

## Late Prehistoric Fortifications in Europe





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# Late Prehistoric Fortifications in Europe: Defensive, Symbolic and Territorial Aspects from the Chalcolithic to the Iron Age

Proceedings of the International Colloquium  
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Edited by

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# Contents

<b>List of Figures</b> .....	iii
<b>List of Contributors</b> .....	viii
<b>Late Prehistoric Fortifications in Europe: Defensive, symbolic and territorial aspects from the Chalcolithic to the Iron Age</b> .....	1
Davide Delfino, Fernando Coimbra, Gonçalo Cruz and Daniela Cardoso	
<b>My home is my castle? Thoughts about the archaeological axiom of the distinction of fortified and unfortified sites, referring to ethnographical records</b> .....	5
Andy Reymann	
<b>A new overview of the later prehistoric hillforts of Britain and Ireland</b> .....	15
Gary Lock and Ian Ralston	
<b>The chronology of the defensive systems at Los Millares (Santa Fe de Mondújar, Almería, Spain)</b> .....	31
Fernando Molina González, José Andrés Afonso Marrero, Juan Antonio Cámara Serrano, Alberto Dorado Alejos, Rafael María Martínez Sánchez and Liliana Spanedda	
<b>Fortified and Monumentalised Landscapes of the Beira-Douro region between the 3rd and 1st millennia BC: Architecture, Scenarios and Symbology</b> .....	44
Alexandre Canha	
<b>Terraced-walled settlements in Bronze Age Liguria (north-western Italy): can we speak of Iron Age ‘castellari’?</b> .....	55
Davide Delfino and Angiolo Del Lucchese	
<b>From earth to wood: the ramparts of Ratinhos (Moura, Portugal) as an example in the transition between the Late Bronze Age to the Early Iron Age</b> .....	63
Luis Berrocal-Rangel, António Carlos S. Silva, Rosario García Giménez and Lucía Ruano	
<b>Another post in the fence. Proto-urban delimitations in Final Bronze Age and Early Iron Age Northern Italy</b> .....	75
Paolo Rondini and Lorenzo Zamboni	
<b>The appropriation of settlement space in Western and Central Europe during the Iron Age</b> .....	90
Caroline von Nicolai	
<b>Some symbolic and chronological aspects of rock art of the Hillfort Culture, northwest Iberian Peninsula</b> .....	104
Fernando Coimbra	
<b>Fortifications of the Early Iron Age in the surroundings of the Princely Seat of Heuneburg</b> .....	113
Leif Hansen, Dirk Krause and Roberto Tarpini	
<b>The fortifications of the Heuneburg lower town: A summary and evaluation of the 2000-2008 excavations</b> .....	123
Manuel Fernández-Götz	

<b>Compartment ramparts in the castros of northwest Iberia .....</b>	<b>135</b>
Jorge Camino Mayor and Esperanza Martín Hernández	
<b>The Iron Age hillforts of Gipuzkoa (Basque Country): settlement patterns, fortification systems and territory control .....</b>	<b>149</b>
Sonia San Jose, Antxoka Martínez, Xabier Peñalver, Carlos Olaetxea, Javier Prieto Domínguez and Juncal Calvo	
<b>Excavations at Caerau Hillfort, Cardiff: Towards a narrative for the hillforts of south-east Wales.....</b>	<b>163</b>
Oliver Davis and Niall Sharples	
<b>The oppidum of Manching: Examining the construction and defensive capability of a Late Iron Age fortification .....</b>	<b>182</b>
Thimo Brestel	
<b>The fortifications of Colle Le Case: a new study of Samnite enclosures in Molise (Italy) .....</b>	<b>196</b>
Francesca Di Palma	
<b>Walls and Castros. Delimitation structures in the proto-historic settlements of Entre Douro and Vouga region (central-north Portugal).....</b>	<b>215</b>
António Manuel S. P. Silva and Gabriel R. Pereira	
<b>Reviewing a pre-Roman oppidum in northern Portugal. Summary of the archaeological works carried out at <i>Citânia de Briteiros</i> (Guimarães).....</b>	<b>229</b>
Gonçalo Cruz and José Antunes	

# List of Figures

## A. Reymann: **My home is my castle? Thoughts about the archaeological axiom of the distinction of fortified and unfortified sites, referring to ethnographical records**

Figure 1: Settlement at Kings Island, as photographed by Allen Shattuck in 1888 .....	7
Figure 2: The Tlingit Fort Daax Haat Kanadaa (49-SIT-244), in the background the rocky archaeological site of Yaay Shanoow (49-SIT-132).....	8
Figure 3: The defensive network on Northern Gulf Island, Strait of Georgia, British Columbia, Canada.....	9
Figure 4: Outer wall of the village of Karat Konso, Ethiopia .....	12

## G. Lock and I. Ralston: **A new overview of the later prehistoric hillforts of Britain and Ireland**

Figure 1: The Atlas set of confirmed (reliability of interpretation) hillforts in Britain and Ireland .....	20
Figure 2: The Atlas set of confirmed small forts in Britain by the OS criterion of under 3 acres .....	21
Figure 3: The distribution of multivallate (including partially multivallate) forts in Britain on current morphology regardless of enclosed area.....	22
Figure 4: Densities of total confirmed hillfort numbers by the areas of historic counties, ranked into quartiles .....	23
Figure 5: Densities of numbers of hillforts over 1 ha in extent by the areas of historic counties ranked into quartiles.....	24
Figure 6: The Atlas set of the 270 confirmed hillforts in Britain and Ireland which are at least 5 ha in extent in at least one of their configurations.....	25
Figure 7: Pie-chart of the hundred largest hillforts in Britain and Ireland by country.....	25
Figure 8: The Atlas set of confirmed promontory forts in Britain and Ireland (N=963), highlighting the 55 examples over 5 ha in internal area.....	26
Figure 9: (A) The Atlas distributions of confirmed forts with excavation evidence for timber-framing or timber-lacing in their enclosures .....	27
Figure 9: (B) The Atlas distributions of confirmed forts with evidence of vitrification from either surface or excavated evidence.....	28
Figure 10: Chevaux-de-frise associated with confirmed hillforts in Britain and Ireland. Only 19 examples, predominantly along western coasts, are recognised.....	29

## F. Molina González *et al.*: **The chronology of the defensive systems at Los Millares (Santa Fe de Mondújar, Almería, Spain)**

Figure 1: Los Millares, southeastern Iberia .....	32
Figure 2: Los Millares – between the Rambla de Huéchar and Río Andarax .....	32
Figure 3: a) Map of the Los Millares settlement, necropolis and hillforts; b) Los Millares and surrounding sites and necropolises.....	33
Figure 4: a) Los Millares necropolis and settlement (including banks/walls); b) Hillfort 1 with ditches.....	34
Figure 5: a) General aerial view of the four defensive lines of Los Millares; b) The northern area of the outer wall (I) with towers and successive bastions; c) Main gate in outer wall (I); d) The central area of the outer wall (I), with the main gate and a view of the outer ditch.....	34
Figure 6: a) View of defensive wall II; b) View of defensive wall III; c) View of the citadel (IV); d) View of hillfort 1 .....	35
Figure 7: A contiguous phases bayesian model from Los Millares radiocarbon dates according to their stratigraphic phases .....	39
Figure 8: a) ‘Sum of probabilities’ curves of Los Millares radiocarbon dates according to their stratigraphic phases; b) ‘Sum of probabilities’ curves of Los Millares radiocarbon dates according to their provenance areas.....	41
Table 1: Available radiocarbon dates for Los Millares.....	37
Table 2: Bayesian calibration results following a model of contiguous phases (without overlapping or hiatus) of the set of dates from the Los Millares archaeological complex .....	40

## A. Canha: **Fortified and Monumentalised Landscapes of the Beira-Douro region between the 3rd and 1st millennia BC: Architecture, Scenarios and Symbology**

Figure 1: The Beira-Douro region within the Iberian Peninsula .....	45
Figure 2: Administrative areas (city councils).....	45
Figure 3: Settlements with at least one defensive system.....	47
Figure 4: Landscape Units defining the project area.....	48

D. Delfino and A. Del Lucchese: **Terraced-walled settlements  
in Bronze Age Liguria (north-western Italy): can we speak  
of Iron Age ‘castellari’?**

Figure 1: Map of Liguria showing positions of the settlements referenced .....	56
Figure 2: Dry-stone wall, settlement of Genova-Brignole .....	57
Figure 3: Map of Genova showing the Early Bronze Age wall .....	57
Figure 4: Position and stratigraphy of the Castellaro di Camogli.....	58
Figure 5: Left: Castellaro di Zignago. A) Mt Dragnone; B) Settlement area. Right: Plan and stratigraphy of southern area.....	59
Figure 6: Plan of the settlement of Bric Reseghe .....	59
Figure 7: Wall of the settlement of Bric Reseghe .....	60
Figure 8: Plan of the Castellaro di Uscio .....	60

