key field that he developed, modified and changed in the course of his long academic career. At the same time, Lilliu published a brief essay in which he attempted to identify certain constant factors in the history of Sardinian art, and this was developed in the catalogue for the exhibition of Sardinian bronzes in Venice in 1949. Following the theories of Ranuccio Bianchi Bandinelli on how to classify the art of the ancient world, Lilliu assessed the coexistence of the ‘anti-naturalistic’ art of the barbarian world and the ‘naturalistic’ art of the classical world within which he inserted Sardinia as a ‘land of pure expression’, and defined as anti-classical and barbaric. This line of thought became the nucleus of a theme which he studied from various angles and which helped him to define key concepts in his field of study.

At the beginning of the 1960s, he published his wide-ranging synthesis of Sardinia, La civiltà dei Sardi dal Neolitico all’età dei nuraghi (1963) (Sardinian Civilization from the Neolithic period to the nuragic
Sardinia and of progressive positions which were initiatives which promoted the independence of Christian Democrats and later as a supporter of also involved in politics, first as a member of the drafting the Special Statute of Autonomy. He was he worked for the Regional Council of Sardinia, and acute, despite his soft tone. As a cultured man, in a way which was never dull but rather vigilant taking on civic responsibilities, which he fulfilled in a way which was both comprehensible and creative and lyrical descriptions. The book was aimed at not only archaeologists and students, but also at a wider public, and indeed the book was dedicated to ‘the shepherds of Barbagia’. Generations of archaeologists have studied the manual and found themselves cited in later editions, in agreement with Lilliu’s global historiographical approach which aimed to unite past archaeological research with his experience of teaching Sardinian Antiquity in a university context. This book also gave birth to a national and popular history of prehistoric Sardinia, and expanded the work of archaeologists and their research from being only something studied in university lecture rooms and solely of interest to academics to its status as part of the common heritage of all Sardinians.

This social dimension, this impact, can be clearly seen from Giovanni Lilliu’s popularity, which came from having shone a light on the national history of Sardinia and giving life to a Sardinian historiographical tradition, i.e. one with a strong sense of identity. His fame led to him being consulted, even in the later years of his life, on current events in Sardinia not necessarily related to culture or archaeology and being seen as a kind of prophet or even as the ‘father of his country’. One of the many lessons that he taught us, and in which he himself was an expert, was the importance of intellectuals being able to discuss, communicate and talk about complex historical themes in a way which was both comprehensible and of interest to laymen.

He showed a total but clear love for his land by taking on civic responsibilities, which he fulfilled in a way which was never dull but rather vigilant and acute, despite his soft tone. As a cultured man, he worked for the Regional Council of Sardinia, drafting the Special Statute of Autonomy. He was also involved in politics, first as a member of the Christian Democrats and later as a supporter of initiatives which promoted the independence of Sardinia and of progressive positions which were close to the Centre-Left. In practice, he was active in actions which were designed to give greater value to Sardinian identity and culture.

The ideological basis for these activities were elaborated by Giovanni Lilliu at the start of his intellectual life, and were made completely clear in the 1970s when he developed the concept of ‘constant Sardinian resistance’. At the beginning of the first prehistoric phase, the Sardinians were characterized by their resistance to foreign invaders and any attempts at acculturation. This characteristic did not disappear in ancient times, but has been a constant theme of Sardinian history and ethnicity, and is still present today. In this sense, Sardinian culture is not a fossil, but rather displays an extraordinary historical continuity with the past. This is an analysis which never became an idealization of aspects of Sardinian society and behaviour, but rather provided a clear and realistic picture through also identifying its negative aspects and its limitations. Nuragic civilization in particular became a symbol of a polycentric society, always in conflict with itself, the land and foreign invaders.

However, it is certainly limiting to supply a rigid definition of what Lilliu meant by nuragic civilization, given that he saw it as a dialectical relationship between its various dimensions, and worked on a reconstruction of it that was complex and multifaceted. He proposed an interpretation of nuragic civilization that saw it not as local but Mediterranean. In this, he was greatly influenced by his direct experience of excavations in the village of Ses Paisses in Majorca, where he found ethnic roots which were common to all the large islands of the West Mediterranean, the Balearics and Corsica, although there were also differences connected to the independent developments drawing on their insularity.

The fact that he found writing easy as can be seen from his some 330 publications. The last of these was in 2010, and was a detailed description of the excavation of the Giant’s Tomb of Bidistili in Fonni. It is worth saying that many of the present arguments about certain elements and problems of prehistoric and proto-historic Sardinia were originally raised by him.

