DPhil Thesis Classical Archaeology

THE AEGEAN INFLUENCE ON THE SOCIAL ORGANIZATION OF ITALIAN COMMUNITIES IN THE LATE BRONZE AGE

Angela Falezza

Merton College, University of Oxford

Supervisors: Dr L. M. Bendall; Professor F. Iacono

Volume I: Text

ACKNOWLEDGEMENTS

First, my deepest thanks go to both my supervisors Dr Lisa M. Bendall and Professor Francesco Iacono for their continuous support through these past years. Their thought-provoking comments and inputs have been essential to the outcome of this thesis.

I would like to thank to my College Advisor, Professor Irene S. Lemos, who's been a very helpful point of contact when in need. My thanks go also to Professor Amy Bogaard and Dr Andrew Shapland for their feedback following the Transfer and Confirmation of Status.

At the University of Oxford, I am grateful to the School of Archaeology, the Faculty of Classics, and Merton College for providing funds which have allowed me to conduct my research.

On many occasions, I found myself presenting the preliminary results of my thesis and I would like to express my gratitude to the people who shared their precious feedback with me, in particular Professor Ruth Whitehouse.

I would also like to thank Dr Maria Clara Martinelli and the Director of the Parco Archeologico delle isole Eolie Rosario Vilardo for allowing me to reproduce in this thesis the photographs taken during my visit at the Museum Luigi Bernabò Brea, Lipari.

Finally, I am grateful to all the people who have helped me throughout these years in different ways, providing both technical and emotional support, including Giovanna Agostini, Elisabeth Ilgner, Myrto Kokkalia, Cristina Laurenti, John Lim. Last but not least, my mum and dad, my brother Filippo, and Simone.

TABLE OF CONTENTS

Volume I: Text

List of Figures viii

List of Tables xxvii

List of Abbreviations xxx

Abstract xxxi

1. Ports of Interactions in The Bronze Age Mediterranean 1

1.1. A Globalised Mediterranean 1

1.2. The Aegean and Southern Italy in the LBA 3

1.3. Aegean Individuals in Italy 9

1.4. Ports of Interactions 12

1.5. Approaching Ports of Interactions 14

1.5.1. Aims and Methodology 14

1.5.2. Functional and Spatial Analysis 19

1.5.3. Material Culture and Interactions 21

1.5.4. Models of Trade 27

1.5.5. Subsistence Strategies 30

1.5.6. Ritual Activities 31

2. Case Study: Roca Vecchia 33

2.1. Background 33

2.2. Fortifications 37

2.3. Layout And Organisation 44

2.3.1. Middle Bronze Age 44

2.3.2. Recent Bronze Age 47

2.3.3. Final Bronze Age 51

2.4. Technologies and Workshops 61

2.4.1. Pottery 62

2.4.2. Metalworking 63

2.4.3. Ivory and Bone Working 64

2.5. Social Organisation 66

3. Case Study: Lipari 69

3.1. Background 69

3.1.1. Lipari–Acropolis 72

3.2. Layout and Organisation 74

3.2.1. Capo Graziano II Settlement 74

3.2.2. Milazzese Settlement 81

3.2.3. Ausonian I Settlement 88

3.2.4. Ausonian II Settlement 94

3.3. Material Culture, Technologies and Workshops 99

3.3.1. Pottery 99

3.3.2. Metalworking 105

3.3.3. Stone Working and Hard Materials 109

3.3.4. Bone Working 112

3.4. The Port and The Society 113

3.4.1. Settlement Organisation 114

3.4.2. Aegean Influence and Communal Activities 119

4. Case Study: Kommos 123

4.1. Background 123

4.2. Layout And Organisation 128

4.2.1. Middle Minoan III–Late Minoan I: Neopalatial Period 128

4.2.1.1. Hilltop Area MM III–LM I 128
4.2.1.2. Hillside Area MM III–LM I 133
4.2.1.3. Southern Area MM III–LM I 134
4.2.2. Late Minoan II–IIIA1 Period: Final Palatial Period 139
4.2.2.1. Hilltop Area LM II–LM IIIA1 140
4.2.2.2. Hillside Area LM II–LM IIIA1 140
4.2.2.3. Southern Area LM II–LM IIIA1 141
4.2.3. Late Minoan IIIA2–IIIC Period: Postpalatial Period 141
4.2.3.1. Hilltop Area LM IIIA2–IIIC 142
4.2.3.2. Hillside Area LM IIIA2–IIIC 147
4.2.3.3. Southern Area LM IIIA2–IIIC 149
4.3. Local Technologies and Workshops 155
4.3.1. Pottery 155
4.3.1.1. Pottery Imported to Kommos 156
4.3.2. Metalworking 164
4.3.3. Stone Working and Hard Materials 166
4.3.4. Bone and Ivory Implements 168
4.4. Social Organisation 169
4.4.1. Banqueting, Feasting and Religion 171
5. A Single Model of Ports? 173
5.1. Chronological and Spatial Trends 173
5.1.1. Political Geography of the Case Studies 175
5.1.2. Ports and their Streets 180
5.1.3. Settlement Dimensions and Demography 182
5.1.4. Structures: Building Techniques and Layout 186

5.1.5. Workshops 190

5.1.6. Storage Areas 195

5.1.7. Functional Division of Space 197

5.2. Imports and Influences 201

5.2.1. Materials Imported and External Influences 201

5.2.2. Distribution of Foreign Artefacts Across the Settlements 210

5.2.3. Areas for Foreigners 213

5.3. Exchange And Administration 216

5.3.1. Pot Marks 217

5.3.2. Tokens 219

5.3.3. Seals 220

5.3.4. Balance Weights and Scale Parts 221

5.3.5. Hoards and Ingots 225

5.3.6. Trading at Ports of Interactions 228

5.4. Domestic Economy and Management of Resources 232

5.5. Rituals and the Religious Realm 236

5.5.1. Symbols and Iconography 236

5.5.2. Ritual Practices 239

5.5.3. Ritual Areas Outside the Settlements 243

5.6. Conclusion 246

6. Conclusions 249

6.1. Ports, Interactions, and Influences 249

6.2. How did it go? 250

6.3. Looking Ahead 252

Reference List 254

Volume II: Figures and Appendix

Figures 333

Appendix: Pottery Shapes and Functions 451

Database 1: Roca

Database 2: Lipari

Database 3: Kommos

LISTS OF FIGURES

Figure 1.1—Map of the study area with sites mentioned in Chapter 1 (Author with QGIS; map data ©2015 Google). 333

Figure 1.2—Italian sites with LH I–II Aegean-type finds and their quantity: 1. Vivara; 2. Lipari (Iacono 2019: 98, Fig. 3.15). 334

Figure 1.3—Italian sites with Aegean-type finds and their quantity during RBA: 1. Cisterna di Tolentino; 2. Roca Vecchia; 3. Scoglio del Tonno/San Domenico; 4. Termitito; 5. Broglio di Trebisacce (Iacono 2019: 150, Fig. 4.16). 335

Figure 1.4—Italian sites with LH IIIC Aegean-type finds and their quantity (Iacono 2019: 186, Fig. 5.13). 336

Figure 1.5—Model showing increasing and decreasing interaction in a centre-periphery model (Feuer 2011: 518). 337

Figure 1.6—SNA representation of the distribution of Sub-Apennine Impasto pottery. The bigger the site, the more connected it is (Iacono 2019: 131, Fig. 134.138). 337

Figure 1.7–Different types of high-energy coasts (Tartaron 2013: 172, Figure 5.13). 338

Figure 1.8—LH IIIB—LH IIIC distribution of Aegean and Italian artefacts across the Aegean. Key: 1. Frattesina; 2. Moscosi di Cingoli; 3. Cisterna di Tollentino; 4. Roca Vecchia; 5. Tiryns; 6. Chania; 7. Koubarà; 8. Pellana; 9. Perati; 10. Kommos (Iacono 2013a: 64, Fig. 65.62). 339

Figure 1.9—Different trading models articulated by Renfrew (1975: 42, fig. 10), where “circles a and b indicate respectively the point of origin and the place of receipt of the commodity, squares A and B the person at the source 340

and the recipient. Circle p is a central place, square P a central person. Exchange transactions are indicated by a cross, and territorial boundaries by a broken line".

Figure 1.10— Possible directions and connections of trading networks during the 14th–13th century BC (Cazzella and Recchia 2009b: 33, Fig. 33). 341

Figure 2.1—Map with the sites mentioned in the Chapter (image by Author with QGIS; map data ©2015 Google). 342

Figure 2.2—North-facing aerial view: 1. promontory of Roca Vecchia; 2. 16th century tower; 3. Poesia Grande cave; 4. Poesia Piccola cave; 5. Torre dell'Orso bay (modified after Dinielli 2016: 7, Figure 2). 342

Figure 2.3—Possible changes in the coastline (Pagliara 1987a: Table XXXVI). 343

Figure 2.4—Double axes and bucrania engraved on the walls of Grotta Poesia (Guglielmino and Pagliara 2004, Figure 279). 343

Figure 2.5—Overview of the MBA fortification walls (image by Author with QGIS based on OpenStreetMap contributors 2015; Scarano 2012a: 52–61 figs 2.22, 2.34, and 2.47). 344

Figure 2.6—First phase of MBA fortification walls in red (based on Scarano 2012a: 52, Figure 2.22). 344

Figure 2.7—Second phase of MBA fortification walls in yellow (based on Scarano 2012a: 56, Figure 2.34). 345

Figure 2.8—Third phase of MBA fortification walls in green (based on Scarano 2012a: 61, Figure 2.47). 345

Figure 2.9—Monumental Gate (Scarano 2012a: 112, Figure 3.127). 346

Figure 2.10—Chamber S, Monumental Gate, Roca Vecchia (based on Guglielmino 2005b, Table CLXVIIg; Scarano 2012a: 105, 116, Figure 3.100). 347

Figure 2.11—Duck pyxis from Chamber S, Main Gate, Roca Vecchia (left, Guglielmino *et al.* 2011: 176, Fig. 15.1a) and duck pyxis from Phourni, Crete (right, Sakellarakis 1971, Table 50β. Scale not available). 348

Figure 2.12—MBA fortifications at Roca Vecchia with Main Gate (P) and posterns labelled A–D, postern E is not visible as located at the northern edge (modified after Cazzella and Recchia 2013a: 49, Figure 4). 348

Figure 2.13—Intact and reconstructed pottery from the MBA Phase 3 fortification walls according to their archaeological context (based on Scarano 2011b: 117, Fig. 13A). 349

Figure 2.14—MBA stone slab masonry (above) and RBA pseudo-ashlar masonry (below) on the inner front of the fortification walls (Scarano 2011b: 99, Figure 2C–D). 350

Figure 2.15—Plan of Roca Vecchia with distribution of MBA evidence (Iacono 2013b: 447, Figure 4.1.11). 351

Figure 2.16—Excavation of a hypogeum located on the cliff of the promontory (Guglielmino 2014: 201, Figure 109). 351

Figure 2.17—Plan and section of a MBA hypogeum structure (Guglielmino 2014: 202, Figure 111). 352

Figure 2.18—Italo-Mycenaean fragment of rim and wall of a MBA cup, Roca Vecchia (Guglielmino *et al.* 2010a: 276, Figure 10). 352

Figure 2.19—Excavation plan of MBA hut, SAS X (modified after Pagliara *et al.* 2007: 325, Figure 7). 353

Figure 2.20—Excavation plan of RBA 2 hut, SAS X (modified after Pagliara *et al.* 2007: 321, Figure 5). 354

Figure 2.21—Copper-alloy violin-bow fibula (left) and ring (right) recovered from the RBA 2 hut, SAS X (Pagliara *et al.* 2007: 349). 355

Figure 2.22—Number of faunal remains identified from RBA 2 structure, SAS X (graph by Author based on Pagliara *et al.* 2007: 350, Table I) 355

Figure 2.23—Excavation plan of RBA 2 structure, SAS IX (based on Pagliara *et al.* 2008: 250, Figure 8). 356

Figure 2.24—Number of faunal remains identified from RBA 2 structure, SAS IX (graph by Author based on Pagliara *et al.* 2008: 269, Table V). 357

Figure 2.25—Red steatite lentoid seal from Roca Vecchia (Pagliara *et al.* 2008: 264, Fig. 15B). 357

Figure 2.26—Possible reconstruction of FBA road system in Roca Vecchia (image by Author with QGIS based on OpenStreetMap contributors 2015; Scarano 2012a: 52–61 figs 2.22, 2.34, and 2.47; Iacono 2013b, figs. 4.1.11 and 6.1.11). 358

Figure 2.27—Excavation plan of FBA 1 structure with indications of the three different occupation areas, SAS X (based on Pagliara *et al.* 2007: 319, Figure 4). 359

Figure 2.28— Excavation plan of FBA 2 structure, SAS X (based on Pagliara *et al.* 2007: 317, Figure 3). 360

Figure 2.29—Excavation plan of FBA 1 structure, SAS IX (based on Pagliara *et al.* 2008: 246, Figure 5). 361

Figure 2.30—Plant and reconstruction of Temple-Hut (Coluccia 2017: 558, Figure 1). 362

Figure 2.31—Excavation plan of FBA 2 structure, SAS IX (based on Malorgio and Maggiulli 2011: 127, Figure 2; Iacono 2013b: 529). 362

Figure 2.32—Terracotta anthropomorphic figurines (Guglielmino 2005b). 363

Figure 2.33—Northeast sector of the Temple-Hut. Key: 1. Gold artefacts; 2. Figurine; 3. Bench; 4. Antlers; 5. Urn; 6. Platform; R. Hoard of Gold; S. Pig remains (Maggiulli and Malorgio 2017: 545, Fig. 4). 363

Figure 2.34—Bronze double axe from the Temple-Hut at Roca Vecchia (Guglielmino 2003: 112, Figure 33) 364

Figure 2.35—Drawing of the calcarenite and clay platform, Temple-Hut, Roca Vecchia (Guglielmino 2003: 110, Figure 27). 364

Figure 2.36—Horseshoe shaped altar, Shrine Γ, Mycenae (Mylonas 1977, Plate IV). 365

Figure 2.37—Double-axe decorated cooking stand (Guglielmino and Pagliara 2004, Figure 264). 365

Figure 2.38—Drawing of tripod tray (Guglielmino 2008: 32, Figure 1.2). 365

Figure 2.39—Clay tripod tray from Roca Vecchia (left) and offering altar from Akrotiri (right; Guglielmino 2003: 112, Figures 31 and 32). 366

Figure 2.40—Some of the items recovered from the Hoard of Gold (Maggiulli 2009a: 310, Figure 2). 366

Figure 2.41—Sun discs from the Hoard of Gold (Maggiulli 2006: 127). 367

Figure 2.42—Sun discs recovered from the floor of the Temple-Hut next to the Hoard of Gold. A. folded gold foils; B–C. open foils reconstructing the two discs (Maggiulli 2006: 128). 367

Figure 2.43—Embossed gold foil sun discs from A. Redù; B. Gualdo Tadino; C. Delos (Càssola Guida 2014: 35, Figure 1). 368

Figure 2.44—Sickles (left) and axes (right) from the Hoard of the Bronzes (Maggiulli 2009a: 320–321, Figures 4–5). 368

Figure 2.45—Partially buried *dolia* in the Store-Hut (Guglielmino 2014: 206, Figure 119). 369

Figure 2.46—*Dolium* number 1 from the Store-Hut: reconstruction (left) and drawing (right; Guglielmino 1999: 476, Figures 2 and 3). 369

Figure 2.47—Inscribed X on the rim of one of the *dolia* from the Store-Hut (Guglielmino 1999: 484, Figure 8). 370

Figure 2.48—*Olla* decorated with a snake relief (Guglielmino 2006a: 100, Figure 15). 370

Figure 2.49— Chronological distribution of Aegean imports and Italo-Mycenaean local productions at Roca Vecchia (graph by Author based on Guglielmino *et al.* 2010a; Jones *et al*. 2014: 146–147). 371

Figure 2.50—Comparison of Aegean imports and Italo-Mycenaean local products recovered from RBA contexts at Roca Vecchia (graph by Author based on Jung *et al*. 2021). 371

Figure 2.51—Drawing of some locally-produced RBA Italo-Mycenaean pottery recovered from Roca Vecchia which has undergone NAA analysis (Jung *et al.* 2021: 476, Figure 2). 372

Figure 2.52—SIP (a–c, e) and Protovillanovan (d, f) pottery from Roca Vecchia (Iacono 2019: 171, Fig. 5.7). 373

Figure 2.53—Mould from Roca Vecchia, SAS XII, displaying two hammer heads (including the “raising hammer”) and an arrowhead on one face, and a curved blade on the other face (Guglielmino 2006b: 35). 374

Figure 2.54—Terracotta tuyere from Roca Vecchia (Guglielmino 2006b: 42). 374

Figure 2.1—Ivory pin head from Roca Vecchia (Guglielmino *et al.* 2011: 179, Figure 15.7). 375

Figure 3.1—Location of the island of Lipari and of the sites mentioned in this Chapter (image by Author with QGIS; map data ©2015 Google after Levi *et al.* 2020: 7, Fig. 1). 376

Figure 3.2—Bronze Age sites on Lipari: 1. Acropolis; 2. Civita; 3. Contrada Diana; 4. Piazza Monfalcone; 5. Quattropani; 6. Monte Guardia; 7. Pignataro di Fuori; 8. Pianoconte, San Calogero Tholos (image by Author with QGIS; map data ©2015 Google after Martinelli *et al.* 2021: 40, Figure 6). 377

Figure 3.3—San Calogero Tholos: a. modern entrance to the tholos; b. tholos plan; c. tholos section (composited by Author. b–c. Bernabò Brea *et al.* 1991, Fig. D2, Fig. H; a. Dawson and Nikolakopoulou 2020: 174, Fig. 14). 378

Figure 3.4—View of the Lipari acropolis (image by Author with QGIS; map data ©2015 Google based on Bernabò Brea and Cavalier 1980; Martinelli and Giordano 2017: 257, Figure 1.4). 378

Figure 3.5—Stratigraphy of the Acropolis (Trench AG) showing the different Neolithic and BA *facies* (Bernabò Brea and Cavalier 1980: 300, Fig. 20). 379

Figure 3.6—Map of the LBA structures excavated on the acropolis showing the four different periods discussed in this thesis (image by Author with QGIS based on Bernabò Brea and Cavalier 1980). 380

Figure 3.7—Structures belonging to the Capo Graziano II culture on the Lipari acropolis (image by Author with QGIS based on Bernabò Brea and Cavalier 1980). 381

Figure 3.8—LH IIIA kylix base (a) and drawing (b) recovered from hut δ III (a. photo by Author 2022 in the Regional Archaeological Museum "Luigi Bernabò Brea", Lipari; b. Bernabò Brea and Cavalier 1980, Tav. CLXI, a). 382

Figure 3.9—Locally made Mycenaean-type ware (a) and drawing (b) (a. photo by Author 2022 in the Regional Archaeological Museum "Luigi Bernabò Brea", Lipari; b. Wardle 2004, Fig. 5.17). 382

Figure 3.10—Pottery recovered from the first occupation layer of structure δ VII: a.–b.: carinated bowl decorated with zigzag patterns around the bottom; c.–d.: large fragments spheric jar with hourglass shaped rim; e.–h. fragments or reconstructed *ollae*; i.: rim fragment of spheric bowl; l.: carinated bowl decorated with zigzag patterns around the bottom; m.–o.: decorated bowl fragments; p. LM II–III bowl fragment (composited after Bernabò Brea and Cavalier 1980, Tables CXIV, 1, 2; CXXI, 1g, 3e,n; CXXII, 1, 2, 5; CXXIV, 2; CXXV, 4; CXXVIII, 4b; CXXIX, 2d; CXXXIII, 4; CXLVIII, 18). 383

Figure 3.11—Structures belonging to the Milazzese culture on the Lipari acropolis (image by Author with QGIS based on Bernabò Brea and Cavalier 1980). 384

Figure 3.12—Architectural remains of structure γ III on top of structure δ VIII, showing the *in situ* grinder and stone slab (photo by Author). 385

Figure 3.13—LH IIIA Mycenaean proto-φ figurine: a. front picture; b. front drawing; c. back drawing (a. photo by Author 2022 in the Regional Archaeological Museum “Luigi Bernabò Brea”, Lipari; b–c. Wardle 2004: Fig. 5.10). 385

Figure 3.14—Clay anthropomorphic figurine (photo by Author 2022 in the Regional Archaeological Museum “Luigi Bernabò Brea”, Lipari). 386

Figure 3.15—Pottery finds from the northern annex of hut γ VI: a. High stand cup decorated with relieves opposing spirals and engraved potter’s seal; b. large ovoid *olla* made of reddish clay with two horizontal handles and notches around the slightly everted rim; c. large sherd of a truncated-cone basin with horizontal strong cordon handle on the shoulder; d. rim fragment decorated with fishtail pattern engraved and filled with white paste; e. flattened spindle whorl of coarse reddish impasto; f. bottle neck shaped tureen with veining forming a large angle; g. LH II–III large fragment of a globular vase, Cycladic origin; h. LH IIIA fragment; i. LH II–III carinated cup fragment, Cycladic origin (composited after Bernabò Brea and Cavalier 1980, Tables CXLI, e–f; CLX, 11; CLXIV, 2; CLXXIX, 4 d; CLXXII, 2; CLXXXII, 5; CLXXXIV, 1; CLXXXVII, 1 h. g–i. photo by Author 2022 in the Regional Archaeological Museum “Luigi Bernabò Brea”, Lipari). 386

Figure 3.16—Structures belonging to the Ausonian I culture on the Lipari acropolis (image by Author with QGIS based on Bernabò Brea and Cavalier 1980). 387

Figure 3.17—Structures belonging to the Ausonian II culture on the Lipari acropolis (image by Author with QGIS based on Bernabò Brea and Cavalier 1980). 388

Figure 3.18—Hut α I, plan and section of the wall showing the location of the timber structure (Bernabò Brea and Cavalier 1980: 25, Fig. 1). 389

Figure 3.19—Graph showing the chronological changes of Aegean-type pottery recovered at Lipari (graph by Author based on Taylour 1958; 1980; Cavalier and Vagnetti 1984). The columns are not necessarily in chronological order as they report the date as indicated on the publications. 389

Figure 3.20—Bowl containing local clay, hut δ XII (photo Author 2022 in the Regional Archaeological Museum "Luigi Bernabò Brea", Lipari). 390

Figure 3.21—Clay horns recovered from the Milazzese settlement on the Lipari acropolis (photo by Author in the Regional Archaeological Museum "Luigi Bernabò Brea", Lipari). 390

Figure 3.22—Potters' marks identified on Milazzese pottery from the Lipari acropolis (composited after Bernabò Brea and Cavalier 1968: 277–279). 391

Figure 3.23—Carinated bowls with elevated handles shaped as follows: a. bridge handle with truncated horns; b–c. ox-shaped horns (photos by Author 2022 in the Regional Archaeological Museum "Luigi Bernabò Brea", Lipari). 391

Figure 3.24—Ausonian II pottery recovered from the acropolis: a. Protogeometric vase from structure α II; b. Feathered vase from trench AH (Levi *et al.* 2020: 14, Figure 6). 392

Figure 3.25—Stone mould for bronze melting from structure δ XII (photos by Author 2022 in the Regional Archaeological Museum “Luigi Bernabò Brea”, Lipari). 392

Figure 3.26—Fragments of some of the ingots recovered from the hoard of bronzes (Lo Schiavo *et al.* 2009: Figure 13). 393

Figure 3.27—Bronzes from structure α II (Bernabò Brea and Cavalier 1980: 638, Fig. 127). 394

Figure 3.28—Aegean seal from the Palermo Archaeological Museum a. front; b. side with through hole (b. Cucuzza 2006: 75, Figure 1b; a. Cucuzza 2008: 34, Figure 1). 394

Figure 3.29—Three rectangular stone plaques recovered from the Capo Graziano II contexts (after Bernabò Brea and Cavalier 1980, Table CXXXIX 4c, g, m). 395

Figure 3.30—Some rectangular weights from central Europe (Ialongo 2018: 112, Figure 6B). 395

Figure 3.31—Decorated ivory comb from the Capo Graziano II layers (Bernabò Brea and Cavalier 1980, Tav. CLIII, g). 396

Figure 3.32—Plaque of boar’s tusk from structure δ XVI (photo by Author 2022 in the Regional Archaeological Museum “Luigi Bernabò Brea”, Lipari). 396

Figure 3.33—Decorated comb made of bone dating to the Ausonian I–II period (photo by Author 2022 in the Regional Archaeological Museum “Luigi Bernabò Brea”, Lipari). 396

Figure 3.34—Graph showing the different demographic estimates suggested in the literature. 397

Figure 3.35—Distribution of storing pottery across the Lipari acropolis in the Capo Graziano II settlement (image by Author with QGIS based on Bernabò Brea and Cavalier 1980). 398

Figure 3.36—Distribution of Aegean imports across the Lipari acropolis in the Capo Graziano II settlement (image by Author with QGIS based on Taylour 1958; 1980; Bernabò Brea and Cavalier 1980; Cavalier and Vagnetti 1984). 399

Figure 3.37—Distribution of storing pottery across the Lipari acropolis in the Milazzese settlement (image by Author with QGIS based on Bernabò Brea and Cavalier 1980). 400

Figure 3.38—Distribution of Aegean imports across the Lipari acropolis in the Milazzese settlement (image by Author with QGIS based on Taylour 1958; 1980; Bernabò Brea and Cavalier 1980; Cavalier and Vagnetti 1984). 401

Figure 3.39—Distribution of different type of artefacts across the Lipari acropolis in the Milazzese settlement (image by Author with QGIS based on Bernabò Brea and Cavalier 1980). 402

Figure 3.40—Distribution of different type of artefacts across the Lipari acropolis in the Ausonian I settlement according to their function and quantity (image by Author with QGIS based on Bernabò Brea and Cavalier 1980). 403

Figure 3.41—Distribution of Aegean imports across the Lipari acropolis in the Ausonian I settlement (image by Author with QGIS based on Taylour 1958; Bernabò Brea and Cavalier 1980). 404

Figure 3.42—Distribution of different types of artefacts across the Lipari acropolis in the Ausonian II settlement (image by Author with QGIS based on Bernabò Brea and Cavalier 1980). 405

Figure 4.1—Map of the Aegean showing the main locations mentioned in this Chapter (image by Author with QGIS; map data ©2015 Google). 406

Figure 4.2—Map of Crete showing the main locations mentioned in this Chapter (image by Author with QGIS; map data ©2015 Google). 406

Figure 4.3—Plan of the Kommos archaeological site (modified by Author after Tomlinson *et al.* 2010: 192, Figure 1). 407

Figure 4.4—Plan of the Hilltop Area with indicated the different structures (Shaw and Shaw 1996: 426, Plate 1.4). 408

Figure 4.5—Plan of the Hillside Area with indicated the different structures (Shaw and Shaw 1996: 430, Plate 1.10). 409

Figure 4.6—Plan of the Southern Area of Kommos showing the different structures according to their date (Shaw and Shaw 2006). 410

Figure 4.7—Map of the Kommos Area in 1924 (Evans 1928: 89, Figure 42). 411

Figure 4.8—Plan of the North House on the Hilltop Area (modified by Author after Shaw and Shaw 1996: 426, 438, Plates 1.4, 2.5). 411

Figure 4.9—LM I plan of the Oblique House (Shaw and Shaw 1996: 482, Plate 2.77). 412

Figure 4.10—House with the Press, Hilltop Area. LM IA–IIIA2 floor deposit (left) and axonometric reconstruction (right; modified by Author after Shaw and Shaw 1996: 530–531, Plates 2.165–166). 413

Figure 4.11—LM I–II plan of the House with the Snake Tube in the Hillside Area (Shaw and Shaw 1996: 622, Plate 3.105). 414

Figure 4.12—Original plan of House X, Southern Area (Shaw and Shaw 2012: Figure 1.2). 415

Figure 4.13—Plan of Building T in LM IA (Shaw and Shaw 2006: 957, Plate 1.7). 416

Figure 4.14—Plan reflecting the recent interpretation of Building T as a Naval Centre, here criticised (Shaw 2019: 91, Figure 7). 417

Figure 4.15—LM IIIA1 plan of the House with the Snake Tube in the Hillside Area (Shaw and Shaw 1996: 624, Plate 3.107). 418

Figure 4.16—LM IIIA2–LM IIIB plan of the North House on the Hilltop Area (Shaw and Shaw 1996: 441, Plate 2.8). 419

Figure 4.17—LM IIIA2 plan of the southern part of the Hilltop Area including the Oblique House, the Northern Cliffside and Southeast Rooms (Shaw and Shaw 1996: 483, Plate 2.78). 420

Figure 4.18—LM IIIB plan of the House with the Snake Tube and the rest of the Hillside Area (modified by Author after Shaw and Shaw 1996: 626–627, Plates 3.111–112). 421

Figure 4.19—LM IIIA2–B plan of Buildings N and P (Shaw and Shaw 2006: 993, Plate 1.60B). 421

Figure 4.20—Schematic plan and section of Building P and its relationship with the earlier Building T (Shaw and Shaw 2006: 1000, Plate 1.68). 422

Figure 4.21—LM IIIC wall built across Room 7 of Building N, in the Southern Area (Rutter 2017a: 248, Fig. 8.2.). 423

Figure 4.22—South Stoa area with kiln, Building T (Shaw 2001: 7, Figure 2). 424

Figure 4.23—Distribution of animal and human figurines across the site of Kommos (image by Author with QGIS based on Shaw and Shaw 1996; 2006; Shaw and Shaw 2012). 425

Figure 4.24— Spatial and chronological distribution of figurines at Kommos (graph by Author based on Shaw 1996d; 2012a; Shaw and Nixon 1996; Shaw 2006b; Shaw *et al.* 2006a; Shaw and Shaw 2012). 426

Figure 4.25—Graph showing the chronological changes of imported pottery at Kommos. 426

Figure 4.26—Percentage of imported pottery recovered from Kommos. 427

Figure 4.27—Concentration and chronological distribution of finds from the Greek mainland and Aegean islands recovered across Kommos (image by Author with QGIS based on Shaw and Shaw 1996; 2006; Shaw and Shaw 2012). 427

Figure 4.28—Concentration of Anatolian finds across Kommos (image by Author with QGIS based on Shaw and Shaw 1996; 2006; Shaw and Shaw 2012). 428

Figure 4.29— Concentration and chronological distribution of Canaanite pottery across Kommos (image by Author with QGIS based on Shaw and Shaw 1996; 2006; Shaw and Shaw 2012). This map also includes two LM IIIA elephant tusks recovered from the Hillside Area. 428

Figure 4.30—Concentration and chronological distribution across Kommos of Egyptian pottery and one glass vessel from Room X4 of House X dating 429

LM IIIA2 (image by Author with QGIS based on Shaw and Shaw 1996; 2006; Shaw and Shaw 2012).

Figure 4.31—Concentration and chronological distribution of Cypriot pottery across Kommos (image by Author with QGIS based on Shaw and Shaw 1996; 2006; Shaw and Shaw 2012). 429

Figure 4.32—Concentration and chronological distribution of Italian finds across Kommos (image by Author with QGIS based on Shaw and Shaw 1996; 2006; Shaw and Shaw 2012). 430

Figure 4.33—Potmarks identified at Kommos dating MM III–LM IIIB (composited after Betancourt 1990, Figures 55, 65; Watrous 1992 Figure 30, 50, 62; Shaw and Shaw 1996: 692–693, Plates 4.46–4.47; Rutter and Van de Moortel 2006: 1123–1124, 1150, 1157, 1160, 1175, 1183, Plates 3.30–3.31, 3.57, 3.64, 3.67, 3.82, 3.90; Rutter 2017b Figure 2.43). 430

Figure 4.34—Drawing (above) and picture (below) of both faces of the jeweller's stone mould, Room X6, House X (Shaw and Shaw 2012 Figure 3.4; Plate 3.11). 431

Figure 4.35—Different chronological distribution of storage areas across Kommos (image by Author with QGIS based on Shaw and Shaw 1996; 2006; Shaw and Shaw 2012). 432

Figure 5.1—Coast of Kommos showing the location of the submerged islet (Mourtzas and Kolaiti 2020: 8, Fig. 3B). 433

Figure 5.2—Chronological distribution of imports recovered from Lipari. This count does not include the material from the hoard in α II. 434

Figure 5.3—Weighted chronological distribution at Kommos of imports from outside Crete. 435

Figure 5.4—Violin-bow fibulae and fragments from the Italian ports of interactions: a. Roca Vecchia, SAS X, Phase III; b.–c. Roca Vecchia, SAS X, Phase IV; d.–f. Lipari, hut α II and surroundings (composited after Bernabò Brea and Cavalier 1980: 640, Figure 128c, h, n; Pagliara *et al.* 2007: 349, Figure 17). 435

Figure 5.5—Sites with ivory finds in the Central Mediterranean: 1. Trinitapoli; 2. Torre Mordillo; 3. Guidonia; 4. Grosseto; 5. Frattesina; 6. Castelvetrano; 7. Syracuse; 8; Madonna del Piano; 9. Pantalica; 10. Cozzo del Pantano; 11. Dessueri; 12. Mizia Purdia; 13. Santu Antine; 14. Roca; 15. Mursìa (modified by Author after Guglielmino *et al.* 2011: 180–181, Figure 15.8). 436

Figure 5.6—Distribution of MBA imported artefacts across Roca Vecchia (image by Author with QGIS based on OpenStreetMap contributors 2015; Guglielmino 2003; Guglielmino *et al.* 2010a, Radina and Recchia 2010; Scarano 2012a: 346; Iacono 2013b). 437

Figure 5.7—Distribution of MBA imported artefacts across Roca Vecchia, excluding possible disturbances (image by Author with QGIS based on OpenStreetMap contributors 2015; Guglielmino 2003; Guglielmino *et al.* 2010a; Radina and Recchia 2010; Scarano 2012a: 346; Iacono 2013b). 437

Figure 5.8—MM III–LM I distribution of imported artefacts at Kommos (image by Author with QGIS based on Shaw and Shaw 1996; 2006; Shaw and Shaw 2012). 438

Figure 5.9—LM II–IIIA1 distribution of imported artefacts at Kommos (image by Author with QGIS based on Shaw and Shaw 1996; 2006; Shaw and Shaw 2012). 439

Figure 5.10—LM IIIA2–IIIC distribution of imported artefacts at Kommos (image by Author with QGIS based on Shaw and Shaw 1996; 2006; Shaw and Shaw 2012). 440

Figure 5.11—Distribution of RBA imported artefacts across Roca Vecchia (image by Author with QGIS based on OpenStreetMap contributors 2015; Guglielmino 2009; Guglielmino *et al*. 2011; Radina and Recchia 2010; Iacono 2013b; Jung *et al*. 2021: 464). 441

Figure 5.12—Distribution of RBA imported artefacts across Roca Vecchia, excluding possible disturbances (image by Author with QGIS based on OpenStreetMap contributors 2015; Guglielmino 2009; Guglielmino *et al*. 2011; Radina and Recchia 2010; Iacono 2013b; Jung *et al*. 2021: 464). 441

Figure 5.13— Distribution of Aegean imports across the Lipari acropolis in the Ausonian II settlement (image by Author with QGIS based on Bernabò Brea and Cavalier 1980). 442

Figure 5.14—Distribution of Nuragic imports across the Lipari acropolis in the Ausonian II settlement (image by Author with QGIS based on Bernabò Brea and Cavalier 1980; Campus and Leonelli 2012). 443

Figure 5.15—Distribution of FBA imported artefacts across Roca Vecchia (image by Author with QGIS based on OpenStreetMap contributors 2015; Guglielmino in Settis and Parra 2005: 312, 315; Guglielmino 2006a; 2006b; Pagliara *et al.* 2007; Radina and Recchia 2010; Malorgio and Maggiulli 2011; Iacono 2013b; 2019; Guglielmino 2014). This map does not include the artefacts from the hoards in SAS IX and other finished gold artefacts. 444

Figure 5.16—Distribution of FBA imported artefacts across Roca Vecchia, excluding possible disturbances (image by Author with QGIS based on OpenStreetMap contributors 2015; Guglielmino in Settis and Parra 2005: 312, 315; Guglielmino 2006a; 2006b; Pagliara *et al.* 2007; Radina and Recchia 2010; Malorgio and Maggiulli 2011; Iacono 2013b; 2019; Guglielmino 2014). This map does not include the artefacts from the hoards in SAS IX and other finished gold artefacts. 444

Figure 5.17—Milazzese vase stand with pot marks impressions (photo by Author 2022 in the Regional Archaeological Museum "Luigi Bernabò Brea"). 445

Figure 5.18—Incised stone weight from Pyla-Kokkinokremos (Karageorghis and Demas 1984: 82–83, Plate XXIX, 78). 445

Figure 5.19—Tokens recovered from the MBA fortification walls at Roca Vecchia: no. 195–227 from Postern A, no. 228–247 from Postern B; no. 248–266 Postern D; no. 267–268 Monumental Gate (Scarano 2012a: 329). 446

Figure 5.20—Possible tokens from Italo-Aegean pottery walls identified at Roca Vecchia (Guglielmino 2003: 101; Figure 12). 447

Figure 5.21—Some of the seals recovered from Kommos (image composited by Author after Shaw and Shaw 1996:61, Plate 4.15; 2006, Plate 4.19; Shaw and Shaw 2012, Plate 3.11). 448

Figure 5.22—Bronze yoke of a scale from tomb 22 in Castelluccio, Sicily (Crispino 2022: 58, Figure 61). 448

Figure 5.23—Lead weights recovered at Kommos (drawings from Shaw and Shaw 1996: 662, Plate 4.16; photos from Shaw and Shaw 2012, Plate 3.2 Me 29-30). 449

Figure 5.24—Cup 501 from Filo Braccio on Filicudi (Martinelli *et al.* 2021: 49, Figure 13). 449

Figure 5.25—Out of scale representations of figurines from the three case studies distributed according to their chronology and place of recovery (Shaw and Shaw 1996: 682–686, 690, Plates 4.36–40, 4.44; Guglielmino and Pagliara 2004, Figure 253; Wardle 2004, Figure 5.10; Guglielmino 2005b: 646, Table CLXVIe; Shaw and Shaw 2012: 1215–1218, Plates 4.44–4.47; Photo by Author 2022 in the Regional Archaeological Museum "Luigi Bernabò Brea). 450

LIST OF TABLES

Table 1.1—Aegean chronology correlated to the Italian relative chronology that has been adopted in this work. Absolute dates follow the high chronology adopted by Manning 2010 (lower dates according to Tartaron 2008: 84 are in brackets). References to the Italian chronology are according to Scarano 2012a: 381; Martinelli 2020; Iacono *et al.* 2021 (adapted after Falezza 2025b: 460, Table 1). 4

Table 2.1—Chronology of Roca Vecchia. Aegean chronology correlated to the Italian relative chronology that has been adopted in this work (design after Scarano 2012a: 381, Table 6.1). Absolute dates follow the high chronology adopted by Manning 2010 (lower dates according to Tartaron 2008: 84 are indicated in brackets in the "Aegean column"). References to the Italian chronology are according to Scarano 2012a: 381; Martinelli 2020; Iacono *et al.* 2021. The phases of Roca are based on Guglielmino 34

(1999); Pagliara *et al.* (2007; 2008); Scarano (2012a). Dates in brackets in the "Roca Vecchia" columns show the radiocarbon results with a 1σ uncertainty (Pagliara *et al* 2007: 356–358; Scarano 2012a: 373–383).
Table 3.1—Absolute and relative chronology of the BA cultures at Lipari. Absolute dates follow the high chronology adopted by Manning 2010 (lower dates according to Tartaron 2008: 84). References to the Italian chronology are based on synchronism with the Aegean relative chronology (Scarano 2012a: 381; Martinelli 2020; Iacono *et al.* 2021). 70
Table 4.1— Chronology of the different periods at Kommos. The absolute chronology follows the high chronology adopted by Manning 2010 (lower dates according to Tartaron 2008: 84 are in brackets). Design after Rutter 2017b:2, Table 1.1. 124
Table 4.2—Pot marks identified on MM III–LM III vases from Kommos. 161
Table 5.1—Absolute and relative chronologies of the three case studies. Absolute dates follow the high chronology adopted by Manning 2010 (lower dates according to Tartaron 2008: 84 are in brackets). References to the Italian chronology are according to Scarano 2012b: 381; Martinelli 2020; Iacono et al. 2021 (adapted after Falezza 2025b: 460, Table 1).). 174
Table 5.2— Dimension of settlements present in the regions within a 8 km radius from each case study at the beginning of the period analysed in this thesis. The site numbers in the Western Mesara refer to Watrous and Hadzi-Vallianou (2004). Other data from Bernabò Brea and Cavalier (1957: 97–110); Recchia and Ruggini (2009: 97–110); Martinelli et al. (2021). 184

Table 5.3— Productive activities identified across the case studies (modified after Falezza 2025b: 469, Table 2, based on Bernabò Brea and Cavalier 1980; Cavalier 1985–1986; Blitzer 1995; Shaw and Nixon 1996; Wright and McEnroe 1996; Shaw *et al.* 2001; Guglielmino 2006; Shaw *et al.* 2006a; 2006b; Pagliara *et al.* 2007; 2008; Guglielmino *et al.* 2010a; Scarano 2012a; Iacono 2013b; Basile 2018; Martinelli 2020). 190

Table 5.4—Quantity of Aegean-type pottery recovered at Lipari across all phases according to function. 203

Table 5.5—Artefacts recovered from the three case studies analysed. 206

Table 5.6—Main structures identified in the ports of interactions analysed (after Falezza 2025a: 12, Table 1.3). 215

Table 5.7—Iconography and symbology across the three sites analysed. Y: present; N: absent. 236

LIST OF ABBREVIATION

asl: above the sea level

BA: Bronze Age

BC: Before Christ

cm: centimetre

EBA: Early Bronze Age

EIA: Early Iron Age

EM: Early Minoan

FBA: Final Bronze Age

FM: Furumark Motifs (see Furumark 1941)

FS: Furumark Shape (see Furumark 1941)

ha: hectares

HBW: Handmade Burnished Wares

IA: Iron Age

ISG: Island Sanctuaries Group

km: kilometre

L: litres

LBA: Late Bronze Age

LH: Late Helladic

LM: Late Minoan

m: metre

MBA: Middle Bronze Age

MH: Middle Helladic

MM: Middle Minoan

MPG: Mainland Popular Group

NAA: Neutron Activation Analysis

RBA: Recent Bronze Age

SAS: Saggio Archeologico Stratigrafico

SIP: South Italian Protogeometric

SNA: Social-Network Analysis

UB: Urnfield Bronzes

WST: World System Theory

ABSTRACT

During the Late Bronze Age, the Mediterranean was characterised by an intense network of interactions, including those between the Aegean and Southern Italy. Within this interconnected context, ports played an important role as meeting points between different cultures. Some ports, which seem to have been involved in interactions more than others, display characteristics which have led to their identification as a separate category, here called ports of interactions. This thesis investigates the role of ports in the interactions between societies in Southern Italy and the Aegean by looking at three case studies, that is Roca Vecchia, Lipari, and Kommos, located in different areas of the Mediterranean Sea.

Through comparative case-oriented analysis, this thesis identifies both similarities and differences between these sites, which do not always reflect their geographical location, but are also influenced by their different chronology, socio-political situation, and trading networks. Foreign materials in southern Italian ports of interactions seem initially to be given a luxury status because of their exotic provenance regardless of what was their status in their original context, while this does not necessarily apply to Kommos. Ports of interactions are demonstrated to be particularly useful to investigate social dynamics, showing that the same types of activities would take place within ports of interactions, although displaying a strong local agency.

1. PORTS OF INTERACTIONS IN THE BRONZE AGE MEDITERRANEAN

1.1. A Globalised Mediterranean

One of the main characteristics of the modern world is mobility, which has significantly broken-down barriers and connected the world in a new way. When we think about the world we live in, we think about a world that is interconnected, where long-distance travels and communications are not conceived as problems as one would imagine they were in the past but are part of everyday life. At the same time, we are affected by events happening on the other side of the world as if they were happening close to us. This high level of connectivity and mobility is what makes us define the modern world as globalised (Kellerman 2020: 13). There are many definitions for the term "globalisation", focusing on the different aspects and scenarios it can be applied to (Gopinath 2018; Kellerman 2020), but it is always associated with "increasing connectivity" (Hodos 2017: 4; see also Tomlinson 1999: 2; Jennings 2017). However, this high level of connectivity is in some way not exactly new to the Mediterranean Basin, which has always been characterised by movements of peoples undertaking journeys for different reasons, such as pleasure travels, economic trade, social visits, and migratory flows (Montanari 2021; Benassi *et al.* 2022). While interactions across the Mediterranean and their social implications are a popular subject for debate, these processes are also being studied in archaeology and history.

Fernand Braudel was the first in 1949 to develop and apply to Mediterranean studies the concept of the *longue durée*, that is that constant features repeat themselves through time (Braudel 1995: 23–24). Among these features, there is the natural competition and interaction between peoples and geographical areas (Braudel 1995: 23–24, see also Horden and Purcell 2000: 9; Broodbank 2013: 20). The identification of

microregions, relying on a combination of natural and environmental elements and of the use that humans make of the landscape, reflects another main characteristic of the Mediterranean Sea, that is "fragmentation" (Horden and Purcell 2000: 10–25; Broodbank 2013: 20, 595–600). In addition to fragmentation and uncertainty, the nature of this geographical area and connectivity have strengthened the link existing between humans and the natural contexts they live in, with the sea enabling multiple processes to take place both across the Mediterranean basin and through time (Braudel 1949: 276; Horden and Purcell 2000: 123; Broodbank 2013: 20, 595–600). This approach provides a geographic context where connectivity enhances the exchange of artefacts, people and ideas (Knapp and Blake 2005). The increasing connectivity across the Mediterranean taking place in the Late Bronze Age (LBA) led to a process of what might be called globalization within the Mediterranean (Sherratt 2017), also referred to as Mediterraneanisation (Morris 2003; Hodos 2006: 9; Versluys 2017).

One of the consequences of people's mobility is the interaction between different cultures, whose social implications are widely discussed also in light of modern events. Today as in the past, the interactions between the different cultures present in the Mediterranean result from a series of complex social, political and economic processes. The challenge of archaeologists is to investigate the nature of these interactions through the analysis of material culture. Here we are going to use this kind of perspective to investigate relations between the Aegean and Southern Italy in the LBA (Figure 1.1). In the next section we are going to briefly talk about the chronology of both areas investigated.

1.2. **The Aegean and Southern Italy in the LBA**

Before giving an overview of the main periods discussed in this thesis, it is important to define the different relative chronologies adopted for each area. The Aegean chronology refers to ceramic phases, while the Italian chronology follows different archaeological 'cultures', also referred to as '*facies*' (Cazzella and Recchia 2019; Danckers 2019). For purposes of clarity, Table 1.1 shows and compares the different chronological phases for each area discussed. This chronology has been adopted as providing general guidelines as the geographical boundaries can be blurred, at times overlapping, and the differences in pottery do not always correspond with other distinctions in the material culture (Cazzella and Recchia 2019). It is also important to bear in mind the important variability of the Italian peninsula at a local level and hence the general nature of the below overviews.

<table>
<tr><th rowspan="2">Dates (all BC)</th><th colspan="3">Aegean</th><th rowspan="2"></th><th colspan="2">Southern Italy</th></tr>
<tr><th>Mainland Greece</th><th colspan="2">Crete</th><th>Apulia</th><th>Aeolian Islands</th></tr>
<tr><td>1700–1650</td><td rowspan="2">LH I (1600–1500)</td><td rowspan="3">LM IA (1600–1480)</td><td rowspan="6">Neopalatial (1700–1425)</td><td>EBA</td><td rowspan="4">Proto-Apennine</td><td rowspan="3">Capo Graziano II</td></tr>
<tr><td>1650–1635</td><td rowspan="3">MBA 1</td></tr>
<tr><td>1635–1625</td><td rowspan="3">LH IIA (1500–1440)</td></tr>
<tr><td>1625–1500</td><td rowspan="3">LM IB (1480–1425)</td></tr>
<tr><td>1500–1480</td><td rowspan="6">Milazzese</td></tr>
<tr><td>1480–1470</td><td rowspan="2">LH IIB (1440–1390)</td><td rowspan="2">MBA 2</td><td rowspan="4">Apennine</td></tr>
<tr><td>1470–1420</td><td>LM II (1425–1390)</td><td rowspan="2">Final Palatial (1425–1370)</td></tr>
<tr><td>1420–1390</td><td>LH IIIA1 (1390–1370)</td><td>LM IIIA1 (1390–1370)</td><td rowspan="3">MBA 3</td></tr>
<tr><td>1390–1350</td><td rowspan="3">LH IIIA2 (1370–1300)</td><td rowspan="3">LM IIIA2 (1370–1300)</td><td rowspan="9">Postpalatial (1370–1000)</td></tr>
<tr><td>1350–1330</td></tr>
<tr><td>1330–1300</td><td rowspan="2">RBA 1</td><td rowspan="6">Sub-Apennine</td></tr>
<tr><td>1300–1240</td><td rowspan="3">LH IIIB</td><td rowspan="3">LM IIIB</td><td rowspan="4">Ausonian I</td></tr>
<tr><td>1240–1200</td><td rowspan="3">RBA 2</td></tr>
<tr><td>1200–1190</td></tr>
<tr><td>1190–1180</td><td rowspan="4">LH IIIC</td><td rowspan="4">LM IIIC</td></tr>
<tr><td>1180–1150</td></tr>
<tr><td>1150–1100</td><td rowspan="2">FBA 1</td><td rowspan="4">Ausonian II</td></tr>
<tr><td>1100–1070</td><td rowspan="3">Protovillanovan</td></tr>
<tr><td>1070–1060</td><td rowspan="2">FBA 2</td></tr>
<tr><td>1060–1040</td><td>Submycenaean</td><td>Subminoan</td></tr>
</table>

Table 1.1—Aegean chronology correlated to the Italian relative chronology that has been adopted in this work. Absolute dates follow the high chronology adopted by Manning 2010 (lower dates according to Tartaron 2008: 84 are in brackets). References to the Italian chronology are according to Scarano 2012a: 381; Martinelli 2020; Iacono *et al.* 2021 (adapted after Falezza 2025b: 460, Table 1).