L. Berrocal-Rangel *et al.*: **From earth to wood: the ramparts of Ratinhos (Moura, Portugal)  
as an example in the transition between the Late Bronze Age  
to the Early Iron Age**

Figure 1: 1. Late Prehistoric sites with vitrified stones along the walls. 2. The Guadiana River and the site of Ratinhos and other main Late Bronze Age hill-forts .....	64
Figure 2: 1. Plan of Ratinhos after the 2004-2007 excavations. 2. View of Ratinhos hill and the northern wall from the North.....	65
Figure 3: Single-layer plan of the constructions of the acropolis, and the relations of the measurements of these buildings .....	67
Figure 4: 1. Section of the Late Bronze Age rampart at the third line; 2. View for the LBA rampart from south .....	68
Figure 5: 1. Section of the Early Iron Age rampart; 2. View from west, with location of the post holes A1 and A2 .....	69
Figure 6: 1. Plan and section of the Early Iron Age rampart with the vitrified or fired remains. 2. Samples of fired clay and vitrified stones from this rampart.....	70
Figure 7: Stone and clay samples with the mineral composition results obtained by X-ray diffraction (XRD).....	72

P. Rondini and L. Zamboni: **Another post in the fence. Proto-urban delimitations  
in Final Bronze Age and Early Iron Age Northern Italy**

Figure 1: North-eastern Italy in the FBA (11th-10th centuries BCE), with the main sites mentioned in the text .....	76
Figure 2: Plans of different FBA and EIA sites from north-eastern Italy.....	78
Figure 3: Plans and reconstructive illustrations from the FBA sites of Calcinato Ponte S. Marco, and Treviso.....	79
Figure 4: North-eastern Italy between the FBA (11th-10th centuries BCE) and Early Iron Age (9th-7th BCE).....	80
Figure 5: Wooden palisades of the EIA from Padova, and Este .....	80
Figure 6: <i>Felsina</i> /Bologna in the EIA: 1) plan of the site; 2) archaeological features in Piazza Azzarita; 3) the excavation in Piazza VIII Agosto.....	81
Figure 7: 1) Eastern Romagna in the FBA; 2) Scheme of the 2011-2017 excavation trenches; 3) The EIA ditch and the palisade; 4) An <i>impasto</i> handle, from a layer of the palisade; 5) The palisade, view from the north.....	83
Figure 8: Verucchio Pian del Monte: 1) plan of the EIA boundary structures; 2) profile of the double ditch.....	84

C. von Nicolai: **The appropriation of settlement space in  
Western and Central Europe during the Iron Age**

Figure 1: Location of Late Iron Age hillforts studied in this paper .....	91
Figure 2: Cross-section of a typical hill-fort rampart showing the possible locations of deposits and burials.....	92
Figure 3: <i>Oppidum</i> of Mont-Vully. Deposit of two lower jawbones of a cow in one of the post-holes of the southern tower .....	93
Figure 4: <i>Oppidum</i> of Stradonice. Implement deposit placed in a pit cut into the bank of the rampart.....	94
Figure 5: <i>Oppidum</i> Yverdon-lès-Bains. Wooden statue and its location in the backfill of ditch 2 .....	94
Figure 6: <i>Oppidum</i> Altenburg-Niederstein. Mass find in front of the rampart .....	95
Figure 7: <i>Oppidum</i> Basle. Skeleton discovered within the <i>murus gallicus</i> . Horizontal section of the <i>murus gallicus</i> at the bottom level of the skeleton.....	96
Figure 8: Wallendorf hillfort. Location of a child's skull deposited in the rampart.....	97
Figure 9: Evolution of the phenomenon between the Early Bronze Age and the Late Iron Age.....	99
Figure 10: Evolution of the phenomenon during the Late Iron Age .....	99

F. Coimbra: **Some symbolic and chronological aspects of rock art  
of the Hillfort Culture, northwest Iberian Peninsula**

Figure 1: Area of the Hillfort Culture .....	105
Figure 2: The warrior from Monte do Castelo .....	105
Figure 3: Hunting scene (?) from the hillfort of Sanfins .....	106
Figure 4: Footprints and cup-marks from the Roriz hillfort .....	107
Figure 5: Incised fish from the Hillfort of Formigueiros .....	107
Figure 6: Segmented circle from Briteiros .....	108
Figure 7: Engravings from Crastoeiro .....	108
Figure 8: Stone with cup-marks from the hillfort of Valinhas.....	109
Figure 9: The same stone displayed in the Arouca Museum .....	109
Figure 10: Swastikas: from Guifões (left) and Giadighe (right), with cup-marks in a cross shape.....	110



**L. Hansen *et al.*: Fortifications of the Early Iron Age in  
the surroundings of the Princely Seat of Heuneburg**

Figure 1: Model of the Heuneburg with the hilltop plateau, lower town and outer settlement in the first half of the 6th century BC.....	114
Figure 2: The environs of the Heuneburg with further hilltop sites, rural settlements and burial mounds of the Hallstatt and Early La Tène periods .....	114
Figure 3: The Heuneburg near Herbertingen-Hundersingen. The mudbrick wall and masonry plinth during the excavations of 1968 .....	115
Figure 4: The Heuneburg near Herbertingen-Hundersingen. Masonry foundation of the lower town gate.....	116
Figure 5: LIDAR scan of the Alte Burg near Langenenslingen.....	117
Figure 6: The Alte Burg near Langenenslingen. Corner situation with the inner face of the main wall .....	117
Figure 7: The Alte Burg near Langenenslingen. The internal end of the peripheral wall.....	118
Figure 8: LIDAR scan of the Große Heuneburg .....	119
Figure 9: Große Heuneburg near Zwiefalten-Upflamör. View of the outer face of the two-shell wall .....	119
Figure 10: Große Heuneburg near Zwiefalten-Upflamör. North section through the fortification in the north-west .....	120

**M. Fernández-Götz: The fortifications of the Heuneburg lower town:  
A summary and evaluation of the 2000-2008 excavations**

Figure 1: Plan of the Heuneburg agglomeration during the mudbrick wall phase .....	124
Figure 2: Overall plan of the 2000-2008 excavations in the surroundings of the Heuneburg hilltop plateau .....	124
Figure 3: Photograph of the skull fragment from the area of the Heuneburg car park excavations .....	125
Figure 4: Thanks to the excellent preservation of the wooden finds beneath the northern tip of the plateau, traces of working with hatchet, axe and adze were visible.....	127
Figure 5: Neck of an amphora from <i>Massalia</i> discovered in the inner ditch at the foot of the hilltop plateau.....	128
Figure 6: Aerial view of the lower town gatehouse. The cross walls reduced the width to 2.50 m .....	129
Figure 7: Strongly burned mudbrick fragments from the gatehouse's upper structure .....	129
Figure 8: Stone plinth of the gatehouse in the lower town: East side with the parallel wall that served as a base for stairs.....	130
Figure 9: Painted pottery from the ditch in front of the gatehouse of the lower town.....	131
Figure 10: Idealised reconstruction of the gateway of the Heuneburg lower town .....	132

**J. Camino Mayor and E. Martín Hernández: Compartment ramparts  
in the castros of northwest Iberia**

Figure 1: Map and front view of Moriyón rampart.....	136
Figure 2: Stratigraphy and superposition of the modular wall over the previous one of La Campa Torres .....	137
Figure 3: Stratigraphy and excavation. In the centre the old wall cut by the modular wall .....	139
Figure 4: Table of C14 dates. The rectangles are marking areas of overlap, between the <i>termini post quem</i> -above- and <i>termini ante quem</i> -below- in each settlement, as field of probability for the construction of the walls .....	140
Figure 5: Cellagú hillfort: walls with modular divisions .....	141
Figure 6: Modular divisions at La Loma, Santibáñez de La Peña .....	144
Figure 7: Modular rampart of Troy VI (XV-XIII cent BC), a clear example of the aesthetic use of modules and according to M. Korfmann the wall has features to prevent earthquake damage .....	145
Map 1: The Cantabrian area with modular ramparts.....	138
Map 2: The Iberian Peninsula with compartment box ramparts .....	142

**S. San Jose *et al.*: The Iron Age hillforts of Gipuzkoa (Basque Country):  
settlement patterns, fortification systems and territory control**

Figure 1: Hillforts .....	150
Figure 2: Some of the materials from the hillforts of Gipuzkoa .....	153
Figure 3: LiDAR digital model and topographic redefinition of some hillforts of Gipuzkoa .....	155
Figure 4: High hillforts isolated from their surrounding environment .....	157
Figure 5: Topography of Intxur (Albiztur-Tolosa) with the walls in black .....	158
Figure 6: Views of the interiors of some excavated walls and a sketch model of an Iron Age wall from Gipuzkoa .....	158
Figure 7: Plan of the main entrance to Munoaundi.....	159
Table 1: Carbon-14 dating from the Iron Age hillforts of Gipuzkoa .....	151