I would like to end this brief and partial memorial to Giovanni Lilliu by mentioning his work as a university professor of prehistoric and proto-historic Sardinia (and not only those subjects – with great versatility he also taught Geography and Christian archaeology). What I will personally remember is his little figure in jacket and pullover (he seldom, if ever, wore a tie), typewritten sheets in hand, and always punctual. He never postponed a lesson and was never
absent. As an examiner he was always courteous and understanding. But you had to be very well prepared for his exams. The end of the course every year was the moment that we all waited for. Then there were the one or two day excursions that he led us on to various parts of Sardinia. We students would present our explanations of the monuments and he would listen with great attention as if it were his first visit, and then sometimes add some of his own memories, making it ever more clear how he was the creator of our view of prehistoric Sardinia.

He really was the memory of Sardinian history.
Tributes to Dr David Trump, FSA, UOM (1931–2016),
and Dr Euan MacKie, FSA (1936–2020)

Caroline Malone & Simon Stoddart

David Trump was best known for his important work on the islands of Malta (Malone 2020), but his contribution to the prehistory of Sardinia is also worthy of record in the context of this volume.

David Hilary Trump took his first class BA in Arch and Anth at Pembroke College, Cambridge in 1955, and was a scholar of both the British School at Jerusalem, where he dug with Kathleen Kenyon, and the British School at Rome, where he excavated the key site of La Starza.

After Malta, Trump held the post of Staff Tutor in Archaeology at the University’s Board of Extra-Mural Studies until retirement in 1997, when he was succeeded by Caroline Malone. He not only contributed to the teaching of Mediterranean Prehistory in the Department of Archaeology, but also had a large following in the wider, continuing education community, engaging mature students in all aspects of Archaeology in the region and beyond. It was during this period that he made a major contribution to the archaeology of Sardinia, uncovering once again unsuspected phases of prehistory at Grotta Filiestru (Trump 1983) and completing the survey of Bonu Ighinu. At Grotta Filiestru, he characteristically invested all the resources he could muster into constructing an effective chronology (Switsur & Trump 1983) and some of the first faunal studies undertaken in Sardinia (Levine 1983). This work was, in its way, as equally pioneering as his work on the island of Malta. The Grotta Filiestru produced a new scientifically dated sequence of Sardinian prehistory, identifying the fifth-millennium BC Filiestru Neolithic phase for the first time. In earlier fieldwork he also excavated the cave site of Sa ‘uca de su Tintirriolu (Loria & Trump 1978). His work around Bonu Ighinu (Trump 1990) is, however, closest to the theme of this volume since, in typical energetic style, Trump also provided one of the earliest studies of a nuragic landscape, once again demonstrating a pioneering role, now followed by many others.

Figure 0.1. David Trump.
Euan MacKie was a central figure in the study of brochs, as is shown by the very high level of citation in this volume (Mackie 1965 ... 2008). In several ways the contribution of David Trump and Euan MacKie run in parallel, one journeying south, the other journeying north also from Cambridge beginnings, both Fellows of the Society of Antiquaries of London, engaged in seminal fieldwork, on a shoe string generally with volunteers, providing the first chronological foundations for monuments in the landscape and addressing synthesis of the results. Both were pioneers of their generation who retained their own intellectual independence in museums (both) and in continuing education (Trump), rather than a department of archaeology or a heritage organization.

MacKie graduated in Archaeology and Anthropology from St. John’s Cambridge in 1959 and took his PhD from the University of Glasgow in 1973, becoming, after a brief period at the British Museum, Keeper and Deputy Director (1986) of the University Hunterian Museum. As a graduate he took part in an expedition to British Honduras, directing the excavation of the Maya site of Xunantunich, leading to an interest in Mesoamerican archaeology throughout his life.

His excavation of brochs such as Dun Mor Vaul on Tiree, published in 1975, Dun Ardtreck on Skye published in 2000 and Leckie in Stirlingshire published in 2008, were fundamental in uncovering the sequence, material culture and chronology of these monuments. He gathered information for his important three-volume compendium on brochs from his own excavations and the investigations of others, undertaking research well into retirement (1998), publishing the final volume in 2007. These volumes are landmarks of data on the subject, a resource which provides a platform for all broch studies. His achievements were also celebrated in his Festschrift, *In the Shadow of the Brochs* (2002), showing the respect shown to him by younger generations.