Starting with the Aegean, at the beginning of the 17th century BC, mainland Greece had just entered the so-called Shaft Grave period, also known as the Early Mycenaean period. This was characterised by the appearance of major tombs and cemeteries, associated with an increase of the wealth in the material culture and the development of social stratification, which led to the emergence of the so-called Mycenaean civilization (Rutter 2001:145; Wright 2008: 238). Among the many

explanations suggested for such transformations, there is the increasing economic exchange with Crete (Hooker 1976: 48–58). Up until the 15th century BC, Crete was in the so-called Neopalatial period, characterised by the presence of various palaces which acted as economic, political and religious centres, as well as having a residential function for both the higher member of the elite and the people involved in running the palatial activities (Lindgren 1987; Schoep 2006). The end of this period was marked by a general destruction and abandonment of settlements across the island, alongside the disappearance of some artistic motifs and crafting activities, including those on media previously under the control of the palaces (Driessen and Macdonald 1997: 36–37; Rehak 1997: 61).

By LM II, new pottery shapes and styles appear on Crete displaying some common elements with the material culture of mainland Greece, which after LM IB seems to have replaced Minoan-like artefacts also outside of Crete (Niemeier 2005: 4–10; Davis 2008: 197). Linear A script also disappeared and was replaced by Linear B, although the evidence for its use was restricted to administrative contexts, unlike Linear A (Steele 2017: 168–169). By the start of LH III, the Greek Mainland had seen the development of palatial institutions like the Cretan ones (Shelmerdine and Bennet 2008; Pantou 2014: 378–379). These societies were characterised by a hierarchical organisation, with the *wanax* at the head of the elite (Shelmerdine and Bennet 2008). In addition to the presence of monumental palaces, these sites had developed an institutionally complex, specialised and centralised political and economic administration (Cherry 1984; Warren 1987: 54; Crowley 2008). Mycenaean palace economy was redistributive, that is following the "upward mobilisation of goods, primarily for the benefit of the ruling elite which organises the mobilisation" (Killen 1994: 67), while not all the economic activities and the craftsmen were equally subjected to palatial control (Whitelaw 2001a). Towards the

end of the 13th century BC, the Aegean experienced a series of transformations which resulted in the end—also referred to as "collapse"—of the palace societies (Shelmerdine 2001: 372–376).

The start of the "Mycenaean connection" is dated to the 17th century BC, when the various LH I transformations taking place in the Aegean resulted eventually in Mycenaeans taking over the pre-existing Minoan trade routes in the East Mediterranean as well as venturing westwards in the search of sources (Rizio 2005: 623; Cazzella and Recchia 2009a: 29; Vianello 2009: 45). Metal sources in Etruria are traditionally considered a good candidate, especially considering the evidence for contacts from sites located on the sea routes connecting the Aegean and Tyrrhenian Sea (Cline 1994: 78–79; Cazzella and Recchia 2009a). These interactions concerned the southern area of the Tyrrhenian Sea, in particular Vivara and the Aeolian islands, with some sites along the Ionian coast (Figure 1.2; Vagnetti 1982: 16; 1983: 169; Jones *et al.* 2014: 59–66). Unlike the earlier sporadic encounters, artefacts from this period were very frequent and clustered in defined areas, suggesting the existence of some sort of organised trade (Tanasi 2009: 51; Cazzella 2010a: 26). The Middle Bronze Age (MBA) period in Southern Italy was characterised by the development of various sites, mostly small villages, especially along the Southern Adriatic coast, on small promontories closely spaced between each other (Bietti Sestieri 2013a: 637; Iacono 2019: 68–70). Settlements could be endowed with fortification walls, sometimes furnished with towers, as in the case of Coppa Nevigata (Cazzella and Recchia 2013a: 49–51; Scarano 2017c). Southern Italy seemed to have been characterised by a fragmented political situation, with relatively small communities with few kin groups competing against each other (Bietti Sestieri 2013a: 638). These competitions could likely result in the political control being temporarily exerted by individual kin groups (Bietti Sestieri 2013a: 638).

The settlement pattern described for the earlier phase of the MBA period continues into the following Apennine phase, with a potential slight shift towards hinterland locations (Iacono 2019: 70, 110). Between the end of the 15th century and the beginning of the 14th century BC, some sites appear also on the Adriatic coast of Apulia as standing out in terms of evidence for Mycenaean contacts, like Roca Vecchia, suggesting that they were favoured in the interactions with the Aegean (Cazzella and Recchia 2009a: 30). More generally, starting from LH IIIA2, there is a change in the sites in Italy which experience interactions with the Aegean, with a shift from the Tyrrhenian area towards Sicily, where sites like Thapsos and Cannatello emerge in the Mediterranean trading landscape (Figure 1.3; Vianello 2009: 48). Other important areas are the Ionian coast of Calabria and various settlements in Apulia, especially in the Taranto area, where are both Scoglio del Tonno and Porto Perone (Vianello 2009: 48). During the Recent Bronze Age (RBA), dating approximately from 1330 to 1100 BC, there was a significant decline in the number of settlements across Southern Italy (Bietti Sestieri 2013a: 641; Iacono 2019: 119–121).

Towards the end of LH IIIB, the number of Mycenaean artefacts across Southern Italy and Sicily gradually decline, possibly in relation to the collapse of the Mycenaean palace societies (Cazzella and Recchia 2009a: 36). LH IIIC Aegean-type pottery is limited to some sites, such as Lipari, Scoglio del Tonno and Roca Vecchia, where local production of these wares is well attested (Figure 1.4; Cazzella and Recchia 2009a: 36; Vianello 2009: 48–49).

In the Final Bronze Age (FBA), starting around 1150 BC, there was an increase in the number of new sites, which are now widespread across the territory; as well as an increase in the number of sites being furnished with walls in comparison with the previous period (Iacono 2019: 161). This period is characterised by a large presence of Southern

Italian Protogeometric (SIP), also referred to as Matt-Painted pottery for its characteristic dark matt-painted decoration (De Juliis 1977: 23–25; Yntema 1985; Iacono 2013b: 267).

Overall, about 10,000 Aegean-type sherds have been recovered from 109 Italian sites (Blake 2008; Cazzella and Recchia 2009a: 27; Broodbank 2013: 442–444; Jones *et al.* 2014: 23–38; 2021). The expression "Aegean-type" pottery includes both Aegean imports and locally made artefacts displaying characteristics which might indicate them as possibly imported from the Aegean. This includes Lustrous Decorated Pottery, appearing in LH I, and which follows the Palatial world but also develops some regional trends (Mountjoy 1993; 1999). Locally produced pottery has often been mistaken as Aegean imports, an example of which is provided by the 1950s–1960s improper identification of Italian Grey Ware with Middle Helladic (MH) Aegean Minyan ware, resulting in the adoption of the 'Pseudominyan' label when referring to this class of pottery (Guglielmino 2012: 178, 182; Bietti Sestieri 2013a: 641). Locally produced Italian Grey Ware is fine wheel-made pottery made out of grey clay, which remains unpainted but with burnished surfaces (Guglielmino 2012: 182). This Italian class of pottery dates to RBA and FBA and thus is much later than Aegean Minyan ware, from which it derived in terms of form and technologically, being fired in a similar environment (Belardelli 1994; Bettelli 2002; Jones *et al.* 2014: 17–18).

This outline of the different chronologies of the Aegean and Southern Italy during the LBA will form a background to discussing the interactions between local people and Aegean societies taking place in this period. Italian and Aegean communities show profound differences from a socio-political point of view and, during the five centuries of intensification of contacts between these different areas, they both significantly changed from a social, political, and economic point of view, alongside the appearance

of technological innovations, like the potter's wheel or the use of kilns to fire at a controlled temperature (Jones *et al.* 2014: 363–405).

1.3. Aegean Individuals in Italy

The nature of Aegean presence in Southern Italy is a hot topic of LBA Mediterranean archaeology. Different scholarly approaches have been adopted, reflecting the historical period of modern scholarship. The earliest approaches to the topic were influenced by Evans' colonialist approach (1928: 321; 1935: 283), openly arguing for the Mycenaean cultural dominance over Italy (Taylour 1958; Pugliese Carratelli 1958; 1976; Holloway 1981; Kilian 1982). Lucia Vagnetti (1983: 174; 1993: 152) was among the first scholars to reject this approach and explained the presence of foreign groups within local settlements as a way to maintain the regular trading activities. The strong agency of local communities in the interactions with the Aegean was also increasingly stressed by scholars such as Anna Maria Bietti Sestieri (1985: 306; 1988: 24) and Elizabeth French (1985).

As mentioned above, Aegean ventures west have traditionally been attributed to a search for resources, usually identified as metals and minerals, especially sulphur, copper and alum, which were particularly important in the Mycenaean world (Vagnetti 1983: 178; Smith 1987; La Rosa 2005; Perna 2005; Michailidou 2008). Francesco Iacono (2019: 113–114) argues that commodities associated with textiles could have been an equally good cause for travelling westwards. For example, textile-related activities have been attested at sites with evidence for interactions with the Aegean, such as purple dye production at Coppa Nevigata and Scoglio del Tonno (Cazzella *et al.* 2004; Cazzella and Recchia 2009a; Iacono 2019: 113–114).

The *longue durée* approach was adopted by many scholars and applied to different fields, as for instance Wallerstein's (1974) World Systems Theory (WST), characterised by different geographical areas, defined as core and periphery areas, that constantly interact and compete. Schneider (1977) was the first to explicitly apply WST to societies of the precapitalistic world and, in 1991, Andrew and Susan Sherratt applied it to the Bronze Age (BA) Mediterranean (Sherratt 1993; 1994; Sherratt and Sherratt 1998). It should be noted how their approach argued for a "creative and dialectical" relation between core and periphery areas, rather than an active-core and passive-periphery association (Sherratt and Sherratt 1998: 337). This seems to differ from what was discussed by Bryan Feuer (1999), who concludes that encounters with other groups increase the farther away from the core area. This is opposite to the level of integration between zones, that is the extent to which different places are connected to one another, which is higher in the core area to decrease in the peripheral areas (Figure 1.5; Feuer 1999; 2011: 518). Such an interpretation has however been challenged by recent studies arguing for a less impenetrable nature of cultural borders, with the core areas being more affected by network changes than peripheral areas, suggesting instead the identification of "buffer zones and interfaces, and highlighting the role of open contact zones and gateway communities, as opposed to the rigid scheme offered by core, periphery, and margin" (Dawson and Nikolapoulou 2020: 177).

Adopting the core-periphery model, Nicola Wardle (2004: 54–56) identifies the core area with ports of trade being the place of direct interactions between cultures through traders and craftsmen, both local and foreigners. Building on both Sherratt and Sherratt (1998) and Feuer (1999), Wardle (2004: 54–56) identifies two further areas of influence. The secondary contact zone is an area which is frequently travelled by natives to reach the primary contact zone and is directly influenced by it; the tertiary contact zone

is characterised by very rare direct interactions with the primary zone and external influences are from the secondary contact zone (Wardle 2004: 54–56).

Located at a distance from the core, frontiers and borders thus coincide with the meeting point for different geographical and historical cultures (Pratt 1992: 8; Feuer 2011). Because of their remoteness, these "contact zones" are less influenced by the social structures characterising the core and hence become particularly susceptible to processes of cultural exchange and creation, mainly through means of exchange or conflict (Feuer 2011: 518–519; Stockhammer 2011: 45, 49; Girella *et al.* 2016: 7). As a consequence, areas peripheral to the Aegean, like Southern Italy, would be particularly suitable for change and interactions, which would take place more easily than elsewhere (Feuer 2011: 518).

The application of social-network analysis (SNA) allows the representation of interactions in a graphic way, where edges connect two sites, represented by nodes, which have provided evidence for some kind of connections (Blake 2014; Iacono 2019). The Central Mediterranean in the LBA saw the development of various nodes along the main trading routes, which often coincide with main port centres. Among the main contributions of SNA is that it clearly shows that some sites are more interested than others by contacts (Figure 1.6). This was made particularly evident through the analysis of Aegean type pottery, with some sites providing a significantly larger amount of finds, especially dating to the RBA (Iacono 2017). It appears that some of these exceptional nodes, like Lipari or Roca Vecchia, played a central role as main hubs in the networks of interaction (Iacono 2017: 213). In addition to significant quantities of Aegean type pottery, these assemblages are characterised by open shapes and dining vessels which could be used for banqueting activities (Iacono 2017: 211). By looking at distributions of these exceptional centres through time and space, Iacono (2017: 211) notices that the

earliest hubs are geographically further away from the Aegean than the more recent ones. The next section will focus on these exceptional ports, starting with their history of studies to conclude with the definition of a new category of ports which will be adopted in this thesis.

1.4. Ports of Interactions

Because of their many different aspects and natures (Reger 2016; Hulin and German 2018), ports are places where different people and cultures come together and interact (Falezza 2025a). An increasing number of studies is focusing on port cities from a social point of view (Rogers 2013: 183). The routine life on site would require some structures for both the economic and the domestic activities (Oleson and Hohlfelder 2011; Rogers 2013: 188–189). From an archaeological point of view, the range of evidence present in these ports thus includes both structural and artefactual remains which can provide a significant amount of information about the interactions taking place on site.

There is a special category of ports which has widely been discussed in the scholarship, although adopting different names, such as ports of trade, gateways centres, hegemonic sites, or emporia (Falezza 2025a: 6–7). Rather than individually discussing these different terminologies, a general discussion on the main aspects characterising them follows below, highlighting the characteristics of what in this thesis is going to be referred to as "ports of interactions" (Falezza 2025a).

Despite adopting different names, these ports are all characterised by a high level of connectivity and are hence located on the main trading networks, both terrestrial and maritime, as well as being involved also in smaller scale trade and interactions (Iacono 2016a; Falezza 2025a: 7). Jones *et al.* (2014: 453) refer to the "emporia" in Italy as also hosting foreign individuals, some of whom were only passing by or were present for

longer periods of time, in relation to economic activities, while others established themselves on site permanently. As aforementioned, these ports have thus provided a large quantity of external elements, including open vessels associated with banqueting activities (Jones *et al.* 2014; Iacono 2017: 211). Feasting, possibly of ritual nature, was indeed among the social activities usually taking place in these ports (Borgna 2012; Iacono 2015; 2017: 211; Iacono *et al.* 2021).

Most studies debating these types of ports have focused on the social dynamics taking place on site, and more specifically on who was in control. Möller (2000: 21) lists among the characteristics of ports of trade a certain degree of separation from the hinterland, which however would contrast with what was mentioned above regarding the involvement of these sites in local trade. Nonetheless, most models argue for the neutrality of these sites, which could still have been administered by either foreign traders (Renfrew 1975) or natives (Chapman 1957: 116) who were facilitating the interactions in a middle ground context (Dawson and Nikolakopoulou 2020: 172).

If we were to project the role and function of ports of interactions within the globalised context of the LBA Mediterranean to the modern world, they could be compared with the function that contemporary airports play for those people whose lifestyle is characterised by constant travelling (cf. Oleson and Hohlfelder 2011). Airports are interconnected places of mobility, where people follow specific norms and behaviours, and expect to find certain facilities, such as going through security controls or the presence of duty-free shops. While there is little to no evidence to assess a similar level of control of behaviour in ancient ports, because of these characteristics, airports have been defined as "non-places", that is "a space which cannot be defined as relational, or historical, or concerned with identity" (Augé 1995: 77–78). However, recent research (Colomer 2017) has challenged this interpretation of airports, highlighting their

importance for people who grew up in a context of international mobility and do not feel any connection to a specific culture. While this is not necessarily the case of LBA mariners and traders, whom would have had links with their countries of origin, a feeling of belonging could be related to the nature of ports, whose sight was welcomed by mariners after having endured a perilous journey. Moreover, unlike airports which are crossing points, travellers to ancient ports could remain for long periods of time that they could develop a sense of place. It is thus possible that Mediterranean ports of interactions might have still been considered as familiar by both local individuals returning home and by foreigners to an extent that there were specific aspects, facilities, and norms recurring among them and which were to be expected. The exploration of potential analogies and differences between the ports of interactions analysed could test the existence of a common model of ports across the LBA Mediterranean.

1.5. Approaching Ports of Interactions

1.5.1. Aims and Methodology

This thesis aims at investigating the role of ports in the interactions between societies in Southern Italy and the Aegean. One of the aims is to assess whether the characteristics of ports of interactions were unique to specific geographical areas or whether they were more widely shared across the Mediterranean. In particular, it would be interesting to understand whether the interactions taking place in this type of sites across Southern Italy were similar to those taking place in similar Aegean centres. A goal of this thesis will be to address how material culture from ports in the Central Mediterranean was received in the Aegean ports of interaction and the other way around. Finally, the possible factors and reasons for the presence of similarities and differences will also be investigated.

This work will analyse three LBA ports of interactions located in different areas of the Mediterranean: Kommos on the Aegean Sea, Roca Vecchia on the Adriatic Sea, and Lipari on the Tyrrhenian Sea. All these sites developed in the MBA and experienced interactions with foreign cultures shortly after. Many other sites had been considered, both in Southern Italy—Cannatello, Vivara, Scoglio del Tonno—and in the Aegean—Kalamianos, Tiryns, Pylos. The choice of selecting only three was mostly influenced by time constraints, as the material to analyse would have been too much to complete within a feasible timeframe. However, these three sites provide a sample from which to draw a general picture of LBA ports of interactions in the Central Mediterranean and Aegean, which can then be used as comparison for analysing other similar sites across the Mediterranean.

This project relies on published reports and papers to bring together data from these three different ports of interactions. Many recent studies have presented and discussed new data from these sites, making the appraisal of these case studies timely (Shaw 2019; Iacono *et al.* 2020; 2024a; Martinelli 2020; Martinelli *et al.* 2021). To facilitate the analysis, the presence of buildings is recorded in a database. When possible, these architectural structures are catalogued in terms of chronology, location, layout and dimension, and building techniques. A separate section of the database is dedicated to artefacts of various materials recovered in association with these structures. The database also incorporates items considered important for this thesis and discussed in the text, including imports and artefacts displaying external influences. It is important to specify that the materials from metal hoards are not included in the database because of their extremely high number, although their relevance is considered and discussed in the thesis. The artefacts are recorded in the database according to their location, description, origin, culture, decoration, and possible function; for this purpose, the pottery shapes and their

functions adopted in this thesis are clarified in the Appendix. Finally, these ports of interactions are mapped with QGIS software to provide a graphical representation of the sites' layouts according to the different chronological phases considered. The combined employment of the database results and GIS allows a diachronic analysis of the artefact distribution across the sites in relation to the distribution of settlement features. Different functional areas, like communal areas, storage areas, and workshops, can be identified by analysing the maps and the layout of these sites and matching them with the finds recovered within the same archaeological context. Despite these case studies all being identified as ports of interactions according to the criteria mentioned above, it is important to highlight that these are three very different sites, not only in terms of geographical location, but also for their social and political context, periods of occupation, and history of studies. These diversities will have an impact on the homogeneity of the recorded structures and artefacts, both in the database and in the graphical rendering on maps.

The presence of material culture or traits which can be associated with different foreign cultures is usually considered as a good indicator of ports of interactions, although it is not sufficient. It is therefore necessary to investigate the existence of any possible pattern inherently characterising activities conducted in ports of interactions. Comparative case-oriented analysis will identify potential similarities and differences between ports of interactions, considering the geographical location of these sites. In case of coinciding traits between different areas, it would be possible to assess the extent to which contacts with the Aegean have influenced Italian societies or the other way around. The adoption of elements of social complexity, such as similarities in the urban layout or in the defence system, may indicate that interactions with the Aegean were not limited to simple contacts, but influenced the social organisation and habits of Italian BA communities.

The first element to consider is the location of these harbours within the features of the Mediterranean landscape. Well-protected basins seem to be one of the features characterising Mediterranean ports in the BA (Guglielmino 2009: 201). Generally, it seems that most of the ports of interactions developed on the so-called high-energy coasts (Figure 1.7; Blue 1997; Falezza 2025a; 2025b: 464), that is coasts that are more affected by natural erosion because of their exposure to winds, currents and tides. A frequent example of these in the BA Aegean consists of promontories, forming the so-called "double harbour arrangement", which could have provided favourable shelter on either side of the peninsula regardless of the weather conditions (Shaw 1990; Shaw *et al*. 2006b: 854). Moreover, the construction of large architectural installations was not necessarily needed in the BA. Weather and water erosion, as well as changes in the sea level, and the possible absence of a built port might explain the fact that the actual harbour area has not been identified at Roca Vecchia and Lipari. However, it is important to clarify that the term "ports of interactions" refers to the port city as a whole and not only to the harbour area. As noticed by Hoyle (1989), ports belonging to this period—and up until the 19th century AD—were not characterised by a strong division between the settlement and the harbour.

The presence of fortified walls at Roca Vecchia reflects a pattern identified by Shaw (1990: 423) for Aegean harbours located on promontories, that is that they were fortified on the inland side. Fortified walls also characterise many other BA port sites in Southern Italy with strong evidence for interactions across the Mediterranean, such as Scoglio del Tonno and Cannatello. However, it seems that no potential port of interactions located on islands within archipelagos was furnished with fortification walls, like Lipari or Vivara for instance (Falezza 2025a). This could be explained by their location on small islands,

meaning that there was no hinterland from where land attack could hit, with nearby islands rather acting as a support and resource than as a threat (Falezza 2025a).

Other factors to consider are the dimensions of the sites, changes in the population number, and public architecture. A functional division of spaces and accessibility also provides information on the type of social organisation at these ports. Working areas might indicate an association between these ports of interactions and specific activities that were conducted on site. The identification of agricultural lands and central storage areas would reveal specific agricultural methods adopted, whether surplus was produced and how this was managed. Finally, religion and rituals can be investigated by looking at their material expression, that is cult objects and shrines (Warren 1988: 12–13).

Chapters 2, 3 and 4 will analyse each individual case study in Southern Italy and in the Aegean in terms of contextual examination, artefacts' distribution and style. These ports of interactions will be presented starting with their historical background as archaeological sites to then look at their morphological characteristics. Evidence for structures, whether fortifications or buildings, will then be presented in chronological order, providing an examination of any other kind of evidence associated with this. A further section will focus on the evidence for technologies and workshops, analysing different materials, tools and style. A final section will then discuss any evidence for social organisation, ranging from banqueting and feasting activities to storage methods. Chapter 5 will compare the three case studies analysed in this thesis. Unlike Wardle (2004: 68–70), who considers certain domains, such as religion and social organisation, more revealing about the nature of interactions than others like pottery or metalworking for instance, this thesis will consider evidence focusing on differences and similarities. The below will give an introduction to the different aspects that will be analysed.

1.5.2. Functional and Spatial Analysis

The first overarching distinction in different areas that is generally addressed in the scholarship is between public and private, which can be particularly challenging in relation to the period and geographical areas analysed (Allison 1999: 11; Nevett 2010: 6; Castro-Martínez *et al.* 2013: 96). Private and public areas should not be understood as opposite, but rather as indicating how many individuals could access these and participated in the activities taking place within them (Falezza 2025b: 468). Public areas include both outdoor and indoor spaces without a restricted access and they could act as gathering places for social or economic purposes, like productive and ritual activities, which however could also take place within the domestic sphere (Falezza 2025b: 469).

There are different types of private and public areas that have been identified across the ports of interactions analysed. Households are usually associated with a more private sphere and so are the domestic buildings associated with them. These structures can thus host activities related to the domestic life, including matters of production, distribution, transmission, reproduction, and co-residence (Wilk and Netting 1984; Rainville 2015: 3), such as workshops, storages, and ritual areas.

Workshops could be identified within domestic buildings, in association with these, or in dedicated areas. Working areas can be identified from both architectural evidence and specific objects, including raw materials, unfinished artefacts, debris from the manufacturing activities, and tool kits (Evely 1993: 547–551). The identification of productive activities in association with a domestic structure does not automatically dictate the scale and the nature of the activities conducted there (Evely 1993: 547). This can be seen in the LBA–EIA settlement of Frattesina, Northern Italy, where evidence for working of bronze, glass, amber, as well as hard animal materials, have been recovered

from the same structures, parts of which were also possibly employed by the same artisans for residential purposes (Bietti Sestieri 1984a: 417–423; 1984b; Peroni 1996: 385–386; Iacono 2019: 178). Specialised working areas and activities differ instead from those belonging to a domestic environment in terms of scale, which is indicated by a higher concentration of those aforementioned elements that can be associated with a working area (Evely 1993: 551). Finally, some activities require certain skills and installations, like kilns, that limit their being run at a domestic level. These are pottery production, metalworking, and to some extent bone and stone manufacture, which will be the object of the analysis in Chapter 5.

There are some structures that can be associated with individuals holding a different status among the society and, in addition to the presence of luxury artefacts, there are some criteria which contribute to the identification of these buildings which differentiate themselves from the other structures in the settlement. First, the presence of decorations or architectural devices can be associated with the elite architecture of a specific culture and therefore with socially stratified individuals. Second, the level of structures' accessibility can also provide useful information on the social status of its occupants as direct and straightforward access usually indicates an egalitarian society, contrary to more structured societies (Doonan 1993: 14). Third, larger buildings, hence requiring a major investment of labour, can be associated with elite individuals when there is an expansion in the scale of the household features or the addition of specialised rooms rather than through the duplication of already existing ones, as in the case of "multi-family residences" (Whitelaw 2001b: 19). All these criteria can be associated with the possibility of investing resources beyond the household level.

Some sort of agricultural surplus can be stored by households as a reserve for potential future needs (Halstead 1989). Despite the amount of household surplus having been

estimated with references to pre-industrial communities (Sigaut 1981: 165; Christakis 1999: 7–8; Halstead 2014: 162–163), according to Nilsson (2014: 224) the annual domestic surplus and surplus storage are very difficult to tell apart in an archaeological context. Surplus storage refers to quantities above the normal yearly production of a household, including social storage, that is the movement of surplus between households in exchange for future return (Halstead 1989; Nilsson 2014; Prats *et al.* 2020: 3). This would be different from the Mycenaean palace societies, where large scale storage was for the use and under the control of the elites (Nillson 2014:226). Communal surplus is characterised by larger quantities stored "either under individual or collective control with the intention of a use of the stored product not depending exclusively on the will of the domestic unit" (Prats *et al.* 2020: 3). While the necessity for this form of control over communal storage has been discarded by Nilsson (2014: 225), the extent to which communal storage was open to the entire community needs to be pondered. Large storage areas can thus provide various information on the social strategies adopted on site as the identification of surplus can be associated with contingency plans, feasting activities, specialised productions, exchange, and the development of social inequalities (Halstead 1989; Asensio *et al.* 2002; Hayden 2009; Sanmartí 2015; Prats *et al.* 2020: 3). Indeed, surplus accumulation can result from local accumulation as well as external interactions and in turn can strengthen the position of a community within the network of interactions (Iacono 2016a).

1.5.3. Material Culture and Interactions

The explicit association between changes in the material culture and movements of people goes back at least to the early 20th century AD in the scholarship and has been characterised by the acceptance of the social and political complexities of this

phenomenon (Mokrišová 2016: 46). In this section, we are going to discuss some of the main categories that scholars have used to investigate cultural interactions. We will address terms such as acculturation, appropriation, hybridization, and emulation.

Acculturation refers to the change in the culture of at least two societies connected by an unequal relationship where one of these will dominate over the other, resulting in the foreign adoption of their concepts (Herskovits 1938; Winthrop 1991: 3; Arends-Tóth and van de Vijver 2004: 19; Wardle 2004: 23). Kilian (1990), for example, talks about acculturation of Mycenaean culture in Southern Italy, associating this process with the diffusion of Mycenaean contacts. The acculturation process can take place to different degrees, with assimilation and integration being at the opposite ends of this spectrum (Wardle 2004: 23–24). Assimilation indicates the complete absorption by the dominant group of the less complex one and the replacement of cultural traits (Raymond *et al.* 2016: 58). The process of integration, on the other side, preserves the main characteristic of the secondary indigenous culture which is also interested in adopting aspects characterising the dominant culture (Arends-Tóth and van de Vijver 2004: 20–21).

Appropriation is the process through which "objects of the same material form change from "commodities" to "personal goods"" (Hahn 2004: 218). While such a stark distinction is not always clear in the timeframe discussed, this theory will quickly be presented to provide the basis for the discussion of the other approaches here presented. Four different aspects can be identified: material appropriation, objectivization, incorporation, and transformation (Hahn 2004: 219–223). Material appropriation looks at the transition from the formal economy of an object, where this is given a specific price, to moral economy and the creation of personal value (Hahn 2004: 220). Objectification indicates the labelling process through which objects are allocated to specific categories

(Hahn 2004: 220–221). Differently from the previous aspects, the process of incorporation takes place at a social level rather than individually, and indicates the understanding and social adoption of specific way of using and interacting with the objects (Hahn 2004: 221–222). Transformation is the application of social norms and related limitations to the object, which are then perceived accordingly (Hahn 2004: 222–223). It is important to clarify that the appropriation process requires an active human agency and only the processes of material appropriation and incorporation can easily be identified in the archaeological context, indicating a change in the way the object is interpreted (Hahn 2004: 228; Stockhammer 2011: 46, 49–50).

These approaches have been substituted by post-colonial scholars with terms like hybridity and hybridization (Voskos and Knapp 2008; Van Dommelen and Rowlands 2012: 27; VanValkenburgh 2013; Mokrišová 2016; Raymond *et al.* 2016). Through hybridization different cultures interact in a middle ground context and are equally influenced, creating a new hybrid society (Malkin 2002; van Dommelen 2012: 403; Antonaccio 2013). Moreover, in the hybridization process agents are unaware of changes taking place (Stockhammer 2011: 46). Evidence of this process can be seen in the material culture, like the MM IB–LM IA S-profiled cup at Miletus which displays a Minoanising shape combined with local Anatolian decoration. The term hybridization has often been replaced in the scholarship with entanglement, which can take on the same epistemological meaning, although entanglement also refers to "phenomena that are the result of the creative processes triggered by intercultural encounters" (Stockhammer 2013: 16). Building on Hahn's (2004: 219–223) different aspects of appropriation and adopting an archaeological point of view, Stockhammer (2011: 50) identifies two different types of entanglement: relational and material. Relational entanglement is reached through the process of appropriation of social practices and meanings, to later

develop into material entanglement when the original form of objects is modified with the creation of new items resulting from the encounter of different cultures (Stockhammer 2011: 50–51; 2013: 16–18).

Finally, emulation is defined by Feuer (2011: 520) as "the tendency of an elite class to welcome or seek acculturation or assimilation into another culture—often in competition with other similar groups—for political power, economic benefits, and/ or social status". Therefore, emulating a culture means adopting both their behaviours and material culture associated with the practices of said culture. Banqueting or feasting paraphernalia can be particularly relevant for identifying elite emulation (Feuer 2011: 515). This process includes Wiener's (1984: 17) so-called "Versailles effect", usually occurring in case of significant prestige of one culture and referring to the presence of similarities with another culture without "political control, economic domination or a major movement of people from the culturally dominant society".

The prolonged, continuous and direct contact between at least two societies results in profound social changes visible in their material culture (Kilian 1990; Winthrop 1991: 3; Arends-Tóth and van de Vijver 2004: 19; Wardle 2004: 23). Interestingly, according to Mokrišová (2016: 46), it is this "small-scale and frequent semi-permanent mobility of diverse groups of people within an area with which they are already familiar" that sets the basis for Mycenaeanisation. "Mycenaeanisation" is a complex term whose meaning is debated in the scholarship, generally referring to the process through which Mycenaean traits are being incorporated in other material cultures (Feuer 2011: 527; Earle 2016; Mokrišová 2016: 45). Both the terms "Mycenaeanisation" and "Mycenaean" are modern constructs originally created to indicate the material culture that developed on the southern Greek Mainland between 1425–1200 BC and consequently extended to the social groups that adopted it (Davis and Bennet 1999: 112; Wright 2004: 14). Mycenaean

culture can be identified through certain markers: cyclopean style architecture and the megaron, any evidence associated with the Palace institution, and certain categories of artefacts such as specialised types of pottery, jewellery and figurines (Kilian 1988; Feuer 2011: 512–513). However, Feuer (2011: 514) argues that none of these elements are cultural markers by themselves and that Mycenaean identity is rather marked by the combination of these various elements.

These processes can involve both material culture and different social, cultural, political and economic spheres. Bettelli (2002), for instance, has argued for a certain degree of symbolic and religious influence in the contacts between Southern Italy and the Aegean in the LBA. It thus appears that encounters see a balance of powers established through control of the means of interactions; these include means of transport, locations and social institutions making the encounter possible (Iacono 2016a). The control over the means of interactions is a form of hegemony in the hubs of encounters, which becomes visible in the adoption of material culture associated with the powerful culture (Iacono 2016a). To exercise hegemony, individuals need to be able to control the means of interaction and have the resources to gather surplus (Iacono 2016a). Iacono (2019: 212) argues that the general possibility of accessing a "relatively high amount of surplus to be reinvested in mobility and interactions" resulted in the development of various social changes rather than the increase of hierarchies.

To better investigate the processes of interactions between communities in Southern Italy and Mycenaean peoples, Bettelli (2002) analyses both the presence of Aegean-like materials in Italy and the other way around. He observes that, starting from LH IIIB, Handmade Burnished Wares (HBW) and Urnfield Bronzes (UB) from Central and Southern Italy appeared across the Aegean to then increase in number in LH IIIC (Figure 1.8; Bettelli 2002: 117–137). HBW is handmade coarse clay, usually dark, and

burnished (Pilides 1991: 12–13) which displays important similarities with the material culture typical of Southern Italy, especially in terms of the handles and projections (Bettelli 2009b: 115; Lis 2009: 153). UB are northern metal shapes mostly consisting of weapons, personal ornaments and hygiene tools, and prestigious wares employed in social interactions such as banqueting and feasting (Carancini and Peroni 1997: 595; Bettelli 2002: 132–137; Iacono 2019: 137–146). Examples include weapons like Naue II, flange-hilted swords and Peschiera daggers, as well as personal ornaments like violin fibulae (Sherratt 2017; Iacono 2019: 140–143). The LBA diffusion of UB across most Continental Europe, Sicily, the Aegean islands and the Levant belongs to the late phase of the so-called 'metallurgical *koiné*' (Carancini and Peroni 1997; Sherratt 2000; Iacono 2013b).

According to Bettelli (2009b: 117), the presence of HBW and grey wares was more important where there was not a strong centralised administration, which includes ports of interactions. He associates the local productions of both HBW and grey ware across the Aegean with the wider Mediterranean network of interactions, although recognising that this pottery could have had different meanings depending on their location. There is still much uncertainty about the social dynamics behind the presence of these foreign materials across the Aegean, starting from whether HBW were actually adopted by the local population (Bettelli 2002; Deger-Jalkotzy 2008: 395; Lis 2009). In order to investigate the local reception of foreign artefacts within ports of interactions, the context of recovery will be considered combined with a diachronic, quantitative and spatial analyses of foreign artefacts recovered across the site. Regarding the quantitative aspect, it is important to acknowledge that raw counts of imports cannot be taken as a precise indicator of influence, which would be rather determined by the proportion of imports in relation to the total (cf. Iacono 2015: 268, 272). However, such a proportion

cannot be obtained for all the case studies: at Kommos, for instance, the number of items to include in the database would be enormous, making such a task not feasible. Nonetheless, changes in the quantity of imports through time, combined with other information such as their distribution across site, can still provide some information on the reception of external artefacts and their influence on local cultures.

1.5.4. Models of Trade

As mentioned above, interactions between the Aegean and Southern Italy have also been associated with an economic nature. Regardless of the extent to which this was true, the various interactions and exchanges characterising the LBA Mediterranean indicate an intense economic activity which needs to be discussed, both in relation to the wider Mediterranean context and to the Aegean and Southern Italy more specifically.

Polanyi (1957: 266) defines exchange within a market economy, that is trade, as "the mutual appropriative movement of goods between hands", which implies the recognition of their exchange value (Polanyi 1957: 257–258; Jung and Pacciarelli 2017: 188). Trade can be divided into three types: gift trade, which happens in a ceremonial context of reciprocity, administered trade, taking place through formal deals made under the control of the government, and market trade, organised according to the demand-price mechanism (Polanyi 1957: 262–263). It is important to notice that none of these are what he means by redistribution, which characterises the Mycenaean Palace economy and does not necessarily require the existence of a market system but rather some sort of "centricity" (Polanyi 1957: 250).

Colin Renfrew (1975: 41–43) has presented ten different spatial trading methods, including the above-mentioned ports of trade, and which are simplified in Figure 1.9. Among these methods, four seem to be particularly suitable for long-distance trade and

show the possible involvement of so-called central places, here ports of interactions, acting as centres where foreign material is concentrated; these methods are freelance middleman trading, emissary trading, colonial enclave, and port of trade (Renfrew 1975: 43).

At the same time, external trade, that is exchange with territories outside the own cultural sphere, can be divided into commercial and diplomatic exchange (Renfrew 1972: 465–471; Cline 1994: 86). Directional commercial trade, that is if stopping at specific destinations, implies regular imports visible in the archaeological record as concentrations of goods belonging to a specific class of materials (Renfrew 1972: 470–471; Cline 1994: 86). For example, Renfrew (1972: 471) interprets the large quantity of LH IIIA–B pottery recovered from Scoglio del Tonno as resulting from directional commercial trade. Trade could also take place in the form of tramping or cabotage (Cline 1994: 86), that is moving from one port to the other keeping themselves near the coastline and trading at each stop (Braudel 1995: 103–107).

Moving to diplomatic exchange, these journeys aimed at maintaining relations between different polities by means of gift exchange and could be managed by either palatial members or merchants (Renfrew 1972: 471–472; Branigan 1982: 209; Cherry 1986: 41). There are cases where diplomatic and commercial journeys were combined, as demonstrated by the excavations of the Uluburun shipwreck: the significant cargo combined with the recovery of two Mycenaean swords, and various pairs of personal effects, as well as seals, have been interpreted by Pulak (2005: 308; 2008: 304) as belonging to two members of the Mycenaean elite who were in charge of the valuable and luxury goods. However, not all the cargo was probably intended for gift exchange, as possibly indicated by the Cypriot pottery recovered on board, which could have been traded by the mariners at the specific destinations of the ship (cf. Pulak 2008: 299). This

provides a good example of a major cargo involved in interregional directional trade and possibly combining both independent trade as well as state commissions (cf. Manning and Hulin 2005: 4).

Knapp and Cherry (1994: 127–128) have identified four different trading methods active in the BA Eastern Mediterranean and Aegean area. These are centralized political control—either regional or interregional, localized control by single polities—with intermediaries linking different nodes, freelance or entrepreneurial trade, and ceremonial or gift exchange. Long-distance trade of raw materials and luxury goods with the Aegean has traditionally been considered as mainly controlled by the Palaces (Kopcke 1987; Wiener 1987; Platon 1988: 406), however traders probably operated both on behalf of the palatial authorities and on their own (Warren 1991). The absence of direct evidence on Linear B documents for exchange activities with areas outside of the Aegean can be explained with the fact that Linear B tablets were employed for administration within Mycenaean economy, and with matters of preservation of the records (Killen 1985: 266–267; Shelmerdine 1985: 152–153; Bendall 2007: 270–274). Nonetheless, an unusual large quantity of perfumed oil is recorded on tablets PY Fr 1202 and 1206 as being shipped abroad (Bendall 2014: 147), suggesting that interactions and possibly trade, including gift-giving, were taking place beyond the Mycenaean palaces. Evidence for Aegean individuals being involved in trading abroad includes archaeological, iconographic, environmental, and ethnographic sources, as well as shipwrecks, like the Uluburun example mentioned above (Tartaron 2013: 33–34).

The economic administration across the Aegean was very different from the situation in Southern Italy, which reflected the local fragmented political situation. In relation to trade taking place between the Aegean and Southern Italy during the LBA, Peroni (1996: 280–285) identifies two different types of trade: organised and diffused

trade. They respectively reflect direct and indirect contact within the interactions between the Aegean and Southern Italy. Organised trade involves mainly the coastal peoples of Southern Italy, who are significantly exposed to contacts with the Mycenaeans and the large amount of trading networks (Peroni 1996: 280–281). On their side, Mycenaean seafarers aimed at identifying good local trading partners to exploit the available indigenous resources, resulting in the creation of wider markets as well as in the development of local socio-economic complexities (Peroni 1996: 281–284). Diffused trade exploits the cultural differences between societies in the Aegean and Southern Italy, relying on the network of interactions and exchanges within the local communities (Peroni 1996: 284–285). This type of trade can be seen in the small number of Mycenaean finds in the internal part of Southern Italy and in Central Italy (Peroni 1996: 284–285).

Graziadio and Guglielmino (2011: 314) argue for a different type of participation in the inter-Mediterranean trade network between sites in the Tyrrhenian and Adriatic regions. They identify two different trading networks, one characterised by direct interactions with the Aegean and another one characterised by a Cypriote and Levantine participation (Figure 1.10). Graziadio and Guglielmino (2011) concluded that direct trade was carried out by both Mycenaeans and Cypriots independently, with the latter distributing Mycenaean artefacts in the areas less covered and more distant from the Aegean. However, the relationship between these different trading networks and the sites developing along them has not been established.

1.5.5. Subsistence Strategies

Alongside providing important information on the social organisation, the identification of storage areas plays a pivotal role in the study of the domestic economies adopted by the case studies as a possible indicator of the storage methods adopted and hence

agricultural capacity to produce surplus (Wardle 2004: 85–86). For example, Wardle (2004: 430) notices how in both Southern Italy and Macedonia, the interactions with the Aegean resulted in a shift towards "more intensive agricultural practices generating surplus", which is visible in the archaeological records in the adoption of pithoi and *dolia*. Specific agricultural strategies can be identified by anthropic traces in the surrounding landscape, such as terracing, but also by looking at the archaeobotanical and archaeozoological remains, as well as pollen diagrams. The adoption of specific subsistence strategies might depend both on the availability of local sources and on the possibility of importing foreign goods through interactions with external areas. The active presence of a site within a trading network also affects interactions and imports of commodities which can be consumed on site.

1.5.6. Ritual Activities

The material symbols and iconographic representations, combined with cult objects, can cast light on the ritual practices conducted within the ports of interactions. Cult practices are intrinsic in the life of a community and to their identification can correspond multiple meanings. As Briault (2007: 241) commented, "'reproduction' of ritual does not necessarily (and indeed rarely does) imply complete identity of content" and the more symbols identified belonging to the same cultural group, possibly in a context which can be associated with certain ritual practices, like shrines for instance, the more likely is their identification within the archaeological context (Wardle 2004: 77).

Banqueting, or feasting, can entail a range of activities that go from eating and drinking with other individuals to gaining religious connotations (Dietler 2001; Dietler and Hayden 2001: 3–4). While the frequent association with names of deities on the Linear B documents and the sacrificial implications of the practice of killing an animal

indicate that most banqueting activities had a ritual connotation (Hiller 2011: 177), "ritual as a concept does not necessarily entail reference to a fully-fledged religious ideology" (Iacono 2015: 262). The social importance of banqueting activities goes beyond their religious nature, providing an opportunity for establishing new social identities and political connection in a communal context, especially through means of conspicuous consumption (Carlier 1984; Bendall 2004: 110–111; 2007: 25).

In this chapter we have discussed the chronological and geographical context for this thesis, the theoretical framework behind the investigations of ports of interactions, as well as the methodology which will be here adopted. To explore the domain of investigation so far outlined, in the next three chapters we will need to look in detail at the case studies, starting with Roca Vecchia, then Lipari, and finally Kommos.

2. CASE STUDY: ROCA VECCHIA

2.1. Background

Roca Vecchia (also referred to as Roca) is located on the southern part of the Adriatic coast of Italy, where the stretch of Adriatic Sea between the Italian and Balkan coast is the narrowest (Figure 2.1). This proximity with the eastern coast of the Adriatic Sea has made of Roca one of the main junctions in the trans-Mediterranean interactions and destination of migratory movements in the past four millennia (Iacono *et al.* 2020: 2). The diachronic perspective provided by this site builds on the large amount of BA material recovered, making Roca Vecchia one of the most important sites for studying the interactions with the Aegean. After providing a brief historical and geographical background of the site, we will look at the development of its monumental walls. The layout and internal organisation of the settlement will then be presented in chronological order (Table 2.1). Within each main chronological phase, the evidence for structures will be followed by the main finds recovered in the same context. The main workshops and productive activities identified will then be discussed with a particular focus on evidence for external influences, especially Aegean, which will be main topic of the final section.

<table>
<tr><th rowspan="2">Absolute Dates (all BC)</th><th colspan="2">Relative Chronology</th><th colspan="4">Roca Vecchia</th></tr>
<tr><th>Aegean</th><th colspan="2">Italy</th><th>Fortification Walls</th><th>SAS X</th><th>SAS IX</th><th>SAS VI</th></tr>
<tr><td>2100–1700</td><td>MH (2000–1600)</td><td rowspan="2">EBA</td><td rowspan="4">Proto-Apennine</td><td rowspan="5"></td><td rowspan="6"></td><td rowspan="7"></td><td rowspan="9"></td></tr>
<tr><td>1700–1650</td><td rowspan="3">LH I (1600–1500)</td></tr>
<tr><td>1650–1635</td><td rowspan="2">MBA 1</td></tr>
<tr><td>1635–1480</td><td>LH IIA (1500–1440)</td><td>Phase 1</td></tr>
<tr><td>1480–1420</td><td>LH IIB (1440–1390)</td><td>MBA 2</td><td rowspan="3">Apennine</td><td>Phase 2</td></tr>
<tr><td>1390–1370</td><td>LH IIIA1 (1390–1370)</td><td rowspan="2">MBA 3</td><td>Phase 3 (1447–1392)</td><td>1 (1431–1399)</td></tr>
<tr><td>1370–1330</td><td rowspan="2">LH IIIA2 (1370–1300)</td></tr>
<tr><td>1330–1300</td><td>RBA 1</td><td rowspan="2">Ancient Sub-Apennine</td><td rowspan="4">Phase 4</td><td>2</td></tr>
<tr><td>1300–1240</td><td rowspan="3">LH IIIB</td><td rowspan="3">RBA 2</td><td rowspan="3">3</td><td rowspan="2">1-2-3</td></tr>
<tr><td>1240–1200</td></tr>
<tr><td>1200–1190</td><td rowspan="2">Recent Sub-Apennine</td></tr>
<tr><td>1190–1150</td><td rowspan="4">LH IIIC</td><td>4-5</td></tr>
<tr><td>1150–1100</td><td>FBA 1</td><td>Phase 5</td><td>4</td><td>6</td></tr>
<tr><td>1100–1070</td><td rowspan="2">Protovillanovan</td></tr>
<tr><td>1070–1060</td><td>FBA 2</td><td>5 (1117–977)</td><td>7 (1220–1040)</td><td>Store-Hut</td></tr>
<tr><td>1060–1040</td><td>Submycenaean</td></tr>
</table>

Table 2.1—Chronology of Roca Vecchia. Aegean chronology correlated to the Italian relative chronology that has been adopted in this work (design after Scarano 2012a: 381, Table 6.1). Absolute dates follow the high chronology adopted by Manning 2010 (lower dates according to Tartaron 2008: 84 are indicated in brackets in the "Aegean column"). References to the Italian chronology are according to Scarano 2012a: 381; Martinelli 2020; Iacono *et al.* 2021. The phases of Roca are based on Guglielmino (1999); Pagliara *et al.* (2007; 2008); Scarano (2012a). Dates in brackets in the "Roca Vecchia" columns show the radiocarbon results with a 1σ uncertainty (Pagliara *et al* 2007: 356–358; Scarano 2012a: 373–383).

The site of Roca Vecchia (Figure 2.2) is on a promontory locally known as "Castello", within the modern municipality of Melendugno, Lecce. The toponym Castello "castle" is from the presence of substantive remains of a medieval fortified centre (Pagliara 2001). The 16th century AD humanist de Ferraris (1558) writes about a fortified citadel named Roca being founded in the first half of the 14th century AD by Gualtieri VI di Brienne on top of the remains of some old unknown city (Pagliara 2001). According

to other written sources (De Simone 1877; De Giorgi 1888), this site played an important role during the 15th century, becoming the main harbour for Lecce in the economic interactions with Greece and acting as one of the main defensive citadels during the Turkish attack in AD 1480–1481 (Mazzotta 2016). In the first years of the 16th century, some movements against the local governor spread at Roca, starting a period of turmoil until Roca was destroyed in AD 1545, with the only surviving structure being a small church (Pagliara 2001: 203; Mazzotta 2016).