**O. Davis and N. Sharples: Excavations at Caerau Hillfort, Cardiff:  
Towards a narrative for the hillforts of south-east Wales**

Figure 1: Hillforts in Wales .....	164
Figure 2: Map of Glamorgan showing topography and location of hillforts .....	165
Figure 3: Simplified plans of selected hillforts mentioned in text.....	167
Figure 4: Location map of Caerau Hillfort showing 'urban' context.....	170
Figure 5: Composite geophysical survey plan of the interior of Caerau .....	171
Figure 6: Section through the inner hillfort rampart on the northern side of the hillfort .....	172
Figure 7: Simplified plan of Trench 3 showing roundhouses and other features.....	173

Figure 8: Late Bronze Age metalwork finds recovered from around Caerau Hillfort.....	176
Table 1: Published radiocarbon dates from hillforts in Glamorgan.....	169
Appendix 1: Glamorgan hillforts.....	180

**T. Brestel: The oppidum of Manching: Examining the construction and defensive capability of a Late Iron Age fortification**

Figure 1: Manching. Schematic map of the oppidum with the excavated areas and the sections through the rampart.....	183
Figure 2: Manching. Section XV through the rampart showing the complex stratification of the ramp.....	184
Figure 3: Manching. Plan of the archaeological features from the wall in section XV.....	184
Figure 4: Manching. Reconstruction of the three phases of the rampart based on the excavated features from section XV.....	185
Figure 5: Manching. Plan of section XIII featuring the eastern gate with the 'Holzkastensperre'.....	186
Figure 6: Manching. Schematic plan of the oppidum with the excavated areas, archaeological features and the hydrography.....	187
Figure 7: Manching. Proposed graphical reconstructions of the eastern gate.....	188
Figure 8: Manching. Distribution of the weapons during LT C and LT D. Hatched areas mark high concentrations of weapons.....	189
Figure 9: Manching. A: One of the caltrops found in the oppidum. B: Detailed distribution map of the features with weapons and caltrops in the 'Zentralfläche' area.....	190
Figure 10: Distribution of the oppida with murus gallicus – and Pfostenschlitzmauer – constructions.....	191

**F. Di Palma: The fortifications of Colle Le Case: a new study of Samnite enclosures in Molise (Italy)**

Figure 1: Colle Le Case external enclosure, first section.....	197
Figure 2: Colle Le Case external enclosure, second section.....	197
Figure 3: Colle Le Case external enclosure, first section (detail).....	197
Figure 4: The tratturo Castel di Sangro-Lucera that crosses the territory of Pescolanciano.....	198
Figure 5: Network of tratturi.....	199
Figure 6: Civita of Civitanova del Sannio, hill fort to check the tratturo Castel di Sangro-Lucera and Trigno river.....	200
Figure 7: Territorial classification, in evidence the area of investigation.....	201
Figure 8: Traces of quarry activities (detail 1).....	202
Figure 9: Traces of quarry activities (detail 2).....	202
Figure 10: A small sherd of pottery founded near the top of hill.....	202
Figure 11: Dry stone enclosure, between localities Colle Le Case and Monte Caravello, maybe a corral.....	203
Figure 12: Survey map.....	203
Figure 13a: HDS7000 the laser scanner used to examine the walls of Colle Le Case.....	204
Figure 13b: HDS7000 the laser scanner used to examine the walls of Colle Le Case (detail).....	204
Figure 14: The graphic restitution of reflectance value: external walls, first section.....	205
Figure 15: The graphic restitution of reflectance value: external walls, second section.....	205
Figure 16: The graphic restitution of reflectance value.....	206
Figure 17: The graphic restitution of reflectance value.....	206
Figure 18: The graphic restitution of reflectance value.....	206
Figure 19: Michele Battista the shepherd who accompanied me in the most impervious areas.....	207
Figure 20: Colle Le Case: a reconstruction hypothesis.....	208
Figure 21: Colle Le Case in visual contact with the other fortified centres.....	209

**A.M.S.P. Silva and G.R. Pereira: Walls and Castros. Delimitation structures in the proto-historic settlements of Entre Douro and Vouga region (central-north Portugal)**

Figure 1: Proto-historic hillforts in the Entre-Douro-e-Vouga region.....	217
Figure 2: Senhor dos Aflitos, Arouca. Wall made from a single alignment of stones.....	218
Figure 3: São Julião, Albergaria-a-Velha. Top view and drawing of the wall.....	219
Figure 4: São Julião. Hypothetical reconstitution of the boundary structure.....	219
Figure 5: Cidade, Arouca. Drawing of an archaeological trench in the boundary structure.....	221
Figure 6: Salreu, Estarreja. Top view and drawing of the wall (sector K).....	222
Figure 7: Salreu, Estarreja. Hypothetical reconstitution of 'platform wall'.....	222
Figure 8: Ovil, Espinho. A perspective of the ditch.....	222
Figure 9: Valinhas, Arouca. A view of a simple stone wall.....	223
Figure 10: Romariz, Santa Maria da Feira. Inside face of the upper wall.....	223
Table 1: Boundary/defensive systems in the castros of the region between the Douro and Vouga rivers.....	224

**G. Cruz and J. Antunes: Reviewing a pre-Roman oppidum in northern Portugal. Summary of the archaeological works carried out at Citânia de Briteiros (Guimarães)**

Figure 1: Drawing of Citânia de Briteiros in 1791, with a representation of the different lines of walls and the orthogonal roads.....	229
Figure 2: A view of the acropolis of the Briteiros oppidum during excavations by Martins Sarmiento.....	230

Figure 3: A detail from the 1892 topographic survey of Citânia de Briteiros made by Álvaro de Castelões.....	230
Figure 4: General plan of the Briteiros <i>oppidum</i> showing the known archaeological structures .....	231
Figure 5: A view of the south-western bathhouse at Citânia de Briteiros .....	233
Figure 6: A schematic plan of the 'House of the Spiral' (left); a plan of the archaeological trenches carried out in the compound (right) .....	234
Figure 7: The central courtyard of the 'House of the Spiral', with the stone pavement, during excavation works .....	234
Figure 8: A general view of the 'House of Auscus' during the 2008 excavation works .....	236
Figure 9: A schematic plan of the 'House of Auscus' (left); a plan of the archaeological trenches dug in the compound (right) .....	236
Figure 10: The stone element with the epigraph 'Aus[ci]'(?), collected in the 2009 excavation campaign.....	238

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# Late Prehistoric Fortifications in Europe: Defensive, symbolic and territorial aspects from the Chalcolithic to the Iron Age

Davide Delfino, Fernando Coimbra, Gonçalo Cruz  
and Daniela Cardoso

In large parts of Europe, walls, fences, berms or ditches around settlements or ritual places became increasingly significant from the Chalcolithic to the Iron Age. Several features have been discovered, relieved and interpreted since the 19th century, giving rise to various terminologies used according to the European regions and the archaeological evidence found: *Causewayed camp* used in the UK (a site with surrounding banks and/or ditches, with entrances, usually not a settlement); *Causewayed enclosure* used in the UK (a site with surrounding banks and/or ditches, with entrances, usually not a settlement); *Crab's claw* used in Italy and France (a site surrounded by ditches with 'crab-claw'-like entrances); *Ditched enclosure* used in the UK (a site surrounded by ditches, usually with entrances); *Earthwork* used generically in many regions (any feature, such as a bank, which involves the movement of earth); *Einhegung* used in central Europe (literally an 'enclosure,' a general term used for sites with encircling features); *Enceinte* used in western Europe (ditch or fortification surrounding a site); *Enclosure* used generically in many regions (general term for any feature surrounding a site); *Erdwerke* used in central Europe (any feature, such as a bank, which involves the movement of earth); *Fortification* used generically in many regions (interpretive term implying a defensive purpose for an enclosure, usually involving a palisade); *Grabenwerke* used in central Europe (ditch surrounding a site); *Henge* used in the UK (upright stones or wood with spaces surrounding an area, usually with no settlement); *Hillfort* used generically in many regions (elevated settlement surrounded by ditches); *Interrupted ditches* used in north-western Europe (discontinuous ditches with many 'entrances'); *Kreisgrabenanlagen* used in central Europe (circular ditches, fortifications, and sometimes henges); *Kreispalisadenanlagen* used in central Europe (a fence of closely arranged wooden posts surrounding a site); *Palisade* used generically in many regions (a fence of closely arranged wooden posts surrounding a site); *Rondel* used in central Europe (site surrounded by multiple concentric ditches, usually not a settlement); and *System ditches* used in northern Europe (discontinuous ditches with many 'entrances') (Parkinson, Duffy 2007: 102). To this

list may be added *casteddi*, used in Corsica (a village perched on a hill surrounded by a drystone wall), *castellari* used in Liguria (a terraced village perched on a hill), *castellieri* used in north-eastern Italy and along the coast of Croatia (a fortified settlement on a hill surrounded by embankment and palisade or drywall), *oppida* used for the fortified towns of the Celtic world, and *castro*, *citânia* or *cividade*, mainly in the northwest of the Iberian Peninsula.