He ventured far and wide in his more interpretative work. Some of his interpretations of broch builders and their monuments are no longer widely held and the chronologies are currently being reconsidered, but his stimulating approach to ideas endures. He was passionate about many other subjects including his seminal work in prehistoric metrology and archaeoastronomy. The volume *Science and Society in Prehistoric Britain* (1977) was a central work for Glyn Daniel’s teaching in Cambridge, and he made the valid point that the sophistication of prehistory is not to be underestimated. His interest in ethnography, no doubt drawing on his Arch and Anth undergraduate career at Cambridge, gave him a great respect for other ways of thinking and for the architectural and political achievements of prehistoric Britain, most notably for the builders of the brochs themselves in the Iron Age.
Chapter 2

Memory in practice and the practice of memory in Caithness, northeast Scotland, and in Sardinia

John Barber, Graeme Cavers, Andy Heald & Dimitris Theodossopoulos

The concept of social ‘memory’ (see Shackel 2003; Thomas 2007) as applied to multi-period monuments runs a great risk of being simply teleological. A broch may contain remains dated to the Bronze Age, Iron Age and Early Medieval Periods, presenting the temptation simply to join the dots and produce a teleological narrative linking these potentially unrelated points in a pseudo-history of continuous settlement. This writer, and others (Barber & Crone 2001; Halliday 2007; Cowley 2003) have shown that continuity of settlement even in simple structures is not a first principle, but more often, a desired conclusion masquerading as a first principle, a common logical fallacy (see Mill 1947, Chapter VII). Much prehistoric settlement is of short duration and sequential settlements on the same locus are commonly separated by intervals of abandonment. Where the evidence survives to test this assertion, as in the Alpine lake dwellings (Suter & Schlichtherle 2009, 32–3) or Scottish crannogs (Crone 2003, 110) or settlements in sand dunes (Barber 2011, 50), it is abundantly clear that settlement is intermittent in nature and that the settlement locus reverts to nature in the inter regna. It may be argued that these waterlogged or, rapidly sedimenting sites are in some way special but similar evidence exists for the ubiquitous Bronze Age hut circles of the Scottish uplands (Barber 1997, 8–10; Barber and Crone 2001, passim: see also Halliday 2007; Cowley 2003). It would require special pleading indeed simply to dismiss the weight of this evidence.

If, for the moment it be accepted that the settlement of brochs may have been of this type, i.e. sequential and episodic, and that the monumental broch structure was not visible during the later settlement episodes then the scope for memory may be embedded in the location or locus, rather than the monument itself (below).

Cultural Landscapes are defined in the operational guidelines to the UNESCO World Heritage Convention (UNESCO 2008, Clause 47) in the following way:

Cultural landscapes are cultural properties and represent the ‘combined works of nature and of man’ designated in Article 1 of the Convention. They are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal (UNESCO 2008).

The interplay of people and their physical environment specifically as defined in UNESCO’s operational guidelines is referred to here as the ‘people/place relationship’. Settlement on a given locus occurs when the people/place relationships available at that locus favour the exploitation of that place by those people at that time. A naturally defensive position may have been repeatedly, but intermittently, reused as a place of refuge in difficult times because the underlying people/place relationship (here, defensibility) fosters long term if intermittent occupation (with intermittent anthropic deposit formation). The rationalization for reuse, over longer timescales, may lose sight of the pragmatic reasoning for its initial selection and focus instead on a social memory of the traditional use of the place as a refuge in troubled times.

Episodic resettlement on a locus can thus reflect an autocorrelation of people and place via some fundamental people/place relationship. It does not, de facto, provide evidence of continuity of settlement, on the one hand, nor, on the other, does it demonstrate a causative role for invested memory in predating reoccupation of the locus.
Concepts and meanings: architecture and engineering

John Ruskin (1989, [facsimile reprint; recté 1880], Chapter 1, 8–9), the great Victorian art critic who had relatives in Perth, defined ‘architecture’ as the elements in a structure that are not essential for its structural integrity, and this is the sense in which the term is used here. The modern term ‘structural engineering’ (Ruskin called this ‘building’) encompasses those elements that are essential for the structural integrity of the building. Engineering differs from architecture in the degree to which it constrains the freedom of the designer/builder to express culturally significant choices. Structural elements constrain the builders’ freedom of choice to those possibilities achievable with the contemporaneous building technologies. For non-structural, architectural elements, the designers’ freedom is relatively unconstrained and they can deploy culturally determined choices to a far greater extent. This distinction between architecture and engineering is perhaps clearer in ancient drystone built structures than in modern buildings. Nonetheless, it is not possible to make an absolutely clear divide between architecture and engineering and indeed, their interplay is the conceptual arena in which architectural tectonics hold sway. As Patrik Schumacher (2012) noted:

If we define tectonics as the strategic utilization of an element’s technically induced morphology in order to address social functions in the articulatory dimension, then tectonics can be redeemed and integrated within contemporary notions of handling form-function relations. We might call this strategy of utilizing technical details tectonic articulation.