The earliest site excavations started in 1928 under the direction of Luigi Paladini, who dug some unspecified areas of the promontory, uncovering traces of a fortification combined with various burials dating back to the 4th and 3rd century BC (Pagliara 2001: 199). While Paladini only published a partial account of his work, the main finds were restudied and presented by Mario Bernardini (1934), who also conducted further investigations of the necropolis and the remains of the Hellenistic structures, rigorously published in 1952 and 1956. The development of local infrastructures taking place in the 1950s and 1960s significantly affected the area and the preservation of the archaeological context until it became officially protected (Pagliara 2001: 199–200). Continuing Bernardini's work, Giovanna Delli Ponti uncovered an additional area of the walls in 1969 and 1970. In 1981, Cosimo Pagliara (1987a; 1987b; 2001) of the Università del Salento started a project including Roca Vecchia within a series of archaeological, topographic and environmental investigations of the coast included between Otranto and San Cataldo. Starting from 1991, the Università del Salento was flanked by the Scuola Normale Superiore di Pisa in excavating Roca Vecchia, while the hinterland of the site is currently part of the Roca Archaeological Survey conducted since 2019 by the Università di Bologna under the direction of Francesco Iacono. Since 2013, the artefacts recovered from Roca have been exhibited in the Acaya Castle, distant about 13 km from the site.

The location of the site has always been particularly convenient in terms of natural resources: on the western side, it was surrounded by the Tamari basin, currently a depressed area which in prehistoric times was probably filled with water by various sources and springs (Pagliara 2003; Dinielli *et al.* 2016: 10). Moreover, this lagoon would have been connected with the nearby Torre dell'Orso bay by the Brunese channel (Pagliara 2003). The erosive action of the sea and other elements on the calcarenite rocks of the promontory has significantly changed the coastline (Figure 2.3), which is now more internal than in the BA, while the sea level was much lower (Dinielli *et al.* 2016: 10). The Torre dell'Orso bay would have been more protected from the winds, offering a good harbouring area for ships of various size (Dinielli *et al.* 2016: 10). As a result of these changes in the coastline, only a small part of the original site can be seen today (Dinielli *et al.* 2016: 10). The BA settlement included within the fortification walls encloses an area of about 3 ha, which before the sea retraction and erosion measured at least 5 ha (Scarano 2012a: 385).

Two main karstic caves—Poesia Grande and Poesia Piccola—can be seen when approaching from the sea, which display engravings of various symbolic representations, partially overlapped by inscriptions of texts in Messapic and Latin (Pagliara 1987a). The dating of engravings is notoriously difficult and, in this case, it has been done by analysing their distribution along the cave's walls, where inscriptions are concentrated on the upper part and signs are predominant in the lower part (Pagliara 1987a: 320–322). Some of these representations seem to have been covered by the rising water level, suggesting that the date of the engravings and their position on the wall are related, with the most recent ones being located in the upper part of the walls (Pagliara 1987a: 322–324). Based on this dating method, signs were engraved earlier than the writings and, comparisons with representations from nearby caves, might indicate that the cave had been frequented since

prehistoric times (Pagliara 1987a: 324–328). Among the engraved signs identified on the cave walls, there are anthropomorphic and zoomorphic representations, as well as sketches of double axes and bucrania (Figure 2.4), which have long been part of the BA Minoan iconography canon. The presence of these specific symbols, frequently associated with rituals in the Aegean world (Palaima 2008: 346), suggests some influence on the site even if they did not necessarily maintain the same meaning they had across the Aegean.

2.2. Fortifications

A fortification wall runs along the western side of the promontory (Figure 2.5), separating it by the mainland. Three construction phases dating to the MBA can be distinguished by looking at their technological and architectural characteristics.

The first fortification phase (Figure 2.6) consisted of a dry-stone wall of roughly shaped slabs and blocks of local calcarenite, about 2.5 m high and more than 6 m wide, as, where buttresses have been identified, walls could be about 10 m thick (Scarano 2010a: 246; 2011b: 100; 2017a: 528). It seems that this early construction was endowed with a main gate and possibly posterns (Scarano 2011b: 100). Artefacts recovered from both the filler layers and the occupation levels at the base on the inner side of the fortification indicate a date not earlier than the 16th century BC (Scarano 2012b: 75). These mainly include cups and dippers with ribbon-handles, hour-glass shaped supports, *ollae*, basins and bowls (Scarano 2017a: 525–528). Among these, a fragment of a basin with a large horizontal handle beneath the rim is particularly useful for associating the fortification walls with the late Proto-Apennine *facies* (Scarano 2017a: 528). In addition to local pottery, these early MBA layers have also produced Aegean imports, such as

matt-painted and burnished ware (Guglielmino *et al.* 2010a: 271–273, 276; Scarano 2012b: 75).

The second fortification phase (Figure 2.7) is characterised by a ditch excavated in the bedrock which creates a defensive line along the external face of the walls (Scarano 2011b: 100; 2017a: 528). This ditch is about 2.5–3 m wide and 2–2.5 m deep and is interrupted by bridges preserved in the bedrock corresponding to passages through the fortification walls (Scarano 2011b: 100; 2012a: 57). As in the previous phase, walls consisted of roughly squared masonry blocks and slabs but increased their thickness ranging from 8 m to 13 m (Scarano 2011b: 100). The exterior façade was covered with clay daub, while on the inner side of the walls, a narrow pebble-paving walkway has been identified (Scarano 2011b: 100; 2017a: 528). Thus, the fortification walls started to display a certain level of monumentality which was further developed in the next phase which we now turn to.

The third phase of MBA fortification (Figure 2.8) was characterised by a monumental gate, which was very complex in structure, and five more posterns. This phase is the best understood as the walls are still visible for about 190 m of length and are on average around 3 m high and 23 m thick, although in reality the thickness changes in different places as these measurements could significantly change along the fortifications (Scarano 2012a: 60; 2017a: 528). In relation to these monumental walls, the dimensions of the ditch are particularly small, raising doubts concerning its defensive function (Guglielmino and Pagliara 2017: 516). Scarano (2011b; 2012a: 389–390) has recently argued for the presence of a *proteichisma*, that is a second defensive wall located outside the main fortification walls. The presence of a double line of defences has also been argued for other contemporary sites across Apulia, like Torre Castelluccia, Coppa Nevigata, Porto Perone and Scoglio del Tonno, which are reminiscent of, with a few

centuries of difference, the Early Bronze Age (EBA) Aegean habit of building two series of fortification walls, as for instance visible at Kolona on Aegina, and Chalandriani–Kastri on Syros (Tsountas 1899: 127–134; Cazzella 2009: 298; Scarano 2012a: 389–390; Guglielmino and Pagliara 2017: 517–518). Raw slabs were combined with fragmented tufina in the construction of walls (Scarano 2011b: 60). Burnt traces have been identified within all the posterns resulting from the destruction of the wooden structures, marking the end of the MBA period. Radiometric analyses on the fortification walls have dated this destruction by fire between the end of the 15th and the beginning of the 14th centuries BC, providing a *terminus post quem* for a chronological identification of the other phases (Guglielmino and Pagliara 2004: 563; 2012: 65; Scarano 2012a: 374).

The Monumental Gate (Figure 2.9), probably already present in the second fortifications phase, significantly increased in complexity during Phase 3. Overall, this structure was of considerable dimensions, measuring 24.20 m in depth and 17.50 m in length (Scarano 2012a: 133). Entering the site from outside the walls, the first area was an open curvilinear corridor: the Orthostats Corridor, which owes its name to two parallel lines of orthostats of local calcarenite along the sides of the main passageway (Scarano 2012a: 137). This corridor had an average width of 3 m and it was long at least 7 m, with the final two being covered by a wooden structure. Excavations have uncovered a floor made up of very fine pebbles which were probably periodically levelled with tufina; the identification of two elongated pits on this surface might have resulted from the passage of wheeled wagons (Scarano 2012a: 137). At the end of the Orthostats Corridor, the remains of a wooden door have been found separating the outside uncovered area from the inside covered one (Scarano 2012a: 94). This door would have led to the so-called Central Corridor, continuing for about 12 m and measuring about 3 m in width. Immediately after the wooden door, two sub-rectangular areas facing each other have

been identified on both sides of the Central Corridor. These two areas, called Transept N and Transept S, have similar dimensions—about 2.5 m by 2 m and 2 m by 1.90 m respectively—and their floors, made of the same materials of the Orthostats Corridor and of the Central Corridor, were about 20 cm higher than the passageway (Scarano 2012a: 95). On the south-western side of the Transept S, a narrow curvilinear passage, named Tower Corridor, has been identified within a structure south of the Orthostats Corridor (Scarano 2012a: 97). Excavations have identified a quarter of a circular structure, interpreted as a tower probably shaped as a truncated cone and with an estimated diameter of about 6 m and a hight of 3–4 m (Scarano 2012a: 97, 121). It has been argued that on top of this solid-walled structure there was a 5–6 m^2 terrace from where it was possible to overlook the Orthostats Corridor to defend the site main entrance (Scarano 2012a: 97).

Proceeding along the Central Corridor, another sub rectangular room, called Transept NE, opens on the northern side of the passage about 2 m east of the Transept N. This room measures about 2 m by 2.50 m and has its longest side open onto the corridor (Scarano 2012a: 99). The Central Corridor continues then for other 2 m, leading to a complex sub-rectangular space developing on both sides of the corridor for a total length of 14 m perpendicular to the corridor (Scarano 2012a: 99). It is unclear whether this space was divided into two different independent spaces labelled Chamber N and Chamber S, both closed on three sides and opened onto the corridor. Within Chamber S, a sort of bench 10 cm high and 50–60 cm deep has been identified along the walls, which are still standing and measure more than 3 m in height (Scarano 2012a: 101–102). Unlike the Orthostat Corridor, along the walls of the Transepts, of the Central Corridor and of the Chambers, both postholes and recesses have been recovered one metre from each other (Scarano 2012a: 96). The recovery of wooden remains from these features suggests the presence of a raised structure, probably supported by the wooden framework which was

also employed to stabilise the walls (Scarano 2012a: 96). The floor of these covered structures was characterised by a beaten earth surface with inclusions of tufina.

Excavations of Chamber S have uncovered the partially anatomically connected skeletal remains of a young man (Figure 2.10; Scarano 2012a: 102). While the bones display traces of fire affecting the body post-mortem, the identification of an unhealed wound on its ribs might indicate a blade inflicted chest blow as cause of death (Scarano 2012a: 103–104). The stratigraphy of the context and the position of the bones suggests that this individual died in a space above the Chamber S, possibly on the roofing structure, to then fall together with the wooden structure when this collapsed (Scarano 2012a: 104). Next to the skeleton, a plain-blade dagger of bronze and a duck pyxis of ivory (Figure 2.11) were recovered and the fire traces identified on both these artefacts and on the human remains, attributed to the same firing event, suggest that they belonged to the personal possessions of the individual (Scarano 2012a: 103). Moreover, the absence of any other artefacts from this area supports this argument (Guglielmino 2005b: 638). The association with the MBA fire destruction level, the type of weapon and wound suggest that the individual died involved in a hand-to-hand combat during an attack to the site (Pagliara 2005; Guglielmino *et al.* 2017: 550). Both the pyxis and the blade display characteristics foreign to the local material culture: the blade belongs to Blegen's (1937: 330–332) type A of daggers, widespread across the Aegean, while duck pyxides made out of hippopotamus teeth, as in this case, were common in the Eastern Mediterranean (Guglielmino 1996: 265–266; 2003: 96). The small dimensions of this pyxis and the fact that it was carved out from a single piece rather than being assembled indicates a pyxis from Phourni, Crete, as its closest parallel (cf. Sakellarakis 1971: 224; Guglielmino 2005a: 40–41; Guglielmino *et al.* 2010b). The presence at Roca Vecchia of objects widespread in the Eastern Mediterranean needs to be attributed to local interactions with

Aegean communities (Guglielmino 1996: 265–266; 2003: 96; 2005a: 40–41). These artefacts have widely been used to suggest that the human remains belonged to a foreign individual (Pagliara 2005: 631; Guglielmino *et al.* 2017: 550) but it could also be a local person in possession of two very foreign objects and probably with the necessary means for acquiring them.

In addition to the main gate, a Southern Gate has been identified at the southernmost limit of the walls, in addition to five passages or posterns located along the fortifications and named A–E (Figure 2.12; Guglielmino and Pagliara 2004: 562; 2017: 515; Scarano 2009: 102). Posterns A and E are located on the northern side of the main gate, respectively at 12 m and 55 m of distance from it and because of its distance from the others, Postern E is not represented in any of the excavation plans (Scarano 2011b: 100). Postern B is located at 20 m southern of the main gate, followed by postern C, at 45 m, and postern D, at 70 m (Scarano 2011b: 100). The corridors for these passages are about 1–1.5 m wide and 15–17 m long, while the identification of postholes along them suggests the presence of wooden posts and probably coverings, as for the monumental gate (Scarano 2011b: 100).

Unlike passages A and E, a significant amount of pottery was recovered from posterns B–D (Figure 2.13). Metalworking evidence has been recovered from Postern A, where the skeletal remains of a dog were also found (Scarano 2012a: 67–68). The skeleton of a child was recovered from Postern B, while, in Postern C, skeletons have been attributed to two adults, male and female, a juvenile, and four children, for a total of seven individuals (Fabbri 2002; Scarano 2010a: 248). The human remains were recovered in anatomical connection, with the bones in a good preservation, and their position in a narrow area, with the upper limbs towards their throat, indicate asphyxia as possible cause of death (Fabbri 2002: 201). The human remains recovered from both passages B and C

have been attributed to the destruction event taking place at the end of the MBA, and have been associated with warfare activities (Guglielmino and Pagliara 2004: 564). The function of these passages has been widely debated in the scholarship (Scarano 2010b: 155; 2011b; 2012a: 89), especially considering their proximity to each other and their archaeological and structural differences from one another. It has been argued that the posterns were used as dwellings, either ordinary or for refuge during attack, possibly as a result of an overpopulation of the site (Scarano 2010b: 155; 2011b: 233–234; 2017b; Guglielmino and Pagliara 2017: 517–518). Postern B seems to have been blocked with a wooden structure a few metres from the external perimeter and, similarly, in postern C a stone barricade had been constructed from the inside to reach the walls' line (Scarano 2012a: 64–86; 2017b: 232–233). Unlike posterns B and C, there is no evidence indicating that posterns A, D and E had been closed off (Scarano 2012a: 64–86; 2017b: 232–233). It has been argued that these passages had been present since Phase 1 and their length grew as the walls became thicker over time (Scarano 2017b: 231). The Phase 3 abandonment of the Southern Gate (Scarano 2012a: 63; 2017b: 231) argues for a decrease in the number of passages over time.

Following the destruction at the end of the MBA, fortifications were rebuilt in the RBA following the layout of the earlier fortifications and employing their remains (Guglielmino and Pagliara 2004: 568; Scarano 2010a: 246). Differently from the building techniques adopted in the previous period, masonry works show that raw slabs were replaced by limestone squared blocks, forming pseudo-ashlar stonework (Figure 2.14; Scarano 2010a: 246; 2011b: 98). Ashlar masonry was characteristic of Mycenaean architecture, representing the power and authority of the ruling elite (Wright 1987: 177). The RBA introduction at Roca Vecchia of this specialised masonry style, which was already widespread in the Greek mainland, could be attributed to Aegean influence.

Interestingly, Luigi Coluccia suggests that the pseudo-ashlar blocks of local calcarenite were actually used to support and reinforce the base of the walls (Guglielmino *et al.* 2017: 553–554). While the MBA posterns were left filled with rubble, the main gate was reconstructed on the same place where the MBA entrance was, although with a slight rotation of 15° (Guglielmino and Pagliara 2004: 568; Scarano 2010a: 246). This new gate had a simpler plan without internal spaces and its floor was raised of about 2 m, requiring the addition of an inner ramp leading to the main gate (Guglielmino and Pagliara 2004: 568; Scarano 2010a: 246).

During the FBA, fortifications underwent a further modification focusing on the inner side, where excavations have identified the employment of a new construction technique (Guglielmino and Pagliara 2004: 571). Unworked stones combined with wooden poles suggest a cruder technique employing poorer materials than in the RBA (Guglielmino and Pagliara 2004: 571). The main gate and the monumental side walls of ashlar masonry were enclosed within a strong wooden framework, which might have been aimed at supporting new wooden roofing and raised structures, as well as at reinforcing the defences (Guglielmino and Pagliara 2004: 572). The end of the FBA settlement and of the fortifications' function was characterised by the presence of a burnt layer covering the entire settlement and interpreted as marking a violent destruction.

2.3. Layout and Organisation

2.3.1. Middle Bronze Age

Archaeological investigations have identified more than 20 semi-hypogea dug into the calcarenite bedrock across the entire promontory (Figure 2.15; Guglielmino 2014: 103). It seems that these structures were mostly located in the area enclosed by the walls and some have been identified on the cliff edge (Figure 2.16; Guglielmino 2014: 103). These

structures generally had a rounded plan (Figure 2.17) with a diameter rarely reaching 3 m and their concave walls were closed off by a vault through which it was possible to access these structures (Guglielmino 2014: 103). However, they could also differ in shape and size, some presenting connected chambers and features such as benches (Scarano 2012a: 38). Artefacts recovered from these structures include cooking tools and well-preserved handmade pottery, mostly open dining vessels. A cup sherd (Figure 2.18) was recovered from a similar assemblage deposited within one of these MBA hypogeal structures (Pagliara 2003: 88; Guglielmino *et al.* 2010a: 274–275). This cup fragment could be identified as LM IIIA2 in terms of decoration and shape but petrographic analyses have indicated it as a local production, making of it one of the earliest indigenous imitations of Aegean pottery (Guglielmino *et al.* 2010a: 274–275). Some structures have also provided evidence for faunal remains combined with large quantities of charcoal and ashes. While some of these hypogea have gone through multiple occupation phases, the majority of those displaying a single period of occupation have provided artefacts dating to the MBA (Scarano 2012a: 38; Guglielmino 2014: 103).

Different possible interpretations have been suggested for these semi-hypogeal structures, some of which were most likely used as dwellings, reflecting the local custom of semi-underground houses, like at Torre Santa Sabina (Coppola and Raimondi 1995; Coppola 1998). Further support to this hypothesis is provided by the identification around one of these structures of postholes which were probably used for raised structures (Iacono 2013b: 128; contra Guglielmino 2014: 103). Another widespread hypothesis associates these structures with ritual activities supported by their similarities with the local Daunian Hypogea (Guglielmino and Pagliara 2004: 567; Tunzi Sisto and Lo Zupone 2008: 190–191; Scarano 2012a: 38; Guglielmino 2014: 103). While find assemblages from these structures can be compared with the LBA ceremonial pits recovered from

Sybrita and Khamalevri (D'Agata 1997–2000; Guglielmino and Pagliara 2004: 567; Andreadaki-Vlazaki and Papadopoulou 2005), the Aegean examples are characterised by a rounded bottom more suitable for depositing unlike the flat floors of the structures from Roca Vecchia.

Various trenches, referred to as SAS (Saggio Archeologico Stratigrafico), have been excavated in the area of the settlement enclosed by the walls. To avoid confusion, the periods of occupation of these trenches summarised in Table 2.1 and compared with Aegean chronology.

In proximity to postern D, excavations have identified a beaten walkway running along the inner side of the walls and associated with the MBA layer (Guglielmino 2008: 27). This was made of clay with inclusions of small stones and crushed murex shells (Guglielmino 2008: 27). While there are not known comparisons across Italy, the employment of crushed murex shells within the construction of walls or streets is widely attested across the Aegean and Eastern Mediterranean (Guglielmino 2008: 28). At these sites, murex shells were actually leftovers from the production of purple dye activities which produced a high level of fragmentation, similar to the remains recovered from Roca Vecchia (Guglielmino 2008: 28). Evidence for purple dye production has been recovered from the site of Coppa Nevigata, situated in the same broad region as Roca and dating back to the 19th–18th century BC (Cazzella *et al.* 2004; 2006: 114). While it is not clear whether the development of purple dyeing activities at Coppa Nevigata resulted from interactions with the Aegean (cf. Cazzella *et al.* 2004; Cazzella 2009; Iacono *et al.* 2021), it is possible that the trans-Mediterranean contacts of Roca Vecchia also led to similar activities being conducted on site (Guglielmino 2008: 28).

Although the majority of MBA dwellings identified consists of hypogea, excavations have identified in various areas of the site some postholes and related floor surfaces immediately inside of the fortification walls which have been associated with MBA 3 huts (Scarano 2006: 133; 2012a: 32–39). The best preserved of these huts belongs to SAS X, where a stone wall forming an angle suggests the presence of a quadrangular structure (Iacono 2013b: 127). Excavations of this structure have identified 13 postholes in combination with a beaten floor surface and remains of plastered lathing, probably belonging to wattle and daub walls (Figure 2.19; Pagliara *et al.* 2007: 323). Finds include both locally handmade impasto ware and imported Aegean pottery, which is represented by a variety of different shapes, including matt-painted and fine orange burnished pottery, as well as lustrous decorated pottery and minyan ware (Guglielmino 2012: 178; Guglielmino *et al.* 2017: 550). The two handmade kantharoi identified as minyan ware are particularly significant as this kind of pottery is rarely found across Italy (Guglielmino 2012: 178). Among the pottery fragments recovered from this area, there is also a concentration of 11 loom weights, suggesting that the building was connected with textile production (Pagliara *et al.* 2007: 324–326). Moreover, 23 postholes of smaller dimensions have been identified east of the hut, suggesting the presence of a connected smaller structure, probably with different function (Pagliara *et al.* 2007: 324–326; Scarano 2012a: 35).

2.3.2. Recent Bronze Age

Similarly to MBA, RBA structures seem to concentrate along the inner side of the walls, at least at 5 m of distance from them (Guglielmino 2014: 104). Excavations of SAS X have identified postholes combined with a beaten floor surface with materials dating to the RBA 1, although unfortunately the results obtained have not been sufficient to reconstruct the layout of this structure (Pagliara *et al.* 2007: 323–326). More information

is available concerning the RBA 2 hut (Figure 2.20), characterised by a beaten earth floor composed of tufina and other small stones (Pagliara *et al.* 2007: 320). Along this pavement, various postholes outline a semi-circular plan connected to a sub-elliptical area located west of this (Pagliara *et al.* 2007: 320) This sub-elliptical area was delimited on the east side by a line of postholes of modest dimensions running alongside an elongated pit and has been associated with a fence or wattle and daub; it is unclear whether this area was covered by a roof (Pagliara *et al.* 2007: 320, 326; Scarano 2012a: 29). Although the function of the sub-elliptical structure is not clear yet, the small dimensions of the poles and the presence of elongated pits within the area enclosed might indicate their use as secondary annex to the circular structure (Pagliara *et al.* 2007: 320).

The semi-circular structure and the sub-elliptical space reflect a distinction in the distribution of artefacts: while a very limited number of finds was recovered from the latter, various artefacts come from the western end of the semi-circular hut (Pagliara *et al.* 2007: 320). In the southern corner, various metal ornaments of local manufacture (Figure 2.21) like fibulas, pins, and a ring, were recovered alongside pottery remains (Pagliara *et al.* 2007: 348–349). Pottery from this structure mainly consists of vessels belonging to the Sub-Apennine *facies*, although some Aegean-type vessels are also present (Pagliara *et al.* 2007: 332–336, 343–345; Iacono 2013b: 258–260).

Various faunal remains were also recovered from the western end of the structure (Figure 2.22). Domestic species are mainly represented by cattle, sheep and pigs in equal measure; among these, a dog long bone displays some toolmarks associated with skinning activities (Pagliara *et al.* 2007: 350). Remains belonging to wild species, like deer or water birds, indicate that hunting took place on site. In the north-west corner of the hut, a concentration of partially worked animal bones was identified, including shells, tortoise shells and imported ivory (Pagliara *et al.* 2007: 350). The recovery of various

hammerstones from this area supports the argument that bone-working activities were conducted in this area (Guglielmino and Pagliara 2004: 569; Pagliara *et al.* 2007: 320–321, 327, 350; Scarano 2012a: 29; Guglielmino 2014: 105).

Five different occupation phases dating to the RBA have been identified in SAS IX. Despite there is no evidence for structures belonging to these first two phases, excavation results will quickly be presented to better understand the site. Each phase corresponds with a deposit mainly filled with both local and Aegean-type pottery and animal remains mixed with fire traces (Pagliara *et al.* 2008: 251, 270–274; Iacono 2015: 266–268). Both phases are characterised by open shapes and fine painted tableware, with a particular predominance in phase 2 of vessels associated with the consumption of wine, such as deep bowls and craters, suggesting banqueting activities (Iacono 2015: 267–268). Animal remains mainly consist of limbs and heads, indicating a selection prior to the deposition of the bones (Isaakidou *et al.* 2002: 88; Pagliara *et al.* 2008: 270). Moreover, these remains present burnt traces as well as butchering marks (Pagliara *et al.* 2008: 270), suggesting that the meat had been removed before the bones were burnt. Similar assemblages in the Aegean have been interpreted as evidence for ceremonial banqueting activities, as for instance at the Palace of Pylos bones (cf. Isaakidou *et al.* 2002: 88). Their taphonomic condition indicates that the bones were still covered in meat when deposited, discarding the possible interpretation of these deposits as waste pits and suggesting instead ritual sacrifices (Pagliara *et al.* 2008: 270).

The third occupation phase had six deep postholes measuring up to 37 cm in diameter and outlining part of what has been interpreted as a rectangular monumental structure made out of wood (Figure 2.23; Pagliara *et al.* 2008: 247). Like the two earlier phases, finds from this structure include animal remains, mostly of domestic species such as cattle, sheep and pigs, while wild animals are represented by deer (Figure 2.24; Pagliara

et al. 2008: 269). Pottery recovered from this structure was scarce but included both handmade local vessels, dating this structure to RBA 2, and imported Aegean pottery, such as a decorated skyphos and a small jar (Pagliara *et al.* 2008).

Among the finds, there is an Aegean lentoid seal of purple steatite inscribed with the schematic representation of a bovine and identified as belonging to the Mainland Popular Group—MPG (Figure 2.25; Cucuzza 2006; Pagliara *et al.* 2008: 266–267; Iacono in Radina and Recchia 2010: 371; Guglielmino 2013: 148; Krzyszkowska 2019: 582). The seals belonging to this group were made of soft stones, usually shiny steatite in dark colours, and displayed linear and schematic representations of quadrupeds and geometric signs (Younger 1987; Krzyszkowska 2005: 20, 271–273). MPG includes a large variety of seals, usually dating to LH IIIA2–IIIB, and that have been recovered from a variety of different contexts, including sanctuaries and ritual zones (Krzyszkowska 2005: 271–279). This widespread diffusion of MPG seals has been associated with their use "as the identity markers of commoners" (Younger 2010: 334). In the Aegean, their frequency in peripheral areas has been interpreted as indicative of local elites imitating the Mycenaean custom of associating the possession of seals with high status (Krzyszkowska 2005: 274; 2019: 580). Guglielmino (2006a: 96; 2013: 148–149) builds on this association of the seal with representations of individual identities to support the possible presence of an Aegean individual on site.

The fourth occupation phase was identified in the NW corner of SAS IX and was represented mostly by a platform made of ashlar blocks of local limestone, combined with faunal remain and RBA 2 dining vessels (Pagliara *et al.* 2008: 247). The fifth and final RBA occupation phase in SAS IX has not provided clear evidence for a new structure in this period but a clay platform for cooking and various impasto vessels were found *in situ*, together with Aegean-type pottery (Pagliara *et al.* 2008: 247). Among the finds from this

area, there are some bronze tools, a bronze dagger with a bone handle and a pendent made of a shell (Pagliara *et al.* 2008: 247). The artefacts recovered from this phase seem to point towards a later moment in the RBA, possibly early FBA (Pagliara *et al.* 2008: 256–258), when the fortification walls were also rebuilt (Iacono 2019: 124). Finally, it is important to mention that a fragment belonging to a zoomorphic Mycenaean figurine has also been recovered from a layer dating to RBA 2 (Guglielmino 2005b: 646), although there is no further information on the area from where this artefact was found.

2.3.3. Final Bronze Age

The FBA is the period which has been mostly investigated as the strategies of excavations have favoured extensive investigations across the site, where structures belonging to this phase were particularly well preserved (Scarano 2012a: 20). Excavations have identified a system of roads (Figure 2.26) consisting of track ballast made of stones and combined with animal bones (Pagliara 2005: 632; Guglielmino 2016: 82). Roads were about 3–4 m wide, allowing the passage of wagons, as indicated by the wheel marks identified on the road surface axis (Scarano 2012a: 22). The site was entered through a road passing through the main gate and leading towards the centre of the promontory on an east–west axis (Scarano 2012a: 22). According to Pagliara (2005: 632), it is possible that streets started from the posterns leading to the centre of the promontory. A 4 m wide road ran along the inner side of the fortifications as indicated by track ballast of stones and animal bones (Pagliara 2005: 632; Guglielmino 2016: 82). Another road was identified 15 m into the settlement, running on a north-south axis parallel to the fortification road, connected by a series of perpendicular streets (Guglielmino 2014: 107). A third parallel road was identified running across the centre of the settlement. This road had a layer of beaten calcarenite on top of the track ballast, creating a smoother surface, and had a rather complex structure with raised platforms on the sides (Pagliara 2003: 89; 2005: 632;

Guglielmino 2014: 107) which have been identified as possible sidewalks (Guglielmino 2016: 82). The presence of sidewalks could be related to rain and water draining purposes (Iacono personal comment). Another suggestion, although more speculative, would associate the sidewalks with the need of separating wheeled from pedestrian traffic and therefore a high frequency in the area. Potential evidence supporting this argument is provided by wheel marks with an interaxle spacing of 1.60 m, which indicate that wagons could travel along this road (Pagliara 2003: 89; 2005: 632; Guglielmino 2014: 107; 2016: 82). Raised walkways were common features in Minoan cities and could run within streets (Driessen 2008), although in this case these platforms were usually central rather than flanking the streets. Interpreted as "Minoan 'red carpet'" (Driessen 2008: 45), their function was to communicate to people the way towards locations particularly important for the community. They have been associated with ritual processions and a similar function could be argued for this road located in the centre of the settlement, especially if considering that an extra layer was present on the surface, indicating a particular care. Guglielmino (2014: 107) refers to some hypogeal structures located next to the road which have provided FBA artefacts interpreted as depositions, as discussed earlier, arguing for a ritual function of this road. Moreover, a possible central square was identified where this road crossed the main east–west path, that is where the medieval church will be built (Pagliara 2005: 632; Scarano 2012a: 23; Guglielmino 2016: 82).

Both SAS X and IX provide evidence for continuity of occupation during the FBA. Two different occupation phases have been identified in SAS X, which will be presented in chronological order. Despite the fact that the FBA1 layer was significantly disturbed by the evidence belonging to the later phase, excavations have identified three different occupation areas (Figure 2.27; Pagliara *et al.* 2007: 327). On the eastern side of SAS X, a single posthole has been identified next to a beaten earth surface interpreted as

the surface floor of a FBA 1 structure (Pagliara *et al.* 2007: 315). Moving towards west, excavations have uncovered a second surface of beaten tufina and stones, characterised by the identification of five postholes in the proximity of two hearth plates, separated by a waste pit, and the remains of a broken cooking stand (Pagliara *et al.* 2007: 318). It has been argued that this area was partially covered and the recovery of burnt organic remains, together with fragmented vessels, have contributed to the association of this area with cooking activities (Pagliara *et al.* 2007: 315–318, 327). Two elongated pits, outlining a semi-crescent area, separate this central cooking space from a surface of small stones located on the south-western edge of this trench and which has been interpreted as a probable outdoor path (Pagliara *et al.* 2007: 315–318, 327).

Much more information is available concerning the FBA 2 hut (Figure 2.28), which was separated from the fortification walls by a path made of small stones and delimited by two parallel lines of postholes (Pagliara *et al.* 2007: 313). East of this walking path, a surface of beaten tufina and clay soil has been identified as the hut's floor, as supported by the identification across this surface of seven postholes possibly displayed according to an orthogonal layout (Pagliara *et al.* 2007: 313). In the internal area of this structure, two mud-hearth plates, a fragmented cooking stand and the possible remains of an oven have been recovered together with various open vessels of large dimensions, among which there are two cordoned *dolia* (Pagliara *et al.* 2007: 313–315). In addition to a stone grinder, some bone artefacts and bronze tools were found in the same area and will be discussed in a later section (Pagliara *et al.* 2007: 315).

The FBA1 hut identified in SAS IX shows a sub-rectangular layout measuring 40 m by 15 m, internally subdivided along orthogonal lines which are indicated by postholes (Figure 2.29; Pagliara *et al.* 2008: 242, 245). The structure is delimited on its western and southern sides by an external track ballast, coinciding with the aforementioned road

running along the fortification walls, and two *ollae* in the shape of a truncated cones have been recovered along the edge of this surface (Pagliara *et al.* 2008: 245). Moreover, a line of postholes parallel to the structure but with smaller dimensions has been identified on the western side of the track ballast, probably belonging to some kind of covered structure part of the wall complex and separated from the FBA 1 structure by the track ballast path. A single Aegean-type fragment, belonging to a decorated skyphos, was recovered from this context (Pagliara *et al.* 2008: 260).

The plan of the FBA 2 structure (Figures 2.30–31), called 'Temple-Hut' by the excavators for reasons that will be explained below, is very similar to the FBA 1 structure in dimensions and shape, while the axis was slightly tilted, following a N–S alignment (Pagliara *et al.* 2008: 245). Like the previous structure, this FBA 2 hut was delimited along the western and southern sides by a 4 m wide corridor made of small stones, potsherds and faunal remains, and probably covered by beaten calcarenite; this surface was raised from the floor level of the hut and possibly covered on top (Pagliara *et al.* 2008: 244). The Temple-Hut was internally subdivided into four longitudinal aisles by large postholes distanced 3 m from each other (Pagliara *et al.* 2008: 242). The larger dimensions of the postholes of the two internal lines suggest the presence of a gable roof (Pagliara *et al.* 2008: 242). This structure is one of the most studied of the site, as the collapse of the raised structures due to the fire destruction has contributed the preservation of the interiors (Pagliara *et al.* 2008: 242). The floor was made of beaten earth on top of the bedrock and was characterised by the presence of various installations, such as two narrow benches or about 20 quadrangular raised hearth platforms (Italian *piastre*; Pagliara *et al.* 2008: 242; Malorgio and Maggiulli 2011: 129–132; Guglielmino and Pagliara 2017: 520).

More than 800 artefacts, either whole or fragmented, have been recovered *in situ* across the floor surface (Guglielmino 2005b; Malorgio and Maggiulli 2011: 128–129). Finds include faunal remains, stone tools, metal weapons, and luxury goods such as gold jewels and ivory artefacts, as well as local handmade pottery, like the five large *dolia* partially buried in the floor (Guglielmino 2005b; Maggiulli 2009a; 2009b; Malorgio and Maggiulli 2011: 128–129). Among the locally handmade artefacts retrieved on the floors, there are a zoomorphic figurine and two anthropomorphic ones (Figure 2.32; Guglielmino 2005b: 646). The first anthropomorphic figurine has been interpreted as masculine and was punctured on the buttock prior to firing possibly to create a support for the statuette (Guglielmino 2005b: 646). The second anthropomorphic figurine was fragmented, perhaps deliberately, making it very difficult to assess its sex (Guglielmino 2005b: 646). These locally made figurines seem to imitate Mycenaean figurines (cf. Taylour 1958: 118; Guglielmino 2003: 108–110), which were known by the indigenous peoples as demonstrated by the recovery from a RBA layer of a small pottery horn belonging to an imported Mycenaean zoomorphic figurine (Guglielmino 2005b: 646). The concentration of figurines identified in this structure is consistent with the ritual function attributed to the building, as Mycenaean figurines could often be found in purely religious contexts across the Aegean (French 1971: 107).

Clusters of artefacts have been identified in the northern area of the structure (Figure 2.33), where the skeletal remains of three pigs were recovered articulated (Guglielmino 2016: 85). In the Aegean BA, pigs could be sacrificed as part of festivals, as for instance demonstrated by the predominance of pigs remains over other animals in room A at Ayios Konstantinos, Methana, where most parts of the pigs were also represented instead of just the meaty parts (Hamilakis and Konsolaki 2004: 139–142). The fact that the pigs from Roca Vecchia were whole indicates that they had not been

consumed as part of feasting activities but rather deposited, possibly during some ceremonial activities (cf. Pagliara 2005: 633). Another possible explanation associates the presence of the pigs with the fire destruction of this structure, which would have entrapped the animals (Iacono 2019: 192). An *olla* containing the skeletal remains of a neonatal human was also found in this area (Malorgio and Maggiulli 2011: 136). Considering that the urn was found laying on the floor rather then buried, it has been suggested that the burying ritual had probably been interrupted (Malorgio and Maggiulli 2011: 136). The practice of burying infants within pottery containers, also known as *enchytrismos* burials, was widely attested across Southern Italy starting from the EBA (Malorgio and Maggiulli 2011: 136).

The various knives identified in this area mostly belong to the sickle-like typology, that is characterised by flat handles and crescent-shaped blades, which can be associated with the moulds recovered across Roca Vecchia, indicating a local production (Guglielmino 2003: 105; Maggiulli 2009a: 317). While few other sickle-shaped knives have been recovered from Apulia, the presence and local production of this type of knives can be associated with influences from the Aegean, where they are common in LBA contexts (Deshayes 1960: 147–148; Buchholz and Karageorghis 1973: 54–55). From the floor of this area, a bronze double axe was also recovered (Figure 2.34), clearly reflecting Aegean models (Pagliara and Guglielmino 2005: 315).

Artefact concentrations have also been found next to the hearth plates and braziers located along the internal alignments subdividing the entire structure (Malorgio and Maggiulli 2011: 129). The association between the hearth plates, faunal remains, and ritual artefacts, such as decorated weapons and braziers, has contributed to the common interpretation of these hearth plates, or platforms, as altars (Guglielmino 2006a; Maggiulli and Malorgio 2017: 97–99). One of the hearth plates (Figure 2.35) was connected to a

small basin located next to it which was made with the same mixture of clay and crushed calcarenite that the hearth plate was made of (Guglielmino 2003: 108; Malorgio and Maggiulli 2011: 130). According to Guglielmino (2003: 108), this combination can be compared with the horseshoe shaped altar identified in the Room Γ in Tsountas' House at Mycenae (Figure 2.36), which also displayed an addition possibly used for libations (Mylonas 1977: 19–22, 92). Because of the similarity between these two installations, he argues that also at Roca Vecchia the small bowl-shaped structure annexed to the platform could be used for votive offerings (Guglielmino 2003: 108). However, such an interpretation can be challenged when considering the perplexities raised by French (2002: 87) on the function of the Mycenae example, as well as the fact that the material of the Roca platform would not have been optimal for slaughtering purposes (Iacono 2013b: 294).

Moreover, a high concentration of handmade local pottery, including miniature jars, was recovered next to the animal remains in this area (Maggiulli and Malorgio 2017). This assemblage mainly consisted of dining vessels, that is employed in the consumption of food, which, combined with the presence of altars, faunal remains, and cooking stands, suggest that food was prepared and consumed in this area, probably dedicated to elite and banqueting activities (Maggiulli and Malorgio 2017: 541). One of these terracotta cooking stands was decorated with cordons arguably outlining a double-axe shape (Figure 2.37; Guglielmino 2003: 113) and a tripod tray fragment (Figure 2.38) bears similarities with the ones common across Crete (Figure 2.39). However, the Cretan tripod trays were painted and generally dated to MM III–LM I, much earlier than the Roca examples, which were decorated with motives of crosses or swastikas on the flat round surface inscribed by the relief edge (Guglielmino 2008: 31–33). Iacono (2019: 193–194) suggests a closer resemblance with Mycenaean griddles (Lis 2008) and that these might have also been

used for the preparation of swastikas-decorated flat breads. In the northern area of the structure, a hoard was identified buried beneath the floor level. This was later named 'Hoard of Gold' by the excavators, referring to the two golden discs recovered together with weapons, jewels and tools of bronze, gold, shell, glass, and ivory (Figure 2.40; Guglielmino and Pagliara 2004: 577; Maggiulli 2006; 2009a). These discs were made of golden foil embossed with points and dimples outlining a cross in the centre (Figure 2.41; Maggiulli 2006). Outside the pit, two more gold discs were recovered: in this case, the foils were fragmented into five pieces overall and deliberately folded (Figure 2.42; Maggiulli 2006: 129). The embossed points and dimples displayed a different pattern from the discs recovered inside the pits (Maggiulli 2006: 129).

Some scholars have interpreted the general decorative patterns on the discs, displaying various circles arranged to create a sort of garland, as sun motives, which are common across both temperate Europe and peninsular Italy as well as the Aegean (Bettelli 2002: 155–156; Maggiulli 2006: 130). The sun symbol is widespread across different cultures, as is their representation through discs of gold foil (Càssola Guida 2014: 34). While the gold discs are representations of the sun, the embossed decoration of repeated circles represents its cyclic journey in the sky (Càssola Guida 2014: 33–34). BA examples have been recovered across Europe, with evidence as far north as Ireland, for instance (Müller-Karpe 1966, Table 483.1–16; Bettelli 1997: 724). Contemporary examples (Figure 2.43) have also been found in the Northern Italy villages of Frattesina, Redù, Casinalbo, and Borgo Panigale, and from a hoard identified at Gualdo Tadino in Central Italy, which was particularly similar to the Roca Vecchia examples in terms of recovery context and decorative patterns (Bettelli 1997; Càssola Guida 2014: 36). However, there are some differences in the decoration technique, as the side of the Roca Vecchia disc was embossed (Maggiulli 2006: 130). Two LH IIIC examples, that is roughly

contemporary with the Italian discs, have also been recovered from the Aegean islands of Delos and Kefalonia, displaying decorative patterns strikingly similar to the discs from Roca (Gallet de Santerre and Tréheux 1947; Brodbeck-Jucker 1986: 73–77; Bettelli 2006). Gold discs decorated with embossed representations of the solar cult seem to concentrate along the Italian Adriatic coast and the eastern area of the Padania plain and the limited examples from the Aegean have led scholars to argue that the Aegean examples were influenced by Italian models (Brodbeck-Jucker 1986: 73–77; Bettelli 2002: 156; 2006: 141–142; Càssola Guida 2014: 36). While the evidence supporting this argument does not appear consistent per se, the association of solar gold discs with religious or ritual contexts was common both in the Aegean and Italian BA (Bettelli 2006: 142).

A second hoard, known as the 'Hoard of the Bronzes' was identified buried in the southern sector of the Temple-Hut. The Hoard of the Bronzes consisted in a handmade *olla* closed by a small stone slab buried under the floor surface (Maggiulli 2009a; Malorgio and Maggiulli 2011: 134). This hoard contained about 16 kg of bronze artefacts—mainly deliberately fragmented axes which had not been used previously as they did not display any wear marks (Maggiulli 2009b: 213; Guglielmino 2016: 87). More specifically, axes and sickles from this hoard (Figure 2.44) belong to different categories common in contemporary peninsular Italy and in the Balkans, suggesting interactions with these areas (Maggiulli 2009b: 211–213; Malorgio and Maggiulli 2011: 153).

Another FBA 2 sub-rectangular structure, referred to by the excavators as 'Store-Hut', was identified in the SAS VI along the north–south road flanking the walls. Like the Temple-Hut, this structure was about 15 m wide and postholes suggest that it measured about 20 m in length (Guglielmino 1999: 475; 2014: 108; 2016: 83). The floor was made of beaten clay and crushed calcarenite, while the identification of postholes

indicated an internal subdivision according to an orthogonal layout (Guglielmino 1999: 475). Next to the employment of wood as main building material, excavations have identified a drystone base of the walls (Guglielmino 1999: 475). Along one of these side walls, four large cordoned *dolia* have been recovered *in situ* partially buried (Figures 2.45–46) and both erosion marks and gas chromatography analyses have confirmed their use as olive oil containers (Di Fraia 1995: 469; Guglielmino 1999: 475, 482–483; Fiorentino 2002: 149). One of these *dolia* was inscribed with an X on the rim, next to one of the handles (Figure 2.47). From this same context were recovered various clay pyramids displaying different simple signs, including an X, on the flat side: pyramids with the same inscriptions are characterised by similar dimensions and weights, with a difference under 10% (Guglielmino 1999: 484). Building on these finds, Guglielmino (1999: 484) suggested the employment of an administrative system on site, drawing also comparison with the pithoi from Akrotiri and Knossos, where signs refer to the size and xvolume of the containers (Boskamp 1996). However, these Cretan signs are much more complex than the X on the *dolium* recovered at Roca Vecchia and the fact that these *dolia* did not significantly differ in terms of volume points instead towards the interpretation of the X as indicating where to attach the handle during the manufacturing phase (Iacono 2013b: 261–262). Initially, the large amount of olive oil that could be contained by the *dolia* led to suggestions of some sort of communal storage, an interpretation also supported by the concentration of *dolia* in this structure as well as their limited mobility (Di Fraia in Cocchi Genick 2004: 564). Later excavations have however identified at least three more assemblages of cordoned *dolia* across the settlement in various levels dated to the FBA period, discouraging the interpretation of the building as a centralised communal magazine (Guglielmino 2014: 109).

Various artefacts recovered from the Store-Hut displayed symbols which can be associated with the ritual sphere (Guglielmino 2014: 109). For example, a handmade *olla* decorated with the relief of a snake (Figure 2.48) was recovered in this area (Guglielmino 2003: 113), as well as two small gold solar discs, one of which decorated with an embossed sun-whirl and a support of heather wood (Maggiulli 2006: 129; Guglielmino 2008: 35). The list also includes some tripod trays like those recovered from the Temple Hut (Guglielmino 2008: 31). This concentration of symbols and artefacts provides an additional similarity between the coeval Store-Hut and the Temple-Hut, the two FBA buildings with a larger size. However, it is possible to identify a difference in the typology of vessels recovered from these two buildings: while the Temple-Hut shows a slight predominance of dining and drinking vessels, including miniature jars (Maggiulli and Malorgio 2017), kitchen wares and storing vessels seem to be predominant in the Store-Hut. Building on Iacono's interpretation (2019: 194) of the Store-Hut as a "storage area belonging to a large multifunctional structure, very much like that in Area IX", it could be suggested that the two buildings had different but to an extent complementary roles. While it is important to highlight that the Temple-Hut most likely played both a domestic and a ritual function (Iacono 2019: 194), it is equally possible that the Store-Hut could partially be involved in elite banqueting activities, with food probably being stored and prepared in the Store-Hut and the actual food-consumption activities and ceremonies taking place in the Temple-Hut.

2.4. Technologies and Workshops

According to Wardle (2004: 54–56), ports of trade act as the arena for interactions between traders and/or itinerant craftsmen exchanging technologies and skills. Significant attention has been given to the possible establishment of Aegean artisans who would have transmitted the skills and techniques required to develop local specialised production. The

archaeological evidence from Roca Vecchia indicates that various specialised activities were conducted on site, and they all seem to show some level of Aegean influence, either in the tools and technique, material or style adopted. Bearing all these aspects in mind, different workshops identified at Roca will now be discussed in turn starting from pottery.

2.4.1. Pottery

The Aegean-type pottery from Roca Vecchia is outstanding both in terms of quantity and date: about 15 years ago, Aegean-type pottery amounted to over 5,000 fragments, that is more than 5% of the fragments of pottery recovered overall (Vianello 2009: 49; Guglielmino *et al.* 2010a: 257). Moreover, Aegean-type pottery dates from LH I–II to Submycenaean (Figure 2.49; Guglielmino 2006a: 93; Guglielmino *et al.* 2010; Jones *et al.* 2014), showing a long and constant presence on site.

Aegean-type pottery peaks in the RBA, when it mostly consists in drinking vessels followed by closed shapes, like stirrup jars (Guglielmino 2006a: 93). Petrographic analyses have indicated that Aegean imports had been produced either in Crete or mainland Greece (Pagliara *et al.* 2008: 265; Guglielmino *et al.* 2010a: 277). Recent petrographic and chemical analyses conducted on a particular sample of sherds have shown that most of the artefacts were locally produced (Figures 2.50–51; Jung *et al.* 2021). The striking similarity of local and imported Aegean-type pottery indicates a successful transfer of technology, including the reproduction of Aegean motifs on the vessels' surface according to contemporary Aegean trends which suggests frequent interactions (Jung *et al.* 2021: 480–481).

Local FBA pottery was mostly handmade and included Protovillanovan impasto, basins, and SIP (Figure 2.52; Castellano *et al.* 1996: 65; Guglielmino and Pagliara 2004: 574; Guglielmino 2006a: 97; Iacono 2019). Wheel thrown pottery consisted in grey

Italian pottery and cordoned *dolia*, whose production show a clear Aegean influence (Guglielmino 1999: 480; Iacono 2019). Overall, pottery production displays a high level of specialisation, and some could be identified as luxury product, such as SIP for instance (Bettelli and Levi 2003; Guglielmino and Pagliara 2004: 574; Guglielmino 2006a: 97; Iacono 2019: 172). The quantity of Aegean-type pottery recovered diminishes in the FBA, reflecting a decrease in the Aegean interactions (Guglielmino and Pagliara 2004: 575). However, Aegean imports did not completely disappear and the contemporary presence of Italian pottery across the Aegean might instead indicate a change in the nature of contacts rather than a decline.

2.4.2. Metalworking

While Aegean-type pottery decreases in number, the FBA is characterised by a significant increase in the evidence for metalworking. Eight moulds, mostly bi-valve, made of calcarenite have been recovered from SAS XII. The use of local stone suggests that they were locally made (Guglielmino 2006b: 34). Marks on the moulds can be associated with various tools, among which is a saw, whose use on moulds is uncommon across Italy but has comparisons across Crete, like at Mallia, and in Troy (Chapouthier and Demargne 1942: 56–63; Guglielmino 2006b: 38). Moulds are significant for casting light on the metallurgy activities conducted on site, providing evidence for both the technological achievements and the nature of local metal productions (Guglielmino 2006b: 38–39). As already mentioned, two sickle-shaped knife stamps have also been identified (Guglielmino 2006b: 41–43). Moulds also indicate the local production of flat axes with sub-rectangular blades, which can be attributed to the local Scorrano typology (Guglielmino 2006b: 43–44). The mould of a socketed spearhead reflects a typology common across peninsular Italy, as does the bronze spearhead identified in the site during excavations (Guglielmino 2006b: 44).