In the Chalcolithic, some examples of different architectures and use of structures are located in Great Britain, with settlements surrounded by ditches and embankments, such as Avebury; in France there are multiple ditches surrounding an empty area at Camp Durand (Parkinson, Duffy 2007: 103); in the south-west of the Iberian Peninsula we have fortified settlements with drywalls and towers, e.g. Los Millares (Molina, Camara 2005) and Zambujal (Kunst 2003), or ditched enclosures with graves, as at Perdigões (Valera, Silva, Márquez Romero 2014) or in the Guadalquivir basin (Escudero Carillo *et al.* 2016).

The Bronze Age also has examples of different types of enclosures around settlements or attendance sites, or really fortified settlements. There are walled sites, such as the *nuraghe* in Sardinia, the *casteddi* in Corsica, the *motillas* of the central Iberian Peninsula. Sites with ramparts and ditches are known in southern Portugal, e.g. Outeiro do Circo, or in central-northern France, e.g. Villiers-sur-Seine – or the most famous example: Fort Harrouard (this one with occupation that goes before and beyond the Bronze Age). There are the well-known hillforts of Great Britain and Ireland – Mooghaum, Dun Aoenghasa, Maiden Castle – occupied until the Late Iron Age. Switzerland has its villages on stilts, such as Cortaillod-est, partially surrounded by timber palisades. Villages completely surrounded by timber palisades are found in south-western Germany, e.g. Siedlung Forschner. Other variants include the walled hilltop settlements in the hills of central Germany, e.g. Stallberg, and the large tell-village in the Hungarian plain with inner palisades, like Jaszdosza-Kapolnaholm, or surrounded by ditch, rampart and palisade, like Santana. Ditch and palisade settlements are found in

Poland and the eastern Carpathians (e.g. Bruszczewo), and dammed villages exist in northern Italy, such as the *Terramare* or the *Castellieri*, and also there are terraced villages in Liguria and Provence known as *castellari*.

For the Iron Age, the *oppida* feature extensively – Maiden Castle (UK), Bibracte (France), Monte Bernorio (Castilla y Leon, Spain), San Cibrán das Lás (Orense, Galicia, Spain), Citânia de Briteiros, and Citânia de Sanfins (both in northern Portugal). Other, smaller, *castros* from the Iberian Peninsula, besides defensive walls, had sharpened stakes (*chevaux-de-frise*) to prevent attacks of organised groups (on foot or on horseback). In the Portuguese region of Trás-os-Montes, so far, there are 38 examples alone of this form of protective system (Redentor 2003).

In the northwest of the Iberian Peninsula, from the 4th century BC onwards, the number of fortified settlements increases significantly (Carballo Arceo, González Ruibal 2003) and thus far, in the region of Galicia alone, some 5000 *castros* are referenced (González Ruibal, pers. comm.).

Interpretation of ‘enclosures’ appears more problematic for the periods of the Chalcolithic, Bronze, and Early Iron Ages, for which we have only archaeological data, lacking of course the classical historical sources we have for Iron Age II. But the latter also has its problems. Fierce debates have been going on for decades now about the role of enclosures (i.e. were they mainly military, or mainly symbolic, or constituting essentially some sort of territorial demarcation?). Each of these interpretations necessarily lead on from the role of a single site to the structure of the whole ancient community (Parkinson, Duffy 2007: 115), and each site demonstrates its uniqueness, demanding an individual research strategy (Jaeger 2016: 151). On the different ways of interpreting the enclosures, Parkinson and Duffy (2007: 116) significantly wrote:

‘Finally, the issue of warfare and the potential use of enclosures as fortifications mimics a general pattern in archaeology, anthropology, and military history that has led to a more reasonable and realistic understanding of violence and warfare in different cultural contexts.’

Symbolic interpretations have been advanced since the oldest ditch enclosures, which embrace the final part of the Neolithic and the Chalcolithic, as links to terrestrial and celestial landscape relationships (Valera 2012), or as a variability reflecting social change (Dias del Rio 2004), or as practical-symbolic structures of territorial control (Gascò 2009: 18).

A defensive interpretation is also applicable for some Chalcolithic examples of true fortified villages in the

Iberian Peninsula (Mederos Martín 2009: 35-40), and through the Bronze Age too, as various examples of hillforts in central Europe testify (Hansen, Krause 2018). And, in the general panorama, the old definition of ‘boom des fortifications’ expressed by Brun and Mordant (1988) for the ‘barbaric Europe’ between the Final Bronze Age and Early Iron Age, still rings true.

Generally, there is a chronological hiatus in the existence of enclosures between the Neolithic/Chalcolithic and the Final Bronze Age/Iron Age, as in southern France (Gascò 2009: 19), while in the Iberian Peninsula the phenomenon continues throughout the Chalcolithic/Early Iron Age, with just rare examples of continuity in the same settlements (Lull *et al.* 2014). On the other hand, in northern Italy, dammed settlements proliferate from the Middle Bronze to the Late Bronze Ages (Bernabò Brea, Cardarelli, Cremaschi 1997), with a partial permanence until the beginning of the Late Bronze Age (Cupitò *et al.* 2012), until the Iron Age, compared to a diffuse continuity in the same settlements with Bronze Age enclosures in the Britannic Islands (O’ Brian, O’ Dryscoll 2017; Harding 2012), France (Gascò 2009), central Europe (Hansen, Krause 2018), and in the Iberian Peninsula.

In the north-western corner of Iberia, there are sites established in the Late Bronze Age that had a continuous occupation to the end of Iron Age, i.e. to the phase of the first contacts with the Romans. This seems to be the case at Citânia de São Julião, and Castro do Barbudo, with continuous occupation reaching through the 1st millennium BC (Martins 1990). In the last two centuries BC, different sites that were established in the Late Bronze Age were reoccupied, their strategic positions being an important criterion for the location of large and impressive *oppida*, regarded as the first urban experiences in this territory (González-Ruibal 2006-07).

Continuing in the north-western corner of Iberia, the hillforts from the Late Bronze/Early Iron Ages were located in places with natural defensive conditions. In the Late Iron Age, they appear at lower altitudes, near better lands for agriculture, but having as a disadvantage worse natural conditions for protection, and having therefore the need for an apparent investment increase in the construction of defensive solutions, tending to modify terrain configurations rather than adapting to the natural conditions (Parceró Oubiña 2002: 200-223).

This could mean a defensive function for their walls, although, in certain cases, protection was not the most important aspect, but rather the symbolic demonstration of power and high status to impress ‘foreign’ communities (Ruiz Zapatero, 2003).

Interestingly, some Bronze Age settlements from the Portuguese Middle Tagus region have no walls, as we find in some examples from the Municipality of Abrantes (Delfino *et al.* 2014) and neighbouring Chamusca (Coimbra, in press). Could this mean low conflict levels in this particular area, as Cardoso (2002) argues, with these settlements being controlled by elites of high prestige, responsible for social cohesion and the stability of the populations?

As we have seen, the European scenario in terms of fortifications and enclosures in the Metal Ages is very uneven, above all in the Chalcolithic and Bronze Age, both from the point of view of the progress of researches in each region, and from the different applied interpretative models and discovered chronologies.

It is appropriate to add here that the analysis of enclosures also benefits from cross-archaeological, ethnographic and historical researches, as demonstrated by Parkinson and Duffy (2007: 117-124) when they compared the data from Europe, Mesoamerica, and the southern United States.

A turning point in the study of fences, as was observed more than 15 years ago by Parkinson and Duffy (2007: 125), can be argued for the creation of interpretative models trying to understand the occurrences of various features on geographical and temporal scales, and, more broadly, by the use of cross-cultural and explicit comparative frameworks in their interpretations. A warning about the ease of error in interpreting certain architectural manifestations as endogenous or exogenous phenomena was pointed out by Guilaine, relative to the Iberian south-east in the Chalcolithic (Guilaine, Zammit 2001: 260). However, an interpretative model in this sense also needs to be based on more data that can be updated, and this requires periodic sharing of information between different researchers working on sites in different regions. (And that they challenge, not simply follow, the different schools of thought, reasoning in an open way.