Schumacher’s ‘tectonic articulation’ is a useful concept for the consideration of structures and society in the remote past.

The scale of a structure is an architectural factor, used to convey social meanings. Small structures e.g. individual domestic dwellings, display very restricted structural variation within their genre, for example, hut circles are found in almost all periods and in many lands and they were the dominant Scottish built form for over 2,000 years. Ruskin argued that the exploration of cultural choice is naturally restricted to large buildings because small quotidian structures are architecturally too bland to carry much burden of cultural meaning. Archaeologists have long accepted that the scale and monumentality of the brochs and Nuraghi elevate them to that category of large buildings; Ruskin’s ‘public’ or ‘communal’ buildings. Large buildings are capable of bearing a considerable burden of social meaning which may, in principle, be rediscoverable.

Drystone building technologies

The term ‘building technology’, as used here, refers to the techniques, tools and methodologies deployed in all stages of a drystone-built construction project, from the bedrock quarrying of the stone to the completion of the structure. They influence the scope for structural sophistication as well as for architectural expression, limiting the tectonic articulation of these structures. The morphological and tectonic similarities between Nuraghi and brochs arise from their common deployment of a dry stone building technology that relies on horizontal arching, corbelled tholoi and cantilevered sub-structures. All of these in turn rely on the natural incompressibility of stone and the immobilization and positional stability of the individual building stones.

*Horizontal arching* (Fig. 2.1a) creates ring beams, when a circuit of compressed stones is continuous, like the layers within a tholos, or beehive-shaped corbelled structure. The stone must not crumble at the contact points and no stone must move out of position (Barber 1992, 24). Segmental horizontal arches (Fig. 2.1b) used as revetments in rectangular floor plans, exploit the same technology, but do not resolve all the forces acting on them and require abutments at either end to contain the unresolved lateral thrusts. Like corbelled tholoi, they also require incompressible stone fixed in place with near absolute positional stability.

*Corbelling* (Fig. 2.1c) is the systematic and sequential superimposition of horizontal arches that reduce in diameter as they rise to achieve a vertical closure which, because it is self-sustaining at every point in its creation does not need scaffolding or centring for its construction.

*Cantilevering* (Fig. 2.1d) is used to achieve partial closure of a roof space, reducing the span to be covered, by corbelling its margins inwards. Its existence does not necessarily imply that the final closure was by stone; wooden roofing with short beams would have been made easier by this technique.

*Incompressible stone* was widely used in the construction of Nuraghi (mainly volcanic and metamorphic rock types) and of brochs (mainly volcanic and metamorphic on the west coast and mainly hard sedimentary sandstones on the east coast). These are all sufficiently robust not to crumble at the edges at which they adjoin the ring beam.
Memory in practice and the practice of memory in Caithness, northeast Scotland, and in Sardinia

Small amounts. In brochs, this is secured by panels of pinnings infilling voids between building stones, whilst, in Nuraghi, dense stone packing between the large constructional blocks achieves the same end (Fig. 2.1e).

**Positional stability** of the building stones is a *sine qua non* for the creation of the ring beam effect because structural integrity is lost if its individual components are free to move out of the compressed circuit, even by small amounts. In brochs, this is secured by panels of pinnings infilling voids between building stones, whilst, in Nuraghi, dense stone packing between the large constructional blocks achieves the same end (Fig. 2.1e).

**Figure 2.1.** Drystone building techniques: a) horizontal arches; b) segmental horizontal arches; c) corbelling; d) cantilevering; e) dense stone packing.
Canonicity and mutability: canonicity

The term ‘canonicity’, is defined by the OED as ‘... authoritative; orthodox; standard...’. In this chapter we explore the consequences of architectural canonicity in prehistoric dry stone built structures by which is meant the tendency for structures, especially prehistoric structures to conform to some orthodox or standard design. In historical societies with no, or restricted literacy, architectural canonicity ensured consistency of design by requiring simple initial inputs and deploying known proportionalities to facilitate the transmission of the design concept from client to architect to builder (Schofield 2009, 66–9). Early Christian churches and domestic buildings in Ireland were sometimes specified by a single dimension (Murray 1979, 82–3). The simple wooden oratories of the earliest church in Ireland were so idiosyncratically standard that they became iconic of ‘The Church’ itself (Bede refers to churches on Lindisfarne constructed of oak, with a roof ‘...thatched with reeds after the Irish manner...’) and are represented in vellum (Book of Kells; Meehan, 1994, 11), metal (House shaped shrines, e.g. Monymusk Reliquary, Eeles 1934, Plate VI) and in the stone capitals of high crosses (e.g. Muiredach’s Cross, Clonmacnoise, Richardson & Scarry 1990, 128–9). In the transition to stone built churches the canonicity of the wooden churches yielded to that of simple stone built forms (O’Carragain 2010, 113, et seq). Canonicity facilitated church building because, given one dimension (typically the length) all of the structure’s other dimensions could be derived from known proportions of this quantum according to a canonical scheme comprehended by the builders.