Moulds' investigations have also identified two hammer heads of small dimensions, with a rectangular hole for the handle on a side rather than in the middle (Figure 2.53; Guglielmino 2006b: 40). This type of hammer head finds comparisons also in other two Apulian sites, that is Surbo and Mottola (Deshayes 1960: 297; Macnamara 1970). The small dimensions of both hammer heads and their characteristics reflect models common in the Aegean and Cyprus, where these small 'raising hammers' have been interpreted as used for working laminated bronze (Pernier and Banti 1951: 370–371; Deshayes 1960: 297–298; Catling 1964: 100; Macnamara 1970: 248–249; Guglielmino 2006b: 41). These hammers would have been used after wooden ones to create elevations on flat surfaces (Catling 1964: 100). In addition to these small raising hammers, other specialised metalworking tools recovered on site include the punches recovered from the Hoard of Gold, whose rounded point matches the circular decoration marks of the sun discs from the Temple-Hut (Scarano and Maggiulli 2014: 13). It is therefore possible that gold was also locally worked by specialised artisans, as supported by the recovery from the Hoard of Gold of partially worked artefacts and leftover foil fragments (Maggiulli 2009a: 329–330; Scarano and Maggiulli 2014: 13). Further information on the technological development of metallurgy is provided by the recovery from SAS XII of a large L-shaped terracotta tuyere (Figure 2.54) with various comparisons from Northern Italy, especially considering the cordoned decoration displayed by the artefact (Guglielmino 2006b: 45–46). The overall picture depicts specialised metallurgical activities conducted on site with foreign influences from both Northern Italy and the Aegean.

2.4.3. Ivory and Bone Working

Ivory finds from Roca Vecchia comprise finished artefacts, scraps and raw material. This evidence, combined with the recovery of tools required for working ivory and other hard

bones, such as hacksaws and drill heads, points towards the identification of an ivory working workshop on site (Guglielmino *et al.* 2011: 182; see also Krzyszkowska 1981: 166–179; Evely 1993: 547–551). In the case of the RBA 2 structure from SAS X, where various half-finished plaques and fragments of hippo teeth were recovered, the workshop was not separated but included with the other bone working activities, such as deer antler, cattle ribs or tortoise shell (Pagliara *et al.* 2007: 350; Guglielmino *et al.* 2011: 181–182). While most of the ivory finds from Roca dates to the RBA, evidence does not disappear in the FBA. An ivory pin head recovered from the Hoard of Gold provides evidence for ivory recycling as it might have originally been half of a so-called "needle-box" (Figure 2.55; Guglielmino *et al.* 2011: 179). Recycling of ivory items was common in the Aegean BA, due to the high value of the raw material, especially when ivory workshops started to decline towards the end of the BA (Guglielmino *et al.* 2011: 179). Except for Roca Vecchia, Frattesina and Mursìa are the only other sites in the LBA central Mediterranean where ivory workshops have been identified, although these were not contemporary (Guglielmino *et al.* 2011: 182; Fiori *et al.* 2024). Moreover, the amount of ivory finds from Roca is the largest across the Central Mediterranean, although ivory remains are still quite scarce compared with the Eastern Mediterranean (Guglielmino *et al.* 2011: 178).

Technology transmission requires a prolonged interaction between different cultures and, as Brysbaert (2008: 165) commented, "technology is a social process, […] because it involves people's daily activities, their relationships, their beliefs". This transmission was probably facilitated by the direct contacts with the Aegean that, according to Graziadio and Guglielmino (2011), characterised Roca within the inter-Mediterranean trade network. Transmission of technology significantly affects the organisation of societies and at Roca Vecchia new specialised productions included luxury items, such as ivory and gold, which were probably aimed at the local elites.

2.5. Social Organisation

At least two destruction events, both associated with fire, have been identified at Roca Vecchia during the period analysed. The first event has been associated with the destruction of the MBA fortification walls, corresponding to the burnt traces recovered also from SAS X (Scarano 2012a: 373–383). This destruction horizon was probably the result of a siege, evidence of which comes from architectural, artefactual and human remains (Scarano 2011b; 2012a). From the supposed disposition of artefacts within the posterns, it is plausible that the siege was not short-lived and lasted for a certain period of time (Scarano 2011b; 2012a). Among the various explanations for this violent attack, it has traditionally been associated with the arrival of Aegean individuals who attacked the settlement (Guglielmino 1996; Scarano 2016: 265), although the evidence supporting this interpretation is slim. The violent fire destruction at the end of FBA 2 has also been associated with a warlike event (Scarano 2012a: 20) which however did not make any victims but individuals managed to flee the settlement in a hurry, leaving behind most precious items, like the hoards recovered from the Temple-Hut (Guglielmino and Pagliara 2017: 520).

Many artefacts from Roca Vecchia show technological and stylistic influences from the Aegean, peninsular Italy and temperate Europe, reflecting Roca's presence in the inter-Mediterranean trading network. Focusing on the many similarities with the Aegean, these include practices and iconography, such as double axes and bucrania, which can be recognised as shared Aegean iconographies and symbols mainly associated with the ritual sphere. It is however difficult to establish to what the extent these symbols maintained the original meaning that they had in the Aegean or changed by being included in the local practices.

The archaeological evidence from SAS IX seems to suggest that banqueting activities were being conducted on site. The aforementioned RBA deposition of large size animals without burning the remains or removing the meat from the bones does not bear any comparisons with the Aegean (Iacono 2015: 272). This supports the argument that local people were responsible for organising the banqueting activities, despite the many symbols and iconographies recovered from SAS IX that display an evident Aegean connection (Iacono 2015: 272). Studies of the faunal remains indicate that the meat consumed in these banqueting activities could have fed about 530 people, revealing the large scale of the event (Iacono 2015: 271). To put this data into perspective, the overall population of Roca Vecchia should be taken into account. Considering the estimate for Apulian BA sites of 100–200 people per hectare (Cazzella and Recchia 2001: 159–160; Scarano 2012a: 385), the 5-hectare large site of Roca could have hosted around 750 people (cf. Guglielmino 2013: 147). A large part of the population was thus involved in these practices of commensality, although the situation will change if we include the area immediately outside the fortification walls, which was at least frequented, if not occupied, reflecting the importance of Roca Vecchia as main site in the region in this period (Iacono *et al.* 2024a). In any case, it appears that at Roca these feasting events acted as an arena where Aegean-type artefacts were employed to renegotiate and modify the internal power equilibria (Iacono 2015: 275). The transmission of technologies was included within the local practices, without however diminishing the importance of these innovative artefacts within the community, where they might have become marker of status. A similar process probably involved the transmission of symbols and iconographies.

The identification of central storerooms can provide a significant amount of information on the production and management of surplus and, consequently, on the social organisation of a settlement. The MBA imported artefacts are never present in large

quantities and tend to be gathered in single spots rather than being widespread across the site (Iacono 2019: 79). Moreover, Aegean-type artefacts often belong to assemblages attributed a ritual function. It seems that specific groups gained control over the interactions with the Aegean, with the consequent restricted access to foreign goods making differences and inequalities more visible (Peroni 1994: 852–853; Tanasi 2005: 567; Legarra Herrero 2016: 27–28). Moving to the RBA, pottery distribution indicates frequent contacts between the Aegean and Southern Italy (Iacono 2019: 157–158). The various FBA storage *dolia* identified across the settlement, combined with the presence of hoards, portray a society where surplus was more available than in the previous periods (Iacono 2019). However, surplus seems to be accessible to various groups within the community, preventing the development of specific hierarchies (Iacono 2019: 212).

Overall, the LBA interactions with the Aegean have had a significant impact on the local society, whose agency in selecting what traits to adopt from the different cultures they interacted with is evident by the end of the FBA. Aegean influence is seen more clearly in pottery and banqueting activities than metalworking, which seems to be particularly influenced by contacts with the rest of Northern Italy and temperate Europe, displaying artefacts belonging to the metallurgical *koiné* (Carancini and Peroni 1997). Whether the dynamics influencing these preferences were common to other ports of interactions or specific to Roca Vecchia will become clear from the analysis of the other sites selected as case study in this thesis.

3. CASE STUDY: LIPARI

3.1. Background

Lipari is the largest of the Aeolian islands, located in the southernmost area of the Tyrrhenian Sea, about 20 km from the northern coast of Sicily and 50 km from the Calabrian coast (Figure 3.1; Martinelli *et al.* 2021: 29). Lipari provided the safest coastal access near the Messina Strait, holding a strategic position along the main sea routes connecting the east and west areas of the Mediterranean (Wardle 2004: 204). This chapter will present the site of Lipari, located on an acropolis on the eastern side of the island, starting from its morphological and historical background. The archaeological evidence for the structures identified on the acropolis will then be presented in chronological order, according to the four different occupational phases: Capo Graziano II, Milazzese, Ausonian I and Ausonian II (Table 3.1). The following section will focus on the evidence providing information on the material culture and workshops identified on the acropolis, with the purpose of identifying foreign technological influences. Finally, the evidence presented will be discussed to better understand the social organisation of Lipari as a port of interactions.

<table>
<tr><th>Absolute Dates (all BC)</th><th>Mainland Greece</th><th>Italy</th><th>Lipari</th></tr>
<tr><td>2100–1700</td><td>MH (2000–1600)</td><td rowspan="2">EBA</td><td>Capo Graziano I</td></tr>
<tr><td>1700–1650</td><td rowspan="2">LH I (1600–1500)</td><td rowspan="4">Capo Graziano II</td></tr>
<tr><td>1650–1635</td><td rowspan="3">MBA 1</td></tr>
<tr><td>1635–1500</td><td rowspan="2">LH IIA (1500–1440)</td></tr>
<tr><td>1500–1480</td><td rowspan="5">Milazzese</td></tr>
<tr><td>1480–1420</td><td>LH IIB (1440–1390)</td><td>MBA 2</td></tr>
<tr><td>1420–1390</td><td>LH IIIA1 (1390–1370)</td><td rowspan="2">MBA 3</td></tr>
<tr><td>1390–1330</td><td rowspan="2">LH IIIA2 (1370–1300)</td></tr>
<tr><td>1330–1300</td><td rowspan="2">RBA 1</td></tr>
<tr><td>1300–1240</td><td rowspan="2">LH IIIB</td><td rowspan="3">Ausonian I</td></tr>
<tr><td>1240–1190</td><td rowspan="2">RBA 2</td></tr>
<tr><td>1190–1150</td><td rowspan="3">LH IIIC</td></tr>
<tr><td>1150–1070</td><td>FBA 1</td><td rowspan="3">Ausonian II</td></tr>
<tr><td>1070–1060</td><td rowspan="2">FBA 2</td></tr>
<tr><td>1060–1040</td><td>Submycenaean</td></tr>
</table>

Table 3.1—Absolute and relative chronology of the BA cultures at Lipari. Absolute dates follow the high chronology adopted by Manning 2010 (lower dates according to Tartaron 2008: 84). References to the Italian chronology are based on synchronism with the Aegean relative chronology (Scarano 2012a: 381; Martinelli 2020; Iacono *et al.* 2021).

The island of Lipari (Figure 3.2) has a surface of 37.6 km^2, mostly covered by mountains (Jones *et al.* 2014: 52–53). Because of the volcanic nature of the Aeolian islands, Lipari has been affected by eruptions, tsunamis and earthquakes over the years which have had a significant impact on the geology and morphology of the island (Martinelli *et al.* 2021: 38–41). Among the outcomes of eruptions, there is the formation of pumice and obsidian deposits, which have been some of the main raw materials exploited and traded since the Neolithic (Tykot *et al.* 2006; Tykot 2011, 2019; Martinelli *et al.* 2019). In addition to the extraction of these, the island's coastline has significantly been affected by the strong north-western and western winds, which have contributed to

the erosion of the beaches, now replaced by the waste resulting from the new pumice industry (Jones *et al.* 2014: 52–53; Martinelli *et al.* 2021).

As visible from Figure 3.2, most of the BA sites concentrate in the south-eastern part of the island. Before moving to the acropolis settlement, which will be the main focus of this Chapter, it is important to briefly mention the alleged tholos of San Calogero (Figure 3.3) as providing strong evidence for interactions with the Aegean world. This place has been known through history because of the thermal centre which developed on site and which was often attributed therapeutic properties (Bernabò Brea *et al.* 1991: 11–18). Excavations have dated the earliest occupation of the site to the 17th–16th centuries BC, after which there is a period without any evidence until the 6th century BC, since when the thermal complex had constantly been frequented and renovated (Bernabò Brea *et al.* 1991: 65). The spring chamber has a diameter of about 4.10 m and is 2.80 m high and, from an architectural point of view, can be compared with Aegean tholoi starting from the relieving triangle, which is characteristic of Mycenaean architecture (Bernabò Brea *et al.* 1991; Vianello 2005: 76–77; Crowley 2008). The tholos can be attributed to Mycenaean influence despite the fact that Aegean tholoi were used as tombs rather than thermal buildings (Bernabò Brea *et al.* 1991). However, springs have often been associated with ritual sites and the local pottery sherds recovered on site could have been part of votive offerings (Vianello 2005: 76–77). While this construction did not contain any burials, the construction date would coincide with the first attested contacts between Lipari and the Aegean world, as demonstrated by the remains recovered on the acropolis which will be later presented and discussed. Overall, this clear example of Aegean architecture could potentially be linked with the presence on site of Aegean masons who might have decided to adopt an architectural style with ritual connotations for a different purpose. The use of the corbelled vault for buildings other than tombs has very few

Aegean parallels, such as the hypogeum at Knossos, which was probably used as a granary (Renfrew 1972: 97), and would reflect a transformation from the Aegean funerary approach.

3.1.1. Lipari–Acropolis

The LBA acropolis settlement (Figure 3.4), also known as Castello, was located on the 3-hectare large plateau about 40 m asl along the eastern coast of the island (Bernabò Brea and Cavalier 1980: 4; Jones *et al.* 2014: 52–53). To the north of the acropolis there is an inlet, called Marina Lunga, and to the south another one called Marina Corta (Bernabò Brea and Cavalier 1980: 4; Jones *et al.* 2014: 52–53). In the BA, two water sources ran through these inlets, respectively called Vallone di Santa Lucia and Vallone Ponte a Sud (Jones *et al.* 2014: 52–53). The natural features of this area have contributed to the establishment and continuous occupation of the settlement on the acropolis, which could only be accessed from the north (Bernabò Brea and Cavalier 1980: 3). Because of the long-term occupation of this site, the contemporary aspect of the acropolis is very different from how it looked like in the BA (Bernabò Brea and Cavalier 1980: 4). Changes on the coastline and construction of modern infrastructures have hampered the identification of LBA harbours through excavations. However, the location of the acropolis between two inlets might have been influenced by their use as landing docks, with which there was a good intervisibility (Martinelli *et al.* 2021: 47).

Excavations have dated the earliest human presence of the acropolis back to the Neolithic, which underwent various occupation phases until today by many different human groups (Figure 3.5), either indigenous, like during the Neolithic Diana *facies*, or exogenous (Jones *et al.* 2014: 52; Martinelli and Mastelloni 2015; Martinelli 2020). For example, the two final *facies* of the BA, Ausonian I and II, have been associated with the invasion of peoples from Southern Italy. The end of the Ausonian II period was followed

by a time of abandonment of the acropolis until the Greek polis Lipara was founded in 580 BC and destroyed in 252/251 BC by the Romans, who settled the acropolis (Martinelli and Mastelloni 2015).

After being raided in AD 1544 by Turkish pirates, the viceroy of Sicily ordered to heavily fortify the settlement (Bernabò Brea and Cavalier 1980: 4; La Rosa 1995: 153). At the beginning of the 20th century, a large staircase was built to connect the Cathedral, located within the fortified acropolis, to the outside of the city, resulting in the destruction of part of the archaeological remains, together with structural damages to some buildings in the citadel (Bernabò Brea and Cavalier 1980: 4–5). In 1926, a local rising against the relocation in the citadel of political prisoners destroyed the medieval and renaissance remains (Bernabò Brea and Cavalier 1980: 4–5).

In 1950, the Soprintendenza alle Antichità della Sicilia Orientale promoted the opening of various trenches across the acropolis with exploratory purposes, directed from 1952 by Madeleine Cavalier (Bernabò Brea and Cavalier 1980: 6–7). Further excavations started in 1954 and were conducted until 1965, resulting in the exposure of the BA structures as they are now visible on the acropolis (Figure 3.6; Bernabò Brea and Cavalier 1980: 8–14). A museum was also opened in 1954 in the buildings on the acropolis for the materials recovered during excavations of both the acropolis and the rest of the island (Bernabò Brea and Cavalier 1980: 14–16; Martinelli and Mastelloni 2015). Today, the archaeological museum "Bernabò Brea" displays most of the finds from the excavations on the acropolis, together with artefacts from the rest of Lipari and the other Aeolian islands (Martinelli and Mastelloni 2015).

3.2. Layout and Organisation

3.2.1. Capo Graziano II Settlement

The Capo Graziano *facies* dates from 2300 to 1500 BC and it is subdivided into two phases (Martinelli and Giordano 2017: 255). Evidence belonging to the first phase has been identified across the plain around the acropolis, in the so-called Contrada Diana and Piazza Monfalcone. The Capo Graziano II phase started in 1700 BC, with a general movement of the site from Contrada Diana to the better defendable acropolis (Bernabò Brea and Cavalier 1980: 510; Martinelli and Giordano 2017: 255–256; Martinelli 2020: 74).

Across the entire acropolis, excavations have identified about 22 structures dating to the Capo Graziano II period and called δ I–XXII (Figure 3.7). They were usually built in groups of five or six nearby structures, though without following any regular layout or orientation (Bernabò Brea and Cavalier 1980: 511; van Wijngaarden 2002: 207; Martinelli 2020: 79). Huts were mostly oval with an average dimension of 3 by 4.5 m, too small to host daily activities, which were probably conducted outside (Bernabò Brea and Cavalier 1980: 511; van Wijngaarden 2002: 207).

Structure δ I was buried and had a truncated-conic shape, measuring about 2.40 m in diameter and about 2 m in height (Bernabò Brea and Cavalier 1980: 217; Martinelli 2020: 78). This was made of cobbles and clay, making the structure completely waterproof (Bernabò Brea and Cavalier 1980: 218). According to the excavators (Bernabò Brea and Cavalier 1980: 217–218; Bernabò Brea 1985: 37), this structure, which had no comparisons in the Aeolian landscape, was used as a silo and could hold about 2800 L (Jung and Pacciarelli 2017: 187). In terms of grain and cereal storage, this would correspond to the yearly subsistence of about 15 people, or to cultivate 14 ha of

land (Albore Livadie *et al.* 2003: 117). Inside this structure, various pottery remains were recovered ranging from the Ausonian to the Roman period (Bernabò Brea and Cavalier 1980: 218). Only the eastern section of structure δ II was preserved, indicating a partially buried hut which probably lay on the remains of an earlier structure (Bernabò Brea and Cavalier 1980: 220).

Excavations of hut δ III have identified a structure of medium size with a possible entrance facing north (Bernabò Brea and Cavalier 1980: 220–221). The floor surface was of beaten earth, on top of which 21 Mycenaean vessels were recovered (Bernabò Brea and Cavalier 1980: 221–222). Among these Mycenaean finds, four date to the LH I–LH II period, and there is also a large kylix base (Figure 3.8) decorated with bands and possibly dating to LH IIIA (Bernabò Brea and Cavalier 1980: 222–224; Jones *et al.* 2014: 60). However, the significant similarities with a LM II example from the Temple Tomb at Knossos might suggest an earlier date (Jones *et al.* 2014: 60). In addition to the Aegean finds recovered on the floor surface, 13 further unstratified pieces were associated with this building (Cavalier and Vagnetti 1984: 146–148). Among these, an amphora displays a spiral decoration beneath the handle (Figure 3.9), which was very uncommon in the Aegean, leading Wardle (2004: 293) to argue for local production of Italo-Mycenaean vessels, although no petrographic analyses confirm this. Two vases set in a stone base were recovered in the east end of the structure, while other various local productions belonging to dinner and storage category were also found (Bernabò Brea and Cavalier 1980: 222–224; van Wijngaarden 2002: 217). This assemblage of imported and local wares was attributed domestic functions, such as food processing (van Wijngaarden 2002: 217). The concentration in this area of Aegean artefacts, recovered together with local productions, might yet indicate a particular function of this structure, possibly in relation to structure δ IV, which will be discussed later.

Hut δ IV is an oval structure measuring 10.30 m by 5 m—about five times larger than the contemporary ones—and situated within a rectangular enclosure (Bernabò Brea and Cavalier 1980: 225). A stone grinder was recovered from this structure, while the floor was covered by various local pottery sherds and 37 local miniature vases similar to those recovered in the nearby cremation cemetery (Bernabò Brea and Cavalier 1980: 230; Cavalier 1985–1986; Jung and Pacciarelli 2017: 187; Martinelli 2020: 79–80). Only three Mycenaean finds were recovered from hut δ IV: two fragments of Vapheio cups and one handle of a LH IIB goblet (Bernabò Brea and Cavalier 1980: 229). A small metal pin was also among the finds (Bernabò Brea and Cavalier 1980: 229). The peculiar layout of this building and the large concentration of pottery, among which miniature vessels, might suggest that it was employed for ceremonial functions (van Wijngaarden 2002: 217; Wardle 2004: 278). While Vianello (2005: 129) suggests that wares used in rituals were probably stored in this area, it has been calculated that this structure could host about 200 people standing, or more than 40 people sitting, indicating a public character of the building (Albore Livadie *et al.* 2003: 117; Martinelli 2020: 79).

Next to hut δ IV, was hut δ V, whose preservation has significantly been affected by modern works (Bernabò Brea and Cavalier 1980: 232–233). Seven Mycenaean finds were recovered from this structure, among which a LH IIA bridge-spouted jug and three semi-globular vases and carinated cups (Bernabò Brea and Cavalier 1980: 232–233). Impasto globular vases and carinated cups were also recovered from this structure (Bernabò Brea and Cavalier 1980: 232–233).

Evidence for hut δ VI is limited to a line of flat stones located next to the enclosure of hut δ IV, although finds include a MH fragment and various impasto fragments (Bernabò Brea and Cavalier 1980: 233–234). Hut δ VII had a quadrangular shape and excavations have identified a hearth in the south-eastern area (Bernabò Brea and Cavalier

1980: 234). Finds from this structure indicate two different occupation phases: the most recent one has shown local vessels together with a Mycenaean sherd (Bernabò Brea and Cavalier 1980: 234–235). The earliest phase has also provided an Aegean LM II–III cup fragment, together with various local cups and some spindle whorls (Figure 3.10; Bernabò Brea and Cavalier 1980: 234–235).

Hut δ VIII was located north-west of hut δ VII and was characterized by a circular shape with an entrance located south-east (Bernabò Brea and Cavalier 1980: 236–237). Excavations of the floor surface have recovered various animal bones mixed with what has been interpreted as kitchen waste (Bernabò Brea and Cavalier 1980: 236–237; van Wijngaarden 2002: 218). Pottery from this structure includes both Aegean imports, among which a Vapheio cup, and local productions, such as spindle whorls, jar fragments, a pithos, jugs and carinated cups (Bernabò Brea and Cavalier 1980: 236–237). The Mycenaean fragments from this area, including one belonging to a LH I jar, have been associated with everyday activities (Bernabò Brea and Cavalier 1980: 236–237).

The evidence for hut δ IX is scant, although it is possible to identify two circular layouts probably belonging to different occupation phases, the latter characterised by a much smaller perimeter (Bernabò Brea and Cavalier 1980: 237–238). One fragment of Mycenaean pottery was recovered together with a large number of impasto vessels, mainly bowls (Bernabò Brea and Cavalier 1980: 238–239). Excavations of hut δ X have identified half of the perimetral wall, about 50–60 cm high, indicating a long elliptical shape along an east–west axis (Bernabò Brea and Cavalier 1980: 239). The floor surface of this structure was on a much deeper level than the other huts, suggesting a possible earlier date within the Capo Graziano *facies* (Bernabò Brea and Cavalier 1980: 239). A significant amount of pottery was recovered from this structure, especially dining and storage wares, as well as three fragments of an LH I vase (Bernabò Brea and Cavalier

1980: 239–240). Various obsidian blades and production waste were also recovered on site, together with a flint point probably used as a tool for working obsidian (Bernabò Brea and Cavalier 1980: 241–242).

Hut δ XI is also characterised by a circular shape delimited by a stone wall (Bernabò Brea and Cavalier 1980: 241). A lump of yellow-reddish clay on top of some of the stone rubble was therefore interpreted as the walls of the hut (Bernabò Brea and Cavalier 1980: 241). A significant amount of Capo Graziano II pottery was recovered in association with this structure together with a small mortar (Bernabò Brea and Cavalier 1980).

Hut δ XII has been identified in the western area of the trench. This had an elongated shape along the north-west–south-east axis with the entrance facing southwest (Bernabò Brea and Cavalier 1980: 243–247). Like other contemporary structures, the floor surface of this hut was lower than the ground (Bernabò Brea and Cavalier 1980: 243–247). In the north-eastern area of this structure, earth displayed burnt traces and wasters were recovered, suggesting the presence of a pottery kiln (Bernabò Brea and Cavalier 1980: 243–247). Burnt traces expanded towards east, where a decorated *olla* containing burnt wheat was recovered together with a dried fig and a partially buried pithos (Bernabò Brea and Cavalier 1980: 243–247). Mycenaean pottery was found in the areas of the structure away from the kiln and in association with tools such as stone axes, needles and spindle whorls, indicating artisanal activities (Bernabò Brea and Cavalier 1980: 243–247).

Near structure δ XII, excavations identified the layout of hut δ XIII (Bernabò Brea and Cavalier 1980: 247–248). Next to one of the walls, a jar was recovered *in situ* on top of a stone slab and covered by a second one (Bernabò Brea and Cavalier 1980: 247–248).

A shoulder fragment of a large Aegean vase was recovered next to it (Bernabò Brea and Cavalier 1980: 247–248).

Hut δ XIV underwent a change, with the long sides being modified in a second occupation during the Capo Graziano II period (Bernabò Brea and Cavalier 1980: 248–250). Artefacts recovered from this structure include various impasto pottery, mainly of closed shape, as well as an *in situ* jar similarly to hut δ XIII (Bernabò Brea and Cavalier 1980: 248–250). Bone and stone tools were also found (Bernabò Brea and Cavalier 1980: 248–250).

Huts δ XV, δ XVI and δ XVII were all characterised by circular layouts with a lower floor surface (Bernabò Brea and Cavalier 1980: 250–252). While the pottery from the first two is limited to Capo Graziano fragments, excavations of hut δ XVII have recovered three LH I–II sherds, among which a kylix piece (Bernabò Brea and Cavalier 1980: 250–252).

Despite only part of the δ XVIII layout being identified, it appears that this structure had a rectangular shape (Bernabò Brea and Cavalier 1980: 252–253). Compared with the other huts, these walls were made of smaller stones put together in a less regular way than the other contemporary structures described so far (Bernabò Brea and Cavalier 1980: 252–253), which could possibly be associated with a non-residential function of the structure. Few Capo Graziano fragments were recovered from the floor surface (Bernabò Brea and Cavalier 1980: 252–253).

Near hut δ XVIII, excavations identified the circular layout of hut δ XIX (Bernabò Brea and Cavalier 1980: 253–254). While it is not certain whether these two structures were contemporary, if this was the case this circular hut was very small (Bernabò Brea and Cavalier 1980: 253–254). Artefacts recovered from this structure include both LH

I—II and impasto pottery, a fragment of a stone tool and a bronze awl (Bernabò Brea and Cavalier 1980: 253–254).

Hut δ XX had an elongated oval shape on the north-west–south-east axe (Bernabò Brea and Cavalier 1980: 254–255). Unlike the other structures, the floor of this hut was identified on the same level of the ground together with various Capo Graziano fragments (Bernabò Brea and Cavalier 1980: 254–255).

Only the southern part of structure δ XXI was excavated, revealing a lower floor surface as in the case of many other structures (Bernabò Brea and Cavalier 1980: 254–255). Excavations have uncovered two glass beads, one of which is amber coloured, probably all imported from the Aegean (Bernabò Brea and Cavalier 1980: 256; van Wijngaarden 2002: 224; Bellintani 2010b). Finally, excavations of hut δ XXII have identified a rounded shape from which fragments of Capo Graziano pottery were recovered (Bernabò Brea and Cavalier 1980: 257–258).

Overall, the Capo Graziano II settlement presents some clear divisions from a functional point of view. The northern part of the settlement was unfortunately less preserved and therefore more difficult to interpret, however only hut δ VIII and possibly hut δ XII, present a clear side entrance on the ground level, suggesting that all the other constructions could be entered from a higher platform (Bernabò Brea and Cavalier 1980: 513). The central part of the settlement was characterised by many assemblages which can be associated with everyday activities, such as weaving, food processing and storage. In the southern sector, two structures can be associated with a communal nature, that is δ I and δ IV. Although Aegean imports are widespread across the settlement, they seem to be concentrated in structure δ III and more generally around δ IV, where however only three fragments were found. Considering the peculiarity of structure δ IV, it is possible

that the concentration of Aegean artefacts recovered from hut δ III, were associated with the individuals frequenting hut δ IV and the activities conducted there.

3.2.2. Milazzese Settlement

The Milazzese *facies* (1500–1300 BC) on the Lipari acropolis is characterised by 19 structures, which generally were of small dimensions and oval shape which will be discussed below (Figure 3.11, Bernabò Brea and Cavalier 1980: 545–546; Martinelli 2020). In addition to the structures in the main trench, a short curvilinear wall associated with an oval-shaped Milazzese hut was identified during the excavations of trench AT (Bernabò Brea and Cavalier 1980: 266–267). Remains of a hut were found in trench F, while another oval hut belonging to this period was identified in trench AH and AH' (Bernabò Brea and Cavalier 1980: 266–267, 270, 283). Similarly to the Capo Graziano II structures, Milazzese huts do not have entrances on the ground level yet could be accessed through a higher opening with a small staircase to descend into the structure (Bernabò Brea and Cavalier 1980: 201, 548). Their building technique is different from the previous period, using mostly polygonal bricks laid down in a much more regular way than the Capo Graziano II structures (Bernabò Brea and Cavalier 1980: 547). Although there is no evidence for a violent destruction separating the Capo Graziano II *facies* from the Milazzese, the strata belonging to these periods can be clearly distinguished and the Milazzese material culture does not suggest a slow development from the Capo Graziano II culture (Bernabò Brea and Cavalier 1980: 546). However, the end of this period seems to be marked by a fire destruction across the settlement, resulting in the identification of various finds still *in situ* (Bernabò Brea and Cavalier 1980: 548; Wardle 2004: 135). This destruction has mythically been associated with the arrival of the Ausonians, a population coming from the southern part of the Italian peninsula, led by their king Auson and son Liparo, from which the island takes its name, as narrated by Diodorus Siculus (V. 7–9).

The smallest of these structures was hut γ I, which has however provided a significant quantity of materials, including various terracotta spindle whorls, a bone tool, and a bronze ring (Bernabò Brea and Cavalier 1980: 163–168; van Wijngaarden 2002: 219). Ceramic vessels, among which many cups, include both decorated impasto and Mycenaean pottery dating LH IIIA2–LH IIIB (Bernabò Brea and Cavalier 1980: 164–168). Overall, the small dimensions of this building and the various pottery finds recovered from it might indicate that domestic activities, including spinning, were conducted on site (Alberti 2017: 325).

Structure γ II developed on top of the previous hut δ VII (van Wijngaarden 2002: 219) and was mostly preserved, showing an oval layout built with polygonal blocks of different dimensions where the major ones are located at the base, like some of the structures recovered at Panarea (Bernabò Brea and Cavalier 1980: 168). The layout of this structure underwent some changes, indicating two different phases of occupation (Bernabò Brea and Cavalier 1980: 169). Excavations have identified various finds on a north-south axis, among which a mortar stone and a large rectangular slab and a stone grinder with worn signs (Bernabò Brea and Cavalier 1980: 169). None of the artefacts associated with this structure were found *in situ* and included local decorated and impasto vessels, pottery fragments imported from across peninsular Italy, and Mycenaean pottery, among which a Vapheio cup (Bernabò Brea and Cavalier 1980: 169–174). Fragments of miniature vessels and a Mycenaean jug were recovered from both this structure and the one located north-west of it, called γ III (Bernabò Brea and Cavalier 1980: 169–174).

Structure γ III was also oval but did not show any specific criteria adopted in the construction, indicating a minor care compared with the other huts (Bernabò Brea and Cavalier 1980: 174). Excavations from its interior have identified a stone slab next to a grinder on the floor of the hut (Figure 3.12), as well as terracotta spindle whorls (Bernabò

Brea and Cavalier 1980: 174–178). Aegean finds include the only possible stirrup jar fragment recovered from Lipari and a fragment of a LH IIIA Mycenaean proto-φ figurine together with an anthropomorphic local version (Figures 3.13–14; Bernabò Brea and Cavalier 1980: 174; van Wijngaarden 2002: 219–221). The recovery of both Aegean and local anthropomorphic figurines from the same context occurs also at Scoglio del Tonno and might indicate that they were employed in local cults (Quagliati 1900: 419; van Wijngaarden 2002: 221; Wardle 2004: 279, 308). Vessels from this structure include Apennine imports and local productions mostly belonging to the dinner and storage category, while most of the Mycenaean pottery was attributed domestic functions (Bernabò Brea and Cavalier 1980: 175–178). Considering that the only figurines from Lipari were those recovered from this structure, it can be argued that it was used for ritual purposes (Bernabò Brea and Cavalier 1980: 174; van Wijngaarden 2002: 219–221; contra Wardle 2004: 279–280). Alberti (2017: 325) argues against the identification of γ III as a house, including it in a cluster of "utilitarian structures" comprising huts γ I and γ II, although, size permitting, the two definitions are not mutually exclusive (Iacono 2019: 101).

East of γ III, excavations have identified three parallel walls which have been associated to two different structures. The first two walls were perpendicular to hut γ VI, which will be later discussed, and surrounded a gravel floor surface, leading to the identification of structure γ IV (Bernabò Brea and Cavalier 1980: 178–180). Because of the small dimensions of this structure and mostly due to its layout, the excavators have identified structure γ IV as a storeroom rather than a dwelling (Bernabò Brea and Cavalier 1980: 178–180). At the southern edge of the structure, there was a small stone basin, while the presence of both an external hearth and a grinder suggest that food processing was also conducted in association with this building (Bernabò Brea and Cavalier 1980:

178–180). Finds from this structure consist of pottery of both Aegean and local origin (Bernabò Brea and Cavalier 1980: 178–180). The third and most eastern wall is all the structural evidence identified for structure γ V (Bernabò Brea and Cavalier 1980: 180). Fragments of Mycenaean and local decorated pottery have been recovered from it (Bernabò Brea and Cavalier 1980: 180).

Structure γ VI was furnished with a northern annex or courtyard, characteristic of the Milazzese culture (Bernabò Brea and Cavalier 1980: 180). The walls were about 60–65 cm wide and made of regular courses which seem to have been reinforced at the base with either smaller stones or soil (Bernabò Brea and Cavalier 1980: 180). According to Alberti (2017: 312), excavations indicate that the superstructure was made of stones, while on the floor surface various finds were recovered. The northern wall opened onto an additional room completely paved and from which a mortar was recovered; it is uncertain whether this room was roofed (Bernabò Brea and Cavalier 1980: 181–182). Among the finds from this structure, imports include Mycenaean pottery dating from LH II to LH IIIB, as well as an Apennine bowl, a cup and a jar from the Italian mainland (Bernabò Brea and Cavalier 1980: 181–186). A wide variety of local pottery productions was also found, including some decorated with incisions (Bernabò Brea and Cavalier 1980: 181–186). Finds from the annex (Figure 3.15) consist mainly of local pottery in association with a fragment of imported impasto and Mycenaean pottery (Bernabò Brea and Cavalier 1980: 181–186). These 13 Mycenaean finds include an LH IIIB miniature jug and a carinated cup unique to Lipari (Bernabò Brea and Cavalier 1980: 181–186). The concentration of these unusual finds might indicate that the annex was used for activities different from those in the main room, as well as that people associated with hut γ VI had access to Aegean imports (van Wijngaarden 2002: 223). Overall, this hut stands out in terms of dimensions, layout, building techniques and finds recovered from it, with

its pottery characterised by a high variety in terms of origin and type, and the occupants of such a structure might have also played a different role in the society (Wardle 2004: 280).

Part of a wall belonging to a new structure, called hut γ VII, was identified on the western edge of the trench and could not be completely excavated (Bernabò Brea and Cavalier 1980: 186). The wall fragment is curvilinear, suggesting an oval layout, and finds associated with it include both local and Mycenaean pottery (Bernabò Brea and Cavalier 1980: 187).

Excavations have identified part of the western wall of structure γ VIII, indicating an oval shape (Bernabò Brea and Cavalier 1980: 181–186). The floor surface was made of beaten earth and small gravel (Bernabò Brea and Cavalier 1980: 188–189). Structure γ VIII has also provided evidence for a spindle whorl as well as both local impasto and Mycenaean pottery dating to LH II–IIIA1 period (van Wijngaarden 2002: 221). Among the Aegean vessels recovered on site there are two LH IIIA2–LH IIIB kylikes, providing evidence for drinking practices (van Wijngaarden 2002: 221).

Very little is preserved of the perimetral wall of structure γ IX, which seems to have an oval outline (Bernabò Brea and Cavalier 1980: 195–196). Finds from within this structure consist in simple and decorated local pottery as well as Mycenaean fragments (Bernabò Brea and Cavalier 1980: 195–196). North of γ IX, hut γ X is indicated only by a wall less than one meter long (Bernabò Brea and Cavalier 1980: 198).

Structure γ XI is an oval hut of large dimensions (Bernabò Brea and Cavalier 1980: 198–200). On its eastern side, the hut is interrupted by a wall running transversally to the long axis (Bernabò Brea and Cavalier 1980: 547). The base of this wall was built using large regular blocks, resembling ashlar masonry, on top of which smaller bricks

were laid down (Bernabò Brea and Cavalier 1980: 199). Finds from this structure are all local pottery, mainly cups (Bernabò Brea and Cavalier 1980: 200). Structure γ XII has seven different sides which made it different from all the other structures in terms of layout (Bernabò Brea and Cavalier 1980: 201). The northern and south-eastern sides were made of pebbled stones, which are not particularly suitable for supporting a roof and other structural purposes (Bernabò Brea and Cavalier 1980: 201). However, in the northern and central areas of the structure, excavations have identified the floor surface, which was significantly below the ground level (Bernabò Brea and Cavalier 1980: 201). A stone axe was recovered together with local pottery, mostly bottles, and Mycenaean vessels dating to LH II–LH III, reflecting similar finds recovered from the other contemporary structures (Bernabò Brea and Cavalier 1980: 204–206).

Excavations uncovered only part of structure γ XIII, whose walls show a precise building technique employing regular courses on the top (Bernabò Brea and Cavalier 1980: 207). Unlike hut γ XII, the floor surface of this structure was levelled with the ground floor (Bernabò Brea and Cavalier 1980: 208). Both Aegean, Apennine and local pottery—decorated and non—was recovered outside this structure but not from its interior (Bernabò Brea and Cavalier 1980: 209).

Structure γ XIV is represented only by a 3-metre wall belonging to the south-western perimeter (Bernabò Brea and Cavalier 1980: 209). This suggests that hut γ XIV was an oval of large dimensions, built with large blocks which however were irregularly laid down (Bernabò Brea and Cavalier 1980: 209). Excavations identified a floor surface of beaten earth, possibly partially paved with small slabs, on top of which fragmented local vessels were found (Bernabò Brea and Cavalier 1980: 209). A fragment of a LH II cup was also recovered (Bernabò Brea and Cavalier 1980: 210).

Structure γ XV is a rounded hut built using regular courses and showing a significant care in the construction (Bernabò Brea and Cavalier 1980: 210). Within the structure perimeter it was possible to recover the collapsed walls of the hut, below which a floor surface made of beaten earth and sea gravel was identified (Bernabò Brea and Cavalier 1980: 210–211). Fragments of local decorated and everyday pottery was recovered from this structure together with two smoothing tools made out of stone (Bernabò Brea and Cavalier 1980: 211).

Structure γ XVI was a hut of large dimensions and the preserved walls are built with large regular courses (Bernabò Brea and Cavalier 1980: 212). The floor surface was of pebbles and various fragments of local pottery, both decorated and non, were recovered from inside the hut, together with six spindle whorls, two clay horns and a stone smoothing tool (Bernabò Brea and Cavalier 1980: 212–213).

Only part of a wall was left of structure γ XVII, which was built using regular polygonal blocks, and to which only five fragments of local pottery were associated (Bernabò Brea and Cavalier 1980: 213–214). Hut γ XVIII was also badly preserved and the excavations have identified only parts of its layout, which had probably an oval shape (Bernabò Brea and Cavalier 1980: 214). Local dining and storing wares were recovered from this structure (Bernabò Brea and Cavalier 1980: 214).

Hut γ XIX was on the western limit of the trench and only a small section of it was excavated (Bernabò Brea and Cavalier 1980: 215). It was built using small quadrangular blocks laid down in a regular way, indicating a significant care in the building structure (Bernabò Brea and Cavalier 1980: 215). A kylix fragment was recovered from this structure together with local pottery fragments (Bernabò Brea and Cavalier 1980: 215).

Overall, structures of big dimensions—γ XI and γ XII—seem to be concentrated in the northern part of the settlement. Moving to the southern part of the settlement, the largest structure is γ VI which is characterised by a higher concentration of Aegean artefacts. This building is situated next to a cluster of smaller structures which were probably employed for different activities, from ritual to domestic production of textiles, possibly in connection to γ VI.

3.2.3. Ausonian I Settlement

Unlike with the previous *facies*, the transition to the Ausonian I period at Lipari (1300—1150 BC) does not show any continuity and has often been attributed to the arrival of exogenous people from the southern part of the Italian peninsula (Bernabò Brea and Cavalier 1980: 705–713; Cavalier 2004; Martinelli 2020: 144–149). Changes in the material culture of the Milazzese and Ausonian I *facies* provide support for the mobility of peoples across Southern Italy (Martinelli 2020: 145), as will be better discussed in the section on material culture below. There is no evidence for occupation dating to this period outside the acropolis of Lipari, where 16 Ausonian I structures were identified, including paved area β XII (Figure 3.16, Bernabò Brea and Cavalier 1980: 559). However, only the outline of 12 of these can be seen, all showing larger dimensions than those in the previous periods (Bernabò Brea and Cavalier 1980: 560). Other Ausonian I huts were also identified in trenches B, F, and AH' (Bernabò Brea and Cavalier 1980: 259–265, 269, 287). Finally, in addition to the two cremation urns identified within structure β I and outside hut β V, three more buried *situlae* seem to have been used as graves (Bernabò Brea and Cavalier 1980: 563). The Ausonian I settlement was destroyed by a fire, traces of which have been identified during excavations (Bernabò Brea and Cavalier 1980: 587–588).

Excavations have identified the perimeter of hut β I, which had an oval shape and measured about 7.50 m by 10.50 m (Bernabò Brea and Cavalier 1980: 112). The entrance was located on the eastern side and was preceded by a paved way (Bernabò Brea and Cavalier 1980: 113). While the internal wall displays a high precision in the way stones and pebbles are laid down, the external façade is very rough (Bernabò Brea and Cavalier 1980: 112–113). This difference has been explained by the fact that the structure was partially buried, with the floor surface significantly below the ground level (Bernabò Brea and Cavalier 1980: 113). The floor was paved with irregular slabs on top of small stones (Bernabò Brea and Cavalier 1980: 113). Partially buried in the floor surface there was an impasto bucket interpreted as a cremation burial: within it, traces of burnt bones were identified together with small finds, such as a folded bronze foil, a bronze rod fragment, ten white glass beads together with an amber one (Bernabò Brea and Cavalier 1980: 114). This assemblage resembles finds from the Ausonian II tombs in the necropolis excavated in Piazza Monfalcone, located about 150 m east of the acropolis, suggesting the interpretation of these items as grave goods (Bernabò Brea 1960: 161; Bernabò Brea and Cavalier 1980: 114). Moreover, it seems that the cremation tradition attested in Ausonian II period was already present on the acropolis in the Ausonian I (Bernabò Brea and Cavalier 1980: 114).

North of hut β I, there was a wall built using large blocks, on the northern side of which excavations identified a floor surface made of beaten earth mixed with gravel and charcoal (Bernabò Brea and Cavalier 1980: 115). This evidence was interpreted as belonging to a structure, called β II, the layout of which has not been preserved (Bernabò Brea and Cavalier 1980: 115). The excavators suggested that the small wall fragment identified north of it could have been the opposite side of this structure (Bernabò Brea and Cavalier 1980: 115). While most of the pottery fragments from this structure were of

local manufacture, among the finds there is part of a decorated urn imported from Northern Italy (Bernabò Brea and Cavalier 1980: 116). Immediately west of the northern wall of hut β II, two walls meet forming a corner of a structure identified as hut β III, oriented in the same directions of huts β I and β II (Bernabò Brea and Cavalier 1980: 116). Finds associated with this structure consist in local pottery fragments, among which was a spindle whorl (Bernabò Brea and Cavalier 1980: 117).

The good preservation status of structure β IV shows an oval layout with the entrance facing north (Bernabò Brea and Cavalier 1980: 122; van Wijngaarden 2002: 223). Perpendicular to the doorway there was a paved pathway, referred to by the excavators as a dromos, flanked by 7-metre wall (Bernabò Brea and Cavalier 1980: 122; van Wijngaarden 2002: 223). Excavations have identified three different occupation phases within this structure, to which two later phases dating to Ausonian II need to be added (Bernabò Brea and Cavalier 1980: 124–126; van Wijngaarden 2002: 223). Mycenaean pottery has been associated with both the earliest and the latest phase of Ausonian I occupation of β IV, in both cases recovered together with local impasto and stone bowls (Bernabò Brea and Cavalier 1980: 126–129; van Wijngaarden 2002: 223). Ten Mycenaean pottery fragments, mostly belonging to drinking shapes, were found concentrated in the dromos together with two fragmented Sicilian vessels and possibly a Sardinian one (Bernabò Brea and Cavalier 1980: 134, 566–568; van Wijngaarden 2002: 223).

Hut β V is probably the largest structure dating to the Ausonian I period, measuring 10.4 m by 6.40 m (Bernabò Brea and Cavalier 1980: 138). This hut had an elliptical shape with the entrance initially facing west but later closed and opened on the north side (Bernabò Brea and Cavalier 1980: 138–139). This new entrance was approached by a paved way and, on the eastern corner created with the wall, there was a

small stone basin (Bernabò Brea and Cavalier 1980: 140). The lower face of the western wall displayed some vertical slabs covering the bottom, reflecting a pattern identified in a Capo Graziano hut from Filicudi (Bernabò Brea and Cavalier 1980: 140). Immediately outside the western wall of hut β V, excavations have identified a large, cordoned bucket partially buried in the floor surface, within which there were a bronze fragment and a glass bead (Bernabò Brea and Cavalier 1980: 140). The excavators have interpreted this assemblage as a cremation urn deposited outside the hut as common in the later Ausonian II layers (Bernabò Brea and Cavalier 1980: 140). A large hearth was identified in the centre of the structure (Bernabò Brea and Cavalier 1980: 140). Like hut β IV, three different floor surfaces have been identified also in hut β V (Bernabò Brea and Cavalier 1980: 140–147). While many pottery finds were recovered from this hut, among which some spindle whorls, there is no evidence for Aegean imports (Bernabò Brea and Cavalier 1980: 140–147).

Only the northern half of hut β VI has been preserved, which indicates that this structure had a rectangular shape with rounded corners. Walls are made of regular courses and indicate a high care in the building technique (Bernabò Brea and Cavalier 1980: 149–150). The ground level was higher than the floor surface, from which various fragments of local painted and plain pottery were recovered (Bernabò Brea and Cavalier 1980: 151–152).

Excavations in the north–west corner of the trench have uncovered various wall fragments, which the excavators have associated with three different structures, named huts β VII, β VIII and β IX (Bernabò Brea and Cavalier 1980: 152). One of the walls identified as belonging to hut β VII is covered by part of β IX, which was built in a later moment (Bernabò Brea and Cavalier 1980: 152). All these walls have been associated with local handmade pottery finds identified as belonging to the Ausonian I period

(Bernabò Brea and Cavalier 1980: 152–155). A small stone bowl was recovered in association with β VIII (Bernabò Brea and Cavalier 1980: 153).

Structure β X is not particularly big but it differs from the contemporary structures for its rectangular layout, whose short south-eastern side extends into another smaller room (Bernabò Brea and Cavalier 1980: 153–155; Wardle 2004: 290). Excavations have identified the entrance to this structure in the north-western corner, at a slightly higher level than the floor surface of the hut (Bernabò Brea and Cavalier 1980: 155). Finds from β X consist of both Aegean pottery, including LH IIIB bowls and vases, and local handmade pottery, in particular mugs (Bernabò Brea and Cavalier 1980: 155–156). While the stratigraphy was particularly disturbed for all the other Aegean finds recovered in association with the Ausonian I structures, the recovery context was well preserved for structure β X. Moreover, these fragments were larger than 5.5 cm^2, suggesting that they were recovered in primary deposition (Schiffer 1983: 679–680; van Wijngaarden 2002: 223).