The Colloquium 'FortMetalAges, organised by the Scientific Commission 'Metal Ages in Europe' of the International Union of Prehistoric and Protohistoric Sciences as part of its scientific program, was designed precisely in these terms, embracing as many European regions and researchers as possible, to discuss open questions, present new data and provide a comparative framework by bringing together a wide range of scholars working on different periods and regions, with the aim of creating a broad and neutral environment for shared discussion on enclosures and fortifications in the Metal Ages. And, if possible, this should be repeated periodically to give continuity to the sharing of data and the discussion of models.

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# My home is my castle? Thoughts about the archaeological axiom of the distinction of fortified and unfortified sites, referring to ethnographical records

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## Abstract

In archaeological research, a categorical distinction between fortified and unfortified settlements has been established and preserved for a long time. In the usual methodological approaches this scheme is accompanied by the assumption that sites with complex fortifications had an important meaning. They were considered strategically more highly ranked in the settlement hierarchy of the surrounding landscape, connecting other settlement types and places by being central to all regional human activities. The established elites, to which the archaeologists of the last hundred years referred to as 'kings', 'warlords', 'Fürsten', 'priest-chiefs', 'big men', and so on, were thought to have had their established reign controlled from these spots. A massive amount of theoretical literature was published that tried to simulate possible models, trying to explain those constellations. If one takes a closer look at settlement organisations and the type of fortification constructions in the ethnographical record, two conclusions can be drawn: that the term fortification cannot only be restricted to those phenomenon that are normally classified under this topic by archaeologists, and that fortifications are not always erected by a restricted and privileged community of 'elites'.

**Keywords:** conflict research, fortifications, ethnographical analogies, warfare, defensive architecture

## Introduction and the wide range of the term 'fortification'

'Yet for centuries, scholars [...] also have looked for more general processes or conditions that help to explain major evolutionary transitions, such as the emergence of inequality, the institutionalization of leadership, and the rise of urban centers. The bulk of scholarly attention has been focused on parallels or similarities in the transitions from one region to another, while questions and investigations to address differences or variation generally have been accorded less emphasis.'<sup>1</sup>

As demonstrated by Feinman in the quote above, archaeological approaches to different source categories regularly compare investigated material. This is quite ambitious as one of the main goals of archaeology aims to understand human behavior in the past to have a better understanding of human behavior overall. However, a stereotypical classification of investigated materials holds pitfalls, as differences and variations are normally ignored. Atypical observations tend to be classified as simple as 'something that has nothing to do with the subject we speak about'.

This problematic phenomenon appears also in the field of the investigation of prehistoric fortified sites. In this field, commonly subsumed under the term 'settlement archaeology', settlement sites are

commonly classified either as 'fortified' or 'unfortified'. Unfortified sites are simply places without ditches, walls, ramparts and similar architectural structures. Fortified sites are commonly seen as places where specialised craftsmanship and purposeful activities were undertaken, and where the social elite would dwell. Statistical observation revealed that, especially in the metal ages, places with well-built fortifications had to be constructed in a labour-intensive way, compared to the mass of small, unfortified sites. This results in a huge amount of work involving the efforts of many people: both their time and resources were necessary for the construction. Some individuals had to organise the efforts of the community. The Bronze Age researcher Albrecht Jockenhövel states that 'only by a greater community realizable constructions [demonstrate, A.R.] a more firm society compared to those of earlier times,<sup>2</sup> meaning a society where elites organised the building of monuments and instructed all bigger tasks.

Turning away from the question of social organisation, the term 'fortification' itself is a vague concept, with a much wider meaning than commonly assumed. Basically, the word fortification derives from the Latin verb 'fortifico', which means making something strong. It correlates to the Middle High German 'Vestung'. The fortification is therefore just a place, which has been artificially improved in reference to its defenses, so that a fortification can be seen as...

<sup>1</sup> Feinman 2017: 460-461.

<sup>2</sup> Jockenhövel 1997: 7. Translated by the author.

.... basically a site, predestined by its topographical position and artificially transformed to improve the ability of a defender to fight against possible attackers.

As shown by this simple definition, it fits not only to the massive fortifications of modern times, not only to the impressive walls of ancient sites like Troy, or other Mediterranean fortifications which have been the main focus of investigation of past archaeological projects,<sup>3</sup> but also to those places that show no, or nearly no, signs of artificial modifications. This problem has already been emphasised in the Anglo-American research, connected to the level of potential warfare in the past.<sup>4</sup> This conviction has been preserved in middle European archaeology, that only massive fortifications were an 'effective' defense against opponents and that only those types of structures were therefore built with an intentional defensive function. Looking closer at the ethnographic record, it can easily be proven that there are different forms of fortifications. They are closely connected to the ways of war and have not always been constructed by highly hierarchical, elite-guided societies.

### A brief typology of fortifications

In archaeology, a distinct spectrum of architectural elements is normally perceived as being part of a fortification. The archaeologist Mariya Ivanova lists under this term, in her work on southern European fortifications, ditches, walls, ramparts, glacis, stockades, bastions, towers and gates<sup>5</sup> as the most important components and describes in detail the different aspects, functions and ways of construction.<sup>6</sup> In a similar approach, Keely, Fontana and Quick tried to show the interplay of the defensibility of a prehistoric site and its usability in daily life, listing different architectural devices of fortifications, such as ditches, gates, etc., as well as their diverse manifestations in the past.<sup>7</sup>

Although these are only two examples in a wide field of archaeological investigations of ancient fortifications, a more detailed examination of fortified settlements is seldom made. A classification of fortifications in more or less complex types is missing.

<sup>3</sup> For a short summary compare Ivanova 2008: 20-21.

<sup>4</sup> 'People who are engaged in frequent war employ a variety of defensive measures, some more costly than others. [...] Because such defensive efforts are costly, they are directly related to the kind of threat that looms: how severe, of what kind, at what scale.' (Arkush 2011: 60).

<sup>5</sup> See Ivanova 2008: 112ff.

<sup>6</sup> This term is no *ad hoc* word creation, as for example the German association for fortification research ('Deutsche Gesellschaft für Festungsforschung', short DGF) focuses especially on different aspects of fortifications from late medieval to modern constructions. For further information see: <http://festungsforschung.de/startseite/> (accessed 19 October 2019).

<sup>7</sup> Keely, Fontana, Quick 2007.

Therefore, we can try to classify fortifications by subdividing them into categories, rating them by the degree in which humans artificially changed their natural topography. Four categories are used here:

1. No, or nearly no, artificial modifications
2. Small artificial modifications
3. Medium artificial modifications
4. Massive artificial modifications

### No, or nearly no, artificial modifications

Starting with the first category, there are many examples in the ethnographic field for such forms of fortifications. It can easily be retraced that very often people chose a settlement site for its access to natural resources, such as food, water and other useful commodities. The aspect of defensibility was extremely important too – if not for the position of the settlement itself, then by choosing a secondary site nearby as refuge, as is described, e.g., for Eskimo-Aleutian groups:

'Defense was one of the factors taken into account in settlement location. Small settlements were often situated behind beach ridges, along the coast, or in willow thickets, inland. Larger settlements were located on points of land that could be approached by foot from only one direction during the period of open water, or near lakes where approaching forces could be easily seen approaching at all times of year.'<sup>8</sup>

While this example only mentions coastlands and dense vegetation, other groups around the world show similar reflections when choosing their settlement sites. For the Jivaro of South America, as one among many examples, it is reported, that explicitly defensible positions were chosen when new houses were built.<sup>9</sup> The usage of the topography here is not only an aspect for the settlement location itself, but also for the interaction between different settlements. If groups were involved in potential conflicts, buffer zones between their settlements were constructed and kept. Those zones normally used special features of the topography, such as mountains, swamps and other features, to keep a distance and their existence changed the methods of the warfare strategy practised.<sup>10</sup>

Another notable region for finding examples for the use of a defensible topography without artificially modifying it is along the northwest coast of the American continent, specifically west Canada. Many of the well-studied societies in this region, for example

<sup>8</sup> Burch 2007: 17.

<sup>9</sup> 'They [the settlements of the Jivaro, A.R.] are usually located in defensible positions overlooking the headwaters of tributary streams [...]' (Redmond 1984: 8).

<sup>10</sup> See Redmond 1994: 10.

Figure 1: Settlement at Kings Island, as photographed by Allen Shattuck in 1888 (<http://vilda.alaska.edu/cdm/ref/collection/cdmg21/id/2679>).