Architectural canonicity is perhaps best exemplified in the layout of more complex buildings like medieval cathedrals (Stalley 1999, 117–19; Kostof, 1995, 281; Fernie, 1976, 77–86 and Hahn, in Stalley 1999) and whilst some element of post factum analysis is detectable in some superficial studies of earlier structures (see Rossi 2003, 2–6 for discussion of the ‘Egyptological’ phenomenon) the existence of Classical and early proto-historic references to proportional schemes removes any possible doubt about the existence and universality of the process in the construction of large and complex buildings.

Canonicity is a conservative force, ensuring that the complexities of a design (once derived from first principles or from accumulated experience) could be disseminated to less expert workers and still reproduce the design in a safe and usable form. Canonicity resists the introduction of random variation in style or form but, within the canonical framework, some degree of variation is necessarily possible (see for an extreme example the non-standard form of the Lomello church plan, altered to fit an irregular site, Stalley 1999, 117). Robert Ousterhout (2008, Chapter Three, 58–85), attributes the standardization of church buildings in the Middle and Late Byzantine to the replacement of architects with master-mason equivalents in the building programmes.

Mutability

Humanity’s requirements of built spaces vary over time and structures have been modified on scales ranging from minor internal rearrangements to major alterations of the building fabric, in response to socially driven requirements. ‘Mutability’ as used here, describes a structure’s capacity for change.

The radiocarbon dating programme from the excavations at Thrumster broch reveals a complex construction history at odds with the simple appearance of the monument. The latter had been identified by MacKie (2007a, 448) and, pre-exavagation, by these writers, as a probable solid based broch. However, the broch’s fabric underwent changes of considerable magnitude between c. 400 bc and AD 400 (Fig. 2.2). MacKie has reported clear evidence for reconstruction in the fabric at Clickimin, Shetland (2008) and at Midhowe and Gunnness, Orkney (1995). Direct observation of many other sites indicates the probability that their fabrics have been reworked but founding significant conclusions on masonry patterns alone would be rash indeed.

Thrumster broch’s fabric was readily modified because it comprises stones of modest sizes. These, unfortunately, are ideally suited for building anything from a stone wall to a large house. It seems very likely that in the Regency refurbishments, stone from Thrumster broch was used during the Regency extensions to the adjacent Thrumster House. Tait (2005, 254–8) has recorded the reduction and loss of many Shetland brochs and their systematic use as quarries. Anderson similarly lamented the erosion of the prehistoric resource base (1883, 184–5). Despite their apparent massiveness as completed structures, brochs were and remain highly mutable during the various periods of their use and vulnerable to down-taking for building materials thereafter. Thrumster, inter al, demonstrates that socially driven changes formed part of the early broch biographies also.

Scales of desired social change and of corresponding physical changes

Large scale social changes does not always require large scale structural change and the cumulative impacts of many small scale changes can result in large structural
Perhaps all large structures exist in a dynamic equilibrium between the forces of canonical conservatism, augmented by social and economic inertia, and the forces generated by evolving social expectations of the buildings. As the many currently abandoned churches attest, a time is reached in the evolution of the people/place relationship of a structure when the existing fabric is not capable of further modification. At that point the force of social demand exceeds the capacity of the structure for change and the structure is abandoned or demolished.

The monuments: brochs

Brochs are drystone built monuments found only in Scotland and there, concentrated in Atlantic Scotland, a zone that also includes the North Sea littoral. Brochs are widely spread throughout land of arable, if now marginal, quality (see surveys of, for example, brochs in Shetland Fojt (1982) and Caithness, Swanson 1989, 48–9, fig. 6).