West of structure β X, a curvilinear wall fragment measuring 70 cm was associated with a potential circular structure called β XI (Bernabò Brea and Cavalier 1980: 156). More westward, there is a paved area called β XII (Bernabò Brea and Cavalier 1980: 156–157). Various pottery finds were recovered in association with this paved area, mainly locally handmade pottery, with an imported LM IIIC sherd and some painted local fragments (Bernabò Brea and Cavalier 1980: 157–158). Some bronze finds were also recovered, among which a decorated pin and a ring, as well as a stone axe (Bernabò Brea and Cavalier 1980: 158–159).

A short fragment of wall coming out of the western trench edge was identified north of structure β VI (Bernabò Brea and Cavalier 1980: 159). In the area included by this curvilinear wall, excavations have identified a paved floor surface, indicating this

complex as the remains of a structure, called β XIII (Bernabò Brea and Cavalier 1980: 159). From this floor surface, excavations recovered many locally made mug fragments (Bernabò Brea and Cavalier 1980: 160).

Evidence for hut β XIV is limited to a curvilinear wall fragment located between huts β IV and β V (Bernabò Brea and Cavalier 1980: 160). Hut β XV is also represented only by a wall fragment north of the dromos of β IV (Bernabò Brea and Cavalier 1980: 160–161). This was oriented on a south-west–north-east line and was built using large blocks (Bernabò Brea and Cavalier 1980: 161). Another wall fragment was identified coming out from the eastern edge of the trench, near the later structures γ VIII and δ XII (Bernabò Brea and Cavalier 1980: 161). This wall, identified as hut β XVI, consisted in a single line displaying large blocks on the north-west façade and smaller bricks on the south-east side (Bernabò Brea and Cavalier 1980: 161).

The Ausonian I structures are concentrated in the northern part of the settlement. Excavations have identified various occupational phases for most of the structures, sometimes with significant rearrangements of the internal layout, as in the case of structure β V (Bernabò Brea and Cavalier 1980: 560–563). Overall, the finds recovered seem to suggest that everyday activities, such as weaving or food preparation, were conducted across the acropolis, although there are some structures standing out for both their layout and the finds associated with it, as in the case of hut β IV and β X, where imports seem to be concentrated. While Ausonian I structures generally have dimensions able to host large groups of people, the limited distribution of Aegean artefacts combined with the presence of various personal ornaments suggests the presence of a restricted groups of individuals, probably having a facilitated access to resources, and differentiating themselves from the rest of the population (van Wijngaarden 2002: 223).

3.2.4. Ausonian II Settlement

The Ausonian II period at Lipari goes from 1150 BC to 900 BC (Martinelli 2020: 157) and, although the final date is later than the timeframe considered in this thesis, this period will be included as the Ausonian II structures were built in the chronological span considered. Unlike the previous destruction events, the fire destruction of the Ausonian II settlement has not been associated with the arrival of any exogenous group (Martinelli 2020: 167). After this event, the acropolis was completely abandoned and remained deserted until the foundation of the Greek polis between the end of the 7th and the beginning of the 6th century BC (Martinelli and Mastelloni 2015). It should be disclosed that the structures associated with the Ausonian II period, being the most superficial of the BA layers, have particularly been affected by later disturbances, spanning from the Greek period to modern days, and only small wall fragments are visible for most of the buildings (Bernabò Brea and Cavalier 1980: 587–588). Ten huts belonging to this period have been identified in the main trench, although at least other six have been identified across the acropolis in trenches AG, AH–AH', D and F (Bernabò Brea and Cavalier 1980). The ten Ausonian II buildings in the main acropolis trench will now be discussed in turn (Figure 3.17).

Hut α I is identifiable by a 2.60 m long wall on a north–south axis (Bernabò Brea and Cavalier 1980: 24–26). It displays a timber structure filled with stones and soil (Figure 3.18; Bernabò Brea and Cavalier 1980: 24–26). Excavations suggest that the hut was partially buried and have identified four different floor surfaces made of beaten soil and stones (Bernabò Brea and Cavalier 1980: 24–26). On top of each floor, it was possible to identify a hearth located on the same location through time and surrounded by charcoal and organic materials associated with cooking activities (Bernabò Brea and Cavalier 1980: 24–26). Artefacts recovered from this structure include a significant amount of

local pottery; a bronze brooch was recovered from the earliest floor of the hut (Bernabò Brea and Cavalier 1980: 24–29).

Hut α II has an elliptical shape, with the long sides, measuring about 15.60 m, on the east–west axis (Bernabò Brea and Cavalier 1980: 30). The entrance of the hut was located in the north-east corner, where a paved and covered portico was probably located, as suggested by fragments of walls on the southern and eastern side of this (Bernabò Brea and Cavalier 1980: 31). This hut was built employing a timber structure stuck deep in the ground and filled with soil and stones. A wall running north–south in the western section of the hut created a separate room, where a hearth slab was identified with many fragments of vessels and food remains (Bernabò Brea and Cavalier 1980: 40–41). Hut α II is characterised by a significant amount of finds of different materials. Overall, about 200 vases were recovered from this structure, 12 of which have been identified as Nuragic imports, while one a LH IIIB/C fragment (Bernabò Brea and Cavalier 1980: 40–41; Cavalier and Depalmas 2008). Clay spindle whorls, weights and hooks were also recovered from this area (Bernabò Brea and Cavalier 1980: 42–55). Metal artefacts are also abundant, including many brooches and personal ornaments, as well as a ring (Bernabò Brea and Cavalier 1980: 42–55). In terms of bone artefacts, it is worth noticing worked antlers and a decorated comb (Bernabò Brea and Cavalier 1980: 42–55). Finally, worked stones consist in various pebbles, smoothers and grinders, as well as some decorated pumice (Bernabò Brea and Cavalier 1980: 42–55).

Hut α III was adjacent to the western wall of hut α II. The only section of wall visible indicates that was on a north-south axis and that adopted the same building technique of the other contemporary huts employing timber, soil and stone (Bernabò Brea and Cavalier 1980: 69–70). Various storage jars, both handmade, wheel thrown, plain and

painted, were recovered *in situ* from this structure, including a Nuragic import (Bernabò Brea and Cavalier 1980: 70).

Hut α IV also developed from α II with a wall perpendicular to its northern side. This wall was built as part of various restoration activities on hut β VI dating to the previous period and destroyed during the fire marking the end of Ausonian I period (Bernabò Brea and Cavalier 1980: 71). Hut α IV had a rectangular shape with a short side adjacent to hut α II and the entrance on the eastern wall (Bernabò Brea and Cavalier 1980: 72). Excavations seem to indicate that the floor surface of α IV was lower than β VI and a hearth slab was recovered in the centre of the hut (Bernabò Brea and Cavalier 1980: 74). A large amount of pottery was recovered from this structure, ranging in terms of shape, technique—both wheel thrown and handmade, decoration–geometric, feathered style, as well as Sardinian imports (Bernabò Brea and Cavalier 1980: 74–79). Other finds include some spindle whorls, a bone plaque and two stone grinders (Bernabò Brea and Cavalier 1980: 77–78).

Hut α V is only represented by a wall fragment but various vessels were associated with it, mostly belonging to the storage and dining category (Bernabò Brea and Cavalier 1980: 79–84). Other pottery finds include a Nuragic import and some spindle whorls, to which some pebbles and a decorated bone disc need to be added (Bernabò Brea and Cavalier 1980: 82–84).

Hut α VI probably exploited the Ausonian I architecture: between structures β IV and β V, a 3.45 m long fragment of wall on a north–south axis has been identified as belonging to hut α VI, more specifically to the long western side (Bernabò Brea and Cavalier 1980: 91). The apse of hut α VI was identified towards the north, outlining the elliptic shape of this structure (Bernabò Brea and Cavalier 1980: 92). Its entrance was facing northeast and was flanked by two large blocks outdoor, as in a dromos or a small

atrium (Bernabò Brea and Cavalier 1980: 92). Both wall sections were built adopting a timber structure (Bernabò Brea and Cavalier 1980: 92). The majority of finds from this structure is handmade dining and storage pottery, however two vases from Sardinia and around 15 slipped or decorated fragments were also recovered (Bernabò Brea and Cavalier 1980: 94–95). A stone grinder, a glass bead and a clay hook with multiple hands can also be included among the finds from this structure (Bernabò Brea and Cavalier 1980: 95).

A long straight wall running parallel to the long sides of hut α II and almost touching to the north the apse of hut α VI can be identified with structure α VII (Bernabò Brea and Cavalier 1980: 95–96). The building technique used for this wall is the same as those of the contemporary structures and the fact that the northern face of this was very irregular suggests that the hut was partially buried and developed south of this (Bernabò Brea and Cavalier 1980: 96). On the floor surface made of beaten earth, excavations have recovered finds very similar to the other structures, though no imports were identified (Bernabò Brea and Cavalier 1980: 98–99).

Hut α VIII is represented only by a wall running on a north-south axis almost on top of the earlier β IV dromos and built employing a timber structure, stones and soil (Bernabò Brea and Cavalier 1980: 99–101). Like the other Ausonian II structures, only the eastern facade of this wall was well defined and hence interpreted as the internal face of a partially buried structure developing eastwards (Bernabò Brea and Cavalier 1980: 99–101). Four assemblages of large vases were found *in situ* on the floor surface associated with this hut (Bernabò Brea and Cavalier 1980: 101–102). Other pottery finds from this structure include bowls and cups, as well as some spindle whorls and an Aegean-type fragment dating to LH IIIC (Bernabò Brea and Cavalier 1980: 103–105).

Hut α IX is represented only by a very short fragment of wall located on top of the earlier structures β VII, β VIII and β IX (Bernabò Brea and Cavalier 1980: 105–106). Various pottery fragments were found in association with this structure, including some decorated wheel made pieces (Bernabò Brea and Cavalier 1980: 106). Finally, a 1.70 m long fragment of wall associated with hut α X was identified in the northern part of the trench, running parallel to hut α VIII and α II (Bernabò Brea and Cavalier 1980: 106). According to the excavators, the hut probably developed northwards as it is possible that a timber structure would have been present on the inner side of the wall (Bernabò Brea and Cavalier 1980: 106). On the floor surface, some locally produced pottery was recovered together with two bronze brooches (Bernabò Brea and Cavalier 1980: 107).

Overall, Ausonian II structures are different from the earlier phases for both their bigger dimensions, quadrangular shape, and building technique, as they were made of dry-stone walls furnished with a timber structure to support the roof trusses. The major destruction between the Ausonian I and II settlements is thus associated with the arrival from Southern Italy of peoples who however had already been interacting with local inhabitants (Martinelli 2020: 153). These structures were probably used as dwellings and for everyday domestic activities. It could be argued that the large hut α II was associated with individuals who differentiated themselves from the rest of the population as the assemblages recovered from this structure characterised it both in terms of quantity and typology of artefacts. From an archaeological point of view, the Ausonian II *facies* is very peculiar. The aforementioned limited structural evidence is hindered by the significant quantity of artefacts and material evidence recovered, much larger in number than the previous periods, and that can be associated with an active occupation of the acropolis (Bernabò Brea and Cavalier 1980: 587).

3.3. Material Culture, Technologies, and Workshops

Excavations of the structures presented above have recovered an outstanding variety of artefacts in terms of materials, style, provenance and technique. Lipari provides a particularly good opportunity for analysing the finds recovered since, unlike other contemporary sites, the context was well preserved (Iacono 2019: 100). The section below will analyse these artefacts, according to their materials, to identify how the presence of Lipari along the main Mediterranean networks and external interactions have influenced the artefacts assemblage as well as local production.

3.3.1. Pottery

A large variety of pottery were recovered from BA Lipari, both locally produced and imported from across the Mediterranean. Among these, Aegean finds play an important role, making of Lipari the only site in the central Mediterranean where the amount of Aegean pottery recovered indicates a continuity of interactions from MH to the LH IIIC period (Figure 3.19; Vagnetti 1983: 174; Wardle 2004: 204). About 320 Aegean vessels have been recovered across the island of Lipari, which is not particularly impressive compared with other sites in Italy like Roca Vecchia, Broglio di Trebisacce, Scoglio del Tonno or Vivara (van Wijngaarden 2002; Vianello 2005). However, the quantity of Aegean pottery recovered in association with the Capo Graziano II *facies* goes beyond sporadic contacts, indicating the existence of organized interactions (Bernabò Brea and Cavalier 1980: 514; Doonan 2001: 175). Moreover, these MH bowls and cups, characterised by a rounded body, have been identified in various Proto-Apennine contexts at Vivara, Punta Le Terrare and Roca (Jones *et al.* 2014: 60). In Lipari, all of the Aegean pottery associated with this period seems to have been recovered from the acropolis area (Bernabò Brea and Cavalier 1980: 515). Among the earliest Aegean artefacts, there are various fragments that can be associated with Minoan and Cycladic pottery tradition,

indicating early interactions with the material culture of Crete and the Cyclades, as well as with the Greek mainland (Bernabò Brea and Cavalier 1980: 515; Vianello 2005). There is no evidence for Cypriot, Canaanite or Levantine imports in any of the periods considered, which have however been recovered across Sardinia, suggesting the existence of different trading networks across the Mediterranean (Vianello 2005; 200a: 11; Russell and Knapp 2017).

Petrographic examinations and spectrometry have been conducted on both local and imported fragments to verify their origin, with results confirming the identification of both Aegean ad Nuragic imports (Williams and Levi 2008; Brunelli *et al.* 2013; Jones *et al.* 2014: 237–241). However, the sample was very small and only ten Aegean fragments have been analysed (Jones *et al.* 2014: 237–241). While the number of analyses conducted is too low for generalising the correct interpretation of Aegean vessels as such, the fact that all of the Aegean imports analysed have been confirmed supports their correct initial interpretation. Nonetheless, Wardle (2004: 293) argues that some of the Aegean-inspired fragments which have not been analysed were locally produced and can be identified by a less lustrous fabric and by a peculiar use of Mycenaean motifs, although this should apply only to later periods. Vianello (2008a: 20) argues that some of the LH IIIB2–LH IIIC Aegean fragments were produced in the southern Italian peninsula and imported to Lipari, although no chemical analysis can support this. Overall, imports do not completely disappear, continuing and preserving their high standard even after the collapse of the Aegean palatial societies (Dawson and Nikolakopoulou 2020: 172).

In the Capo Graziano II period, local productions were predominant, and a pottery workshop was identified in the north-west corner of hut δ XII, where some kiln waste was recovered (Bernabò Brea and Cavalier 1980: 517). A bowl containing a lump of local clay, probably to be used for production, was found in the same structure (Figure 3.20;

Bernabò Brea and Cavalier 1980: 517; Levi *et al.* 2019: 56–57; Martinelli 2020: 80). Two large lumps of clay were recovered in two trenches on the acropolis associated with the Capo Graziano II *facies* (Bernabò Brea and Cavalier 1980: 513–514). These large clay lumps were completely foreign to the geology of the Aeolian islands but imported to Lipari from Sicily (Bernabò Brea and Cavalier 1980: 364, 513–514). Generally, very few LBA pots produced on Lipari employed local clay, preferring instead the smoother Sicilian clay tempered with volcanic elements from the Aeolian islands (Bernabò Brea 1976–1977: 37; Bernabò Brea and Cavalier 1980: 564; Williams and Levi 2008). Bernabò Brea (1976–1977: 38; Bernabò Brea and Cavalier 1980: 514) suggests that this imported clay was stored in underground pits to keep it fresh for employing with either pottery or for building purposes. Despite the limited employment of local clay, the pottery production on Lipari must have been of a certain importance as some Capo Graziano wares recovered on Vivara have been attributed an origin from Lipari (Jones *et al.* 2014: 200) thus suggesting that pottery produced on Lipari was being exported (Levi *et al.* 2019; Martinelli *et al.* 2021: 36).

The so-called Milazzese culture, widespread across the coast of Northern Sicily and the other Aeolian islands, combines elements from both the Apennine and the Thapsos culture, such as the large pedestal, bowls and decorations with ribs (Bernabò Brea and Cavalier 1980: 548–550; Wardle 2004: 133). Shapes characteristic to this *facies* can be divided into storing, cooking, and dining vessels. Storing vessels are six-handled pithoi for food and *ollae* for liquids, cooking ware are mostly represented by trays, while jugs decorated with white incisions and ring-shaped supports for vases belong to the dining vessels category (Bernabò Brea and Cavalier 1980: 552–557). Clay items also include hooks with multiple arms, possibly used for hanging vases, and various horns (Figure 3.21), usually attributed a symbolic meaning and associated with fertility because

of their phallic resemblance (Leighton 1999: 108; Martinelli 2020: 132–133). Clay horns artefacts started appearing across Sicily starting from the Late Copper Age and became common in the MBA domestic contexts as ritual items, like at Montegrande or Ustica (Lukesh 1995: 56–57; Castellana 1998: 30, 180–196; Leighton 1999: 108). In terms of production, the Milazzese period sees the introduction of new fabrics, pottery forms and decorative motifs that suggest an opening towards different cultures (Levi *et al.* 2020: 20–23).

Pottery finds from the Milazzese period are often characterised by signs or potters' marks impressed on clay before firing (Bernabò Brea and Cavalier 1980: 549). The marks identified at Lipari can be divided into six different categories: points, crosses, circles, metopes, frames, and geometric (Figure 3.22; Martinelli 2020: 98–100; Martinelli and Levi 2021). These marks have been identified on pottery belonging to the Milazzese culture recovered across various Aeolian islands and they tend to be located on areas less visible, such as vase bottoms, while pithoi usually bear these impressions on the shoulder (Bernabò Brea and Cavalier 1968: 219–279). It should be noted that on Lipari these marks appear also on a clay horn and on three loomweights and are therefore not limited to vases (Bernabò Brea and Cavalier 1968: 259). The function of these marks has been widely debated in the scholarship. While points are usually associated with a numeral meaning, the others are interpreted as graphic representations and seals' impressions because of their round or rectangular shape (Bernabò Brea and Cavalier 1968: 222; Martinelli 2020: 98–100). However, a purely decorative nature of these marks is not accounted as they are usually engraved in areas of the artefacts that are not particularly visible. While these marks have often been associated with the Linear scripts of the Aegean world, especially considering the evidence for interactions with Lipari, they tend to appear individually, rejecting a potential writing meaning (Bernabò Brea and Cavalier 1968: 222). Looking at

the spatial distribution of marks across the Milazzese settlement, and considering their type and pot shapes, Martinelli and Levi (2021: 190–191) argue for a specialised pottery production where marks would have been used to identify different workshops. Moreover, a correlation between some marks and their context of recovery, that is huts and their living groups, has also been identified (Martinelli and Levi 2021: 190–191), although further interpretation is at the moment tentative. Overall, their identification as potters' marks appears as the most sensible one, especially considering that it was common for pottery across the Mediterranean, including the areas of the Aegean with which Lipari was in contact, to bear similar engravings (Martelli 2005).

The pottery associated with the Ausonian I period was very different from the material culture identified in the earlier layers. Potters' marks and clay horns are no longer common and pottery is now characterized by black wheel thrown carinated bowls with various types of elaborated handles, most of which are ox-head shaped (Figure 3.23; Cavalier 2004; Wardle 2004: 136). There are also examples of impasto pottery decorated with angular motifs, dimples and banded decorations, usually referred to as 'protogeometric' (Yntema 1985: 27–39; Bettelli and Levi 2003: 436; De Juliis *et al.* 2006: 39–45; Bettelli 2009a: 26–27). This type of pottery has many more similarities with the peninsular Sub-Apennine *facies* and Protovillanovan style than with the Sicilian Pantalica culture (Albanese Procelli *et al.* 2004; Cavalier 2004; Bettelli 2009a: 27–29; Bietti Sestieri 2013b: 24; Levi *et al.* 2020; Martinelli 2020: 145–149). There is a decrease in the number of Aegean-type pottery sherds associated with this period which could possibly be associated with strata disturbances (van Wijngaarden 2002: 223). Nuragic pottery also starts to appear in this period (Campus and Leonelli 2012; Paglietti 2013; Lo Schiavo *et al.* 2018: 174–175), against the argument according to which this class of materials used

to be associated only with the Ausonian II *facies* until very recently (Cavalier and Depalmas 2008).

In the Ausonian II period, a variety of new fabrics can be identified on the acropolis, alongside the production of old fabrics using both imported and local clay (Levi *et al.* 2020: 20). A pottery kiln has been identified during excavations of the area below the archaeological museum and another possible one in hut AG (Bernabò Brea and Cavalier 1980; Cavalier 1985–1986: 236–237; Basile 2018; Martinelli 2020: 161–162). Five different categories of pottery finds have been associated with the Ausonian II period. First, there is handmade local pottery, which is characterised by a brown colour and decorated with indentation and grooves; handles are mostly furnished with horned appendices (Martinelli and Mastelloni 2015: 25). Second, wheel made productions included both red-slipped and protogeometric pottery, which could also be imported from Southern Italy (Figure 3.24a; Bernabò Brea and Cavalier 1980; Martinelli and Mastelloni 2015: 25; Levi *et al.* 2020). The third category consists in the so-called feathered style (Figure 3.24b), that is wheel thrown vases displaying broad brushes of diluted paint and characteristic of Sicily, from which they could be imported (Bernabò Brea and Cavalier 1980; Martinelli and Mastelloni 2015: 25; Levi *et al.* 2020). Aegean pottery is the fourth category, although no more than 13 LH IIIC fragments can be associated with this period (Taylour 1958; 1980; Bernabò Brea and Cavalier 1980). The fifth and final category consists in Sardinian pottery, which is largely present across the site and is mostly represented by closed vases such as askoid jugs (Bernabò Brea and Cavalier 1980: 24–107; Taylour 1980: 813–814; Cavalier and Depalmas 2008; Martinelli and Mastelloni 2015: 25–26). The predominance of closed shapes suggests that these imports were valued for both their aesthetic and their contents, probably of a liquid nature (Cavalier and Depalmas 2008: 287). Finally, the presence of a ship-shaped lantern should be

mentioned among the Sardinian imports recovered from hut α IV (Bernabò Brea and Cavalier 1980: 74). It has been argued that two different production networks existed for local impasto wares and the production of new fabrics using imported clays, as for local imitations of Protogeometric and feathered wares (Levi *et al.* 2020: 24).

Overall, the pottery recovered across the acropolis provides a good overview of the technological changes and material preferences during the LBA. The chronological appearance of specific shapes, new fabrics and techniques, above all the introduction of the potter's wheel in the Ausonian I period, indicates a shift from domestic production to the development of more centralised and specialised workshops (Levi *et al.* 2020: 20–24). While the Capo Graziano and Milazzese pottery seem to be mostly influenced by interactions with the Aegean and Peninsular Italy, the transition to the Ausonian periods sees the adoption also of different foreign material cultures from Sardinia and Sicily (Vianello 2005: 84–85). Through the early adoption of specific classes of pottery, such as Protogeometric decorations during the Ausonian I period, it is possible to see the local agency choosing patterns other than the decorative Aegean tradition: the Protogeometric style will develop across Southern Italy independently from similar decorative patterns spreading across the Aegean and the Balkans (Bettelli 2009a: 27–29). Local peoples seem to be less influenced by the Aegean culture, possibly associated with a change in the geopolitical scenario across the Mediterranean basin, in turn affecting the main trading networks.

3.3.2. Metalworking

Evidence for metalworking dating to the Capo Graziano II culture is limited to a mould fragment and less than 10 bronze fragments belonging to awls and pins (Bernabò Brea and Cavalier 1980: 540–541). Metalworking evidence from the Capo Graziano II *facies* is concentrated around structure δ XII, which is also where the pottery workshop has been

identified. The mould recovered from this structure (Figure 3.25) is made of sandstone and was probably used for the production of shaft-hole axes, which were common in Sicily but also had many comparisons across the Aegean (Bernabò Brea and Cavalier 1980: 245; Martinelli 2020: 112). In the Milazzese period, metal artefacts are made of bronze and do not increase in number, comprising two rings, a couple of blades and some lumps (Bernabò Brea and Cavalier 1980: 557–558).

Most of the metalworking evidence belongs to the Ausonian period, which is largely made of a hoard recovered during excavations of Ausonian II hut α II. This is one of the largest and most important hoards of the Central Mediterranean, as will be better discussed below. The assemblage was recovered within a pithos sealed with a stone slab and buried in the Capo Graziano II layer (Bernabò Brea and Cavalier 1980: 736). While it should be excluded that this deposit belonged to the Capo Graziano II period, it was initially argued that the hoard had been deposited at the end of the Ausonian I period (Lo Schiavo *et al.* 2009; 2018). However, while most of the materials recovered inside the pithos display characteristics typical of the RBA period, there are some artefacts with clear comparisons from the Monfalcone Necropolis and that can be dated to the FBA (Bernabò Brea and Cavalier 1960; Borgna 2021). Such an assemblage leads instead to suggest that the hoard was deposited during the Ausonian II period, yet before the construction of hut α II, which was built in an advanced phase of this (Bernabò Brea and Cavalier 1980; Borgna 2021).

The metal artefacts recovered from the pithos amount to 75 kg overall and they range from weapons to personal ornaments, razors and tools, including bronze foils, copper ingots and casting wasters and moulds (Bernabò Brea and Cavalier 1980: 736–757; Lo Schiavo *et al.* 2009). Metalworking activities were conducted on site, as indicated by the recovery of a bronze mould for an axe typical of Sicily together with many casting

wasters and ingots (Lo Schiavo *et al.* 2009: 177). Finds belong to different cultures with some artefacts, like the shaft-hole axes and some swords and razors, finding comparisons only in Sicily (Bernabò Brea and Cavalier 1980: 788). However, there are examples that clearly belong to the Peschiera culture widespread across peninsular Italy and rare in Sicily, including the cannon and middle-winglets axes, the fenestrate razor, eight-shaped brooches, sickles, and swords and small knives with a *presa a linguetta* (Bernabò Brea and Cavalier 1980: 788). Both bun and oxhide ingots have been identified from the hoard (Figure 3.26; Bernabò Brea and Cavalier 1980: 785–787; Lo Schiavo *et al.* 2009). LBA oxhide ingots have been found across the central Mediterranean, comprising finds from Sicily, Corsica, France, and in particular Sardinia, where a large concentration was recovered (Lo Schiavo 2006; 2008). The recovery of copper oxhide ingots, that is a shape typical of Cypriot and the Aegean, has been used as an indicator for interactions and trading activities with the Aegean and the eastern Mediterranean world even after the collapse of the Aegean palatial system (Bernabò Brea and Cavalier 1980: 788; Lo Schiavo 2006; Vianello 2008a: 20; Russell and Knapp 2017). Considering that in Sardinia oxhide ingots might have been both imported and produced (Begemann *et al.* 2001: 57; Russell and Knapp 2017: 7–10), more support is given to Vagnetti's suggestion (1983: 180) that the presence of these ingots could be associated with the existence of trading networks between Sardinia, Sicily and the Aeolian islands. However, it was not possible to chemically analyse the gold and silver components of the oxhide ingots recovered from Lipari to verify their origin (Lo Schiavo *et al.* 2009; 2018: 172).

None of the artefacts recovered were intact and some displayed clear signs of deliberate fragmentation, possibly as part of a ritual deposition (Bernabò Brea and Cavalier 1980: 738; Lo Schiavo *et al.* 2018: 164). Materials were packed in the pithos and were characterised by a blue-greenish patina due to the dry environment which,

according to some scholars, had purposely been created within the deposit, rejecting the provisional nature of this hoard, not meant to be retrieved in a later moment (Bernabò Brea and Cavalier 1980: 736; Lo Schiavo *et al.* 2018: 166). According to Lo Schiavo *et al.* (2009: 177), the elements buried in the pithos had been selected over time to represent different categories of artefacts, which were present in equal numbers, without any typology of artefacts prevailing. Various interpretations have been suggested for this hoard, the most popular being that it was the treasure of the settlement to which eminent members of the society contributed (Bernabò Brea and Cavalier 1980: 789; Lo Schiavo *et al.* 2018: 177). Primas and Pernicka (1998: 58) have suggested that the metal ingots and fragments would have been collected from traders and newcomers as forms of payment for landing to Lipari, similarly to what was happening for the ports and harbours along the trading networks on the Danube River. While Primas and Pernicka's suggestion could be challenged on the grounds that it would have required traders from different parts of the Mediterranean to be aware of this norm and similar contexts should be present in most Mediterranean ports, it should be noted that hoards are present also in Roca, as it will be discussed in Chapter 5. If this was the case, two different scenarios would appear. Either artefacts would have been gathered over time either in a different area or areas, and then deposited during a single ritual, or would have been gathered directly in the pithos over a longer period of time and the ritual would have consisted in sealing the pithos without the deposition act. The fact that some of the artefacts from the pithos date to the Ausonian II period and the location of the hoard below the northern wall of hut α II suggest that this was sealed in an early phase of the Ausonian II period, before the construction of α II (cf. Bernabò Brea and Cavalier 1980: 738; Moscetta 1988: 69; Borgna 2021: 456).

Out of 21 bronze artefacts associated with Ausonian II structures, there are 12 fibulae and one ring, showing a large predominance of personal ornaments (Bernabò Brea and Cavalier 1980: 636–644). Other artefacts recovered from the Ausonian II stratum include razors and knives, as well as tools and bronze plaques and bars (Bernabò Brea and Cavalier 1980: 636–644). They belong to two different time frames which are reflected in a different distribution of finds: the earlier phase finds comparisons with the finds from the hoard recovered from hut α II and with the grave goods recovered from the contemporary necropolis of Piazza Monfalcone, and these bronzes are concentrated in huts α I and α IX (Bernabò Brea and Cavalier 1980: 636–644). Later bronzes come from structure α II (Figure 3.27) and are mostly represented by particularly solid brooches, characterised by an elbow shaped bow and with a curved pin, that can be associated with finds from the Sicilian sites of Mulino della Badia and Cassibile (Bernabò Brea and Cavalier 1980: 636–644, 718).

Overall, it is possible to see a major increase in metalworking activities throughout the four periods analysed, reflecting the development of the metallurgical *koiné* across continental Europe (Carancini and Peroni 1997; Iacono 2013a). While metal artefacts continuously display influences from nearby cultures in Sicily and Southern Italy, the Aegean influence in the metallurgy becomes less visible over time. Many personal ornaments, such as fibulae and rings, can be associated with these later periods, suggesting a shift towards individualisation within the community.

3.3.3. Stone Working and Hard Materials

Various stone artefacts have been identified in association with the Capo Graziano II culture, comprising mostly smoothers, grinders, awls, and other tools like flints and obsidian splinters (Bernabò Brea and Cavalier 1980: 541–543). It is important to mention a seal (Figure 3.28), bought in Lipari in 1901 and now in the Archaeological Museum of

Palermo (Cucuzza 2006). This seal is made of red jasper and has a lentoid shape with a hole going through the long side (Cucuzza 2006: 74–76). One face of the seal is engraved with the representation of a bovine feeding a calf, both standing on a line representing the ground surface (Cucuzza 2006: 74–76). Despite the lack of recovery context, Cucuzza (2006: 74–76) argues against the identification of this seal as a forgery, relying on the fact that this specific iconography, combined with the materials, shape and dimensions of the seal, finds good comparisons in the Minoan and Mycenaean worlds, confirming the authenticity of the seal as an Aegean import. Cucuzza (2006: 77) compares this seal with the *Island Sanctuaries Group* (ISG) and the *Bulls with Striated Necks* to suggest a LH II–LH III production date (cf. Younger 1984: 57–58; 1987: 61–62). Assuming that this artefact was recovered on Lipari, it would provide further evidence for interactions with the Aegean in the LBA.

Another class of stone artefacts that is widely present in the Capo Graziano II layers are rectangular plaques (Figure 3.29; Bernabò Brea and Cavalier 1980: 232, 245, 249), identified by Ialongo (2018: 110) as balance weights but originally interpreted by the excavators as whetstones (Bernabò Brea and Cavalier 1980. According to Ialongo (2018: 110), these ten rectangular stones bear clear comparisons with contemporary weights in central Europe, like at Mannheimn-Seckenheim and Marolles-sur-Seine (Figure 3.30; Pare 1999). These rectangular stones completely disappear in the Milazzese period, when stone working activities are mainly represented by the many grinders recovered *in situ* from the structures located in the southern area of the settlement (Bernabò Brea and Cavalier 1980: 558).

A rectangular stone plaque appears again in the Ausonian I period, from structure β IV, together with a sphendonoid weight, a shape which was widespread across Central and Eastern Mediterranean, with examples recovered also from the Uluburun and Cape

Gelydonia shipwrecks (Ialongo 2018: 115). Other Ausonian I stone artefacts are mostly limited to some grinders, pestles and loomweights; a small axe and possibly two sharpening stones have also been associated with this *facies* (Bernabò Brea and Cavalier 1980: 583). Stone artefacts continue to be present in the Ausonian II period, when they appear to increase in number. In addition to the rectangular stone plaques associated with this *facies*, a lenticular balance weight was recovered from structure α II, where two rectangular weights were also found (Ialongo 2018: 114). The use of lenticular weights for scales is widely attested in Northern Italy between 1500–1150 BC (Cardarelli *et al.* 1997; 2001a; 2004; Ialongo 2018: 114). There are some examples of high stone-working skills on small artefacts, like decorated spindle whorls or plaques (Bernabò Brea and Cavalier 1980: 647–649). Stone artefacts from the Ausonio II period include some fishing nets (Bernabò Brea and Cavalier 1980: 647).

Glass and amber beads were recovered across the settlement (Bernabò Brea and Cavalier 1980: 644–645). The Capo Graziano II glass beads have been attributed a possible Aegean origin, especially considering their association with Aegean pottery (Bellintani 2010b). Chemical analyses on the Ausonian amber have shown that it was imported from the Baltic while the association of amber and glass beads finds good comparisons in assemblages from the settlement of Frattesina in Northern Italy (Beck 1986; Bellintani 2010a: 84; Bietti Sestieri 2010).

Overall, stone artefacts and hard materials recovered from the acropolis find comparisons across continental Europe, suggesting wide interactions especially in the Capo Graziano II and Ausonian periods. Interestingly, finds associated with Aegean influence are not predominant in any period, against the idea of special interactions taking place.

3.3.4. Bone Working

Bone finds identified on the Capo Graziano II strata comprise both tools and finished artefacts. In terms of personal paraphernalia, finds from this period include the earliest bone comb recovered from across Italy (Figure 3.31), which was initially interpreted as a possible Aegean import (Bernabò Brea and Cavalier 1980: 516, 544; Bettelli and Damiani 2005: 19). However, it has recently been identified as an *unicum*, with no close comparisons neither in the Aegean nor in Italy (Bettelli and Damiani 2005: 19).

A bone bead of uncertain origin was recovered from structure δ XVIII, while a plaque made of boar's tusk and punctured on the edges was found in structure δ XVI (Figure 3.32; Bernabò Brea and Cavalier 1980: 251–253). Two different interpretations have been suggested for this find: as a bracer to protect archers' arms and as an element of a helmet (Bernabò Brea and Cavalier 1980: 543; Bernabò Brea 1985: 115). First, despite the small dimension of this artefact—4.5 cm by 2.2 cm, it is possible to find bracers of similar dimensions across central Europe in association with the earlier Bell Beaker Culture, although made of stone (Clément 2020: 17–25). Second, this plaque could belong to a boar's tusk helmet, similar to those found in various LBA warrior tombs across the Aegean, like in the Grave Circles at Mycenae or in other sites in the Peloponnese (Bernabò Brea 1985: 115–116; Martinelli 2020: 113). Comparisons dating to the EBA–early MBA come also from the Italian Peninsula, like from Posta Rivolta and Garagnone in Apulia, and from Castelluccia, in Campania (Venturo 2010: 52; Scarano 2011a; Tunzi *et al.* 2012: 135, 150; Albore Livadie 2020). Another significant example from Campania comes from the earlier EBA village of Nola–Croce del Papa, where various plaques and a complete headgear of suine tusks have been recovered (Albore Livadie 2020). On the basis of attested interactions between the Aegean and Lipari, the

interpretation of this plaque as belonging to a headgear seems more plausible than bracers, although the evidence is still scarce for a more valid interpretation.

No bone artefacts have been found dating to the Milazzese period. Only two bone artefacts can be associated with the Ausonian I period: an awl made from a sheep bone and a worked deer's antler (Bernabò Brea and Cavalier 1980: 586). However, in the Ausonian II period, bone working activities are much more widely testified, with finds of both raw materials, like deer and bovine antlers, and finished artefacts, among which some tools (Bernabò Brea and Cavalier 1980: 308, 646–647). Many plaques displayed a concentric decoration similar to a bone comb recovered from hut α II and which finds a good comparison at Molino della Badia, Sicily (Figure 3.33, Bernabò Brea and Cavalier 1980: 586; Bettelli and Damiani 2005).

Overall, we see bone working activities mostly developing at the beginning and at the end of the chronological period analysed. However, while it is possible to argue for local traditions with some possible Aegean influences for the Capo Graziano II bone artefacts, the Ausonian finds can be compared with other bone artefacts from across Sicily, suggesting a wider pool from which inspiration could be drawn. The analysis of bone artefacts reflects the same general trend identified for the pottery and metal workshops, where the predominant Aegean influence is slowly replaced over time by trends common across continental Europe and peninsular Italy.

3.4. The Port and the Society

Section 3.3 on material culture, technologies, and workshops suggests that the interactions of the acropolis settlements became more varied over time due to an increase in connections and networks. After focusing on the demographic implications of the

architectural organisation over the four different periods, the following section will analyse and discuss the effect that these interactions had on the local society.

3.4.1. Settlement Organisation

When comparing the different periods discussed above, it is important to consider the bias due to preservation issues, as aforementioned for the Ausonian II period. Overall, the number of structures identified on the acropolis diminishes over time, as well as the percentage of complete buildings. For example, it is possible to identify the layout of only five out of the 16 Ausonian I buildings and one out of 10 in the Ausonian II period. However, those structures that can be outlined are much larger than the previous periods: the Capo Graziano II structures have an average area of 8 m^2—excluding δ IV—which increases to 16 m^2 for the Milazzese structures—without considering γ XII—26 m^2 for the Ausonian I buildings and the only complete Ausonian II structure measures about 70 m^2 (Bernabò Brea and Cavalier 1980: 30–31). Structures belonging to the same *facies* could significantly differ in terms of dimensions and, when comparing quantities of artefacts recovered within these, a higher number of finds does not necessarily mean a higher concentration of these as they could be distributed across a larger area. It is important to bear in mind that the analysis of artefact distribution conducted below maps artefacts depending on their recovery location, which does not necessarily imply that they were *in situ* and hence can be misrepresented. This choice was made to include many important finds which would otherwise be excluded. Artefacts from the hoard below hut α II have not been included. Finally, this study has not considered the distribution of artefacts within the structures since it is not necessary for this piece of research but could be analysed in future studies. The following section will investigate the demographic aspect of the Lipari acropolis in relation to the four different chronological settlement phases. Various demographic estimations for Lipari have been suggested in the

scholarship (Figure 3.34), however it is important to clarify that these estimations are made on the demography of the entire island rather than just on the acropolis, as done in this work, and hence they can be higher for the Capo Graziano II and Milazzese period, when also other areas of Lipari are occupied. Moreover, Speciale (2021) relies on the methods suggested by Naroll (1962) and Hassan (1981), both of which have been criticised by Whitelaw (2001b) because relying on a connection between the space inhabited and the people occupying it. While this is also what it is done for the population estimations suggested in this thesis, other factors are also considered here, such as the information on household and settlement wealth indicated by the recovery of specific artefacts or structural elements (Whitelaw 2001b: 19). For example, the presence of multiple similar rooms within the same architectural unit can be associated with a higher number of individuals residing there (Whitelaw 2001b: 19). Different functional areas will also be identified according to each period.

Cross-referencing the finds with the small dimensions of the Capo Graziano II structures identify most of them as dwellings that could host a nucleus of maximum three people and where basic domestic activities, such as weaving and food processing, were mostly conducted outside (Bernabò Brea and Cavalier 1980: 511; Cazzella and Recchia 2004; 2009b). Pottery production and metalworking activities have been identified in association with structure δ XII. The presence in the southern area of the settlement of silo δ I, which was probably dedicated to the storage of large quantities of grain, would have obviated the need of storing large food quantities within the small huts. However, as visible in Figure 3.35, storing vessels are present across the entire settlement, with an important concentration in hut δ XII, which could however be due to recording biases. Bernabò Brea and Cavalier (1980: 511) calculate that, if the same number of structures identified in the trenches was present across the entire acropolis area, this would have

hosted between 200 and 300 huts occupied by 3–4 individuals each, resulting in an overall population count between 600 and 1000 inhabitants. Considering that the main trench is about one-twentieth of the entire acropolis, this thesis considers a maximum of 400 huts and 1200 individuals. However, it is implausible that the entire acropolis was occupied by the same density of huts, thus Bernabò Brea and Cavalier (1980: 511) half the higher estimation of inhabitants and suggest that this settlement would have hosted less than 500 people—in the same way, no more than 600 are considered for this work. If this was the case, the silo would have been able to support the entire community for about 10 days, therefore this silo was likely not to be used for supporting the entire population, unless it was used for some feasting activities. A further implication of this demographic estimate is the fact that the public structure δ IV would not have been able to host the entire community but possibly one or two representatives per nucleus. Finally, the small remain of a metal pin from hut δ IV suggests that this building was employed by individuals differentiating themselves from the resto of the society. Aegean pottery is widely distributed across the settlement in the Capo Graziano II period with concentrations in the southern area of the settlement, that is where huts δ III, δ IV, δ V, and silo δ I were located, as visible in Figure 3.36 (van Wijngaarden 2002: 211–212; Martinelli 2020: 79). However, in these contexts Aegean pottery is mixed with locally produced ware which had a similar function, like carinated cups and globular vases, involving both local and imported items into drinking practices.

Structures belonging to the Milazzese period have been identified as dwellings where domestic activities could be conducted. Considering that Milazzese buildings are on average twice as large as structures belonging to the Capo Graziano II period, it can be estimated that about five peoples inhabited Milazzese huts (cfr. Cazzella and Recchia 2004; 2009b). Applying the same rationale used for the Capo Graziano II settlement and

considering 18 Milazzese domestic structures of larger dimensions than the Capo Graziano ones, it could be argued that the population of the Milazzese settlement could have been no more than 900 individuals overall.

From a functional point of view, Figure 3.37 shows that storing vessels are present in almost all of the Milazzese structures, as are dining and drinking vessels. Also Aegean wares are widely distributed, as visible in Figure 3.38, with some concentrations around the large hut γ XII and the southern cluster of huts made of γ I, γ II and γ VI (van Wijngaarden 2002: 224; Iacono 2013a: 61). A difference can be noted between the northern and the southern area of the settlement, where there is a slight predominance of food processing facilities. Figure 3.39, which shows the distribution of different type of artefacts across the Lipari acropolis, indicates that this area is characterised by the recovery of items associated with the individuals, namely the figurines, a bronze ring, and the clay horns. Overall, considering the nature of these finds, it could be argued that banqueting and feasting activities were organised in this area of the settlement. Clay horns have also been identified within structure γ XVI, where five spindle whorls and two smoother tools suggest that textile and perhaps other production activities were conducted in association with this structure. The horns could have been symbolically used to favour the production activities, in the same way as they are still used nowadays across Southern Italy as a sign of fertility and protection.

The assemblages recovered from the large Ausonian I structures indicate that these structures were also used for conducting domestic activities and as dwellings (cfr. Cazzella and Recchia 2009b). However, most of the artefacts associated with the Ausonian I period come from the area of structures β IV and β V, where most of the activities seem to concentrate (Figure 3.40). Figure 3.41 shows that Aegean wares were not as widespread across the settlement as in earlier periods but seem to have been

associated with huts β IV and β X, which has a rectangular shape rather than the oval shape characteristic of the other buildings belonging to the same phase (van Wijngaarden 2002: 223). Moreover, hut β IV is also where other imported pottery from this period was recovered (Vianello 2005: 129). According to van Wijngaarden (2002: 223), the concentration of Aegean ware into two assemblages reflected some degree of restriction in the access of local inhabitants to this type of pottery. While structures belonging to this period are now larger, the number of people occupying it does not necessarily increase as no internal subdivision was identified. At the same time, buildings display some more elaborated entrances, which, combined with an increase in personal ornaments, might indicate instead a different distribution of people within the buildings. I would thus suggest that about 750 people lived on the acropolis in this period, showing a slight decrease from the Milazzese settlement but not as steep as indicated by other scholars who consider the demography of the entire island rather than just on the acropolis and, considering that by the Ausonian I period this is the only settled area of the island, it is normal that calculations show a major decline in the population.

Calculating the population of the Ausonian II settlement in a similar way as done for the previous periods would be extremely speculative as only one Ausonian II structure can be completely measured and therefore no average dimension was produced for structures of this period. As aforementioned, this structure α II differs itself from the others both in terms of dimensions, layout, and quantity of finds, suggesting that it should not be taken as a model for the other structures belonging to this period. Despite the lack of finite measures, the other structures identified seem to be larger than those belonging to the previous periods and the fact that only ten were identified across the same area excavated might support this hypothesis. Looking at the artefact distribution (Figure 3.42), weaving activities are widespread across the settlement, while various bone and

stone tools seem to be concentrated in the area between structures α II, α IV, and α V, although no specific area dedicated to specialised activities, such as bone working, was identified within the main trench. Finally, a very high number of personal paraphernalia was recovered in association with this period, not only in structure α II, but also widespread across the settlement.

While no clear estimation on the population of this period can be suggested, the evidence above points towards a higher level of wealth displayed by the structures of this period. Bernabò Brea and Cavalier (1980: 716) talk about the absence of signs indicating a decrease in the population number in the Ausonian II period, when evidence for occupation seems to be widespread across the entire area of the acropolis. On the contrary, evidence for surplus might instead be associated with an increase in population number (Grier 2003; Iacono 2019: 195). Overall, while the specific estimates suggested in this thesis differ from what suggested by other scholar, the fluctuations identified are similar.

3.4.2. Aegean Influence and Communal Activities

As already mentioned, one of the main characteristics of ports of interactions are regular connections with different communities and Lipari is a perfect example of this (Wardle 2004: 281). Since the long-term involvement of Lipari in the obsidian trade, connecting the Aeolian Archipelago across the Tyrrhenian Sea, as far north as Southern France, and along the eastern coast of the Adriatic Sea (Martinelli *et al.* 2021: 33), local communities were used to seafaring activities and involvement with other cultures (Iacono 2019: 115; Tykot 2019). The different types of artefacts recovered show that interactions were not limited to those with the Aegean area but with other areas of the Mediterranean and continental Europe, which were conducted along different trading routes. The first two periods analysed show a general predominance of interactions with the Aegean and the Sicilian islands. The continuity of interactions with the Aegean from late MH to LH IIIC

period was probably facilitated by the favourable location of the island along the main trading routes (Vagnetti 1983: 174; Wardle 2004: 204). Finally, it should be noted that all of the Aegean fragments of pottery recovered at Lipari that have been chemically analysed indicate the Peloponnese as the origin of the imports (Jones *et al.* 2014: 239–240), suggesting the existence of a specific trading route connecting this region with Lipari.

Aegean wares, which are usually associated with practices of commensality and feasting, seem to be predominant in relation to large-size buildings, as in the case of the Capo Graziano II hut δ IV and the Milazzese structures γ VI and γ XII (Wardle 2004: 290). The communal nature of these buildings, supported by their large dimensions able to host large numbers of people (van Wijngaarden 2002: 221, 224; Iacono 2017; Dawson and Nikolakopoulou 2020: 172), combined with the concentrations of artefacts and assemblages of Aegean drinking and dining wares, can be connected to practices of commensality and conspicuous consumption, which seem to take place in Lipari, as well as in Roca Vecchia (Iacono 2017). Practices of commensality make an excellent arena for interactions and their frequency within ports of trade indicates that social identities were continually negotiated in these areas, going beyond interactions of economic nature, while technologies and iconographies could also be exchanged in these instances (cf. Legarra Herrero 2016: 27–29).

Aegean influence declines in the two Ausonian periods and Lipari seems to open to trading with new areas, like Sardinia for instance. It should be noted that, while Aegean pottery included many open shapes, Nuragic wares mostly display closed shapes. Some scholars (Contu 1980; Cavalier and Depalmas 2008: 287) rely on the shortage of open shapes to argue against the direct involvement of Sardinian people in trading interactions with Lipari, suggesting that Nuragic artefacts were either being exchanged by

middlemen—either Mycenaean or Phoenicians—or directly imported by the Lipari inhabitants. However, there is not enough evidence supporting this interpretation, especially considering the increasing amount of evidence for Nuragic presence across the central Mediterranean (Campus and Leonelli 2012: 152). The new predominance of closed wares among imported pottery could be interpreted as a change in the expression of agency mentioned earlier: it can be inferred that Nuragic imports did not simply substitute Aegean pottery as exotica, but rather were being valued for their own aesthetic, function and content (Campus and Leonelli 2012: 152).

Martinelli (2020: 152) has identified some areas with a significant continuation of occupation, with structures belonging to different periods laying on top of each other, for example huts β V, γ XI and δ XV, and huts β I and δ IV. While this could be simply attributed to the employment of pre-existing walls and structures, as commonly seen in the Ausonian II period, and in particular with the structures β VI and α IV, it is also possible that specific areas maintained their function over time (Martinelli 2020: 152). This could be the case of the southern area of the settlement, where communal activities were conducted in the Capo Graziano II and Milazzese periods but were almost abandoned in the two Ausonian *facies*. These final two periods are also characterised by an increase in personal paraphernalia in comparison to the Capo Graziano II and Milazzese periods, possibly indicating a shift from a communal to a more private and individual-focused lifestyle. This could be connected to a rise of network strategies aimed at establishing and maintaining social importance through the control of prestige goods (Blanton *et al.* 1996: 4–5). The development of specialised productions, seen for example in the pottery workshop, indicates the presence of a social structure able to at least partially support crafters, which in turn implies the ability of producing surplus and the presence of storage areas (Costin 1991; 2007; Borgna and Levi 2015; Iacono 2019: 159).