*King Island - Cliff dwellers*

Alaska State Library - Historical Collections

the Haida, Kwakwaka'wakw or Tlingit, are known for their fierce warriors. Those societies used their rich fishing grounds to establish a sedentary way of life, relying on a staple food subsistence with a highly complex social organisational structure. Although examples for more complex fortifications are reported for those regions, there are also several sites that were especially used because of their natural features as refuge islands or refuge rocks in times of danger (Figure 2). Of course, the threshold of the category 'small artificial modifications' here is low. For example, Cannonball Island, a site of the Quileute, was used as a defensive position, and oral tradition names it as 'a multipurpose site used to spot whales and other maritime animals, as a lookout for enemies, and as refuge during times of attack'.<sup>11</sup> On the contrary, the Tlingit Site on Admiralty Island was used also in the function of a refuge, but was classified as a 'fort', due to an artificial modification.<sup>12</sup> While many Tlingit sites like those along the northwest Pacific coast were usually built using natural defendable sites, such as islands or rocky headlands, some sites also received artificial modifications to improve their effectivity. On Admiralty Island, archaeological surveys revealed at one place an artificial dam beneath the water surface which enabled people to cross the river without boat.<sup>13</sup>

<sup>11</sup> Moss/Eerlandson 1992: 84.

<sup>12</sup> See Moss and Erlandson 1992 for the descriptions of different sites on Admiralty Island.

<sup>13</sup> Moss and Erlandson 1992: 74.

For possible attackers, the water surrounding this island was a natural line of defense and the vegetation at this and similar places was never cleared, so that defenders had cover and could easily hide, making the spot a perfect refuge in times of danger.

#### Small-scale artificial modifications

As already mentioned, there is a thin line between the first and second categories of fortifications; therefore, we come to the point where only small artificial modifications of the landscape can already change the defensibility of a site. The Kwakwaka'wakw of the Pacific northwest coast, for example, often built their settlements using natural slopes: the village on Kings Island is one of those sites (Figure 1).<sup>14</sup> The houses were constructed on small artificial platforms dug into the hillside. While the settlement was not accessible from the hilltop itself, the only access to the village was possible from the riverside and the canoe landing places there. In that way, the houses could be used as defensive positions in case of an attack, giving the defenders a height advantage and an effective covering against enemy attack.

Another important example for the category between no and low level modifications of the topography of a site are lookouts, level modifications of site topography

<sup>14</sup> See Mackie 2010.





Figure 2: The Tlingit Fort Daax Haat Kanadaa (49-SIT-244), in the background the rocky archaeological site of Yaay Shanoow (49-SIT-132) (Admiralty Island, Alaska, USA. Prof. Madonna Moss, July 1991).

are lookouts, especially among the Canadian indigenous populations. For example, reports exist which describe not only stockades, surrounding most of the villages of the Salish coast, but also the parallel existence of complex line-of-sight-settlement arrangements, combining fortified winter settlements and unfortified summer settlements. In particular the Lillooet and the Stó:lo, both part of the Coast Salish speaking community and inhabiting parts of the Fraser Canyon, are well studied with reference to settlement structures and fortifications.<sup>15</sup> In particular, the settlement system of the Lillooet, living in the area of the Fraser Canyon, has been examined very intensively over recent years. This forager society uses an intensive staple subsistence and shows interesting signs for a trans-egalitarian organisation that used region-wide cooperative systems to fortify their settlements, gather food, build houses, and wage war against other or against their enemies. Their settlement arrangement shows traces of a simultaneous usage of fortified and unfortified sites connected by natural places with adequate visibility, allowing the residents of this region to secure the canyon, relying on lookouts for their guarding and warning systems.

Lookouts were not the only natural features where the vegetation had been mostly cleared. There are also many examples of artificial creations of lookout points. North of Fort Kitwanga there was a Coast Salish lookout point described by Prince that had been artificially constructed:

‘This site is atop a very steep, narrow ridge, barely wide enough to stand on.... This extreme topography was purposely altered at great effort to make it habitable. The crest of the ridge was terraced down

to make a small platform, 5 m x 5.5 m, with a hearth in the center.... The position and limited size of this platform are more indicative of a lookout site. It has no easy route of access to the water’s edge below, but it has a 340-degree view-shed of the shoreline, including a clear view of the north part of the lake, and of the channel to the south, through which approaching canoes would have to pass.’<sup>16</sup>

Beside stockades, the Stó:lo used a combination of stone walls and lookouts.<sup>17</sup> If mapped, like in this case for coast Salish defensive networks by Bill Angelbeck in the Figure, the arrangement of coexisting settlement sites allows the identification of their intensive interconnection for defensive purposes (Figure 3). For this, a direct line of sight between the different settlements often existed. Additionally, if the direct line vanished, or was interrupted, or a direct line of sight was not possible due to the natural topography, the gap was closed by the construction of lookouts and communication positions. By acting like this, in case of an attack, the defenders of a settlement could alert their allies and wait until help arrived. As for the place near Fort Kitwanga, it happened that not only was the vegetation cleared, but that places were artificially transformed into suitable positions.<sup>18</sup>

In addition to the category of more or less intensive modifications to the natural topography, the ethnographical record shows several other ways of improving the defensibility of a site with little effort, although these will often leave no archaeological traces. This applies especially for defensive structures, such as hedges, fences and bushes, that can appear solely or combined as part of a complex defensive strategy.

<sup>15</sup> For Coast Salish lookout arrangements, see Angelbeck 2009: 174-180. For Stó:lo, see Schaepe 2006; for Lillooet, see Sakaguchi *et al.* 2010.

<sup>16</sup> Prince 2004: 49f., quoted this way in Angelbeck 2009: 178.

<sup>17</sup> See Schaepe 2006.

<sup>18</sup> See Schaepe 2006.



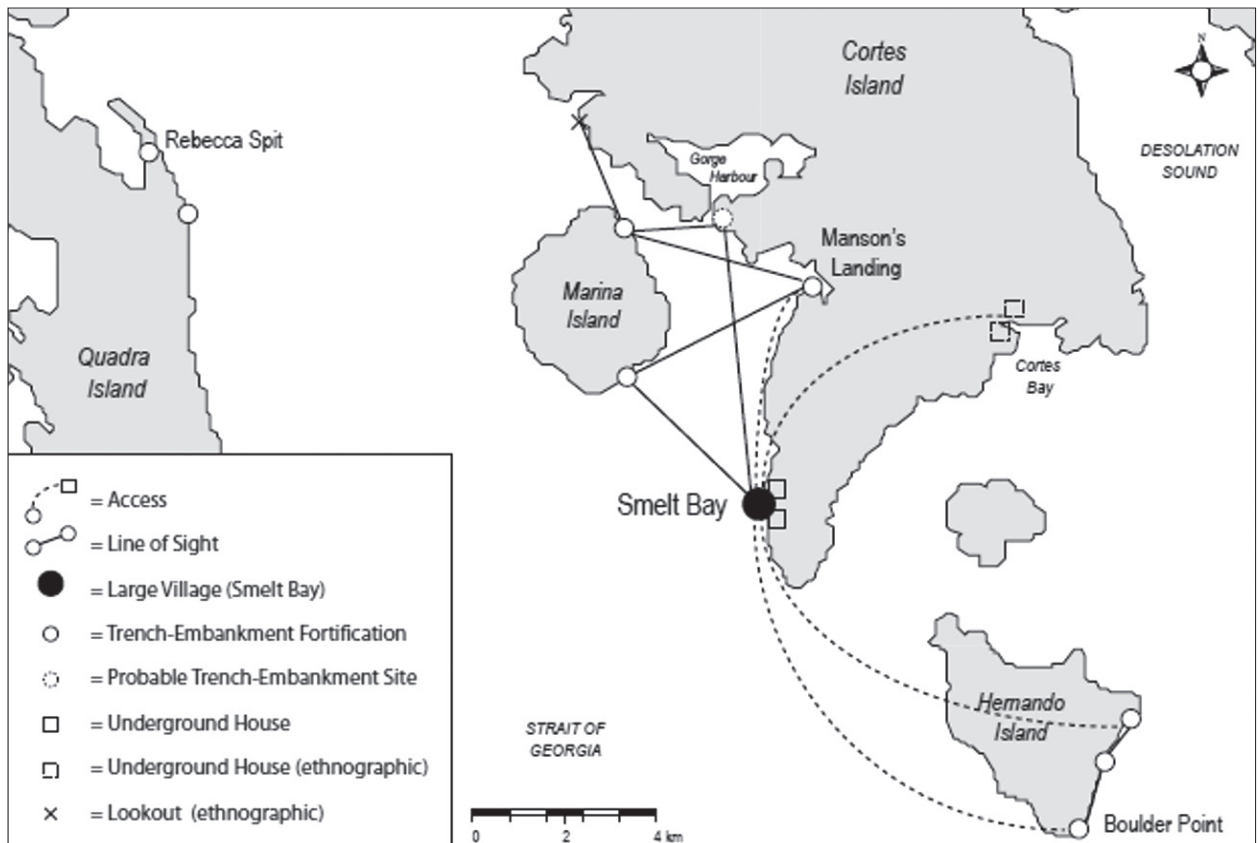


Figure 3: The defensive network on Northern Gulf Island, Strait of Georgia, British Columbia, Canada (Angelbeck 2009, figure 43, 255).