Figure 2.3 sets out the terms used here to describe broch features. Brochs are commonly represented as tall structures (up to 13 m high), thick walled (3.5–5.5 m thick) circular structures with external diameters ranging up to 21.5 m with an enclosed area, up to
11.5 m in diameter open to the sky. An enclosed area or ‘garth’ is contained within a dry-stone-built complex wall. The complex wall, at ground level, contains small cells and is pierced by a single, low, narrow entrance passage usually furnished with door rebates or closing faces, bar-holes and guard cells (Fojut 1981; MacKie 1991, 150–1; Armit 2003, 55–78; Harding 2004, 109–23). Above this level, the complex wall is in fact two walls, separated by up to five lintelled galleries. The inner wall of the complex wall is usually vertical and of uniform thickness (typically about 0.8 to 1 m). The outer wallface of the complex wall reduces in diameter as it rises and the outer wall simultaneously corbels in over its footings, finally to meet with the inner wall just below the wallhead. This differs a little from the standard artist’s impression of a completed broch tower (Armit 1996, 126) with wooden internal mezzanines and other features is based on the form of Mouset broch but, while Mousa is a broch, no other broch is a Mousa (Fojut 1981).

A projecting stone ledge forms a scarcement, to support a floor structure. These may have been mezzanine floors, given the common observation of large hearths in the centre of the ground floor and the absence of alternative ingress for daylight. Some broch excavations have revealed traces of post holes in the garth whose erstwhile posts may have supported the mezzanine floor (MacKie 2002, 6). No broch wallhead survives and there is no direct evidence for the nature of their roofing (but see Romankiewicz (2011) for reasoned speculations).

Competing taxonomies of the brochs (see Hedges 1987, Vol III for discussion) were, in the 1990s abandoned and all ‘broch types’ were subsumed within the general category of ‘Monumental Atlantic Roundhouse’ (Armit 1992, 22–51; and see Armit 1996, 109–36; and Armit 2003, 13–17 for overviews). Armit (2003, 16), argues that the term ‘broch’, sensu ‘broch tower’ can be usefully applied only to those structures exhibiting physical remains of a high hollow wall containing superimposed galleries. MacKie (2007a, xlix–lx), however, has identified 78 specific monuments to which he attributes at least a second storey. While the NMRS records some 573 actual, possible and probable ‘brochs’, structural details can only be observed at about 150 examples. MacKie’s list therefore suggests that over 50 per cent of those monuments for which some level of observation is possible were in fact broch towers. The absence of ‘Duns’ from this listing does not invalidate this statistic, but should be noted.

The spectrum of forms in which Monumental Atlantic Roundhouses exist places the classic broch tower at the more complex extreme, the other extreme being occupied by Simple Atlantic Roundhouses, like Bu (Hedges 1987, i), Pierowall (Sharles 1984), Quanterness (Renfrew 1979), Tofts Ness (Dockrill 2007), St Boniface, Orkney (Lowe 1998) and Crosskirk (Farhurst 1984). These low-walled structures have no known intra-mural features or stairs and it is argued that some or all of them were probably built in the first half of the first millennium bc, i.e. pre-500 bc; a view whose confirmation is not helped by the impact of the Hallstatt Plateau Effect on their radiocarbon dates. These, apparently non-tower structures amount to 6 examples, or around 4 per cent of those c. 150 monuments for which some level of structural detail can be observed.

In the current ‘standard model’, Monumental Atlantic Roundhouses, divide into three significant sub-sets; Simple, Complex and Broch Towers. It further suggests that the Simple form progressed to Complex forms between 500 and 200 bc. The broch towers are viewed as a specialized form of Complex Atlantic Roundhouse which may have emerged around 200 bc (see Armit 2003, 51). Excavations in Caithness (Heald et al., forthcoming; Cavers et al., this volume) and Orkney (e.g. Carruthers 2013, 23–4) suggest that broch towers were often reused, in truncated form, as roundhouses, in the fourth and later centuries, probably by peoples conventionally described as Picts.

Village-type settlements were built around broch towers and other complex Atlantic roundhouses in Orkney and the northeast mainland (see Armit 1990c, 438–40; Foster 1989). Traditionally believed to be Pictish in date, Cavers et al. (elsewhere in this volume) present evidence that some at least were contemporaneous with the main period of broch use. In the Western Isles, nucleated settlements are unknown and isolated Complex Atlantic Roundhouses remain the Hebridean norm.