In conclusion, there are some patterns that seem to develop in the social organisation of Lipari. Communal activities, such as feasting, conducted in the Capo Graziano II and Milazzese *facies* are less evident in later periods, when more importance is given to individuals as indicated for example, in the proliferation of personal ornaments. Local agency becomes more evident in the FBA through the selection of specific traits to adopt in the material cultures of people they interacted with.

4. CASE STUDY: KOMMOS

4.1. Background

The importance of BA Kommos (Figure 4.1) as an international port has been widely recognised (Rutter 1999; Shaw 2004; Tartaron 2013: 22). This chapter will present the LBA site of Kommos as an example of a port of interactions in the Aegean for comparison with the case studies from Southern Italy and Sicily. First, the site will be presented from a geographical and historical point of view. This will be followed by an overview of the major buildings and architectural developments across the site, which will be presented according to three different chronological periods. Since many different terms have been used in the scholarship, some of which are particularly problematic, a selection of the terms used is given, with the chronological terms and related dates adopted in this work displayed in the right column of Table 4.1. The first period goes from MM III to LM IB, and literature usually refers to it with a variety of terms such as Neopalatial, Second or Late Palatial period. The second phase corresponds to the so-called Final Palatial period, dating from LM II to LM IIIA1, while the third phase goes from LM IIIA2 to LM IIIC, that is the so-called Postpalatial period. The evidence for workshops and productive activities conducted across Kommos will then be discussed, with a particular focus on the evidence for foreign interactions and influences. The final section will deal with social organisation at the site.

<table>
<tr><th>Dates (all BC)</th><th>Mainland Greece</th><th>Crete—Kommos</th><th>Watrous (1992); Rutter (2017b)</th><th>Shaw (2006b: 4)</th><th>Hallager (2010: 151)</th><th>Galanakis (2013)</th><th>Letesson and Knappett (2017: 2)</th><th>Shapland (2022: 8)</th><th>This work</th></tr>
<tr><td>1750–1700</td><td>MH (2000–1600)</td><td>MM III (1700–1600)</td><td rowspan="5">Neopalatial</td><td>Protopalatial</td><td rowspan="5">Neopalatial</td><td rowspan="5">Neopalatial New Palace</td><td rowspan="5">Neopalatial</td><td rowspan="5">Neopalatial</td><td rowspan="5">Neopalatial</td></tr>
<tr><td>1700–1635</td><td>LH I (1600–1500)</td><td rowspan="2">LM IA (1600–1480)</td><td rowspan="4">Neopalatial</td></tr>
<tr><td>1635–1625</td><td rowspan="2">LH IIA (1500–1440)</td></tr>
<tr><td>1625–1480</td><td rowspan="2">LM IB (1480–1425)</td></tr>
<tr><td>1480–1470</td><td rowspan="2">LH IIB (1440–1390)</td></tr>
<tr><td>1470–1420</td><td>LM II (1425–1390)</td><td rowspan="3">Monopalatial</td><td rowspan="6">Postpalatial</td><td rowspan="4">Final Palatial</td><td>Third/Mono Palatial</td><td>Palatial Final</td><td rowspan="3">Final Palatial</td><td>Final Palatial</td></tr>
<tr><td>1420–1390</td><td>LH IIIA1 (1390–1370)</td><td>LM IIIA1 (1390–1370)</td><td rowspan="5">Post/Final-palatial</td><td rowspan="5">Postpalatial</td><td rowspan="5">Postpalatial</td></tr>
<tr><td>1390–1350</td><td rowspan="3">LH IIIA2 (1370–1300)</td><td rowspan="3">LM IIIA2 (1370–1300)</td></tr>
<tr><td>1350–1330</td></tr>
<tr><td>1330–1300</td><td rowspan="4">Postpalatial</td></tr>
<tr><td>1300–1250</td><td rowspan="3">LH IIIB</td><td rowspan="3">LM IIIB</td><td rowspan="3">Postpalatial</td><td rowspan="3">Postpalatial</td></tr>
<tr><td>1250–1200</td></tr>
<tr><td>1200–1190</td></tr>
<tr><td>1190–1060</td><td>LH IIIC</td><td>LM IIIC</td><td>Sub-Minoan</td></tr>
</table>

Table 4.1—Chronology of the different periods at Kommos. The absolute chronology follows the high chronology adopted by Manning 2010 (lower dates according to Tartaron 2008: 84 are in brackets). Design after Rutter 2017b:2, Table 1.1.

Kommos is located on the southern coast of Crete, about 3 km north of the Roman harbour of Matala and 8 km south-west of the Minoan sites of Phaistos and Hagia Triada (Figure 4.2, Shaw 1977). It is situated at the western end of the Mesara Plain, which expands eastwards for about 50 km up to the mountains of Dicte (Shaw 1996b: 1). The main river crossing the plain is the Geropotamos, now less abundant than in ancient times (Shaw 1996b: 1). The fertile Mesara Plain has been known as the "granary of Crete" due to its important agricultural activities which could provide for a large part of the island since the Neopalatial period (Shaw 1996b: 1; Tsougarakis and Angelomatis-Tsougarakis 2004: 402–404; Bendall 2017: 332).

The archaeological site spreads for about 200 metres along the coast covering a total of 3.5 ha and it can be divided into three main areas from the north: Hilltop, Hillside and Southern Area (Figure 4.3). The Hilltop Area (Figure 4.4) covers about 840 m^2 in the northernmost part of the site, at about 16 m above the current sea level (Shaw and Nixon 1996: 15–18). This area is characterised by a high density of LBA structures and individual houses have successfully been isolated by the excavators as seen in Figure 4.4 (Shaw and Nixon 1996: 16). The main buildings from this area which will be here discussed are the North House, the Oblique House, and the House with the Press. South of this is located the Hillside Area, covering about 611 m^2 (Figure 4.5; Shaw in Wright and McEnroe 1996). This area was mostly occupied in the MM period with limited construction of new structures in the LM period and reuse of earlier buildings (Wright and McEnroe 1996). The main building of the Hillside Area is the House with the Snake Tube, located on the western side of it. Finally, the Southern Area (Figure 4.6) includes both House X and the Civic buildings—namely Building T and the later Buildings N and P—which developed across a plain area.

Human occupation of Kommos dates back to the Final Neolithic period, when it was concentrated on the Hillside Area as testified by pottery finds, although no architectural structures belonging to this period were identified (Shaw 1996b). The site then expanded southward and towards the Hilltop Area, which was continually occupied until its abandonment at the end of LM IIIB (Tomlinson *et al.* 2010: 193–194). However, excavations have provided LM IIIC evidence for occasional human presence, especially in Rooms 5 and 7 in Building N (Shaw 2006b: 85). Around 1020 BC, a small Greek temple A was built in the Southern Area on top of the Minoan ruins, while Temple B was built in the same area around 800 BC, followed by other structures supporting the sanctuary until its abandonment at the end of the Geometric–Orientalising period (Shaw 1989; 2006a: 4–11). Until the Late Classical and Hellenistic periods, the occupation of the site was limited, when the Greek sanctuary flourished again and various altars and structures were built (Shaw 2006a: 11). Finally, the site lost its importance during the Roman period, when Matala became the main harbour of the Mesara and Kommos was abandoned by AD 50 (Shaw 2006a: 11; Watrous 2007: 101–102; Bendall 2017: 331–332).

Before proceeding with the analysis of the site, it is important to contextualise Kommos within the LBA political geography of Crete. If we accept the identification of Kommos with the Linear B toponym *da-wo*, argued by some scholars (Shaw 1985: 56; 2000: 709; Shaw *et al.* 2006b: 874; Bendall 2017: 301), Linear B evidence provides important information regarding the economic importance of this site across Crete. About 3,700 sheep are recorded on the Linear B tablets associated with *da-wo*, suggesting that there was "a good deal of pasturage available" across the region (Bendall 2017: 303–316). Moreover, *da-wo* is recorded as collecting major quantities of grain (Bendall 2017) which have however led other scholars to suggest that *da-wo* was located in the Central

or Eastern Mesara, in the area comprised between Gortys and Pretoria (Chadwick 1973; Privitera 2009a: 69). It has been clarified that *da-wo* would have been only a place for collecting the grain produced from different sites, possibly 34 (Bendall 2017: 313). According to the Linear B records, palace personnel, mostly associated with textile production, were also living at the site, while some payments or contribution were made to the palace (Bendall 2017: 308–316), suggesting that *da-wo* was under palatial control. Kommos dependence on Knossos probably lasted until the destruction of the palace, when Chania may have replaced Knossos as main centre on Crete (Shaw *et al.* 2006b: 874–875).

Arthur Evans was the first who suggested the importance of Kommos, and he conducted a brief survey of the site (Evans 1928: 88–92). In his accounts, Evans (1928: 88–92) reports rows of *in situ* pithoi in a building called "Teloneion" or "Custom House" and possibly used as a magazine for the harbour (Figure 4.7); this structure will be later identified as Room 5 of Building T/N according to modern designations (Shaw 2006b: 18). According to Evans (1928: 88–92), the importance of Kommos as the main port of the Mesara plain was associated with a guarded paved road connecting the site to Knossos. However, this road, which runs on an east-west line and separated House X from the Civic buildings providing main access to the harbour, was more likely to be connected to the nearby palace of Phaistos than to Knossos directly (Shaw 1977: 201; Driessen and Macdonald 1997: 31).

After Evans, the site was visited by various scholars like Luigi Pernier (1935: 6–7) and later Nicholas Platon (1955: 564–5565), although no excavation project started until 1976. Following Joseph Shaw's visit to the site in 1965, the University of Toronto initiated a fieldwork campaign which continued until 2004, with a 9-year break from 1990 to 1999 (Shaw 1995a: 3; 2006b). The material excavated from Kommos is mostly

exhibited in the newly opened Archaeological Museum of the Mesara at Ampelouzos, Gortys.

4.2. Layout and Organisation

4.2.1. *Middle Minoan III–Late Minoan I: Neopalatial Period*

The Neopalatial Period was characterised by structural changes for many Cretan sites, like Hagia Triada, Phaistos or Knossos, where a new palace was built, more monumental in nature but also much smaller compared with the earlier MM building (Driessen and Macdonald 1997: 195; Shaw and Shaw 1997: 424; Watrous and Hadzi-Vallianou 2004: 291–298). At Kommos, in MM IIIB–LM IA, the Hillside Area underwent a destruction event which has been associated with an earthquake (Betancourt 1990: 41–42; Shaw 1996c: 346; Shaw and Nixon 1996: 20, 56, 128). Evidence for a seismic event dating to the MM IIIB/LM IA transitional period has been recovered across Crete and was associated with the widespread fires and burning activities (Driessen and Macdonald 1997: 17). At the end of LM IB, major sites across Crete underwent physical destructions and abandonment, especially administrative centres (Hood 1985: 177–178; Driessen and Macdonald 1997: 37). Contemporary evidence from Kommos suggests instead some sort of stability and continuous occupation throughout the LM period (Shaw and Shaw 1997: 424).

4.2.1.1. Hilltop Area MM III–LM I

Of the Hilltop houses, the North House (Figure 4.8) is the largest in terms of dimensions, covering an approximate area of about 144 m^2, that is more than a fifth of the entire Hilltop Area (Shaw and Nixon 1996: 17). Two intersecting roads—N19 and O2—run along the eastern and southern sides of the house, connecting the North House to other structures such as Space N24, east of road N19 (Shaw and Nixon 1996: 18). West of the

North House, there was a large courtyard N2, the western part of which is no longer visible because eroded. This court was flanked to the north by Room N1 and separated from the southern road by a wall, indicating that access to the court was restricted to the residents of the North House, which was detached from the other buildings (Shaw and Nixon 1996: 18, 32, 38).

Excavations have suggested that the North House on the Hilltop Area was built in the LM IA period and completed by LM IB (Shaw 1982: 166). It was built on top of the remains of the earlier structures, reemploying some of the pre-existent walls, while the adoption of architectural techniques, such as doorjamb bases, krepis and timber poles, distinguishes the North House from the other structures on the Hilltop Area (Shaw and Nixon 1996: 31).

In the northwest corner of the house, excavations of Room N3 identified in the south-east corner a pi-shaped enclosure containing the fragment of a cooking pot (Shaw and Nixon 1996: 33). Since no burning traces have been identified in association with this, it is possible that this installation was used as a cupboard (Shaw and Nixon 1996: 33). On the opposite corner next to the southern wall, two squared stone slabs were recovered which were probably used as platforms (Shaw and Nixon 1996: 33). This room was possibly dedicated to food processing activities (Shaw and Nixon 1996: 33). From Corridor N7, it was also possible to access the small rectangular Room N10 and Room N11, located east of this (Shaw and Nixon 1996: 34). The original LM IA floor surface was made of slabs to be later raised in LM IB (Shaw and Nixon 1996: 34). Burnt traces and fragments of cooking ware suggest that cooking activities were conducted in this area (Shaw and Nixon 1996: 34).

South of Room N3, two consecutive rooms N4 and N5 led into Room N16, which was located in the south-western corner of north house and could be closed on the northern side from rooms N5 and N9 by two doors (Shaw and Nixon 1996: 34–35). The floor surface was slab paved with a hearth in the middle of the room and the nearby recovery of faunal remains suggests that food related activities, like cooking or eating, were taking place in N16 (Shaw and Nixon 1996: 35). It should be mentioned that a MM II–III crystal rock engraved seal was recovered from this room, and it has been interpreted as an heirloom belonging to the house inhabitants (Shaw and Nixon 1996: 35). Spaces N8 and N9 were part of an H-shaped staircase with wooden steps (Shaw and Nixon 1996: 35). A pottery deposit was recovered in what was probably the space underneath the steps in N9 (Shaw and Nixon 1996: 35).

N12 and N13 are two connected rooms of equal dimensions located north of Room N17 (Shaw and Nixon 1996: 36). N17 was at the centre of the house and had openings in every direction (Shaw and Nixon 1996: 36). Excavations have identified a hearth in the middle of the room, while two stone mortars and some faunal remains were identified on the floor surface (Shaw and Nixon 1996: 37). On the east of these rooms, Space N18 had an irregular shape opening into staircase N21, corridor N 22, Road N19, and possibly Room N21, and thus favouring the creation of a maze-like layout characteristic of the Minoan fashion (Shaw and Nixon 1996: 37). Finds from this area were scarce but included cooking vessels, a loomweight and a stone tool (Shaw and Nixon 1996: 38).

Overall, the North House can be distinguished in terms of building techniques and wealth of finds (Shaw and Nixon 1996: 17). The excavators have identified within the house a division of space according to their function: the northern rooms were probably used for storing and seem to “have had a largely utilitarian function that served the entire

house, while the western and central suites may have been designed as working and living quarters for separate groups within an extended family" (Shaw and Nixon 1996: 40).

Next, the Oblique House (Figure 4.9) was built in the LM IA period south of Road O2, opposite to the North House. It was originally made of the three Rooms O14, O15 and O16 and Space O20—only part of which was excavated—for a total of 88 m^2 (Shaw and Nixon 1996: 60). In the north-west corner of Room O16, there was a platform combined with a drain channel going through the north wall to Court O13, where it would have been possible to empty the liquids of the platform (Shaw and Nixon 1996: 64, 67). The excavators (Shaw and Nixon 1996: 67) have interpreted this installation as a washing place for either clothes or people, however the recovery of whetstones together with dining and cooking ware suggests that this installation could have been used for food processing activities taking place in this area.

The House with the Press (Figure 4.10) takes its name from a spouted stone installation identified in Room 5 and identified as an oil press (Shaw and Nixon 1996: 105). This House is situated in a central position on the southern edge of the Hilltop Area and covers an area of about 91.80 m^2 (Shaw and Nixon 1996: 106). The House consists of a northern block, subdivided into Rooms 10a, 10b and 8, and two consecutive Rooms southern of it, respectively Room 5 and Room 2. This last room is the largest space of the House and was connected to the entrance of the House in its north-west corner through Lane 7/4 (Shaw and Nixon 1996: 105–106). These spaces will now be discussed in turn.

Excavations of Rooms 10a and 10b, which were connected, have identified some stone slabs and platforms which probably served as table surfaces and seating areas for working activities, possibly food processing, as some shell remains and stone hand tools were also found (Shaw and Nixon 1996: 113–115). The excavators rely mostly on the

small dimensions of Room 10a, insulated environment and location within the building to interpret this room as a food storage area (Shaw and Nixon 1996: 113–114). Pottery sherds recovered from Room 10b mostly consist of coarse ware suggesting that also this room was probably used for storing purposes (Shaw and Nixon 1996: 114–115). Room 8 was characterised by small blocks possibly used as working stations, as supported by the recovery of various tools (Shaw and Nixon 1996: 115–116). Miscellaneous finds from this area include pottery and stone wares, stone tools, burnt traces and shell remains belonging to both edible and non-edible types (Shaw and Nixon 1996: 116). According to the excavators, activities conducted in this area could be associated to food processing and possibly making personal ornaments (Shaw and Nixon 1996: 116). Room 8 was connected to the southern Room 5 through a threshold. The floor surface of Room 5 was paved with horizontal slabs on top of which an olive press was identified in association with a stone spouted vessel, a small platform and a pithos used in the production of oil (Shaw and Nixon 1996: 117–118).

Through a door on the southern wall of Room 5 it was possible to access Space 2, which was roofed as suggested by the posthole on the west of the hearth located in the centre of the room (Shaw and Nixon 1996: 119–120). A small basin was located in the north-western corner of the area, partially interred in the slab paved ramp leading to the door (Shaw and Nixon 1996: 121). Two mortars were identified along the western wall, while in the south-western corner of the room a small platform was identified together with a saddle quern and a couple of stone tools (Shaw and Nixon 1996: 121–122). In the north-east corner of the structure, there is a pi-shaped enclosure which was probably used as a cupboard, and next to it a slab with two circular depressions for supporting pots (Shaw and Nixon 1996: 121–122). South of this, there were two flat stones which could

be used for seating or working surfaces, as supported by the recovery of some hand tools next to these (Shaw and Nixon 1996: 121–122).

It is peculiar that the House with the Press could only be accessed through Lane 7/4, unlike other contemporary houses at Kommos which were furnished with multiple entrances (Shaw and Nixon 1996: 124). Moreover, the threshold presents pivot holes indicating that the entrance could be closed off with a door (Shaw and Nixon 1996: 124). Overall, the evidence for productive activities such as the pressing of olives conducted in this house suggest its employment as a workshop as well as a dwelling (Shaw and Nixon 1996: 126).

4.2.1.2. Hillside Area MM III–LM I

The House with the Snake Tube (Figure 4.11) was a single storey building comprising eight rooms (Shaw and Shaw 1996: 200). The building is a rough rectangular measuring north–south 7.50 m by 11.50 m east–west (Shaw and Shaw 1996: 201). Evidence from this building indicates that storing and food processing activities were being conducted, while Room 11 has been interpreted as either a washing area or a latrine, supported by both chemical analysis of the soil components and comparisons across the Minoan world in terms of size, form and location within the structure (Shaw and Shaw 1996: 205). Overall, the Hillside Area seems to be less populated in LM compared with earlier phases (Shaw and Shaw 1997: 425). As in the Hilltop Area, evidence from this period mostly consists in dumps, like the one found in the House of the Snake Tube (Shaw and Shaw 1997: 424–425).

4.2.1.3. Southern Area MM III–LM I

House X (Figure 4.12) is located in the north-east corner of the Southern Area, at the junction between two slab-paved roads—Road 17 and Road 32/34 (Shaw and Shaw 1997: 426). This last road connected the main entrance of House X to the major Building T, whose importance will be discussed later. The location of this house, separated from the rest of the residential area, combined with Minoan elite architecture and fresco decorations, suggests a different status for its occupiers and possible palatial connections (Shaw and Shaw 1997: 426; 2010: 545; Shaw 2015).

House X was the largest house of Kommos, with a rectangular shape covering about 205 m^2 to which a second storey should be added, as suggested by the two stairways identified (Shaw 2012a: 2). The ground floor can be divided into rooms different in dimension, shape, and findings, indicating that they were dedicated to various functions. For example, in room X2, a doorless space in the northern part of the house, three aligned pithoi were found together with various shells and bones which suggests that this room was used as a storage area (Shaw 2012a: 17–19). Rooms X6 and X8–10 were probably dedicated to storage and productive activities, as suggested by the mortar recovered *in situ* from Room X9 (Shaw 2012b: 120). Some activities were also being conducted in the columned porch X16, which separated the spaces dedicated to storage and industrial activities from the residential areas (Shaw 2012b: 120). House X has been identified by Maria Shaw (1996c: 369) as belonging to McEnroe's (1982) Type 2 of Neopalatial houses. House X also provides examples of a pillar room and lightwells, which are typical of elite Minoan architecture (Shaw 1996c: 369; Shaw 2015). All the other houses across Kommos have been identified as belonging to the Type 3, that is the most common and simple category (McEnroe 1982: 10; Shaw 1996c: 369). Such a division builds on the

argument that the MM III–LM I settlement was characterised by the presence of social groups belonging to different levels, with a clear hierarchical distinction.

Taking up most of the Southern Area, Building T (Figure 4.13) was built on the ruins of a Protopalatial Building AA, maintaining its rectangular shape with the exception of the north-east corner, where the northern side was shortened to allow Road 34 to enter the building (Shaw 2006b: 21). Overall, Building T measured 61.10 m on the northern side by about 55 m, of which only 22.84 m have been excavated on the eastern side (Shaw 2006b: 21). Squared ashlar masonry was employed both for the facades and other exposed areas within the building, such as courts and piers and door partitions, typical of Minoan palatial architecture (Shaw 2006b: 17; 2015). The only two known entrances to the building were from Room 5, in the west wing, and from Space 43, to the south (Shaw 2006b: 17).

The north-west part of Building T, represented by Room 5, was initially identified as a separate structure referred to as Building J in earlier publications but later recognised as part of Building T (Shaw 2006b: 98, 101). No other references to Building J will therefore appear in this work, including everything under Building T. This area was probably built towards the end of MM III, before the rest of the building, as suggested by the differences in the construction techniques with its projection towards east, which had large orthostate slabs set on a single stepped socle, unlike Room 5 which was of simple ashlar on a double-stepped krepidoma, that is a socle (Shaw 1986: 254; 2006b: 20). Excavations have also identified a bench along the eastern wall and painted plaster decorations along the interior walls (Shaw 2006b: 24). Located at the entrance of Building T, Room 5 provided a gathering area from which it was possible to control access to the upper storey and was thus interpreted as a clearinghouse for both local and visiting merchants to discuss their business (Shaw 2006b: 18, 24–25).

Building T was characterised by a rectangular pebble courtyard (Spaces 7 and 15) measuring 28.64 m by 39.10 m (Shaw 1986: 262). The court was delimited on the east by the perimeter of building T, while on the west side, because of erosion and later employment of masonry, excavators could only suppose that it was flanked by an ashlar wall (Shaw 1986: 247, 251; 2006b: 59). The courtyard was furnished with two stoas, one to the north and one to the south, both with six columns and highly decorated (Shaw and Shaw 1997: 428–429; Shaw 2006b: 27). They probably developed on two storeys, as suggested by the staircases in the western ends of both the north and south stoas, which probably led up to a loggia above the stoa and to the roof (Shaw 2006b: 58–59). The stoas were unusual as they were not connected with the rear rooms but could only be accessed from east and west and they were particularly deep to host large gatherings of people for different reasons (Shaw 2006b: 27, 91–96). Concentrations of plaster offering tables, together with some drinking sets and food related ware, were identified in both stoas, where ritual activities were possibly conducted (Rutter 2004: 72; Rutter and Van de Moortel 2006: 377–425; Shaw *et al.* 2006a: 751–770; Shaw *et al.* 2006b: 849). However, it seems that only after their destruction in late LM IA both stoas were used as productive areas, as indicated by the recovery of raw materials, tools, debris and incomplete objects associated with pottery production and metalworking (cf. Evely 1993: 547–554; Shaw *et al.* 2006b: 850). LM IA pottery was recovered from the South Stoa, to which needs to be added the dump of a kiln that was built in this area (Shaw *et al.* 2001; Shaw 2006b: 58). This kiln is oval measuring 5.40 m by 3.20 m and is characteristic of MM III–LM I Crete. During LM IA–B, the Northern Stoa was subdivided into different areas for functional purposes. Burnt traces have been identified in Room 16, together with cup sherds, cobbles and other stone tools, and crucibles, suggesting that bronzeworking activities were being conducted in this area (Shaw 1984: 273). In the south-east corner of the room was set a

bin of four slabs where the fragment of a basin was also found (Shaw 1986: 249). North-west of the bin, there were four more "three-side slab enclosures", each associated with a stone mortar, which probably used to be closed on their fourth side with plaster and were employed for storage, possibly of grain (Shaw 1986: 249). Similar installations have been recovered in Rooms 4 and 12 of the House with the Snake Tube (Shaw 1986: 250). It thus seems that during LM IA–B, the Northern Stoa was employed for conducting both metalworking and food processing activities, such as storage, grinding and cooking (Rutter 2004: 67–72; Shaw *et al.* 2006b: 850).

The eastern wing of Building T was subdivided from north to south in ten long rooms about 3.89–4.60 m wide (Shaw 2006b: 47). The two northernmost divisions were formed by Rooms 42, 19, 21, 23, 24a–b, and by rooms 22 and 25a–b respectively (Shaw 2006b: 47). The layouts of rooms 24a–b and 25a–b are similar to storerooms and large amounts of pottery, especially pithoi, were recovered from each of them but Space 25b, suggesting that this eastern area of Building T, including Room 23, was dedicated to storage activities (Shaw 2006b: 41). During LM IA–B these two galleries were modified and subdivided into different spaces as the rest of the Northern Stoa. Excavations have uncovered a concentration of 16 loomweights from Room 25, which was possibly used for storing weaving tools (Shaw 2006b: 43–46). Next to the southern wall within Room 22, two slab-enclosed hearths were identified, together with various animal bones, seashells, and drinking pottery (Shaw 2006b: 44). A spouted stone basin, which was recovered in secondary deposition south of Room 22, was associated with the south-east corner of this room, where it was probably employed for pressing olives for oil production (Shaw 2006b: 44). Overall, finds suggest that food processing and consumption took place in this area (Shaw 2006b: 44).

The central seven rooms—namely spaces 26, 51, 27, 28, 35, 50, and 36—were unroofed and opened on Pebble Court 15. A large quantity of finds was recovered from Space 27, comprising MM III pottery, 13 loomweights and 10 schist bars (Shaw 2006b: 49–50). While it should be clarified that their association with Building T is not certain, the loomweights support the argument for weaving activities being conducted in this eastern wing (Shaw 2006b: 49–50). The schist bars have been interpreted by the excavators as evidence for either "a nearby workshop or a floor decoration that had been installed" (Shaw 2006b: 50). Space 36 could only be excavated in its western end, which opened on the pebble court (Shaw 2006b: 54). This room was 3.90 m wide and the floor surface paved with limestone slabs, on top of which various finds were recovered including pottery, fragments of moulds, copper strips and a bronze chisel (Shaw 2006b: 54). A hearth was also identified together with burning remains, cooking vessels and faunal remains, indicating that this area was probably used for food processing (Shaw 2006b: 54). Finally, room 43 was about 4.6 m wide as was probably separated at 1.50 m from the southern wall by another parallel wall flanking a flight of wooden stairs leading to an upper storey or to the roof (Shaw 2006b: 55). Behind the stairways, there was one of the accesses to Building T (Shaw 2006b: 55). At the western end of each wall comprising the area north of the staircase, there is a block with a notch on the inside, as to host a slab to partially close off this room (Shaw 2006b: 56). Excavations have identified a greenish-grey clay surface as the floor of this room, to which was associated a crucible fragment (Shaw 2006b: 56).

Because of its location on the sea, the excavators have recently interpreted Building T as a naval centre, where ships were being stored in all of the galleries with the exception of the northernmost one—formed by Spaces 42, 19, 21, 23, 24a–b—and the southernmost Space 43 (Figure 4.14, Shaw 2019: 88). According to the excavators, both

these galleries were too narrow to host ships and would have instead been used for storing ship equipment "such as sails, masts and rudders" (Shaw 2019: 88). This argument relies mainly on comparisons with the much later Zea Harbour at Piraeus and on the identification of a slipway connecting the predecessor structure of Building T to the sea (Rankov 2013: 479; Shaw 2019: 88). However, the argument that all of the other eight galleries were used as shipsheds seems unconvincing, starting from the fact that the second northernmost gallery was internally subdivided for storing purposes and therefore would not have been able to host a ship. I am not suggesting that this building was not used for seafaring related activities such as storing goods or even ships, but the identification of the entire building as a shipshed only seems inconsistent with the evidence previously presented. Whether Building T was used as an institutional building is also difficult to assess, however it can be associated with some administrative and public functions. First, the extremely large dimensions of this building and the many similarities with palaces in terms of architecture, building techniques and decoration, suggest that it was not a private elite residence. Next, the argument for drinking and possibly ritual activities taking place in the Stoas is much more appropriate with a communal nature of Building T rather than its complete use as a shipshed. The LM IA–B employment of this building for productive activities, like metalworking and pottery production, could possibly reflect a less institutional use of these spaces, which would maintain their communal nature. It is possible that Building T could have been a communal area used for multiple purposes, including storing and naval related activities, like shipshed functions.

4.2.2. *Late Minoan II–IIIA1 Final Palatial Period*

The transitional LM II period was marked by a decline in the Cretan population, resulting in the downsizing and abandonment of sites (Watrous and Blitzer 1997: 516). During the

LM II–IIIA1 period, Crete was characterised by intensified evidence for interactions with Mainland Greece (Hallager 2010: 154). In the LM II period, there was a continuity of occupation at Kommos and, during LM III, the Messara experienced a period of development that can for instance be seen in the construction of various large buildings at Hagia Triada (Shaw and Shaw 1997: 431–432).

4.2.2.1. Hilltop Area LM II–LM IIIA1

On the Hilltop Area, the limited evidence for LM II pottery sherds from some structures, namely the North House, the Cliffside House and the House with the Press, can be associated with a continuity of occupation of this area from MM into LM III (Shaw and Shaw 1997: 426). Metal scraps, a mould and crucible were also found in Room N11 associated with a LM IIIA context, indicating that metalworking activities were being conducted in the later phase of this building (Shaw and Nixon 1996: 34).

4.2.2.2. Hillside Area LM II–LM IIIA1

Moving to the Hillside Area, the House with the Snake Tube (Figure 4.15) underwent some alterations in the LM II period. Room 11 went out of use in this period, while Room 10 was built south of it, although it was abandoned soon after in LM IIIA2 (Wright and McEnroe 1996: 213–214). A high number of organic remains was recovered from this structure together with dining wares, suggesting that food consumption was conducted in this area (Wright and McEnroe 1996: 212–216). Other activities related to the House of the Snake Tube include weaving and fishing, as indicated by the recovery of various loomweights and fishhooks, and possibly metalworking was conducted in Space 40 (Wright and McEnroe 1996: 216). Various fragments of imported pottery dating to LM IIIA1 were also recovered from the pottery deposit of Room 10 and more generally across the Hillside Area (Wright and McEnroe 1996: 216).

4.2.2.2. Southern Area LM II–LM IIIA1

LM II evidence across the Southern Area of Kommos is mostly limited to House X, which had undergone significant structural changes at the end of LM IB and by LM II the northern rooms X1, X2, X3 and X10 were no longer accessible from the building (Rutter 2017b: 235–237). As a consequence of this closure of spaces, the south-western areas of the House developed as to create new rooms (Rutter 2017b: 237). The significant high amount of cooking wares from the eastern section of House X has been interpreted as evidence for a second household living in this structure (Rutter 2017b: 184, 238). Generally, many unused areas filled up with debris and during LM IIIA1 the upper storey collapsed (Rutter 2017b: 237–238).

Moving to Building T, some LM II new occupation took place in the north-western area, with the identification of burnt traces on a new floor level of Room 5 and Space 7 (Shaw 2006b: 26–27). The large amount of cooking ware recovered from this last space indicates that cooking activities were conducted in this area, as supported by the presence of a hearth and the faunal remains associated to it (Shaw 2006b: 26–27). At the same time, some areas of Building T went out of use, including the eastern part possibly as a consequence of a collapse, before the entire building was completely abandoned by the end of LM II (Shaw 1986: 249; 2006b: 27, 41).

4.2.3. Late Minoan IIIA2–IIIC Period: Postpalatial Period

Between the end of the 13th and the start of the 12th century BC, the Aegean experienced the so-called collapse of the palace societies (Shelmerdine 2001: 372–376). While this event is usually represented by the various destructions recorded across the Aegean (Dickinson 2006; 2010), more recent studies have focused instead on the evidence for continuity and transformation characterising various aspects of contemporary societies

(Deger-Jalkotzy and Lemos 2006; Bachhuber and Roberts 2009). During LM IIIA2–B, the Mesara went through a regional revival: a general increase in population is reflected in the architecture through the subdivision or extension of existing spaces rather than constructing new buildings (Watrous *et al.* 1993: 228; Shaw *et al.* 2006b: 874–875).

4.2.3.1. Hilltop Area LM IIIA2–IIIC

During LM IIIA2–IIIB, the North House (Figure 4.16) underwent various alterations marking a second occupation phase characterised by the blocking of various access points which divided the house in three separate areas of about the same size (Shaw and Nixon 1996: 42, 51). The first area comprises Rooms N3, N6–8 and N10–11. Room N3 preserved along its southern wall the stone slabs possibly used as platforms for food processing, as supported by two triangular pecked cobbles and some pumice recovered from the same area (Blitzer 1995: 438–439; Shaw and Nixon 1996: 43). LM IIIA2 pottery vessels were recovered from Room N11, including a kylix, five conical cups, a brazier, an amphoroid krater and fragments of Canaanite jars (Shaw and Nixon 1996: 45). Finds from this area also include a loomweight and some shells (Shaw and Nixon 1996: 45). The absence of installations and predominance of small finds led the excavators to reject the association of this room with either cooking or storing activities (Shaw and Nixon 1996: 45), while food consumption could still be an option.

The second area comprised rooms N4, N5, N16, N9 and N17b. Room N4 maintained some slabs along the walls possibly used as benches or shelves (Shaw and Nixon 1996: 45). Finds from both this room and Room N5 include some organic remains, drinking vessels and some stone tools suggesting the conduct of food related activities (Shaw and Nixon 1996: 45). Finds from the southern Room N5 were not very abundant though varied in nature, including a loomweight, a possible lamp, stone tools and some

seashells (Shaw and Nixon 1996: 45–46). Excavators have interpreted this room as a bedroom, where however other activities could also be conducted, such as food processing (Shaw and Nixon 1996: 45–46). Room N16 was characterised by the presence of three pi-shaped enclosures associated with food processing and cooking activities (Shaw and Nixon 1996: 46–47). While neither cooking nor storage wares have been recovered from Rooms N9, N16 and N17b, drinking and dining vessels seem to indicate that this area was dedicated to food consumption and possibly preparation, as suggested by the recovery of a bronze knife and some organic remains (Shaw and Nixon 1996: 47).

The third group of rooms is made by N17a, N12–13, N21, and N23. Excavations of Room N17a have identified two enclosures associated with cooking and serving vessels and stone tools, leading to the interpretation of these two installations as hearths, or possibly cupboards (Shaw and Nixon 1996: 48–49). Various food processing tools and implements were found, together with a brazier, in Room N12 (Shaw and Nixon 1996: 49). However, the presence of a large stone platform led the excavators to interpret this room mainly as a sleeping place, attributing to the brazier a lighting function, while it should also be considered that food processing activities were taking place in this area (Shaw and Nixon 1996: 49). Finds from room N13 are miscellaneous in nature, including local and imported pottery sherds, and various stone tools, which were probably stored in this area (Shaw and Nixon 1996: 49–50). Large amounts of dining, storing and cooking pottery were recovered together with various tools underneath the staircase N21, where they were probably stored in connection to the activities conducted in Room N17 (Shaw and Nixon 1996: 50–51).

Overall, the three different groups of rooms constituted independent residences which could be assimilated in terms of dimensions, number and function of rooms. By the end of LM IIIB period, most of the house had been abandoned with only some rooms

being still occupied (Shaw and Nixon 1996: 53–54). Excavations of Room N17a, for instance, have recovered both local and imported vessels dating to this phase (Shaw and Nixon 1996: 53–54). Dining, storing and cooking pottery was found with faunal remains, indicating that food was probably prepared and consumed in this room (Shaw and Nixon 1996: 53–54). Various stone tools and weights were also recovered, suggesting other activities not strictly related to the domestic sphere, such as metalworking, which has also been attested in Room N6 (Shaw and Nixon 1996: 53–54). Considering that parts of the North House had already been abandoned by this date, it is possible that the people occupying these spaces were "squatters" (Shaw and Nixon 1996: 54).

Moving to the Oblique House (Figure 4.17), during LM IIIA2, this building saw the development of the earlier trend creating individual small rooms: Room O19 was built in the south-east area and Room O12 was created from Court 21 (Shaw and Nixon 1996: 62). Excavations Room O19 identified a hearth in the north-west corner, together with very large quantities of fine decorated pottery as well as coarse vessels (Shaw and Nixon 1996: 68–69). They belong to different categories, including storing, dining and cooking, and were both locally produced and imported from Chania and Italy (Shaw and Nixon 1996: 68–69). The recovery of stone tools for food processing supports the interpretation of this room as a cooking area (Shaw and Nixon 1996: 68–69). Installations identified in room O12 include a hearth and a stone enclosure, possibly used as a cupboard, while the recovery of stone tools for food processing indicate that this room was employed as a kitchen (Shaw and Nixon 1996: 65). Moreover, a high density of local and imported pottery fragments, mostly cooking ware, was found in this area, supporting its interpretation as a kitchen (Shaw and Nixon 1996: 65).

Rooms 22 and 29 were also built, resulting in the destruction of the eastern wall of Room O14, which had been abandoned at the end of LM IIIA2 (Shaw and Nixon 1996:

62). Room O16 was opened up in the north-east corner and paved with a pebble floor, possibly indicating the transformation of at least part of it from an inside area to an outdoor one (Shaw and Nixon 1996: 62). Burnt traces were identified in the western part of the room together with mixed stone tools, local and imported cooking and dining ware (Shaw and Nixon 1996: 67). It seems like that the washing platform went out of use in LM IIIB (Shaw and Nixon 1996: 67). From court O16 it was possible to access Road O18 and Court O13, which had now been enclosed (Shaw and Nixon 1996: 62). In this court, the LM IB slab enclosures mentioned above were still in use and some LM IIIA2–B cooking pottery was recovered from the north-east one, near which there were some limpet shells and burnt traces (Shaw and Nixon 1996: 66). Very large quantities of pottery dating to LM IIIA2/B were recovered from the courtyard, including imported storage jars, and cooking ware, suggesting that cooking and possibly eating activities were being conducted in this area (Shaw and Nixon 1996: 66). Overall, it seems that the new independent areas built in this period were mostly used as kitchens.

In LM IIIB, it was no longer possible to access room O12, while in the same period a curvilinear wall was built across Spaces O16 and O20, possibly with retaining purposes (Shaw and Nixon 1996: 62). Finds recovered from Space O20 mostly consist in vessels and stone tools for food processing, although it should be mentioned that a female figurine was also found in this area (Shaw and Nixon 1996: 68). By the end of LM IIIB, the Oblique House had been abandoned.

Similarly to the Oblique House, also the House with the Press in the southernmost area of the Hilltop Area underwent some structural changes in LM IIIA2, marking a second period of occupation. Room 10a was abandoned towards the beginning of LM IIIA2, when the door leading to Room 10b was blocked (Shaw and Nixon 1996: 114).

The almost absence of artefacts from rooms 10b and 8 suggests that these were also abandoned soon after (Shaw and Nixon 1996: 126).

Room 5 was still employed for olive oil production. Various LM IIIB pottery fragments were also recovered from Room 5, mostly belonging to drinking, cooking and storing shapes (Shaw and Nixon 1996: 116–119). Excavations of Room 2 have recovered a large amount of LM IIIB pottery, including Italian imports (Shaw and Nixon 1996: 119). Excavations of this area have identified a floor surface made of white earth and some pebbles, while the roof was no longer covering the entire area, which was used for working activities (Shaw and Nixon 1996: 119–121). The central hearth and the roof pole were no longer in use (Shaw and Nixon 1996: 123). Pottery was mostly recovered from the southern area of the room, which, according to the excavators, remained roofed for the longest (Shaw and Nixon 1996: 123). Shapes are mostly of the drinking type, followed by storing vessels, like amphorae and stirrup jars; cooking wares were also present (Shaw and Nixon 1996: 123). Various imported pots from Cyprus, Mainland Greece, and Italy were identified in this area (Shaw and Nixon 1996: 123). Towards the end of this period, the House with the Press was probably mostly revolving around its productive function (Shaw and Nixon 1996: 127). It has been suggested that the presence of Italian wares could be connected to specific specialised activities conducted there (Shaw and Nixon 1996: 127). More specifically, relying on Watrous' argument (1992: 182) that Italian wares probably contained metal to be used on site, Shaw and Nixon (1996: 127) argue that Room 2 could have been used as a storage area for metal scraps for metalworking conducted in nearby areas.

4.2.3.2. Hillside Area LM IIIA2–IIIC

On the Hillside Area, the House with the Snake Tube underwent some alterations in the LM IIIA2 period (Figure 4.18) such as the demolishment of the southern walls of Rooms 2 and 4 which created an open area including areas 7, 10 and 11 (Wright and McEnroe 1996: 217–218). Room 4 could also be accessed from space 3/13 from which in LM IIIB was separated by an open hearth and a quarter-circular platform (Wright and McEnroe 1996: 224–226). Opposite to this, in the north-west corner of Room 4 there was a pi-shaped enclosure containing a brazier which does not show any burnt traces, unlike the fragments of cooking pots recovered from the same room (Wright and McEnroe 1996: 227). Considering the assemblages from this room, excavators have suggested that the vessels deposited here were being used elsewhere for cooking (Wright and McEnroe 1996: 227–229). Among dining and cooking vessels recovered from this area, there was a so-called snake tube which is traditionally associated with religious activities (Wright and McEnroe 1996: 227). In LM IIIB, Space 14 was separated from Space 3/13, where were found about 1,500 pottery fragments, for a total weight of 32 kg of which 17.6 kg were made of coarse ware (Wright and McEnroe 1996: 225). The predominance of cooking fabrics and the high number of cooking shapes, combined with the installations from this room, suggest that cooking activities were conducted in Space 3/13 (Wright and McEnroe 1996: 225). It should be noted that there is almost no evidence for food or water storage in the LM IIIB House with the Snake Tube (Wright and McEnroe 1996: 232).

There seems to be a general shift of activities towards the eastern part of the Hillside Area, where metalworking activities were conducted. The easternmost house of the Hillside Area was also continuously used throughout LM period and underwent major renovations and architectural changes in LM III. A staircase was built in the northern area of this structure descending into a paved area (Shaw 1982: 169). On the east, Room 38

had been flanked by new walls furnished with vertical slabs and its floor was raised, although the hearth maintained its original position (Shaw 1982: 169). A pithos and a cylindrical container were recovered buried in the ground and with their mouths covered with slabs (Shaw 1982: 169). Underneath the slab covering the pithos, there were traces of a thick dark substance and of corrosion caused by the content of the pithos, according to Shaw (1982: 169), possibly associated to the process of wine turning into vinegar. Other finds from this room include LM IIIB domestic pottery, both local and imported, bronze and stone tools, as well as shell fragments (Shaw 1982: 169; Wright and McEnroe 1996: 221). Finally, a significant amount of charcoal and burnt seeds were recovered together with a burnt mound of clay, interpreted as a hearth with a long time of use (Shaw 1982: 169).

On the east of the paved area, a ramp of beaten earth led into a horseshoe-shaped room (Shaw 1982: 169). The walls of this structure were built setting large upright slabs on edge, like the walls along the staircase (Shaw 1979: 158; 1982: 170). The recovery from this area of a stone platform and a spouted stone press, together with charred olive pits, a large jar and other cooking and domestic pots indicate that this area was used for olives or grapes pressing (Shaw 1982: 170). Excavations have shown that this structure used to be larger and was later downsized when Room 19 was built to the west of it, possibly as a storeroom or auxiliary for the wine or olive production (Shaw 1982: 170).

Generally, the LM IIIB Hillside Area was characterised by employing and reorganising already existing structures. Not many artefacts and personal belongings have been identified in association with this period (Wright and McEnroe 1996: 234). Most of the spaces were used for food processing activities and evidence for other activities is restricted to the snake tube recovered from Room 4 and associated with ritual activities, and bronze working (Wright and McEnroe 1996: 234). “The basic pattern of habitation

of the Hillside Area after LM IIIA1 is one of increasing limitations" leading to the LM IIIB abandonment of Kommos (Wright and McEnroe 1996: 234).

4.2.3.3. Southern Area LM IIIA2–IIIC

By LM IIIA2, the occupation of House X was limited to spaces X4, X5 and X7 on the ground level (Rutter 2017b: 238). Artefacts recovered from this structure indicate that storage and drinking activities, possibly of ritual nature, continued to be conducted in these spaces, although no more than two individuals would have been able to fit in Room X7 (Rutter 2017b: 238). Room X5 was also used as a workshop for jewellery and personal ornaments (Rutter 2017b: 238). The broken wares recovered from the floor of these rooms suggest that House X underwent a final collapse during LM IIIA2 which resulted in its abandonment (Rutter 2017b: 203–206, 238).

Building N (Figure 4.19) measured 13.78 m by 19.40 m and could be accessed through a door from the south, leading to Court 6, around which different rooms developed (Shaw 2006b: 60–61). The structure was built mostly on top of the earlier Building T, employing the existing walls or building new ones (Shaw 2006b: 61). For example, the southern face of Space 7 was made of rubble blocks, horizontal slabs and reused ashlars (Shaw 2006b: 61–62). Two rooms were in the north-west corner of the building: the smaller Room 4 to the right and Room 5 to the left (Shaw 2006b: 60–61). They could both be accessed from the south, with Room 5 opening onto Space 7, which was probably covered (Shaw 2006b: 60–61). Two different floor levels have been identified within Room 4, the upper one hosting a hearth in the south-eastern corner (Shaw 2006b: 66). The recovery from this context of three stone tools, possibly used for grinding activities, as well as bone and shell remains suggests that food processing activities were taking place in this area (Shaw 2006b: 65–66). Excavations of Space 7

have identified burning traces associated with cooking activities on the floor surface, which was covered in LM IIIB pottery (Shaw 2006b: 64). Next to the threshold leading to Room 5, two storage vases were found *in situ* and one of them contains sea bream bones, indicating that the pithos was either used for food processing or to store dried or pickled fish (Shaw 2006b: 64). Rooms 12 and 13 were built along the eastern side of the court and probably belonged to a bigger eastern wing, with at least one more room developing northwards, now underneath the remains of the later Greek temple (Shaw 2006b: 61, 67). By the end of LM IIIA2/B, these two rooms merged into a single area, from which significant burnt traces were identified (Shaw 2006b: 68). The presence of fragments of bronze and copper ingots has led the excavators to argue for metalworking activities conducted in this area, while the stone tools and raw materials found in the northern area have been associated with either metalworking or cooking activities (Shaw 2006b: 68–69). Finds from this area also include imported pottery from the Cyclades, Cyprus and Egypt (Shaw 2006b: 69). Various miscellaneous finds have been recovered from Pebble Court 6: both local and imported pottery, loomweights, stone tools such as cobbles and whetstones, and large amounts of faunal remains (Shaw 2006b: 66). According to the excavators, this building was used for the administration of naval activities in connection with Building P, which has generally been interpreted in the literature as a shipshed, as it will be discussed below (Shaw 2019: 89).

Roughly contemporary with Building N, Building P (Figures 4.19–20) was also constructed on top of the remains of Building T. Building P was made of six galleries 38.50 m long and about 4.50–5.88 m large, covering a floor surface of over 1360 m^2 (Shaw 1986: 255–257; 2006b: 70). Because of their dimension, shape and finds, the galleries have been identified by the excavators as winter shipsheds (Shaw *et al.* 2006b: 851). There is no evidence that these galleries were closed on the west, thus facing the

sea and facilitating the movement and storage of ships (Shaw 1986: 257). It seems that Building P was built in stages, with the galleries having been built in pairs through time, starting from the two northernmost ones (Shaw 2006b: 75).

Moving to the six galleries, these will be now discussed in turn, starting from the north. The first one measures 5.41 m in width, comprising Spaces 26 and 51 (Shaw 2006b: 76). The floor surface of this gallery provided burnt traces and was scattered with LM IIIB vessels, including large amounts of cups and medium-coarse short necked amphoras (Shaw and Shaw 1993: 188; Shaw 2006b: 76). This locally produced type of pottery started to be widespread across the Kommian houses from LM IIIIA2 (Watrous 1992; Shaw and Shaw 1993: 188; Rutter 2000; Shaw 2006b: 76). The second gallery was 5.54 m wide and, like in the contemporary northern gallery, excavations have identified burnt traces on the floor surface in association with LM IIIA2 pottery deposits (Shaw 2006b: 76). On top of this first floor, a second surface was characterised by a horseshoe shaped hearth and a cylindric clay installation with significant burnt traces were identified in the south-eastern area of the gallery (Shaw 2006b: 76–77). A third floor made of flat slabs was identified in association with a hearth located in the south-eastern area, on top of the earlier cylindric installation (Shaw 2006b: 77). Overall, finds from this area include imported pottery from the Aegean islands and Egypt, short necked amphoras, fragments of cooking vessels, a lamp, and faunal and shell remains, as well as bronze and stone tools (Shaw 2006b: 77–78).