Good examples are wooden *chevaux-de-frise* commonly used to fortify a settlement in Melanesia, Polynesia, and eastern Toraja.<sup>19</sup> The Toraja accounts mention the combination of sharp bamboo constructions with other structures such as wooden walls and stockades.<sup>20</sup> Another example of small modifications, or rather 'light' fortifications, are bushes and thorny hedges; they could and still can be found in many parts of Africa, where they were reported, for example, among the Rwanda at the beginning of the 20th century,<sup>21</sup> or

<sup>19</sup> See Adriani and Krujtit 1950 for Toraja; Playfair 1909 for Garo; Low and Roth 1893 for Iban.

<sup>20</sup> 'Furthermore, a thick hedge of bamboo was planted around the dwelling place, the stalks of which were connected by cross-laths in times of war. *Chevaux-de-frise* were placed in this bamboo hedge, and sharpened bamboo, which stuck out like spears (VI, 56). Such fortification was called *bente* (from the Boeg./Buginese/ benteng). Some villages were provided with a double hedge of bamboo, some with three.' (Adriani and Krujtit 1950: 247).

<sup>21</sup> 'I observed such fences among the Baamba on the Ruwenzori. In Ruanda one does not see them. Here the dwelling is, as a rule, situated on the edge of the courtyard and is, together with the courtyard, surrounded by a euphorbia hedge. The hedges of the individual homesteads intertwine and form a labyrinth that is impenetrable even with the aid of a bush knife, for if one cuts the branches an exceedingly caustic juice squirts out which is very dangerous for the eyes. On the inside these hedges are usually supported by a fence made of sticks bound together. At night the outer approaches, usually opposite the huts, are closed with tree trunks, the branches of which are turned toward the outside. This primitive closure cannot be removed from the outside and, along with the euphorbia hedge, makes a very effective though not at all conspicuous fortification.' (Czekanowski 1917: 103).

the Barundi and Urundi.<sup>22</sup> Additionally, in other parts of the world settlement defense is realised in that way as well, e.g. thorny hedges among the south American Chiquitos,<sup>23</sup> or a cacteen hedge surrounding villages of the Goajira.<sup>24</sup>

Although the use of plants may seem an ineffective way of defense, the ethnographic reports show that it is perfectly adjusted to the frequent appearances of raids in those regions where it is used. When combined with other types of fortifications, such as traps, stockades or ditches, then plants can provide a suitable additional line of defense. This slows down enemy approaches and is often more feared by attackers than the 'real' fortification. But of course, from the perspective of archaeological fieldworks, the identification of prehistoric hedges and other easy ways of fortifications is a difficult challenge.

Finally, before looking at more costly forms of defensive structures, a last example leads us to quacking ducks! This may sound strange at first glance, but the Dani of Papua New Guinea are masters of utilising all aspects of their rough terrain for additional fortifications.

<sup>22</sup> See Meyer 1916.

<sup>23</sup> 'Villages were protected by thorny hedges and by poisoned caltrops. During the Conquest, the Spaniards had to storm villages defended by strong palisades.' (Métraux 1948a: 385).

<sup>24</sup> See Armstrong and Métraux 1948.

Although much has been written about the ritualised warfare in this part of the world, non-ritualised fighting often occurs as raids and small-scale attacks. Some tribes of the Dani have therefore resettled in swamps and wetlands, with only scarcely visible paths leading towards their homes. The Dani often provide these paths with traps and holes, in which a species of loud quacking duck can be penned.<sup>25</sup> (It may seem to be an isolated case, but this effective way of defending villages finds its counterpart in the famous story of Juno's sacred geese during the invasion of Rome by the Gauls in 390 BCE, and hints at the special role of animals for the protection of human property and life in prehistoric times.<sup>26</sup>)

### Medium-scale artificial modifications

If we move on to the next category of fortifications, we reach those structures usually categorised under the term 'fortification' by modern archaeology. Beginning with the most basic, the palisade or stockade, we find many thousands of examples from all over the world. The *boma*, for example, is a simple wooden construction consisting only of one line of posts dug into the earth and bound together, supplemented by a gate that could be barricaded if needed.<sup>27</sup> Similar structures have been used by the South American Tupinamba<sup>28</sup> and the North American Huron and Iroquois,<sup>29</sup> although for the latter an evolution from single line palisades to complex multi-line-systems has been researched in detail.<sup>30</sup> Moreover, the use of multiple lines of palisades seems to be a common feature in the ethnographical record as well:<sup>31</sup> always as a reaction to an increased frequency of warfare and the increased danger of being attacked.

<sup>25</sup> See Heider 1979: 100f.

<sup>26</sup> Of course, this means of fortification is not the only defensive tactic of the Dani – as has been described in detail in Harrer 1976.

<sup>27</sup> See Weule 1916. Although the word is also in use in modern times, it only refers to fences as protection for livestock (see Sutton *et al.* 2017).

<sup>28</sup> 'The minimal sociopolitical unit of the Tupinambá was the maloca or longhouse, some 5 to 10 meters wide and perhaps 100 meters long (some accounts say twice that long). Each maloca was occupied by an extended family of at least 40 people, more usually 50 to 200 people, and according to some sources as many as 600 to 850 people. Each local group or aldeia – called a *taba* in Tupinambá – had a distinctive name and was composed of one to seven or eight malocas, arranged around a central plaza which was the locus of important activities such as ritual sacrifices, feasts, dances, and chiefly council meetings. On the frontiers between traditional enemies the aldeias were fortified with stockades.' (Sturtevant 1998: 141f).

<sup>29</sup> 'Only in the area occupied by the predecessors of the historic-period Huron and Iroquois were robust walls common. They consisted of multiple lines of posts or thick bands of posts and appear to have conformed to seventeenth-century descriptions of palisades [...]' (Milner 2007: 189).

<sup>30</sup> Keener 1999.

<sup>31</sup> Examples for multiple systems can also be found worldwide, e.g. in South America, among the Chiriguano (Métraux 1948b: 472), in Oceania the so-called Pah among the Maori (see Best 1924), the North American Nuu-cha-Nulth (Drucker 1951: 338), and the Maasai of Africa (Thomson 1887: 77).

The question of adequacy can be touched on here. Much has been written about war and warfare in ancient past, more than can be referenced here of course.<sup>32</sup> However, the thorny issue of how the effectiveness of fortifications can be measured still raises controversy, and especially in archaeological science. Narrowing the wide topic down only to attempts to calculate the defensiveness of a site,<sup>33</sup> a good example is presented in an article by Keeley, Fontana and Quick.<sup>34</sup> Here, beside other topics, the question of the effectiveness of fortifications is discussed by contrasting the defensive layout of gates with their suitability in daily life.<sup>35</sup> As the authors show, the concept of a gate itself proposes a problem, as from 'a purely military perspective, a curtain ideally would have no gates. [...] However, main gates at fortified settlements had to allow the regular transit of people, livestock, and carts or loaded pack animals and, if busy, simultaneous passage of streams in and out.'<sup>36</sup> Therefore fortifications were not only places of an absolute focus on the aspects of defense, but they were also places governed by considerations of necessity and compromise.

On the other hand, places that perhaps look weak and vulnerable to us nowadays could have been fully fortified sites in the past, bearing in mind the particular manner of warfare. The East African *tempe* for example, described by the German Ethnologist Karl Weule at the beginning of the 20th century, shows this clearly. This type of building, in its simplest form, was a long house with a width of 5 m and a length of 20 m; it was usually constructed as a log house with walls made of poles, sticks and clay, and a roof of similar materials. Although this concept looks relatively flimsy to us nowadays, Weule describes the walls of this house as being immune to attacks by spear and arrow, pistol and rifle fire, and even rounds of light field artillery.<sup>37</sup> With a fire-resistant roof and the structures arranged in a circle, as well as being supplemented by towers, ditches and other defensive structures, the African *tempe* were effective fortifications in the early 20th century. Several were attacked by German forces in their war of conquest, and they were often 'besieged', as if they were modern fortifications of European style – even though they looked like simple huts at first glance.

### Large-scale artificial fortifications

This aspect and a look at African *tempe* brings us to the last category of fortification, which has been mentioned previously. As already discussed with reference to the other categories, there is a thin line between

<sup>32</sup> But to nevertheless refer to just some publications on warfare in archaeology, see e.g. Horn and Kristiansen 2018.

<sup>33</sup> See, e.g., Martindale and Supernant 2009; Sakaguchi *et al.* 2010.

<sup>34</sup> Keeley, Fontana and Quick 2007.