Nuraghi

The Nuraghi of Sardinia are described and discussed in extenso by our Sardinian colleagues elsewhere in this publication where authoritative descriptions can be found (but see Lilliu 1988, and Moravetti 1998a & 2000 for detailed plans, sections and descriptions of the Nuraghi of central-west Sardinia; see also Depalmas & Melis 2010 for their environmental context). Instead, only those features of Nuraghi on which the thesis of this chapter relies are presented here. As aliens to Sardinia, the writers are conscious that their observations and conclusions may be superficial and we look to our Sardinian colleagues to correct us where necessary. Much of the following account is derived from the works of the last named scholars, Lilliu, Moravetti and Depalmas & Melis, to whom we acknowledge our
Memory in practice and the practice of memory in Caithness, northeast Scotland, and in Sardinia

Debt. One of us [JB] has visited and observed some 35 Nuraghi, including all of those referred to here.

Depalmas & Melis (2010) suggest that nuragic towers were first built as single, truncated cone shaped monuments in the period 1700 to 1600 BC. The local agglomeration of isolated towers began in the interval 1600 to 1350 BC and culminated, between 1350 and 1200 BC, in nuragic complexes with up to 6 (more usually 3, 4 or 5) nuragic towers enclosed within a curtain wall. At all stages, the nuragic towers were surrounded by a village-like arrangement of small, mainly domestic structures. While the towers persisted, it is extremely unlikely that any towers were built after 900 BC and the villages continued in use well into the Iron Age.

Nuraghi are taller than the brochs with which they have been compared, by Anderson (1883, 193) and by many others. Nuraghi are, in some cases, twice as tall as brochs but single nuragic towers, in general, have smaller external radii, so that the total volume enclosed by the outer wallface of a Nuraghe may, on average, exceed that of a comparable broch by only about 30 per cent of the volume of the broch. However, whilst the broch encloses a large garth which is not roofed in stone, the Nuraghe is massively built and contains up to three superimposed tholoi (Depalmas & Melis 2010, Fig. 11.5), reducing in scale with height. The tholoi are accessed by a helical stair, running between the external wallface and the inner tholos constructions. The massive nature of the build of Nuraghi gives values of up to 50 tonnes of masonry per square metre (tpsm) of enclosed floor space for single Nuraghi and perhaps twice as much for the nuragic complexes. In comparison, an average broch required some 35 tpsm (including the garth amongst the enclosed spaces).

Unlike brochs, some Nuraghi survive to wallhead height and the architecture of the wallhead arrangements are elaborate. They are machicolated, with a battlement wall carried on projecting machicolis stones, many of which survive (see Depalmas & Melis 2010, Figs 11.5 & 11.6, for examples). In addition, replicas and models of Nuraghi were manufactured in stone and metal and these replicate the wallhead...
arrangements. These models are associated with ‘meeting huts’ which are usually the only circular village structures whose interiors are composed of cut and ground stone. The model nuragic tower stood within a shallow but well-made stone basin raised on a plinth. In later nuragic Period structures, altars are found, the corners of which are skeuomorphic representations of nuragic towers. It is suggested that the use of these representations of Nuraghi are late in, or post-date, the main periods in which the Nuraghi were built, and were possibly used in the Iron Age when the Nuraghi had ceased to function as domestic residences.

Post-construction biographies of brochs

Thrumster broch underwent a high level of modification and reuse within the envelope of the original building and during the first Broch period, i.e. between 400 BC and AD 200. The estate history records the removal of what was most probably a settlement around the broch during the Regency remodelling of the monument as a garden feature (Barber et al. forthcoming). Circum-broch settlement in the northeast mainland and Orkney were in intermittent use until the end of the first millennium AD. During these reuse periods, the broch was generally reduced in height to one or two storeys and the interior, if not filled and built over, was often reconfigured for use as a domestic residence. Finally, isolated burials were inserted into the mounds of decomposing broch and settlement in the Pictish and Norse periods, and new, rectangular structural forms were built from the displaced stone.

Modern archaeological claims that brochs were iconic can only have been true when their massive structures were still visible. Those involved in the later reuse of broch sites probably had no conception of the broch tower when they reused the locus; which in many cases would have been reduced to a mound of loose stone, or even grassed over by then.

No original or authentic legend, tradition or myth regarding brochs survives to us and they are not mentioned in any early texts (in contrast with, for example Irish ringforts and some Scottish hillforts) and the names by which their builders knew them are unknown to us (‘broch’ being of Norse origin). Therefore, the original cultural relevance of brochs was lost for a period, after which successive societies created false etymologies to embody broch remains in their own cultures.

The Pictish reuse of brochs was probably an attempt to legitimate the territorial claims of newly emerging princlings by association with the major residences of an earlier and possibly by then an heroic age. Monumental even in decay, their reuse for burial may have been founded on the perception of that derived monumentality with which association was sought for the dead. This exercise in ‘manufactured memory’ is a consequence, possibly an unintended one, of a false etymology deployed to explain the monumentality of the remains.