The third gallery from the north was 5.74 m wide, covering most of Space 28 (Shaw 2006b: 79). Excavations have identified seven stone slabs aligned on the central east-west axis dividing the gallery in half (Shaw 2006b: 79). These slabs were used to support timber poles possibly employed for scaffolding in the building phase, since these slabs were mostly covered by the floor surface (Shaw 2006b: 79–80). Two of the slabs

have been identified as large LM IIIA2 limestone anchors, pierced at the top and with two lower holes (Shaw 1995b; Shaw *et al.* 2006a: 745). Geological analyses on the fossils on the have indicated that they had either Cypriot or western Anatolian origin (Shaw 1995b). Large amounts of LM IIIA2 pottery have been recovered from this gallery and, concentrated in the western area, there were basins, drinking and cooking vessels (Shaw 2006b: 80). Faunal remains were also identified, together with stone bases and various bronze strips and blades (Shaw 2006b: 80). A second occupation period of the gallery has been dated to LM IIIB, when it seems that the structure was no longer covered by a roof (Shaw 2006b: 80). Pottery from this layer is very similar to the assemblage recovered from the second gallery, including both local elements such as short necked amphoras and cups, and imported storage vessels (Shaw 2006b: 80). Two loomweights were also recovered together with a bronze bead and faunal remains (Shaw 2006b: 80–81). In the south-eastern area of the gallery, two horseshoe shaped ovens were identified together with a possible cooking slab and LM IIIA2–B pottery fragments (Shaw 2006b: 81). Next to one of the ovens, there were various short-necked amphoras whose mouth had been removed to facilitate their use in food processing activities (Shaw 2006b: 81). The many LM III ovens identified either in the proximities of Building P or within its galleries suggests that a large amount of people was connected to this building, who employed the ovens for their subsistence (Shaw 2006b: 81). A third and last upper layer was identified within this gallery, providing a large amount of pottery vessels, especially short necked amphoras (Shaw 2006b: 82). Some of these amphorae contained red haematite, which was probably used in contemporary shipsheds, like Katsamba, to be applied to ships as an "anti-fouling agent" (Blackman 2013: 13; Shaw 2019: 89). A hearth was identified in the south-eastern corner of the structure, from which organic burnt remains, seashells and urchin spines were found (Shaw 2006b: 81–82).

Despite natural erosion and later Archaic Greek structures having significantly affected the preservation of the fourth gallery, it has been possible to identify its side walls, distancing 5.19 m from each other (Shaw 2006b: 82–83). Two bronze artefacts have been recovered from the only floor surface identified (Shaw 2006b: 82–83). Like Gallery 4, only the western part of Gallery 5 was excavated, revealing a 5.30 m wide area (Shaw 2006b: 83). Finds from this gallery mostly consist in LM IIIB pottery, including fragments of Canaanite jars and other imports (Shaw 2006b: 83). Faunal remains were also recovered (Shaw 2006b: 83).

The southernmost of the six galleries was also the narrowest, with a width of 4.43 m, while the pillars belonging to the earlier Building T walls were maintained (Shaw 2006b: 83). The floor surface of this gallery was lower than the court level on the west and therefore a retaining wall was built at the entrance of the gallery to stop water from entering (Shaw 2006b: 84). Finds recovered from this gallery include LM IIIB pottery, a worked cobble, shells and some metal fragments (Shaw 2006b: 83–84).

South of Building P, excavations uncovered a line of slabs set vertically in the soil on a west–south-west/east–north-east axis (Shaw and Shaw 1993: 182; Shaw 2006b: 71–72). South of this, namely in Area 45, two small clay ovens were identified, which were probably sheltered from wind by the aforementioned vertical slabs (Shaw and Shaw 1993: 182; Shaw 2006b: 71–72). One of these ovens contained a burnt fragment of an amphora (Shaw and Shaw 1993: 182). A third larger oven was built where the earlier LM IA pottery kiln used to be (Shaw 2006b: 72). The high number of LM III ovens identified in association with Building P, might have been associated with the various activities conducted on site (Shaw 2006b: 72).

Different interpretations have been suggested for Building P. The most common one sees Building P being used as a shipshed, with Building N as an administrative centre accessory to the shipshed activities (Shaw *et al.* 2006b). According to Hulin and German (2018), Buildings N and P were frequented and used by mariners for processing and consuming food and working activities respectively. Their interpretation builds on the wide distribution of low status foreign items "in non-elite settings, in small quantities and in unusual variety", which can be taken as a marker of mariners' presence on land (Hulin and German 2018: 361). Other scholars argue that the galleries of Building P could have been used for storage of grain or other perishable goods (Shaw 1985: 56; Bendall 2017: 328–329). While establishing the specific function of this building is beyond the scope of this thesis, it appears that this area was used for facilitating the economic activities of the site, especially in terms of maritime exchange.

Towards the end of LM IIIB, Kommos was mostly abandoned, although the recovery of some LH IIIC finds indicates human presence on site. While some sherds were recovered from the Hilltop (Shaw and Nixon 1996: 71, 129), most of the LH IIIC finds come from Room 5b of the Building N in the Southern area (Figure 4.21; Shaw 2006b: 85). Two fragments of obsidian, a stone basin and a metal lump suggest that some sort of productive activities were conducted in this area. Such an interpretation agrees with the identification of the only potential structure that was built in LM IIIC. An S–shaped wall was built across Room 7 of Building N and it would have created a smaller area employing the remains of the earlier building (Rutter 2017a: 246). An imported LM IIIC stirrup jar was recovered from this structure (Rutter and Van de Moortel 2006: 576; Rutter 2017a: 246).

4.3. Local Technologies and Workshops

The large number of finds recovered from Kommos will now be discussed according to their material, with a particular focus on evidence for local productive activities, and imports and foreign influences. The media discussed in turn are pottery, metalworking, stone working and hard materials, and bone and ivory implements.

4.3.1. Pottery

The LM IA pottery kiln identified in the southern Stoa of Building T (Figure 4.22) provides clear evidence for specialised industrial activities conducted at Kommos, especially considering the large dimensions of this installation (Van de Moortel 2001: 106–110). Most vases from the kiln and dump are wheel thrown but excavations could not establish whether a pottery workshop was located in the proximity of the kiln, despite the significant evidence from the kiln dump (Van de Moortel 2001: 34). This evidence includes a cylindrical pit identified in the dump area which could have housed a pivot stone for the potter's wheel, some coarse slabs which could have been used as bats, and pottery showing encrustations of ochre, used for vase painting (Van de Moortel 2001: 34–35). The evidence recovered suggests that the pots were thrown employing a low wheel with a large clay bat (Van de Moortel 2001: 34). Moreover, Blitzer (1995: 487, 521) interpreted as a pivot base a stone with socket recovered from the Hilltop Area and a potter's rib from the Hillside Area. Overall, pottery was produced at Kommos in LM I period, although the exact location of the workshop can only be speculated on. The pottery fired on site is much more standardised compared with earlier assemblages, both in terms of shape and decorations, and this is also reflected in the contemporary assemblages recovered from the Hilltop and Hillside areas (Van de Moortel 2001: 106–110).

The pottery produced from this kiln seems to have been produced quickly and with a minimal effort, as suggested by the lack of elaborated decorations, used every day in domestic contexts (Van de Moortel 2001: 106–110). It is not clear whether the production activities associated with this kiln should be envisioned within a larger market economy or were strictly associated with an institutional authority controlling Building T (Earle in Rice *et al.* 1981: 230; Shaw 2001: 110). It is difficult to assess whether the pottery produced at Kommos was exported across Crete as most samples reflect common Cretan contemporary styles (Van de Moortel 2001: 106–110; cf. Rutter 2017a: 262). However, the evidence for fast production could be associated with an increase in the production rate and scale (Van de Moortel 2001: 106–110), which in turn might reflect a market expansion and export towards other parts of Crete, though no certain exports have been identified yet.

Clay finds from Kommos include figurines of both animals and humans, respectively mostly bulls and women (Shaw 1996d: 289). Interestingly, only one male figurine dating to LM III has been recovered and no animal figurines dating to LM I–II (Shaw 1996d: 289, 294). Only 7 out of 27 attested human figurines were recovered from the public buildings in the Southern Area where however many animal figurines have been recovered (Figure 4.23). While most of the figurines were found in the Southern Area (Figure 4.24), 29 out of 47 come from domestic contexts, that is House X and the buildings in the Hilltop and Hillside areas, showing that "most household had their own figurines" and can be attributed a ritual function (Shaw 1996d: 282–302).

4.3.1.1. Pottery Imported to Kommos

The pottery recovered from Kommos included both local Mesara products and imports from the rest of Crete—including Gavdos—and other areas, that are mainland Greece and

islands, Anatolia, Cyprus, the Levant (here referred to as Canaanite), Egypt, and Italy, as shown in Figure 4.25 (Watrous 1992: 167–201). Artefacts with no specific dates, such as vessels indicated as "LC IIC Cypriot Late White Slip II" or "Western Anatolian Late Bronze Age", and vessels from later contexts have not been included in the graph, while when possible, analogies with the Cretan chronologies were made. When the period indicated was wider and included multiple subperiods, the weighted average of number of vessels was applied. Most of the pottery imported from outside Crete comes from the Aegean islands and the mainland until LM II–IIIA1, when Canaanite, Cypriot, Egyptian and Anatolian wares became predominant among imports recovered in Kommos. The final change in trends was in LM IIIA2–B when Italian imports were most numerous. The imported pottery will now be discussed in turn according to their origin, with a particular focus on Italian pottery. As in the case of Lipari, maps showing the distribution of imports are based on their recovery context and thus will include deposits and non *in situ* artefacts.

No significant chronological changes can be seen in the number of finds at Kommos imported from the Aegean islands and the Greek mainland, which seem to be predominant among the imports from outside Crete until the LM II period, with the exception of LM IB (Figure 4.26). Figure 4.27 shows that LM I imports, especially from mainland Greece, have mostly been recovered in the Southern Area to later become more widespread across the rest of the settlement.

As visible in Figure 4.28, most of the Anatolian finds from Kommos were recovered in association with House X. While no significant chronological trends can be identified, if compared with the other imports it is possible to identify an important presence of western Anatolian artefacts in the LM IB–LM IIIA1 period, to then decrease in the following periods (Shaw *et al.* 2006b: 860). As it will be seen below, this trend

seems to differ from what displayed by imports from other regions outside the Aegean, which increase around LM IIIA2.

This increase is particularly visible when looking at Canaanite pottery, which is predominant in the LM IIIA2 period. Looking at the distribution of this type of pottery across the site (Figure 4.29), it appears that, with one exception, Canaanite imports can be recovered across the Hillside and Hilltop Areas only from LM IIIA1 onwards. Overall, most of these artefacts consist in storing artefacts which were recovered from the Southern Area.

The earliest Egyptian import recovered in Kommos is a jug dating to LM IA–B which was found in Room 10 of the House with the Snake Tube on the Hillside Area (Figure 4.30, Watrous 1992: 162). No other Egyptian finds earlier than LM IIIA1 were recovered outside the Southern Area, where they were distributed between the Spaces 5, 7, the north-west part of the Pebble Court, and House X. Starting from LM IIIA1, finds become more widespread across the site, following the same trend identified above for the other imports.

In comparison with other imports, the percentage of Cypriot pottery recovered is much more constant throughout the period analysed, with the exception of LM IA–B. There are only three pottery finds dating to the Neopalatial period and they were all recovered in Building T and House X, with the earliest artefacts being a MM III–LM IA jug from the South Stoa. From LM IIIA1 Cypriot pottery starts spreading across the site, with some concentrations identified on the Hillside area (Figure 4.31). As most of the Cypriot pottery belongs to the dining and drinking category, suggesting that they were used in everyday activities, it could be argued that the imports arrived into the Civic Buildings first to then be moved towards the Hillside and Hilltop Areas.

The earliest Italian imports appear at Kommos in LM IIIA1 and by LM IIIA2–B they had become predominant over other imported items (Cline 1994: 90). Looking at the distribution of Italian artefacts across the site displayed in Figure 4.32, it can be seen how all the LM IIIA1 finds were from deposits in the House with the Snake Tube, expanding towards the Southern Area, and the Hilltop, only in a later moment. While possibly associated with deposition biases, this trend seems the opposite of what identified so far for the other imports, which appear first in the Southern Area to be moved towards the domestic buildings in a later phase. Italian pottery imports mostly consist in storing shapes and bowls, the latter usually with a diameter slightly larger than those of *dolia* and collared jars and which could have easily been used as lids (Watrous 1992: 182). The collared jars are very similar to those identified in Lipari, while they have good parallels with Sardinian material, where they were used for storing metal (Bernabò Brea and Cavalier 1980: Plate CXI; Watrous 1992: 182). As aforementioned, given the recovery of some of the Italian storage jars in areas associated with metalworking activities, like Room 3 in the House with the Snake Tube, Watrous (1992: 182) argues that the Italian wares were probably imported as containers for bronze scraps to be used in metalworking activities on site. This relationship between Italian pottery and metal artefacts was further developed by Iacono (2013a), who has argued for a connection between HBW and metal trade based on patterns of chronology and distribution of HBWs and UBs across the Aegean. In these regards, the evidence from Kommos reflects the general picture from the rest of the Aegean, where HBWs can mostly be found in settlements (Iacono 2013a: 64). However, the significant quantity of Italian artefacts recovered from Kommos distinguishes the site from the other LH IIIB Aegean contexts where isolated fragments of HBW are usually found, with the exception of Tiryns and Chania, where however they

were mostly locally produced (Hallager 2003: 253–254; Kilian 2007: 46–47; Stockhammer 2007: 88–90; Iacono 2013a; 2019: 146).

Looking at the distribution of imported pottery across the site, there are some patterns that can be recognised. Interestingly, in most cases it is possible to see a change in the distribution of imported items around LM IIIA1–2, when they become more widespread across the site. This might suggest that, starting from this date, imports were widely used in everyday life by the inhabitants of the site. This trend also shows how imports were generally received in the Kommos harbour, possibly processed in the administrative Building N and then be moved up to the residential area.

Looking at possible pot marks, 31 possible signs, including some Linear B and Cypro-Minoan inscriptions, dating from MM III to LM III have been identified on both local and imported vessels recovered at Kommos (Figure 4.33, Table 4.2).They were mostly made prior to firing—only one of these was certainly inscribed after firing, and six are dubious—suggesting that they were related to the production process rather than to distribution and market system (Bennet 1996: 318). Their concentration in the Southern Area of the site, that is where the potter's kiln was located, might support this interpretation. About ten of these vessels have been identified as imports from outside Crete and it is noteworthy that the six whose origin has clearly been identified—from Cyprus, Egypt and the Levant—were all recovered from Kommos' Southern Area. Despite the fact that these marks bear similarities with the Linear scripts and were probably influenced by these, five of them are dubious Linear B signs and only one has certainly been identified as a Linear B sign painted before firing (Bennet 1996: 320–321). The LM III marks find many comparisons across the Aegean (Bennet 1996: 321), suggesting the existence of a shared knowledge or customs regarding their employment.

Image	Excavation Number	Date	Location	Origin	Vessel	Production Technique	Possible Function	Interpretation	Bibliography	Notes
X	I19	MM III	SA		Large coarse ware	BF, incised	Production (potter or batch number)		Bennet 1996, 315, no. 2, pls 4.46; Christakis 2014, no. KM 23	
X	C1483	MM III	CH		tripod tray, leg	BF, incised	Production (potter or batch number)	one vertical line	Betancourt 1990, 166, no. 1436, fig. 55, pl. 74; Christakis 2014, no. KM 6	
	C1913	MM III	SA		lentoid jar, bottom	BF, incised	Production (potter or batch number)	double axe within a circle	Betancourt 1990, 170, no. 1549, pl. 79; Christakis 2014, no. KM 30	
X	C6599	MM III/LM I			tripod cooking pot, leg	BF, incised	Production (potter or batch number)	one vertical line	Betancourt 1990, 183, no. 1869, fig. 65, pl. 95; Christakis 2014, no. KM 4	
X	C6598	MM III/LM I			tripod tray, leg	AF?/BF?, incised	Production (potter or batch number)	one vertical line	Betancourt 1990, 183, no. 1865, fig. 65, pl. 94; Christakis 2014, no. KM 7	
X	C6584	MM III/LM I			cooking pot, leg	BF, incised	Production (potter or batch number)	two vertical lines	Betancourt 1990, 183, no. 1868, fig. 65, pl. 95; Christakis 2014, no. KM 8	
X	C6611	MM III/LM I			cooking pot, leg	AF?/BF?, incised	Production (potter or batch number)	five vertical lines	Betancourt 1990, 183, no. 1870, fig. 65, pl. 95; Christakis 2014, no. KM 9	
X	I18	MM III–LM IA	CH	Non local	Conical cup	BF, incised	Inscription?		Bennet 1996, no. 3, pls 4.46, 4.48	
X	I53	MM III–LM IA	SA	Cypriot?		BF, incised	Production (potter's mark?)	CM	Bennet 1996, no. 4, pls 4.46, 4.49; Rutter and Van de Moortel 2006, 580, no. MI/UP/3, pl.3.90	
X	C9415	MM III–LM IA	SA	Crete	closed vessel	BF, incised	Production (potter or batch number)		Rutter and Van de Moortel 2006, 403, no. 12/4, pl. 3.31; Christakis 2014, no. KM 19	
X	C9430	MM III–LM I	SA		tripod cooking pot, leg	BF, incised	Production (potter or batch number)	three vertical incisions in an inverted triangular arrangement	Rutter and Van de Moortel 2006, 401, no. 9b/10, pl. 3.30; Christakis 2014, no. KM 21	
X	I1	MM–LM III	HT		Open, Rim fragment	BF, incised	Inscription?	I/re?	Bennet 1996, no. 8, pls 4.46, 4.50	
X	I2	MM–LM III	HT		Open, body fragment	BF, incised		ra?	Bennet 1996, no. 9, pls 4.46, 4.50	

X	C10263	LM IA	SA		jar, vertical strap handle			three-pronged impression	Rutter 2017: 54 no. X6:1/4, Fig. 2.43	
X	I5	LM IIIA	CH	Local	Stirrup jar? handle	AF?/BF?, incised	Distribution of vessel	je?	Bennet 1996, 317, no. 12, pls 4.46, 4.50; Christakis 2014, no. KM 20	
X	I51	LM IIIA1	SA	Local	Jar, vertical strap handle	AF?/BF?, incised	Distribution of vessel	Cross sign	Bennet 1996, 317, no. 11, ppls 4.46, 4.50; Rutter and Van de Moortel 2006, 578, no. MI/Cy/10, pl.3.89; Christakis 2014, no. KM 13	
X	C285	LM IIIA1/2	SA	Knossos	amphora, handle	BF, incised	Production (potter or batch number)		Watrous 1992:40, no. 702, fig. 30, pl. 16; Christakis 2014, no. KM 15	
X	I43	LM IIIA2	SA	Canaanite	Jar, vertical strap handle	AF?/BF?, incised	Inscription?	CM 91/je?	Bennet 1996, no. 7, pls 4.46, 4.49; Rutter and Van de Moortel 2006, 577, no. MI/SP/2, pl.3.88	
X	C10065	LM IIIA2	SA	Egypt	amphora	incised		possible horizontal line	Rutter and Van de Moortel 2006, 532, no. 57d/6, pls. 3.64, 3.92	
X	I50	LM IIIA2	SA	Cypriot?	Large coarse ware, handle	BF, incised	Production (potter's mark?)	CM 28?	Bennet 1996, no. 5, pls 4.46, 4.49; Rutter and Van de Moortel 2006, 578, no. MI/Cy/9, pl.3.89	
X	I47	LM IIIA2	SA	Canaanite	Jar, vertical strap handle	AF, incised	Weight	De? /metric unit?	Bennet 1996: 317, no 13, pls. 4.47, 4.51; Rutter and Van de Moortel 2006, 650, no. 56e/9	comparison from Pyla-Kokkinokremos
X	I21	LM IIIB	SA	Local	Conical cup, base	BF, incised	Production (potter or batch number)	X	Bennet 1996, 316, no. 6, pls 4.46, 4.49; Rutter and Van de Moortel 2006, 545, no. J60/7, pl.3.70; Christakis 2014, no. KM 10, 11	
X	I7, C7915	LM IIIB	HT		Shoulders	BF, painted		Ka	Bennet 1996, no. 10, pls 4.46, 4.50	
X	C45	LM IIIB	CH		tripod cooking pot, leg	BF, incised	Production (potter or batch number)	one vertical line	Watrous 1992:95, no. 1654, fig. 62, pl. 42; Christakis 2014, no. KM 1	Only one reporting inscription is christakis
X	C2494	LM IIIB	SA		tripod cooking pot, leg	AF?/BF?, incised	Production (potter or batch number)	one vertical line	Watrous 1992:78, no. 1346, fig. 50, pl. 32; Rutter and Van de Moortel 2006, 543, no. 59/16, pl. 3.68; Christakis 2014, no. KM 2, 3	
X	C9941, C12086	LM IIIB	SA	Canaanite	jar, body	incised		arc	Rutter and Van de Moortel 2006, 565–66, no. 72/6, pls. 3.82, 3.94	

X	C2504	LM IIIB	SA	Chania	three-handled ring-based cup, base				Rutter and Van de Moortel 2006, 541, no. 59/4, pl.3.67	possible
	C5397	LM IIIB	HT	Chania	stirrup jar	incised			Watrous 1992: 82, no. 1408; Shaw and Shaw 1996	
X	C10361		SA	W Anatolia		incised		horizontal groove	Rutter and Van de Moortel 2006, 566, no. 73/a2, pls. 3.82	
X	C9926		SA	W Anatolia	jar	BF, incised		probable hemispherical sinking	Rutter and Van de Moortel 2006, 579, no. MI/WA/4, pl.3.90, 3.94	possible
X	C8203		SA	Non local	closed shape	BF, incised		two vertical lines	Rutter and Van de Moortel 2006, 520, no. 53/3, pl.3.57	possible

Table 4.2—Pot marks identified on MM III–LM III vases from Kommos.

4.3.2. Metalworking

Various areas dedicated to metalworking activities have been identified across the entire site of Kommos, starting from the MM III–LM I clay crucibles and tuyeres recovered from Building T in the Southern Area (Blitzer 1995: 502–504; Shaw *et al.* 2006a: 729). These crucibles belong to an EM and MM local type with various comparisons across Eastern and Central Crete (Blitzer 1995: 502, 528). Moreover, the absence of moulds alongside these crucibles might suggest that the metalworking conducted here was probably aimed at producing items such as strips, wires and bars used in everyday activities (Blitzer 1995: 528). Overall, it seems that the evidence for metalworking activities in the Neopalatial period was concentrated in the Southern Area of the site to disappear after LM IB until LM III (Blitzer 1995: 527–528).

Generally, between the end of LM IB and LM II there is a change in the type of metalworking activities conducted at Kommos. The LM II fragment of crucibles and tools recovered from Space 7 indicate that some level of metalworking activities continued in the Northern Stoa (Shaw 2006b: 26–27), but appeared also around the residential areas, including House X (Blitzer 1995: 520, 527–528). However, these activities seem to have been conducted on a smaller scale compared with the Neopalatial Period (Blitzer 1995: 527–528). The small bridge-spouted clay crucibles used for the melting activities and recovered in association with the House with the Snake Tube, the North House and House X, find many comparisons across Crete from LM II onwards, indicating the use of local technologies (Blitzer 1995: 504–505, 528). A jeweller's stone mould (Figure 4.34), engraved to produce earrings of three different sizes, was recovered from Room 6 of House X, even if from a mixed Minoan/7th century BC context (Shaw *et al.* 2012: 87). However, the earring shape finds comparisons across Minoan Crete and the mould could have been used either for casting or pressing metal foil, possibly gold or lead, like the

similar earring recovered from a LM I–II context of Space 7, south of the House with the Snake Tube (Dabney 1996b: 264–265; Shaw *et al.* 2012: 87–88). The MM III–LM I presence of lead and gold jewellery implies that at the time raw materials were being imported, possibly from the Laurion and outside Crete respectively, to be worked on site (Dabney 1996b: 263–264, 270). In LM IIIA–B, lead was replaced by bronze for jewellery production, as suggested by the rings recovered from the Oblique House and Building P (Dabney 1996b: 264–265).

Metalworking activities continued both on the Hilltop and Hillside Area, with evidence from the North House dating from LM IIIA1–2 to a period subsequent to the abandonment of the structure (Shaw and Nixon 1996: 34, 54). On the Hillside Area, LM IIIB metalworking activities were being conducted also in areas 3/13 in the House with a Snake Tube and in the southern Space 53 (Wright and McEnroe 1996: 234–235). Possible evidence for LM IIIA2/B metalworking activities was also identified in the Southern Area, namely in Rooms 12 and 13 of Building N (Shaw 2006b: 68–69).

A total of six fragments of copper ingots have been recovered from these two rooms and from Rooms 30 and 32 on the Hillside Area (Blitzer 1995: 500–501; Shaw *et al.* 2006a: 725–726). All the ingots are contemporary to the date suggested for metalworking activities—LM IIIA2 in the eastern Hillside Area and LM IIIB in the Southern Area—and they originated in Cyprus (Muhly *et al.* 1988: 291; Blitzer 1995: 500–501; Shaw *et al.* 2006a: 725–726). Overall, it is possible to identify an increase in the areas dedicated to metalworking activities in LM IIIA2, which seem to be widespread across the entire Kommos site. Considering that in this period the site seems to be characterised by a more industrial nature, it could be argued that this spreading of metalworking activities could be related to an increase in the need of liquidity that metal endows to economic transactions. Moreover, after the collapse of the Palatial

administration, it is possible that metal was more frequently used as a commodity due to its intrinsic value, and thus wider validity.

The LM IIIA2–B metalworking level was highly specialised as testified by the 12 different clay moulds recovered from the Northern Area and the Hillside Area which were used in the lost-wax process for the production of double-axes (Blitzer 1995: 506–507). According to Blitzer (1995: 506, 531), these double axes were probably produced for being exported outside Kommos, considering that only one double-axe was found on site. Some LM IIIA2 blades from some galleries of Building P have been associated with sawing of wood or similar materials (Shaw *et al.* 2006a: 717). This could be associated with the ship maintenance activities which would have been conducted in the galleries if these were used as shipsheds.

4.3.3. Stone Working and Hard Materials

The evidence from Kommos for stone working and hard materials include jewellery and personal ornaments, stone vases, and slabs with depressions. Each category will now be discussed in turn.

The on-site production of jewellery was not limited to the metalworking industry, involving also the production of beads and pendants, which were made with materials local to the Mesara, such as steatite, shells and pebbles (Dabney 1996b: 263). The recovery of unworked or partially worked raw materials suggests that these were being worked at Kommos, although no specific workshop area has been identified (Dabney 1996b: 263). Up until LM I/II jewellery production also involved precious stones such as lapis lazuli and amethyst, which had to be imported (Dabney 1996b: 263–264). This period corresponds also to significant craftsman skills in the work of local materials for the production of beads and pendants, which significantly declines if compared with the

cruder LM III ornaments (Dabney 1996b: 263–264). Out of the eight seals dating EM II–LM III recovered across the entire site of Kommos, five were from House X, including one EM II–MM I seal from Room X2 (Dabney 1996b: 269; Shaw *et al.* 2012: 85–87). From this same room, two more were found dating to LM I (Shaw *et al.* 2012: 85–87).

Vessels make another category of stone items widely present across the site, especially from the Hillside Area (Schwab 1996: 271). The evidence for stone vessels production at Kommos is limited to raw materials recovered from the eastern Hillside Area, the latest being Space 33 dating to the LM I period (Schwab 1996: 272). Despite the fact that stone vessels had mainly been produced in the EM III–MM period, on site they were probably preserved and passed on to later generations as they were mostly recovered in MM III—LM I and LM IIIA/B contexts, such as the elaborated squat alabastron found in LM II Room X2 (Schwab 1996: 271–273; Shaw *et al.* 2012: 84). Some of these vases have been associated with a ritual function, as in the case of the offering table made of serpentine and found in a LM III context of Room 5 in the House with a Snake Tube (Schwab 1996: 271).

Finally, 12 stone slabs with depressions, ranging from 2 to 21 in number and made with a cobble, were found across the site dating from MM III–LM I to LM IIIA2–B (Whittaker 1996). Only the two slabs used as thresholds were in their primary context of deposition, while three more were recovered *in situ* but as reused (Whittaker 1996). According to their context of recovery, they can generally be interpreted either as board games or offering tables, as in the case of the three recovered around the House with the Snake Tube which have been attributed a ritual function (Whittaker 1996: 321). The use of threshold slabs as board games finds comparisons across Crete, Cyprus and Egypt (Swiny 1980: 59–62; Whittaker 1996: 322). Since the depressions on one of the slabs did not display any recognisable pattern, it is possible that this was more generally used as a

working table and the depressions resulted from grinding activities (Whittaker 1996: 322).

4.3.4. Bone and Ivory Implements

Various bone tools have been recovered across Kommos, 26 of which date between MM III–LM IA and LM IIIA2–B (Blitzer 1995: 497–500). These include various flat points, recovered mostly from the LM I–II dump in Space 7 south of the House with the Snake Tube and from Building X (Blitzer 1995: 497). Relying on the large number of fishhooks recovered from these areas, Blitzer (1995: 497) associates these thin tools with fishing net manufacture. Other bone implements include other tools such as spatulas and sleeves (Blitzer 1995: 497). A worked LM IIIA2 boar's tusk sliver was also recovered from the Hillside Area, which is where most of the bone implements and artefacts were recovered across the entire site of Kommos (Blitzer 1995: 497–500). Despite their recovery mostly from secondary contexts and dump, it can be argued that bone working activities were conducted in the Hillside Area.

Noteworthy is the recovery from the Hillside Area of two LM III sawn cubes of elephant ivory (Reese and Krzyszkowska 1996: 324). The origin of the elephant tusks is uncertain—either African or Syrian—indicating that raw materials were being imported at Kommos for being worked on site (Reese and Krzyszkowska 1996: 326). Unfortunately, both cubes were found in secondary deposition and therefore not much can be said about their context of recovery. However, they show sawing marks, suggesting that ivory was worked at Kommos during LM III despite the fact that no finished ivory artefacts were recovered on site (Reese and Krzyszkowska 1996: 324). Moreover, their recovery across the Hillside Area, which is where bone working activities were probably conducted, supports the argument the ivory was being worked on site.

Overall, in terms of local technologies and workshops, various productive activities were being conducted at Kommos. There is a shift in the type of imports, initially of luxury nature and mostly dedicated to the production of personal ornaments to then focusing on vessels and general functional items. This corresponds also to an improvement in the craftsmanship skills, which reflect a more specialised production. It also appears that the technologies adopted in the various working spheres were local and do not show any significant foreign influence, with evidence for imports mostly consists in pottery vessels and some raw materials for metal and ivory working, while most of the ground stone was locally sourced (Blitzer 1995: 418).

4.4. Social Organisation

The evidence presented above has shown that olive oil and possibly wine production were conducted at Kommos. The various mortars and querns dating to the MM III–LM I period could have been used together with the spouted basins with handles for processing olives and grapes (Watrous 1992: 115; Shaw 1996a: 390–391). Interestingly, their reduction in number corresponds with the LM I appearance of proper presses across the settlement which remained active until LM III, suggesting that the processing of olives shifted from being household based to centrally organised (Blitzer 1995: 479–484, 528).

In terms of storing, Figure 4.35 shows the chronological distribution of storage areas across Kommos. MM III/LM IA evidence for storing installations across the residential areas is limited, suggesting that perishable containers were being employed (Shaw 1996a: 382). Separate platforms serving as base for storing vessels were identified in Rooms 23, 24 and 28 on the Hilltop Area, and partially buried pithoi were found in Room X2 of House X and Room 6 of the House with the Snake Tube, where some more were installed in Room 39 in LM IIIA2 (Shaw 1996a: 382). However, unlike after LM

IA, storing areas diminished and under-stair units started to be used as pottery cupboards, as in the case of staircase N21 in the North House (Shaw 1996a: 382). While across the site of Kommos there seems to be a decline in the presence of large storing areas over time (Falezza 2025b: 471), this could be valid only if we do not consider Building P as storing areas due to the ongoing debates on its function mentioned above. Even in this case, the LM II–IIIA1 period would still be lower than the previous period to then increase again in the LM IIIA2–B, although without reaching the level of storage areas recorded for the MM III–LM IA period. This being said, it is interesting to notice how the number of finds recorded in the database and which have been attributed a storing function is actually increasing over time, corroborating the growing importance of Kommos as a port.

Overall, it seems that by LM II the importance of agricultural activities at Kommos had significantly decreased and the evidence presented shows between LM II and LM IIIA1 a general decline in terms of food processing and storage areas, apart from the large quantity of specialised hand tools recovered from the Hillside Area (Blitzer 1995: 529–530). Kommos was no longer relying on agriculture and Blitzer (1995: 531) argues that it became "dependent on the external world for at least some of its processed commodities (metal, certainly)". If we consider the argument that the galleries of Building P could have been used for storage of grain or other perishable goods (Shaw 1985: 56; Bendall 2017: 328–329), this was probably collected from the entire Mesara plain to be exported. It appears how, like other activities, even the agricultural production was no longer conducted on a self-sufficient base but for economic purposes. This evident change in the social life of people at Kommos culminates in the apparent abandonment of the site in LM IIIB2 (Blitzer 1995: 529–530).

The excavators have calculated that the Neopalatial town extended for about 40,000 m^2, of which 35,000 m^2 were inhabited as the Civic Area was probably not used for residential purposes (Shaw 1996b: 7; Shaw *et al.* 2006b: 848). On these bases and comparing them with the suggested average population per hectare in contemporary sites across the Aegean, Shaw (1996b: 7) maintains a conservative approach and estimates that no more than 400 people lived at Kommos in this period. This number is then meant to decrease to 200 individuals by the end of LM IIIA, when the population is no longer based on agricultural subsistence but relies on industrial activities (cf. Blitzer 1995: 532; Shaw 1996b: 7).

4.4.1. Banqueting, Feasting and Religion

LM IA evidence for religious activities was identified across the site of Kommos despite the absence of household shrines dating earlier than LM II/III (Shaw 1996d: 290). While in the residential area, ritual evidence is mostly associated with the recovery of figurines, even if in secondary deposition, in the public Building T the recovery of drinking and dining ware together with some plaster offering tables, suggests that feasting and public activities, possibly of public nature, were conducted in this area.

As aforementioned, two household shrines can be recognised in LM III Kommos, which will be discussed in turn below. These shrines occur within a room of a house characterised by structural installations like benches or offering tables and items usually associated with ritual functions (Gesell 1985: 47–53; Shaw 1996d: 290).

A household shrine dating to LM II–IIIA1–2 has been identified in Room X7 of House X, where on top of a small offering table two miniature jugs were found with a conical cup containing shells and pebbles (Shaw and Shaw 1993: 149–153). Among other finds from this room, there are two *in situ* kalathoi, a brazier, an incense burner and a

steatite lentoid seal engraved with a bird-woman (Shaw and Shaw 1993: 149–153; Shaw *et al.* 2012: 86–87).

The LM IIIA2 snake tube recovered from Room 4 of the homonymous structure, where were also a quarter-circular platform and a brazier, suggests that ritual activities were conducted in this area (Shaw 1996a: 391; Wright and McEnroe 1996: 226–229). Maria Shaw (1996c: 372) suggested that the shrine in the House of the Snake Tube could have been public in nature, considering that by LM IIIA2, that is the date of the snake tube, Room 4 was open to the south and in a central location within the buildings (Wright and McEnroe 1996: 226–229). Overall, there seems to be a transition from public ritual activities and feasting to more private ones, while dwellings also reduce in number and size.

The change detected in the ritual sphere from public to private is also flanked by a diminishment in the luxury displayed across the settlement, both from an architectural point of view, such as frescoes and elite residences like the North House and the House X, and in the personal ornaments recovered across the site. It thus appears that the change in the nature of the settlement from agriculturally based to industrially active corresponds to a decline in the visibility of social differences among the inhabitants. At the same time, the significant increase in imports from outside Crete indicates that Kommos is much more open and active as a port of interactions on the Mediterranean trading networks. This trend seems to be different from what is seen so far in the Italian ports of interactions, where the opening to wider Mediterranean networks seems to come alongside the appearance of different social groups within the community. Such a difference will be better investigated in the next Chapter, which will also address whether these differences depend on geographical or social factors, among others.

5. A SINGLE MODEL OF PORTS?

5.1. Chronological and Spatial Trends

The three sites presented in this thesis are located in different geographical areas of the Central Mediterranean and Aegean and, nevertheless, they do present some common patterns both from a morphological point of view, and in terms of physical and social organisation. This chapter will analyse and discuss potential similarities and differences with the purpose of investigating whether the existence or absence of common physical and behavioural patterns can be attributed to different geographical contexts or to the participation of these ports of interactions in diverse trading networks. Each section will analyse the evidence with a chronological approach, comparing LBA settlements contemporaneous in time. In order to better analyse and identify contemporary and diachronic trends, Table 5.1 compares the different chronologies for each case study analysed in this work.

<table>
<tr><th>Dates (all BC)</th><th colspan="2">Kommos</th><th colspan="2">Roca Vecchia</th><th>Lipari</th></tr>
<tr><td>1750–1700</td><td>MM III
(1700–1600)</td><td rowspan="7">Neopalatial
(1700–1425)</td><td rowspan="2">EBA</td><td rowspan="5">Proto-Apennine</td><td>Capo Graziano I</td></tr>
<tr><td>1700–1650</td><td rowspan="3">LM IA
(1600–1480)</td><td rowspan="4">Capo Graziano II</td></tr>
<tr><td>1650–1635</td><td rowspan="3">MBA 1</td></tr>
<tr><td>1635–1625</td></tr>
<tr><td>1625–1500</td><td rowspan="3">LM IB
(1480–1425)</td></tr>
<tr><td>1500–1480</td><td rowspan="8">Milazzese</td></tr>
<tr><td>1480–1470</td><td rowspan="2">MBA 2</td><td rowspan="4">Apennine</td></tr>
<tr><td>1470–1420</td><td>LM II
(1425–1390)</td><td rowspan="2">Final Palatial
(1425–1370)</td></tr>
<tr><td>1420–1390</td><td>LM IIIA1
(1390–1370)</td><td rowspan="3">MBA 3</td></tr>
<tr><td>1390–1350</td><td rowspan="3">LM IIIA2
(1370–1300)</td><td rowspan="12">Postpalatial
(1370–1000)</td></tr>
<tr><td>1350–1330</td></tr>
<tr><td>1330–1300</td><td rowspan="2">RBA 1</td><td rowspan="6">Sub-Apennine</td></tr>
<tr><td>1300–1240</td><td rowspan="3">LM IIIB</td><td rowspan="4">Ausonian I</td></tr>
<tr><td>1240–1200</td><td rowspan="3">RBA 2</td></tr>
<tr><td>1200–1190</td></tr>
<tr><td>1190–1180</td><td rowspan="5">LM IIIC</td></tr>
<tr><td>1180–1150</td></tr>
<tr><td>1150–1100</td><td rowspan="2">FBA 1</td><td rowspan="5">Ausonian II</td></tr>
<tr><td>1100–1070</td><td rowspan="3">Protovillanovan</td></tr>
<tr><td>1070–1060</td><td rowspan="2">FBA 2</td></tr>
<tr><td>1060–1040</td><td>Subminoan</td></tr>
</table>

Table 5.1—Absolute and relative chronologies of the three case studies. Absolute dates follow the high chronology adopted by Manning 2010 (lower dates according to Tartaron 2008: 84 are in brackets). References to the Italian chronology are according to Scarano 2012b: 381; Martinelli 2020; Iacono *et al.* 2021 (adapted after Falezza 2025b: 460, Table 1).

Another issue that will be addressed is to what extent some of the changes in trends identified, as well as the way space was structured in ports of interactions during the BA, could be connected to wider macro-trends taking place across the Mediterranean, such as the so-called LBA collapse. Hence, before proceeding with the comparison of evidence from the three ports of interactions analysed, it is important to address the various

destruction horizons that affected them to provide a background context. The two Italian sites have provided evidence for violent destructions at different stages of the period analysed, while no evidence for a violent destruction, neither anthropogenic nor natural has been identified at Kommos. The destruction events characterising the three sites show different chronologies and consequent patterns of socio-political organisation which might raise doubts on the validity of comparing these different areas. However, their differences need to be considered as an advantage which allows us to understand the nature of the interactions between the ports analysed and to what extent they could influence the dynamics of societies located in other areas of the Mediterranean (cf. Iacono *et al.* 2021). It has been argued that, despite the continuity of interactions, some effects of the Aegean and Eastern Mediterranean collapse event can be identified in Southern Italy, like at Coppa Nevigata and Trinitapoli, although these are extremely limited cases and there is mostly evidence for resiliency (Cazzella *et al.* 2004; Iacono 2019: 210; Iacono *et al.* 2021). The potential identification of changes influenced by larger transformations, such as environmental changes, destruction events, or broader transcultural trends, will make it possible to assess to what extent ports of interactions were affected by their geopolitical context rather than being independent to a certain degree. Similarly, destruction events affecting ports of interactions far away from their geographical context can provide information on both the strength and nature of these networks.

5.1.1. Political Geography of the Case Studies

Different types of settlements have been identified in the MBA Apulia. Roca Vecchia is classified among the fortified coastal settlements. Being able to access and control water and other resources, these types of sites benefitted from strategic geography offering an overview on both the terrestrial and maritime surroundings and main communication routes (Bianco 1991–1992; Scarano 2012b; 2017c). The hinterland was instead

characterised by dispersed clusters of smaller non-fortified hamlets primarily sustained by agriculture and pastoralism (Cazzella and Recchia 2013a: 56; 2021: 436; Iacono 2016a). Despite the differences in scale between the fortified sites and the hamlets, there is no unquestionable evidence to suggest that the former exercised control over the latter, as they both appear to have been self-sustaining (Cazzella 2010b; Cazzella and Recchia 2013a: 55). While hamlets were probably relying mostly on farming and herding, it is possible that fortified centres specialised in crafting activities and exchange (Cazzella and Recchia 2013a: 55), especially considering their favourable position on the main trading routes.

During the MBA and LBA, southern Italian communities were generally believed to be organized through territorial associations rather than kin-based structures (Peroni 1996: 15). Nonetheless, kinship ties and land association could coexist, as kin relations do not necessarily exclude a connection to land and resources (Wolf 1997: 88–96; Iacono 2019: 37). The building of fortifications suggests a degree of communal coordination, potentially rooted in familial ties or cooperative networks (Cazzella 2009; 2010b: 93; Cazzella and Recchia 2017; Iacono *et al.* 2021: 37). Although evidence for social hierarchy in the MBA remains limited (Cazzella 2010b: 93; Cazzella and Recchia 2017), according to Scarano (2012b: 85–87), the monumental character of the fortifications at Roca Vecchia increases their symbolic meaning, contributing to the power landscape of Apulia as an expression of the local elite. The symbolic meaning of fortification walls is further corroborated if considering the role of local elites in organising the external interactions of Roca, both at a smaller scale and a larger intra-Mediterranean one (Scarano 2012b; 2017c). However, as mentioned before, the evidence for the existence of elites in Proto-Apennine Southern Italy is scarce even when considering the data from the funerary contexts (Cazzella 2009; 2010b: 93; Cazzella and Recchia 2017). Towards the end of

MBA and throughout RBA, Apulia experiences a slight decrease in the number of sites, which are now mostly concentrated on the coastal area (Iacono 2019: 119–121). Moreover, surface surveys of the hinterland of Roca Vecchia seems to indicate that in this period the occupation of the site started to significantly extend outside the fortification walls (Iacono *et al.* 2024a). The slight decline in the number of sites recorded in the RBA was overturned in the FBA, when sites increased again in number (Iacono 2019: 161). Compared with the previous periods, fortified sites were more common although most of the walls had been built in earlier phases (Iacono 2019: 163).

The location of the Lipari acropolis provided it with a good intervisibility with Sicily and Calabria, as well as with a favourable visual on the trading routes crossing this area and on the harbouring inlets next to the settlement (Martinelli *et al.* 2021: 47). Lipari played a pivotal role within the Aeolian archipelago, especially starting from the Capo Graziano II period, when various sites on the island and across the Archipelago were abandoned (Levi *et al.* 2020: 11; Martinelli *et al.* 2021: 36–38). The islands still inhabited, that is Lipari, Filicudi, Salina, and Stromboli, were characterised by coastal occupation, while the "inner upland plains" were employed for agriculture (Martinelli *et al.* 2021: 36). Maritime activities supported local communities in terms of sustenance and trading within the Archipelago locally produced pottery (Brunelli *et al.* 2013; Levi *et al.* 2020; Martinelli *et al.* 2021: 37). This evidence has been associated with the absence of a stratified society at least until the end of the Capo Graziano II period (Brunelli *et al.* 2013; Levi *et al.* 2020: 20). By the Ausonian I period, the acropolis of Lipari is the single area still settled across the entire archipelago (Martinelli *et al.* 2021: 36–38). The longevity of Lipari compared with the rest of the Aeolian Archipelago points towards the prominent position of the island both on a smaller scale in terms of interactions with the other nearby

islands and, as evidenced from Aegean imports, on a larger interregional scale (Martinelli *et al.* 2021: 50).

Moving to Kommos, both textual and archaeological evidence help cast light on its political geography, although results are not necessarily definite. First, it is important to consider the general political geography of Crete. Because of its mountainous geomorphology and topography, the possibility of a single site to control large areas is limited, with the exception of the period comprised between LM II and LM III, as indicated by the Linear B tablets (Bennet 1990: 207). In the Neopalatial period, palaces acted as main regional centres which relied on a series of second-order sites characterised by the presence of central buildings, like at Hagia Triada, Archanes and Gournia; a third level of settlements comprised villas and country houses (Bennet 1990: 196–198, 207). The situation changed between the end of LM I and LM II, when Knossos probably became the main administrative centre on the island and the Linear B tablets from Knossos indicate the existence of at least six second-order centres, which would have facilitated the administration of further away territories (Bennet 1985; 1990: 208–209). In this three-tier hierarchy, Bennet (1990: 208–209) identifies sites such as Kydonia and Phaistos being second tier, and then describes as third-order centres, like Tylissos and Amnisos, sites which probably maintained their importance from the Neopalatial period but were now connected to the second-order centres. Kommos would probably then belong to the third tier because it is administratively below Phaistos.

In terms of textual evidence, the third-order classification of Kommos is further strengthen if associated with the Linear B toponym *da-wo*, which was situated nearby the second-order centre of *pa-i-to*, possibly putting together the areas of Hagia Triada and Phaistos (Bennet 1990; Bendall 2017: 210). From the Linear B records, it appears that the activities conducted at *da-wo* and *pa-i-to* were different in scale—the first collecting

greater quantities of grain while the second is characterised by a larger presence of workers and industrial activities—and *pa-i-to* was more involved in high-level administration (Bendall 2017: 324). It is also because of the proximity to Hagia Triada that Privitera (2009a: 72) disregarded the identification of *da-wo* with Kommos as it would have collected grain from an area as large as to include Hagia Triada. It is however highly probable that both sites were under the control of Knossos (Bennet 1985) at least until the time of destruction of the main Knossian archives when Chania may have replaced Knossos as main centre on Crete (Shaw *et al.* 2006b: 874–875).

The identification of Kommos as a third-order site is consistent with the archaeological evidence as it coincides with the hierarchy of settlements argued by some on the base of site dimensions and specialised activities conducted on site (Branigan 2001: 39–41; Whitelaw 2001b: 27; 2017: 123). At the top of this hierarchy there would be sites over 20 ha with palatial buildings, followed on the second tier by towns usually in the between 4 ha and 10 ha, although with some exceptions, and furnished with "substantial central buildings which in their architectural features and furnishings emulate the principal palaces, of which the most obvious at present are Arkhanes, Gournia, and Petras" (Branigan 2001: 39–41; Whitelaw 2001b: 27; 2017: 123). The third tier is formed by small settlements playing an important role in the economy and exchange of Crete rather than from an administrative point of view, like Mochlos, Zakro, and Kommos (Branigan 2001: 41). While not all the scholars have discussed a three-tier hierarchy of the settlements, regional field surveys have led to a general agreement on a hierarchical division of settlements which could depend on their different scale, presence of certain architectural features, and conduct of specific activities (Nixon 1987; Branigan 2001: 39–41; Whitelaw 2018: 231). Furthermore, the continuous importance of Kommos in the Western Mesara in the period analysed went beyond its function as harbour town of

Neopalatial Phaistos (Simpson *et al.* 1995; Watrous and Hadzi-Vallianou 2004: 291–304).

It thus appears that Kommos belonged to a proper political system spread across the territory, with a hierarchy of sites. In the MBA, the Italian sites did not belong to any overarching political organisation with a hierarchy of sites like for Kommos. However, this situation changes through time, and it appears how the sites in Southern Italy become increasingly more important across the territory. This applies to both Roca Vecchia and Lipari regardless the different occupational trends across their geographic areas. Overall, it is important to bear in mind the different chronologies of the sites, meaning their histories and trajectories which have led them to that point.

To sum up, unlike Lipari and Roca, Kommos likely was not the main centre in the surroundings, but above all a harbour town supplying the needs of the secondary centres of Phaistos and Hagia Triada in the Mesara (Watrous and Hadzi-Vallianou 2004). Despite the difference in the political geography of the three sites analysed, their nature as ports of interactions does not necessarily prevent the existence of some common elements, which will be further identified and discussed in this Chapter.