<sup>35</sup> Keeley, Fontana and Quick 2007: 62-67.

<sup>36</sup> Keeley, Fontana and Quick 2007, 82.

<sup>37</sup> Weule 1916: 136.

medium- and large-scale artificial modifications. We will therefore subsume these fortifications into this grouping, for which huge amounts of earth had to be moved to form such structures, which then changed the topography of a wide area. Together with massive stone walls and multilayered complex systems, these structures formed an impressive, highly visible aspect of the landscape.

Naturally, the iconic examples are massive stone fortifications, and the massive medieval castles of Europe always appear in discussions about the visibility of fortifications, as their usual hill top positions normally allow them to dominate all view points of the landscape. They could accommodate large mobile forces – mounted knights – who could be stationed at all critical points. In times of danger, castles were miraculous refuges with large storerooms and formidable walls. It is also well known that castles were a high cost investment, not only if we look at the time and money needed to construct them, but also in terms of the resources needed to maintain them.

In archaeology, there are several approaches to calculate the construction costs of ancient fortifications.<sup>38</sup> Although the resulting data differ, all investigations and their underlying ethnographical and experimental-archaeological surveys prove that complex fortifications, and especially stone walls, were connected to an extensive amount of labour.<sup>39</sup> Nevertheless, in archaeology, just as in ethnology, there are several examples of fortifications constructed with enormous efforts of labour and resources.<sup>40</sup> Ethnological examples of stone walls and complex fortifications can be found worldwide.<sup>41</sup> As well as stone walls, other types of massive fortifications, such as multi-layered rampart systems, are found, e.g. the mound building cultures and other early North American cultural complexes.<sup>42</sup>

### Konso stone walls and discussion

The intent of this paper was to demonstrate the problematic link between the archaeological definition of the term ‘fortification’ and the consequential

systems that have been postulated by archaeologists for many decades.

As it has been shown, fortifications – in their easiest form or as complex, multilayered systems – exist in many cultures worldwide. Many of them, although perhaps hardly traceable in the archaeological record, can be defined as defensive when compared to the actual ways of warfare which the corresponding societies were used to seeing. Therefore, a distinction between unfortified and fortified may be problematic, as it creates divergent categories, probably only in a modern Eurocentric way, while effective defensive categories of the past stay invisible to us.

As Arkush expresses, fortifications are ‘directly related to the threat that looms’.<sup>43</sup> However, this does not mean that the complexity of fortifications is directly derivable from the corresponding system of social organisation, as Jockenhövel mentioned in the quote at the beginning of this contribution. On the contrary, in a short register of fortifications and the correlating social and political organisations, Arkush demonstrates that cultures with different political and social systems can react in a similar way to threats and smoldering conflicts.<sup>44</sup> Clarifying, not only do fortifications exist in small-scale societies and among hunter and gatherers with low social and political complexity, but also they appear in large-scale and high hierarchical pre-state societies. Moreover, it means that an organising elite is not required to construct a complex fortification system, and that an existing fortification is not necessarily an indication of an elite living and ruling culture there.<sup>45</sup> A striking example of this can be found among the Ethiopian Konso. In this society, that has been studied since at least the beginning of the 20th century,<sup>46</sup> war was common and most of the settlements were surrounded by massive, well-defended stone walls:

‘The Konso live in about thirty-five walled towns, with average populations of 1,500 and a maximum of about 3,000, covering from 6 to 14 hectares, often on the summits of hills or at other easily defensible sites. The walls are without mortar, 3.0 to 4.5 meters high; they are intended only to deter a surprise attack, not to resist a siege. They are usually surrounded by a dense belt of vegetation as a further deterrent to attack. Each town is separated into two divisions, and a man who is born in one is forbidden to live in the other. The divisions have no other social function, however’.<sup>47</sup>

<sup>38</sup> See, e.g., Müller 2001: 388-395; Cazella and Recchia 2013: 55-57.

<sup>39</sup> Here we subsume the direct working costs for the building of a fortification itself and the indirect workings costs, meaning the energy and time needed to gather resources, construct the necessary tools, etc.

<sup>40</sup> Here one quote of E. Arkush may be particularly apposite: ‘Because such defensive efforts are costly, they are directly related to the kind of threat that looms: how severe, of what kind, at what scale.’ (Arkush 2011: 60).

<sup>41</sup> To name just some groups and cultural complexes: the Marquesans in Oceania (Handy 1923), the eastern Toraja in South Asia (Nicolaus and Kruijitt 1950), the north Asiatic Koryak (Jochelson 1905-1908), the Shona (Bhila 1982) and the Wolof (Poix/ Winchell 1955) in Africa, and of course the complex cultures in Southern and Mesoamerica – Inca, Aztecs, etc. (see, e.g., Arkush 2011).

<sup>42</sup> See for a summary Lambert 2002, or the different articles in Chacon and Mendoza 2007.

<sup>43</sup> Arkush 2011: 60.

<sup>44</sup> Arkush 2011: 61.

<sup>45</sup> And as has been argued by Feinman, even if a society-leading elite existed, it was not always they who were responsible for the construction of fortifications (see Feinman 2017).

<sup>46</sup> See, among others Hallpike 1972; Jensen 1936; Poissonnier 2009.

<sup>47</sup> Hallpike 1995: 169.





Figure 4: Outer wall of the village of Karat Konso, Ethiopia (Dr Angela C.Y. Lee, October 2012).

The Konso-People, who call themselves Konso, meaning ‘those who live on mountain tops’,<sup>48</sup> are socially structured by a complex age-class-system, the so called ‘Gada’, in which members of different families are integrated. The age-class derives from the father’s age-class minus one, and in a specific rhythm that takes between eight to ten years on the occasion of a special feast, where the group of all the living members raises by one. Access to public offices is only available to those with a certain class, so that long-living members with good connections can reach high social positions. Influential persons can be rich members of the settlement, owners of religious offices or ‘killers’. This means that those who have killed at least one enemy during their life are considered very important and therefore have won honour for their whole age class. This is a very important matter, as age-classes without killers are marked as useless and mocked by the rest of the group. They are not allowed to enter public offices and hold respectful positions.

Killing, attacking and small-scale warfare between different settlements therefore happens very often, central male houses are used as guard houses and

armory, and the regular construction of effective defenses shows the importance of, and need for, organised defensive structures (Figure 4).<sup>49</sup> The Konso system is not led by authoritarian members or an elite, but rather by a council composing of high-ranking members from different settlement districts. This council rules on a democratic base, but its orders are not compelled commands, since there often follows a time of negotiation and intergroup interaction.<sup>50</sup>

Keeping this example in mind, it should be asked, which possibilities and established modes of operation are still operational in prehistoric archaeology? Because, if a distinction between fortified and unfortified sites seems to be so dependent from our viewpoint of the effectiveness of defensive structures, and derived from our opinion about what a fortification is and what is not – how possible is it, then, to reconstruct ancient modes of warfare, social organisation and territorial connectivity from these estimates?

Moreover, it has been shown that different social systems can construct similar fortifications, so that a fortification itself seems not to reveal what type of social system it was based on – but only as signifier

of the way of warfare, or the intensity of estimated warfare – as a fortification was often constructed in the estimation of an attack or conflict, not during an actual event. The Konso are a good example of the multi-social use of massive stone walls, which can be contrasted with highly hierarchical pre-state societies on the one hand and forager bands on the other.

And, finally, the classical concept in European prehistory that proclaims a model such as ‘One castle – many villages’, especially for the northern Alpine metal ages, has to be considered with care, because the concept of centralisation and fortification is not as easy as it seems. This is not only shown by Arkush,<sup>51</sup> but also by the settlement organisation of the late Zulu kingdom under the lead of King Shaka. At this time, a system of hierarchical connections between fortified and unfortified settlements had been established: but the fortified settlements, surrounded normally by several unfortified sites, were only inhabited by warriors, who had no economic productive value. The real elite, especially the war chiefs under Shaka’s command, lived

<sup>49</sup> An overview of Konso settlement structures and defenses can be found in Capuro *et al.* 2011.

<sup>50</sup> See different examples in Poissonnier 2009.

<sup>51</sup> Arkush 2011: 60-61.

<sup>48</sup> Poissonnier 2009: 22.

half of the time in these warrior villages and the rest in their fortified kraal.<sup>52</sup> Classical models, such as the widely known 'centralisation model' of Gringmuth Dalmer,<sup>53</sup> would completely fail here, as the typical markers were widespread and a polythetical approach had to be constructed.

It should always be kept in mind that a fortification is much more than just two stones forming a wall – trusting on a fortification in times of danger was always a way of life.

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<sup>52</sup> See Edgerton 1988.

<sup>53</sup> See, e.g., Gringmuth-Dallmer 1999.

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