In essence, the broch tower may have been iconic in its own time, but being highly mutable its native iconicism was lost, as its mutability facilitated its progressive degradation, the monument gradually being subsumed within its altered social roles, until the iconic tower monument was finally forgotten. Impressive in decay, it attracted adulatory reuse following its abandonment and elicited a reassessment of its social meaning, based on false etymology, when, its garlands dead and its Gods fled, it was deemed an appropriate burial mound for the occasional Pictish, Viking or Norse burial. It was the locus of the broch rather than the broch itself that retained access to social relevance over the greater part of this period. Sadly, many modern Scots seem never to have heard of a broch and consciousness of the broch’s contemporary iconicism seems largely restricted to archaeologists.

Post-construction biographies of Nuraghi

As noted above, the massiveness of the Nuraghi, and of their individual building stones, render them highly immutable, resistant alike to social and natural vectors of change. The inherent stability of the nuragic structure and the high cost of deliberate down-taking have militated against the loss of Nuraghi over time. Depalmas (2012, 172; referencing Contu), suggests that some 7,000 of the 9,000 Nuraghi originally built still survive, and records exist for a further 1,000. Their massive numerical and structural presence in the living Sardinian landscape has ensured that they have served as icons of Sardinian local, regional national and international identities, from their construction to this day. When their immutability eclipsed their social functionality, society pointed to their iconic status rather than their pragmatic functionality as the social validation of the nuragic form. For a time, they were venerated in effigy and even when this tradition passed, nuragic ruins continued to act as icons throughout the more recent past, even as they do for contemporary Sardinians.

Conclusion

Drystone building technologies limited tectonic expression, required canonicity and reinforced conservatism in large and or complex structures. Roofing by corbeling the internal space was not technically feasible for
brochs and was possible with Nuraghi only by massive building.

The people/place relationship on the sites of brochs continued to refocus upon broch sites even when the broch was forgotten. However, the Nuraghe was so dominant and powerful a symbol that it created around itself a ‘nuragic landscape’ that restricted the people/place relationship to a people/Nuraghe relationship; it became its own cultural landscape and persisted in that respect to this very day.

Canonicity implies a guiding mind. The idea that individual communities could each arrive at a canonical form independently is improbable in the context of a large and complex structure. A social mechanism that shared information and influence above and beyond the local and even regional level is strongly implied.

Mutability, as evidenced at Thrumster broch facilitated frequent changes which may have owed their inspiration to individual whim, evolving architectural fashion or the coercion, moral or physical, of more powerful neighbours. The undoubtedly complex relationships between social pressures and the physical organization and reorganization of brochs may yield to further field work. The immutability of Nuraghi rendered them immune to social pressures whose existence may be more easily explored in the surrounding settlements and the rich artefactual assemblages they contain.

Memory was embodied in the construction of brochs and Nuraghi and modulated in the mutability of the former but crystallized in the permanence of the latter. Brochs were forgotten and subsequently reinvented (after AD 400) for other uses in which disparate acts of memorialization, founded on false etymologies, may have included aggrandisement of new polities, creation of appropriate burial sites for the ‘special dead’, Christian efforts at liturgical sterilization of ancient respected places, quarries for new constructions on site and elsewhere, and so on. Nuraghi encapsulated memory and by their dominance, formed and constrained it, restricting evolution to agglomeration into complexes. The term ‘Nuraghe’ is thought to be a Bronze Age survival and since then, the monumental form has retained its cultural significance as an icon of Sardo identity.

Large structures, perhaps all structures, exist in a dynamic equilibrium between the forces of canonicity and conservatism on the one hand and those of mutability and differential social pressures on the other. Drystone built structures may prove more highly mutable that at first appears but if massively built, remain immutable. But social pressures for change need not manifest themselves in the physical realities of the monument. Economic pressures rather than structural tectonics abbreviate the lives of modern structures when their inability to mutate to higher revenue-generating forms falls below a rate commensurate with the burgeoning greed of their owners. It will be hard to detect social mechanisms like this from site studies unless more, and more extensive, excavation is undertaken.
Gardening time

Gardening may seem worlds away from Nuraghi and brochs, but tending a garden is a long process involving patience, accretion and memory. Scholars argue that memories are also cultured, developed and regained. The monuments in Scotland and Sardinia are testament to the importance of memory and its role in maintaining social relations.

This collection of twenty-one papers addresses the theme of memory anchored to the enduring presence of monuments, mainly from Scotland and Sardinia, but also from Central Europe and the Balkans.

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