5.1.2. Ports and their Streets

As mentioned in Chapter 1, being ports of interactions, the three sites analysed developed on high-energy coasts, which more susceptible to natural erosion due to winds, currents and tides (Falezza 2025b: 464). Both Roca Vecchia and Lipari were on a promontory between two natural bays and Kommos provided anchorage in the lee of an islet, to which it was originally connected through a sandy tombolo (Figure 5.1, Pagliara 1987a; Shaw 1990; Jones *et al.* 2014; Mourtzas and Kolaiti 2020). The first difference that appears when comparing the physical plans of the three case studies is the absence at Lipari of

some sort of internal organisation through a street layout (Bernabò Brea and Cavalier 1980: 590), which is instead visible at Kommos and to some extent also at Roca (Falezza 2025b: 464–468). Sites in the central Mediterranean are generally not homogenous in terms of internal organisation, since there are also examples of contemporary sites furnished with a street layout like Faraglioni on Ustica or Thapsos in Sicily (Doonan 1993). Climate could also play a part in dictating the internal organisation of settlements and an example of this is provided by Faraglioni, where the buildings and streets were particularly narrow to protect from the sun (Rapoport 1969: 89; Doonan 1993: 34–35). Similarly, the creation of groups of round structures within a settlement, like in the case of Lipari, provides a major protection from the adverse weather throughout the year (Doonan 1993: 170). This practice was common across the central Mediterranean with examples not only from the Aeolian islands but also from Sardinia (Usai 2021). Apsidal buildings have been associated with climate conditions, such as particularly windy areas, also in the BA and Iron Age (IA) Aegean (Coldstream 2003; Betancourt 2006). Moving to Kommos, an orthogonal road layout crossed the site from west to east and from north to south, linking the residential area, formed by the Hilltop and Hillside areas, to the Southern Area. At Roca Vecchia, some of the MBA semi-hypogeum structures can be identified where the FBA roads belonging to a more defined layout will be identified, suggesting a possible earlier date of these (cf. Guglielmino 2014: 104).

Both ports of interactions located on larger land masses, that is Roca and Kommos, are characterised by a street layout within the settlement, with some streets also expanding outside towards their hinterlands (Falezza 2025b: 468). This is the case at Kommos of road 17/33, connecting the site with the rest of the Mesara plain (Shaw 1977: 201; Driessen and Macdonald 1997: 31). Interestingly, both the North House and the House X, identified as elite residences, are at the crossroad of two streets. While

separating these structures from the clusters of dwellings in the Northern and Hillside Areas, these roads would put the structures in a favourable location both within the settlement and in terms of connections with the nearby site of Phaistos and possibly the rest of Crete. Moving to Roca Vecchia, it could be argued that wagons travelled to the site from the hinterland through these major roads, as supported by the wheel impressions identified on the road passing through the monumental gate and leading into the settlement (Scarano 2012a: 22), and the by the graffiti of a chariot recognised on a collapsed block from the RBA main gate (Guglielmino and Pagliara 2017: 517). "The absence of a street network at Lipari (Bernabò Brea and Cavalier 1980: 590) could be attributed to its location on an island within an archipelago, where small scale connections via maritime routes rather than terrestrial ones were particularly frequent and facilitated" (Falezza 2025b: 468). Moreover, considering that Lipari is part of the Aeolian archipelago, small scale maritime connections were particularly frequent and facilitated. I will now shift from the internal organisation of these sites to their functional division.

5.1.3. Settlement Dimensions and Demography

While the three case studies are located in different geographical areas and do not hold the same position within the local political geography, they seem to be similar in terms of size (Falezza 2025b: 464). This comparison only takes into account the excavated area of the settlement, without considering the possible expansion of these sites across the hinterland resulting from regional surveys, as in the case of Roca where we have evidence for human presence also outside the fortification walls (Watrous *et al.* 1993; Watrous and Hadzi-Vallianou 2004; Iacono *et al.* 2020; Iacono *et al.* 2024a). Kommos was about 4 ha, the Lipari acropolis 3 ha, while the area within the fortifications of Roca Vecchia originally measured around 5 ha (Bernabò Brea and Cavalier 1980: 4; Shaw 1996b: 7; Scarano 2012a: 385). While these dimensions are not too dissimilar from each other, from

a wider perspective it can be seen how Kommos was smaller than other sites on Crete, while the Italian ports of interactions were among the largest in their areas (Cazzella and Recchia 2001: 159–160; Martinelli and Giordano 2017: 269). However, within a 2-hour walk radius, meaning approximately 8 km, while being secondary to the significantly larger sites of Hagia Triada and Phaistos, Kommos would have been bigger than about 20 settlements identified during survey of the area (Table 5.2; Watrous and Hadzi-Vallianou 2004). A completely different situation appears when looking at the Italian ports of interactions: no contemporary settlement can be found within the same distance from Roca Vecchia and the only settlement identified in the surroundings of the Lipari Acropolis that should be considered as a separate settlement rather than as an extension of the Acropolis is Quattropani, which measures less than 400 m^2 (Bernabò Brea and Cavalier 1957: 97–110; Recchia and Ruggini 2009: 97–110; Martinelli *et al.* 2021). Overall, it appears that the area around Kommos was much more densely settled than for the Italian ports, which in turn could have increased their importance as main centres in the surroundings.

Western Mesara			
Kommos	4 ha	58 Βοροι	Large?
Phaistos	56 ha	70	2 ha (225x90)
Hagia Triada	Large?	74	1 ha (140x80)
7	4.5 ha (150x300)	76	<1 ha (70x80)
8–Ζοδοκος Πιγι.	1.7 ha (170x100)	77	<1 ha (40x110)
13	<1 ha (75x75)	82	<1 ha (90x50)
16	Large	93	<1 ha (80x110)
17	<1 ha (50x60)	96	<1 ha 130x60
21	1 ha (130x95)		
30–Κουσουτλιτις	<1 ha (40x40)	**Apulia**	
45	1.5 ha(75x200)	Roca Vecchia	5 ha
49–*Λουρες*	2.6 ha (200x130)		
52–*Αγιος Σπουριδον*	150x?	**Aeolian Archipelago**	
53–Αγιος Δημητριος	3.2 ha (160x200)	Lipari Acropolis	3 ha
55 Καλλεριμι	(150x?)	Quattropani	378 m2 (28x13,5)

Table 5.2—Dimension of settlements present in the regions within a 8 km radius from each case study at the beginning of the period analysed in this thesis. The site numbers in the Western Mesara refer to Watrous and Hadzi-Vallianou (2004). Other data from Bernabò Brea and Cavalier (1957: 97–110); Recchia and Ruggini (2009: 97–110); Martinelli *et al.* (2021).

Despite the similarities in settlement dimensions, both the estimations and related trends of the demographic changes in each site are different. Starting from LM II, at Kommos there is a general decrease in size and number of domestic areas and scholars envisage a demographic decline (cf. Blitzer 1995: 532). The picture from Kommos is in sharp contrast with the evidence from both Roca Vecchia and Lipari, where buildings become bigger over time. However, larger buildings do not necessarily equal to more inhabitants, also considering that not all of them probably functioned as dwellings, and can instead indicate a different unit of co-residence or space per capita. At Roca, accepting the interpretation of the MBA posterns as dwellings, Guglielmino and Pagliara (2017: 518–519) have justified their employment as such with an overpopulation of the site. However, this is also when there is the first expansion outside the walled area, which

seems to increase in the later phases of the BA (Iacono *et al.* 2024b: 49–50). Moving to Lipari, most recent studies have argued for a decline in the population of the acropolis in the Ausonian I period (Levi *et al.* 2020: 12; Speciale 2021: 78, 101–103), which however recovered in the Ausonian II. However, many of the methods applied for Lipari have been criticised (see Chapter 3.4; Whitelaw 2001b), and demographic studies are notoriously venturing.

At Lipari, it seems that the Ausonian I decline in imports (Figure 5.2) is preceded and followed by major destructions and changes in the social components of the settlement. At the same time, the material culture of this period marks a very strict relationship with continental Italy, hinting at important connections in that direction. This hints that a favourable location and physical aspect is not the only factor at play in the flourishing of ports of interactions, but social stability is also important—whether this is a prerequisite or an outcome of the use of certain places as ports is a different matter. Both long distance and short scale interactions require a certain degree of continuity, highlighting the strong social component and influence over the LBA interactions across the Mediterranean. While this association between flourishing interactions and social stability could be true for Roca Vecchia and Lipari, it should not be obvious as all the three sites experience interactions to various degrees with different areas of the Mediterranean throughout the period analysed. Looking at Kommos, Figure 5.3 shows how imports significantly increase around LM IIIA1 to peak in LM IIIA2 and, though there is a decline in the following period, this is very slight and imported artefacts are still significantly higher than the numbers registered up until LM II. As mentioned in Chapter 1, the number of imports on its own is not very reliable as an indicator for influence. Considering the LM IIIA2–B demographic decline argued for Kommos, this Aegean case study shows how local demographic changes are not necessarily connected to quantity of

imports, since in this case, the quantity of imports and number of inhabitants follow opposite trends, possibly highlighting the strong harbour nature of this site. Goods are not necessarily associated with the local population as they are imported to the site to be relocated to other sites either via land or sea.

Finally, if we assume that the estimations provided in this thesis are correct, the Italian sites would have been more densely populated than their Aegean counterpart and this could be again associated with their different geo-political role. Rather than focusing on the demography, it seems more sensible to discuss density and nuclei of co-residency, as it would cast light on the settlement organisation and social structures characterising the three ports analysed. This will be possible starting by looking at the dimensions and layout of structures, both internal and in relation to the rest of the settlement, which will be done in the next sections.

5.1.4. Structures: Building Techniques and Layout

Looking at the building techniques employed in our case studies, at Lipari, the employment of dry-stone masonry reflected a common constructing method across the Aeolian islands both because of the availability of materials and in respect of climate conditions (Doonan 1993: 170–171). Also at Roca, the main building materials employed throughout the period analysed, namely timber and calcarenite, are locally available, although stone is much more used in the fortification walls than other structures (Scarano 2012a: 22–29).

At Roca Vecchia, MBA structures were mostly made combining stone fundaments or small walls made of local calcarenite, with wooden frames. This applies both to the fortification walls and to the MBA structure identified in SAS X (Pagliara *et al.* 2007; Scarano 2012a). Moving to Lipari, the Capo Graziano II structures were also

irregular in shape, with some small ovals characterised by a floor level located below the outside walking surface which could be accessed through a higher opening. The layout of structures of this early period can mainly be attributed to local building traditions, which were also influenced by the climate conditions as discussed above.

Starting from the Milazzese period, at Lipari there is a gradual increase of attention in the architecture of huts, which are now built with thicker dry-stone walls and the blocks employed are more regularly shaped and laid down accordingly (Bernabò Brea and Cavalier 1980: 547). Similar changes can be identified also at Roca, where from RBA onwards calcarenite mostly appears in the shape of ashlar blocks, laid down in a more regular way than the MBA pseudo-ashlar blocks (Scarano 2012a: 22–29).

By the FBA, at Roca Vecchia timber is the major building element, both for constructing new structures and for repairing extant ones; this is visible both in the construction of the fortification walls but also in the other structures, which were built with a timber frame (Scarano 2012a: 22–23). Wood was locally sourced and these poles were made of olive trees, oaks, heather, *alaternus*, and *phillyrea* (Primavera 2018: 89–90). A general increase in the use of timber can also be identified in the new Ausonian II structures on Lipari with the introduction and employment of timber frames in combination with drystone walls (Bernabò Brea and Cavalier 1980: 590–591; Martinelli 2020: 159–160). The charcoals analyses conducted indicate that wooden poles were made mostly of heather, followed by other wood available on Lipari, such as oaks and *leguminosae* in different percentages (Speciale 2021: 94–97). According to Speciale (2021: 129), "the widespread presence of wooden poles in Ausonio II could be linked to specific technical choices, influenced, in turn, by the environmental conditions for the available materials". As discussed in Section 3.2.4, these structures differ from their predecessors also in terms of dimensions and layout, as they become larger and hint at an

internal subdivision of space. The increasing employment of timber as a building material at Roca Vecchia has been associated with the acquisition of shipbuilding technologies and resulting wood working skills (Scarano 2012a: 22). Chronologically, this development follows the RBA peak of connections at Roca within the wider Mediterranean trading network, as testified by evidence for foreign influences and imports. If we try to apply a similar logic to Lipari, the Ausonian II change in building techniques corresponds to a major opening of Lipari towards different areas, although this is not necessarily represented by an increase in the number of imports but by the variety of cultures represented by the artefacts associated with this phase.

This situation is very different from what seen in Kommos, where the residential areas are characterised by large rectangular buildings used as dwellings, built of stone and subdivided into multiple rooms (Shaw and Nixon 1996; Shaw 2006b; Shaw 2012a). In the Neopalatial period, some structures, namely House X and Building T, present some characteristics typical of elite architecture, such as pier and door partitions, pillar crypt room and ashlar masonry, as well as fresco decorations, and can be associated with individuals belonging to a higher social elevation (Shaw 1996c: 369; Shaw and Shaw 1997: 426; 2010: 545; Shaw 2015). Structures at Kommos also differed from the other two case studies in terms of constructing techniques and materials employed, as they were built using mostly stone masonry with some wooden elements. This building tradition was maintained throughout the period analysed at Kommos, where the only structural difference concerns the disappearance of elite architecture and decorations.

Overall, structures from all three sites seem to be influenced by the local traditions and availability of raw materials both in terms of shape, layout and building techniques. As mentioned in Section 5.1.1., climate is also a possible factor affecting the structures layout and building materials, as well as their distribution within the settlement (Rapoport 1969).

The employment of mud and stone is particularly suitable for isolating from both hot and cold temperatures (Rapoport 1969), which applies to all the three sites analysed (Shackleton *et al.* 1984; Doonan 1993; Shay and Shay 2004). Looking at the climate changes recorded in the period analysed, in the Aegean a shift from humid weather conditions towards drier and cooler ones took place around the 12th century BC (Molloy 2023). In the Aeolian islands, various climate fluctuations have been shown in the palaeoclimate curve (Caracuta *et al.* 2012; Speciale *et al.* 2016). Generally, the area was characterised by a humid climate, with the exception of the Milazzese period, when significantly drier values have been recorded. This drier period mirrors also the data collected for the Apulia region (Primavera *et al.* 2015; 2017). However, the structural changes identified through time, rather than being ascribed to the climate changes, might be partially associated with the development and/or acquisition of different technical skills and knowledge resulting from exogenous interactions. First, the main structural changes do not match the chronology of the climate changes mentioned above. At Lipari, for instance, buildings adopted a different technique in the Ausonian II period, adding timber frames to the drystone walls to support the rafters of the roof (Martinelli 2020: 159), and not during the Milazzese one, that is when climate became drier. Interestingly, the LM III changes identified in the buildings at Kommos can be associated with a change in their function and living standards, reflecting a settlement centred around production activities (Shaw 1996c: 372). While these changes could result from the transformations in the socio-political nature of the site due to an increase in trading activities with foreign areas, they cannot be attributed to external influences in the building techniques.

5.1.5. Workshops

All three ports analysed have provided evidence for the conduct of various crafting activities, as displayed in Table 5.3. These activities will now be discussed in turn, with a particular attention to their chronological and spatial distribution across the sites.

	Date	**Metal Working**	**Pottery Working**	**Ivory and Bone Working**	**Stone Working**
Roca Vecchia	MBA	Postern A			
	RBA		SAS IX	SAS X; SAS IX	
	FBA	SAS XII			
Lipari	Capo Graziano	δ XII	δ XII		δ X
	Milazzese				
	Ausonian I				
	Ausonian II		Area below museum; Hut AG?	Hut AG; nearby α II?	
Kommos	MM III–LM IB	Southern Area, Building T	Southern Area, Building T		Hillside
	LM II–LM IIIA1	Hilltop, North House; House with the Snake Tube, Hillside; House X			
	LM IIIA2–LM IIIC	Hilltop—North House, Cliffside House; Hillside—House with the Snake Tube; Southern Area—Building N	Southern Area	Hillside	

Table 5.3—Productive activities identified across the case studies (modified after Falezza 2025b: 469, Table 2, based on Bernabò Brea and Cavalier 1980; Cavalier 1985–1986; Blitzer 1995; Shaw and Nixon 1996; Wright and McEnroe 1996; Shaw *et al.* 2001; Guglielmino 2006; Shaw *et al.* 2006a; 2006b; Pagliara *et al.* 2007; 2008; Guglielmino *et al.* 2010a; Scarano 2012a; Iacono 2013b; Basile 2018; Martinelli 2020).

Pottery production workshops can clearly be identified at Kommos and Lipari in the earliest and latest phases analysed. At Roca Vecchia, no specific area dedicated to the production of pottery has been identified. However, a kiln lining fragment and some pottery wasters recovered from SAS IX confirm that pottery was being produced on site between MBA 3–RBA 1 (Guglielmino *et al.* 2010a: 193; Iacono 2013b), possibly in proximity of this structure.

Metalworking activities were conducted at all three sites. Evidence for metalworking activities increases at Roca in the FBA period, reflecting a general trend visible also at Kommos and Lipari. At Roca Vecchia, a metalworking area dating to the FBA has been identified in SAS XII. The recovery of moulds from this area might suggest that this area was dedicated to casting metal objects, while the finer work, including goldsmith, testified by the punches and raising hammers here produced and recovered from the Temple-Hut might have been conducted in a separate area not yet identified. Moving to Kommos, there is also evidence from different areas of the settlement for both casting of metal and more polished and fine work: fine metalworking for jewellery production were conducted in House X, that is a different area from where major melting and casting activities took place. As discussed in section 4.3.2, from a chronological perspective, evidence for metallurgical activities significantly increase in LM IIIA2, which have now been identified evenly distributed across the site. In these regards, Lipari differs from the other ports of interactions analysed in the sense that no specific areas dedicated to this specialised activity have been identified from the Milazzese period onwards. However, a mould fragment was found in the hoard recovered underneath hut α II (Bernabò Brea and Cavalier 1980: 743, 785; Lo Schiavo *et al.* 2009: 199; 2018: 168). Assuming that the mould was used locally and not imported, this would be the only piece

of evidence for metal production being conducted on the Lipari Acropolis before the hoard's deposition.

In addition to pottery production and metalworking, other activities such as stone or bone working, were conducted across the three ports of interactions analysed, although their identification is more challenging. Areas dedicated to the crafting of stone, such as lithics and knapped tools, are harder to identify as many stone artefacts can be recovered across the settlements, but their working did not require built-in structures like furnaces, kilns, or storage pits. Moreover, the tools required for working stone artefacts—that is chisels, drills, and awls, points and punches—are very similar to those employed in other industries, especially bone and ivory working (Evely 1993), making it difficult to easily distinguish them on the basis of tools.

An area dedicated to knapping activities can be identified in hut δ X at Lipari, where obsidian blades and chipping remains were found together with a flint probably used as a tool. Some other knapping activities were probably conducted also in the southern area of the settlement, where various flints and slivers, as well as obsidian cores, flakes, and blades, were found without being associated with any specific building (Bernabò Brea and Cavalier 1980: 324–325, 338, 384). When discussing the presence of stone artefacts and workshop areas across Lipari, it is important to bear in mind the long-term history of the island in the export of obsidian and pumice, which led to the development of high stone-working skills. At Roca Vecchia, very few stone artefacts have been recovered and no specific lithic workshops identified. As discussed above, this scant evidence depends on identification issues but is also connected to chronology, as by the end of the LBA the employment of stone for crafting artefacts is significantly reduced and substituted by other materials. At Kommos, a possible LM I area dedicated to the

production of stone vases could have been located on the Hillside Area, although the evidence for this is limited to the identification of raw materials (Schwab 1996: 272).

Turning to ivory and bone working, workshops have been identified at Roca Vecchia, both in SAS IX and SAS X (Pagliara *et al.* 2007: 350; 2008: 268). The bone working techniques display characteristics typical of local Apulia, like for the awls and needles, which are similar in terms of size and decoration to those recovered at Punta Le Terrare (Wilkens 1998: 235–247; Scarano 2012b: 337). Despite the import of raw materials like ivory, there seems to be no real difference between the working of bone and ivory, which was probably done by local craftsmen. At Lipari, no specific area interpreted as a bone workshop was identified, with the possible exception of the area of huts α II, α IV, and α V, and possibly also the hut identified in trench AG, where various fragments of deer antlers and tools have been recovered (Bernabò Brea and Cavalier 1980: 308). Evidence for ivory working at Kommos has been recovered dating to the LM IIIA period on the Hillside Area, although it is unclear where exactly this was conducted.

The presence of productive activities, whether on a small or larger scale, seem to characterise ports of interactions (see Chapter 1). The location of these working areas across the ports should be analysed, especially in terms of accessibility from the harbour, to understand whether the use of these was restricted to local people or was also open to outsiders, and whether it was functional to the shipping and movement of goods. Such a consideration would cast light on the dynamics of interactions within ports, identifying any potential differences, especially in the extent to which outsiders were welcomed within settlements. In Roca Vecchia, the excavation strategies adopted, which in turn were influenced by the good preservation of FBA structures in the centre of the settlement (Scarano 2012a: 20), created a bias in the display of the chronological division of the evidence across the site. As a result, MBA data come predominantly from the area of the

fortifications and this is particularly evident in the distribution of the productive activities across the site. In the Capo Graziano II settlement at Lipari, productive activities were located in proximities of huts δ X and δ XII, in the northern area of the settlement (Bernabò Brea and Cavalier 1980: 240, 517; Martinelli 2020: 80). No workshops have been identified for the Milazzese and Ausonian I settlements as productive tasks were taking place within domestic structures, indicating a possible change in socioeconomic organization, although the evidence is not sufficient to investigate the nature of this shift more in detail (Falezza 2025b: 469–470). The pottery kiln dating to the Ausonian II period and identified in the area below the museum shows how production activities were conducted also in the final period of the acropolis (Cavalier 1985–1986: 236–237; Martinelli 2020: 161–162). With respect to Kommos, towards the end of LM IA the southern area of Building T, which was no longer employed by the elite and accessible from both the harbour and the settlement, was used for both metalworking and pottery production (Shaw *et al.* 2001; 2006b: 850; Shaw 2006b; Falezza 2025b: 470). The identification of a single pottery workshop combined with the recovery of pottery displaying regional characteristics, like the Kommian conical cups, points towards local production (Van de Moortel 2001). From LM IB–LM II, it is possible to identify a shift in the distribution of metalworking activities across Kommos, which appear around the residential structures, including House X (Blitzer 1995; Shaw *et al.* 2012).

Finally, while the presence on the Italian case studies of Aegean craftworkers coming from the Aegean is confirmed (Jones *et al.* 2014; 2021), there is no evidence pointing towards the identification of specific areas where they could reside. On the one hand, it could be argued that migrant artisans stayed outside the settlements' limit, in areas which have not been excavated or are no longer preserved, and hence there is a lack of evidence for these (Falezza 2025b: 470). On the other hand, it is equally possible that

these artisans resided within the settlements without necessarily being segregated in a specific area.

5.1.6. Storage Areas

The identification of agricultural surplus can indicate a certain level of capital accumulation which in turn can be associated with an increased ability of undertaking interactions (Iacono 2019). Among the practices most frequently adopted to deal with agricultural surplus there are feasting and storing activities (Hayden 2009). An aspect to consider is the distribution of agricultural surplus and in what quantities across settlements, as larger concentrations in single spots might indicate a major control of single entities rather than an opening to the wider population (cf. Cazzella and Recchia 2013b: 198–199; Iacono 2016a). As discussed in Chapter 1, the identification of large storage can also indicate some sort of redistribution for partially supporting specialised individuals or for the redistribution to other centres, as in the case of Kommos. The evidence for larger storage areas identified in the three case studies analysed will be here discussed and compared with reference to their context. There seems to be a relation between the presence of specialised activities and the identification of communal storage, as they can both indicate the existence of a social structure able to support at least partially through production, storage, and redistribution of surplus to specialised workers, but also mariners, and a potential elite (Costin 1991; 2007; Borgna and Levi 2015; Iacono 2019: 159).

At Lipari, in the Capo Graziano II period, the underground silo δ I has been interpreted as a granary with a capacity of about 2800 L (Bernabò Brea and Cavalier 1980: 217–218; Bernabò Brea 1985: 37; Jung and Pacciarelli 2017: 187). No other areas for storing large quantities of grain have been identified in the following phases, although the Ausonian II period provides a significant amount of finds associated with storing

activities, including large dimension pithoi and *situlae*. Regarding Roca, three concentrations of cordoned *dolia* for a total of 11 have been found in the FBA levels of SAS VI, IX and X (Guglielmino 2014: 109; Iacono 2019: 194). Considering the dimensions of two *dolia*, Guglielmino (1999: 475) calculates that they could have hold about 600 L each, for a total of 2400 L in the Store-Hut, assuming that they were all of similar dimensions. If all of the 11 cordoned *dolia* belonging to this period had a similar capacity, a total of 6600L could be stored in the settlement. Presuming that the pithoi did not contain exclusively oil as those in the Store-Hut and taking into account the calculations of calorific values by Christakis (1999), compared with the average individual daily need of 2583 calories (Foxhall and Forbes 1982: 49, 71), it seems that about 0.6 L would support an individual for a day and hence, 6600 L would have supported about 30 people for a year or more individuals for a shorter period. These accumulations of surplus reflect the demographic fluctuations discussed above, as the number of individuals within a community and the surplus capacity are directly proportional (Grier 2003; Iacono 2019: 195)

In the Italian ports of interactions analysed, the presence of substantial storage corresponds to the identification of working areas, while at Kommos this connection is not as evident since productive activities have constantly been identified from LM IA to LM IIIB. As discussed in Section 4.4, the LM II decline in the number of storing areas next to a higher number and wider distribution of imported storage vessels and areas where metal was being worked can be associated with the change in the domestic economy from a self-sufficient agricultural settlement "into a focused workplace" (Blitzer 1995: 532). In LM IIIA2 Kommos thus appeared more industrial, with a slight increase in the number of the storage areas compared with the previous period, although never surpassing what recorded in MM III–LM I. Large storage areas, especially within

the domestic buildings, were no longer necessary to store agricultural products for longer periods of time. As discussed in Chapter 4, it is possible that large scale storing was still taking place in the Southern Area, which was probably used to facilitate maritime economic activities, among which the storing of goods meant for trading—either imports or exports. The fact that not many large storing devices, such as pithoi, were recovered in this area, could be explained by the employment of organic containers.

Overall, it appears that storage areas become more widespread across Lipari and Roca Vecchia, while this does not happen at Kommos, where, if we do not consider Building P as a storage area, they tend to decrease in number over time (Falezza 2025b: 471). Nonetheless, considering also the textual evidence for Kommos, all three sites were able to produce surplus, the difference being that the Italian sites were mostly storing it locally, while at Kommos this was exported abroad or to the rest of the island.

5.1.7. *Functional Division of Space*

Chapter 1 explains the different types of areas that can occur within the ports of interactions, whose presence and location within the settlements will now be compared and discussed. Starting from Roca, the structures identified along the inner front of the fortifications have generally been associated with everyday household activities and hence attributed a domestic nature. An example of this interpretation comes from the RBA 2 structure in SAS X, interpreted as a dwelling endowed with an outdoor area employed for working activities like bone and ivory working (Pagliara *et al.* 2007). In contrast, SAS IX provides evidence pointing towards the employment of this area for banquets, possibly of ritual nature, from the RBA through to the FBA 2, culminating in the construction of the so-called Temple-Hut (Pagliara *et al.* 2008).

Moving to the FBA, buildings generally appear of larger dimensions than in the earlier periods (Iacono 2019). In addition to the Temple-Hut, ritual activities were probably conducted also in association with the Store-Hut, which was also used for food related activities (Iacono 2019: 192–195). The similarities between the Temple-Hut and the Store-Hut substantiates the existence of different groups within the society which would employ these larger structures for different purposes, of both ritual and domestic nature (Iacono 2019: 194; Falezza 2025b: 471). No exclusive public areas where ritual activities were conducted have thus been identified across the site for the period analysed. Another open area which could have potentially been employed also for ritual activities is the square in the centre of the settlement, where are the remains of the medieval church. The recovery in this exact same point of an IA pit, which has been attributed ritual connotations (Corretti *et al.* 2010: 161), might suggest an earlier religious use of this area. To sum up, the evidence analysed suggests that there is no sharp division of functional areas at Roca Vecchia, where the domestic areas can host productive and ritual activities to a different degree.

In the Capo Graziano II period, the acropolis of Lipari appears to be subdivided into different areas according to their function. The artefacts recovered from the central part of the settlement were mostly used daily for weaving, food processing and storing practices. The southern area of the settlement hosts the two structures standing out from the rest of the settlement for their capacity to support a higher number of individuals, that is silo δ I and structure δ IV. In the Milazzese period, structure γ XII differentiated itself in terms of shape and size and for a high number of Aegean pottery, although it is not clear whether it could be used by a larger number of individuals or by social groups differentiating themselves from the rest of the society (Bernabò Brea and Cavalier 1980: 201–206, 547; Martinelli 2020: 122). The bronze ring recovered from hut γ I, situated on

the southern area, of the settlement, suggests the existence of high-status individuals. These were possibly involved in banqueting and feasting activities, considering the recovery of imported and local figurines from the nearby structure γ III (Falezza 2025b: 471), as probably also happened for the activities taking place in the Capo Graziano II structure δ IV.

The Ausonian I and II periods display a higher number of artefacts that can be associated with individuals, like personal ornaments, which also appear to be more widespread across the settlements (Falezza 2025b: 472). Mirroring the trend identified at Roca, structures are larger than previous periods and some of these buildings differ from the rest of the settlement in terms of assemblages, like α II and also the hut identified in trench AG, which could be frequented by a high number of people (Albanese Procelli 2003: 49–50; Basile 2018; Martinelli 2020: 162). The pottery assemblage from hut AG suggests that banqueting activities conducted here could involve at least 15 individuals (Basile 2018), while the many personal ornaments recovered from hut α II might indicate that the individuals frequenting this structure tended to differentiate themselves from the rest of the society (Falezza 2025b: 472). This scenario is similar to the one described for FBA Roca Vecchia, where evidence for food processing and consumption comes from the same context, namely the Temple-Hut, where cultic and ceremonial activities were also conducted (Maggiulli and Malorgio 2017). This structure, like the other large buildings belonging to this period, has been associated with larger residential groups (Iacono 2019: 194) and it is thus possible that also access to the activities conducted within these buildings was restricted to members of those groups (Falezza 2025b: 472).

A functional organisation of the settlement can be identified also at Kommos in the Neopalatial period, where domestic activities are mostly conducted in the Hilltop and Hillside Areas, while the so-called civic area can be attributed mostly a public nature

(Falezza 2025b: 472), especially towards the end of LM I. Building T hosted activities of different character, including economic, social and ritual (Falezza 2025b: 472). That ceremonial banqueting was taking place in this building is supported by the various drinking and dining pottery recovered with some plaster offering tables (Rutter 2004: 72; Rutter and Van de Moortel 2006: 377–425; Shaw *et al.* 2006a: 751–770; 2006b: 849).

The Southern Area continued to be frequented by people also in the following periods, when the activities taking place in Building N and Building P, whatever the function of this last structure was, were mainly of economic nature. In contrast, by looking at the evidence for working and ritual activities, there seems to be a shift towards a more restricted—or private—character, as for instance indicated by the presence, starting from LM III of the two household shrines mentioned in Section 4.4.1 (Falezza 2025b: 472). This apparent restriction of ritual activities seems to coincide with "a decrease in the luxury displayed across the settlement, both from an architectural point of view, such as frescoes and elite residences like the North House and the House X, and in the personal ornaments recovered across the site, which contrasts with what is seen at Lipari and Roca Vecchia" (Falezza 2025b: 472).

It is worth noticing that, while public areas have been identified in Roca and Kommos, like the central square and the South Area, this is not the case in Lipari, where similar areas disappear when foreign interactions become more intense. The site of Kommos provides an example where there is the clearest distinction between public and private areas as they coincide with the division between residential and civic areas. However, this distinction could possibly be attributed to a more formalised distinction between private and public spheres, more similar to the modern understanding. At Roca, domestic structures seem to be concentrated along the inner side of the fortification walls. While this could be due to the fact that investigations focused particularly in this area, the

potential identification of an orthogonal layout at Roca Vecchia is uncommon across contemporary Southern Italy (Scarano 2012a: 22). Moreover, at Kommos the public area is located next to the sea, coinciding with the actual harbour. As the areas where the possible harbours of Lipari and Roca were located have not been excavated, a plausible hypothesis suggests that accessible open areas could have been positioned nearby the sea access (Falezza 2025b: 473). By looking at the chronological and spatial distribution of workshops and storage across the ports analysed, it was possible to gain some insights on the social organisation of local communities (Falezza 2025b: 473). The possible reasons behind the inversely proportional evidence for luxury and precious personal ornaments between the Italian and Aegean ports of interactions will be investigated below. The social and economic implications of these differences will also be discussed more in detail.

5.2. Imports and Influences

5.2.1. *Materials Imported and External Influences*

Influences and patterns of imports will be here analysed in turn according to the different media discussed, that is pottery, metal, ivory, and stone. This will allow the potential identification of specific trends in the trading networks, both in terms of types of materials and interactions between different cultures. Their distribution across the ports of interactions will then be analysed in Section 5.2.2 adopting a chronological approach.

Starting with pottery, the significant presence of open shape wares was one of the characteristics for the identification of ports of interactions already identified in the literature and listed in Chapter 1 (Iacono 2017: 211). However, this is a general characteristic which does not specify what is the role of Aegean pottery: it is important to consider what type of Aegean imports were present in the southern Italian ports of

interactions as they provide important information on their reception among local inhabitants and on whether they were employed in specific practices. The most common type of Aegean-type pottery in Lipari in all the phases analysed are storing vessels, followed by drinking wares, which also seem to be predominant in large size buildings, as in the case of γ VI. In terms of shapes, vases and cups are the two most common, as shown by Table 5.4. At Roca, deep bowls are the most common Aegean-type ware. At Kommos, imports comprise artefacts from Anatolia, Egypt, the Levant, Cyprus, Italy, and the Aegean mainland and islands. They mostly consist in storing and transporting vessels, which can be associated with the function of the site as a port considering that some wares could be imported as containers of other commodities rather than as for their own sake. Moreover, Murray (2023: 26) observes that the foreign transport wares identified at Kommos are however absent in inland Cretan sites. This observation may suggest that the content transported in such wares was then moved into other locally made containers to be redistributed across the island. In terms of quantity of imports, storing and transporting vessels—mostly Canaanite jars and stirrup jars—are immediately followed by dining wares, such as bowls and Cypriot milkbowls.

Dining	**5**	**Pouring**	**10**
Bowl	3	Jug	8
Pedestalled Bowl	1	Bridge-spouted Jug	1
Vase, FS 226	1	Hole-mouthed Jar FS 100	1
Drinking	**91**	**Storing/Transport**	**113**
Cup	55	Alabastron	13
Cup/Kylix	1	Amphora	5
Kylix	17	Amphora/Jug	1
Mug	1	Jar	5
Vapheio Cup	15	Krater	1
Vessel	1	Stirrup Jar	1
Drinking/Dining	**1**	Vase	87
Deep Bowl	1	**Ritual**	**1**
Undetermined	**9**	Figurine	1
Open	2	**Mixing**	
Close	7	Krater	5

Table 5.4—Quantity of Aegean-type pottery recovered at Lipari across all phases according to function.

At Roca Vecchia and Lipari, the most evident technological innovation is the introduction of the potter's wheel. At Lipari, local production of pottery continues from the Capo Graziano to the Ausonian II period, while imported pottery initially increases to the drop significantly in the Ausonian I period, when however there is an increasing diversity which reflects an opening towards different areas of the Mediterranean (Figure 5.2). In the FBA, while the production of Aegean-type pottery at Roca continues to some extent, as demonstrated by the Neutron Activation Analysis (NAA) results and chemical analysis (Guglielmino *et al.* 2010a; Jones *et al.* 2014; 2021; Jung *et al.* 2021), production of local artefacts continues in the form of SIP pottery (Iacono 2013b: 262; 2019: 171).

Technological innovations are less evident at Kommos, where, despite the large number of imports from Central and Eastern Mediterranean, external influence seems to

be limited to possible inspirations from Mainland Greece affecting local production in LM IIIA2 and LM IIIB pottery, with the adoption of stemmed bowls and early LH IIIA2 pottery decorations from Mainland Greece, such as "the voluted Flower FM 18, Multiple Stem and Tongue FM 19, the Whorl-Shell FM 23, and Curve-Stemmed Spirals FM 49" (Rutter and Van de Moortel 2006: 612; see also Watrous 1992: 131–145; 1997: 186; Rutter and Van der Moortel 2006: 709). Overall, evidence from all the three sites indicates an opening towards various Mediterranean routes despite their different social and political situations.

Moving to the imports of metal, the evidence for artefacts and metalworking activities presented per each site shows that it could be imported both as finished artefacts and raw materials to be worked on site. At Kommos, metal was imported from abroad to be worked on site, for both personal ornaments and utilitarian items such as tools, though metalworking activities display elements mostly connected to Minoan traditions (Blitzer 1995: 504–505, 528; Dabney 1996a; 1996b: 263–265; Shaw *et al.* 2012: 87–88). Imports include oxhide ingots, which were found also at Lipari dating to the end of the Ausonian I period, suggesting that both sites were involved in trading networks with Cyprus. The recovery of some oxhide ingots provides evidence for the import of metal: the almost totality of copper oxhide ingots came from Cyprus; some examples originating from Sardinia have been identified although none of these was found in the case studies here discussed (Gale 2006; Russell and Knapp 2017; Lo Schiavo 2018; Sabatini and Lo Schiavo 2020). Looking at Roca, some of the metal worked on site was probably imported from Northern Italy as indicated by the lead isotope and compositional analyses of some artefacts from the hoards and SAS IX (Jung *et al.* 2011 in Iacono 2013b: 210–211). Gold was also imported to be worked on site: while the origin of it has not clearly been identified yet, the sun discs share the same geological source of similar items recovered

from Northern Italy (Bozzini *et al.* 2004; Numrich *et al.* 2024). In this regard, it is important to acknowledge the limits of relying on the trace elements to investigate provenance (Pernicka 1999; Orfanou *et al.* 2024). Considering the preliminary results from archaeometric analyes, it has been suggested that this gold employed both in Southern and Northern Italy—where a different alluvial source was also been used—could have originated from Egypt and it is possible that Roca Vecchia was the first point of arrival of this source (Numrich *et al.* 2024).

Table 5.5 compares similar type artefacts that have been recovered from the three case studies analysed, showing how both Roca and Lipari have provided evidence for artefacts belonging to the metallurgical *koiné* and UB, such as Peschiera and Scoglio del Tonno swords and violin-bow fibulae (Figure 5.4). Moreover, in both sites was recovered a metal hoard buried within the main FBA buildings, that is the Temple-Hut and α II respectively. A possible explanation for the absence of UB in Kommos was provided by Iacono (2013a: 64–66) who, building on the association between HBW and metal trade suggested by Watrous (1992: 182), argues that, after being imported, metal artefacts were then moved to ritual and funerary contexts, while pottery would have remained in ports as predominant in settlement sites. Two different points emerge: first, that there was an association between the participation of these sites in the metallurgical *koiné* and the identification of metal hoards, where many metal artefacts belonging to said *koiné* were found, and second, that the distribution of the metallurgical *koiné*, including UB and Peschiera daggers, was independent from the Cypriot trading network of oxhide ingots (cf. Bouzek 1985: 209–211; Borgna 2009: 294–295). The fact that at Lipari both oxhide ingots and UB occur is the result of the site being involved in two different trading networks. Elisabetta Borgna (2023: 97) suggests that Cyprus traded mostly with “primary

craft and trading centres", however also Roca Vecchia could be included in this category, although no oxhide ingots had been recovered from this site.

Sites	Oxhide Ingots	UB	Hoards
Roca Vecchia	N	Y	Y
Lipari	Y	Y	Y
Kommos	Y	N	N

Table 5.5—Artefacts recovered from the three case studies analysed.

Ivory working has been identified both at Kommos and Roca Vecchia, meaning that, from the 14th century BC, both sites started importing raw materials. The two partially worked ivory cubes recovered from Kommos date to LM III and they are both made of elephant ivory from either Syria or Africa (Reese and Krzyszkowska 1996), while the only import at Roca made of an elephant tusk dates to RBA 2 (Guglielmino 2009: 197; Guglielmino *et al.* 2011: 175). The other ivory imports recovered from Roca Vecchia were made of hippopotamus ivory (Guglielmino 2009: 197; Guglielmino *et al.* 2011: 175). While elephant ivory was imported from either Africa or Syria, hippo ivory originated from the Levant, in the area comprised between South Anatolia and the Nile Delta (Krzyszkowska 1990; Guglielmino *et al.* 2011: 173). Considering that the elephant ivory continued being traded across Eastern and Central Mediterranean, the introduction and final predominance of hippo ivory at Roca could be attributed to the involvement of Roca with different trading networks. Looking at Figure 5.5, there is only another site in the Central Mediterranean where hippo ivory occurs and Roca Vecchia is the only case where both hippo and elephant ivory are present, pointing towards the extraordinary level of connections of this port. Incidentally, gold could also have had an Egyptian origin and could have been transported along the same trading routes as ivory. Considering that gold and ivory, with the earlier exception of the duck pyxis which however could be interpreted as a personal possession, started being imported to Southern Italy from RBA 2 onwards,

that is corresponding to the collapse of the Aegean palace societies, it is possible that someone else oversaw these later trading networks. It could be argued that people from the Central Mediterranean could have taken over some of the trading networks previously operated by Aegean individuals, as there is evidence for Sardinian and Sicilian people, usually respectively identifiable with the Shardana and Shekelesh Sea Peoples, in the Near East and Egypt (Drews 1993; Roberts 2009a; 2009b; Ugas 2016; Zorea 2021). Overall, these are only speculations based on scant data and whether this potential change in the trading networks through which ivory was imported to Southern Italy should be ascribed to local agency, to the traders, or to other factors is another matter to be discussed.

Moving to the style of the ivory artefacts recovered from Roca Vecchia, that is the MBA duck-pyxis and the FBA pin head, they both display very "orientalising" traits widespread across the Aegean, Cyprus and the Near East (Guglielmino *et al.* 2010b; 2011). Starting with the duck-pyxis, the tight comparison with the sample from Phourni, Crete, might suggest an Aegean manufacture and provenance of the artefact (cf. Sakellarakis 1971: 224; Guglielmino 2005a: 40; Guglielmino *et al.* 2010b). While the duck-pyxis had been associated with the individual whose remains were laying nearby, the re-employment of part of a possible Cypriot needle-box as a pin head shows how in FBA allogenous materials was readapted and included in local material culture (Guglielmino *et al.* 2011: 179). However, Roca Vecchia is remarkable also as there are only two other sites in Italy from which evidence for ivory manufacture has been recovered, that is Frattesina and Mursìa on Pantelleria (Figure 5.5; Guglielmino *et al.* 2011: 182; Fiori *et al.* 2024). Given the restricted nature of ivory trading, it has been pointed out that the presence and working of ivory artefacts in Italy generally do not occur in those sites with large evidence for interactions with the Aegean, which was “involved

in the circulation of such exotica […] as Scoglio del Tonno, or Broglio di Trebisacce, or Lipari" (Guglielmino *et al.* 2011: 182). Instead of ivory working, evidence from Lipari indicates that bone working was conducted on site, where however locally produced artefacts mostly display local traditions until the Ausonian period, when bone working activities reflect Sicilian influence. Overall, in terms of ivory import and working, Roca Vecchia bears more similarities with Kommos than Lipari, although the different origin of the ivory recovered from Roca Vecchia and Kommos highlights the diversity of contemporary LBA trading networks.

In the three ports of interactions analysed, stone was mostly locally sourced, with some exceptions regarding their employment in personal ornaments. At Kommos, up until LM II, lapis lazuli and amethysts were being imported for jewellery production and at Lipari glass and amber beads were also imported first from the Aegean and then from Northern Italy (Bernabò Brea and Cavalier 1980; Dabney 1996b: 263–264). From Lipari and Roca Vecchia come also two Aegean seals, which were mostly used as personal ornaments, providing some hints on how they were perceived and employed by local communities, as it will be better discussed below.

A difference between the Italian ports of interactions and Kommos is that, in this last site, no personal ornaments, such as pins, rings or seals, were recovered among the imports, which, with the exception of pottery wares, comprised only raw materials. There are personal ornaments dating to the early periods analysed, and these could be made with imported materials like silver or amethyst, but they were probably worked on Crete, if not at Kommos, and in any case they do not display foreign influences (Dabney 1996b: 263–264). On the contrary, in the ports analysed in Italy personal ornaments and finished metal items were imported or displaying foreign influences, especially starting from the FBA period. From a chronological point of view, this could be connected to more

personalised networks in the aftermath of the collapse of the palace societies and restriction of interactions across the Aegean. Another possible explanation could be associated with the different importance, political organisation, and role of these ports within their landscape: both the Italian sites are major centres, while Kommos was dependent on the palaces and most goods imported to Kommos were then redistributed across the Mesara and Crete. At Kommos, the absence of imported possessions could suggest that only strictly functional items were imported and that foreign personal items were not employed as ornaments for conspicuous consumption. It should also be considered whether the exchange dynamics taking place in Kommos were different from those in Southern Italy and therefore required different types of artefacts. In the case of gift exchange and banqueting, for instance, exotica and luxury items were necessary to establish links of reciprocity between different groups. Finally, it should be addressed what was considered as exotica in Kommos, as it is also possible that imported artefacts in the southern Italian ports were given a different value than in the Aegean ones, as will be discussed in Section 5.2.3.

Overall, imports mostly consist in pottery, metals and ivory, both as raw materials and finished artefacts. These were considered luxury items, also because of the added "exotic" value that these could earn after having been imported (Helms 1988: 118–121; Guglielmino *et al.* 2011: 172). In addition to distance from the source, another factor to assess the value of exotica, and especially of pottery, is their shape, as some artefacts could be used for specific functions or activities carried out by a restricted group of individuals. For this reason, the following section will investigate whether some specific types of imports, like open shape pottery, were concentrated in specific areas of the settlements. This will also facilitate the identification of a possible association between imports and specific activities, such as banqueting.

5.2.2. *Distribution of Foreign Artefacts Across the Settlements*

This section will consider the spatial distribution of foreign artefacts across the three ports of interactions to identify possible areas where imports concentrated and whether these changed according to their origin. The evidence from the three sites will be presented chronologically to compare contemporary patterns of distribution: the Capo Graziano II and Milazzese *facies* at Lipari will be compared with the MBA period at Roca Vecchia. Evidence from Kommos will also be considered starting from the Neopalatial period to then discuss the later changes, always looking at the patterns identified in the Italian sites at the same time.

Looking at the distribution of imported artefacts across the sites, evidence from the Capo Graziano II period at Lipari (Figure 3.36) shows that Aegean artefacts were widespread across the settlement, although with some concentrations in areas which have been associated with drinking practices. However, as discussed in section 3.4.1, in these contexts local pottery is equally present and the limited presence of Aegean pottery from the only structure potentially associated with public and communal activities might indicate that these imports were mostly employed in domestic contexts (van Wijngaarden 2002: 219). Moving to the Milazzese period, Aegean wares were still present across the settlement, however there was a significant difference between the northern and southern areas, where most artefacts were found. Concentrations were also found around huts γ VI and γ XII, which were characterised by larger dimensions in comparison with the other contemporary structures. This typology of pottery is usually associated with practices of drinking and feasting and were mostly present in structures where many people could participate, highlighting a shift in the distribution of imports from the Capo Graziano II settlement.

Given the fewer areas investigated at Roca, compared to Lipari and Kommos, it was possible to map the distribution of artefacts according to their recovery context also excluding artefacts dating to different periods, which could have resulted from various disturbances (Figure 5.6–7). While results for all the periods analysed generally show the same patterns of distribution, Figure 5.7 corroborates what already suggested in Chapter 2: imported artefacts in MBA Roca Vecchia are never present in large quantities and tend to be gathered in just a few spots rather than being widespread across the site (Iacono 2013b: 129; 2019: 79). Most of the MBA imported artefacts have been recovered from the fortification walls—including posterns (Pagliara *et al.* 2007; Iacono 2013b).

Interestingly, at Kommos imports are present in elite contexts since the earlier phases analysed and looking at the distribution of imported artefacts at Kommos in the Neopalatial period, most of these have been recovered from the Southern Area and, more specifically, from Space 5 and House X (Figure 5.8). The concentration of artefacts in House X, which has been identified as an elite structure, might indicate a situation similar to what seen in the Milazzese period at Lipari but different from the Capo Graziano II and the MBA period at Roca. In the Capo Graziano II settlement at Lipari, imports seem to be more widespread across the settlement, while at MBA Roca, the number of imported artefacts is too little to identify any specific pattern of distribution. Bearing in mind the investigation bias affecting earlier layers, which are often explored in small extensions, at Kommos and Lipari imported artefacts appear in association with banqueting and feasting contexts. However, the social and political situation of the Italian sites does not yet identify a separate hierarchy which can be compared to the Cretan elite.

At Kommos, starting from the LM II period, imports start spreading across the settlement, with the highest concentration of these coming from the dump in the house of the Snake Tube (Figure 5.9). This trend further develops in the period comprised between

LM IIIA2 and LM IIIB, when imported items are much more widespread across the settlement (Figure 5.10). At Roca, in the RBA, imported artefacts become predominant in SAS IX, although it is important to specify that this count does not make a difference between the various succeeding structures in this area during the entire period considered (Figures 5.11–12; cf. Iacono 2013b: 190–193). At Lipari, in the Ausonian I period, while the number of imported artefacts decline, Aegean wares were not as widespread across the settlement but seem to have been concentrated around huts β IV and β X, which have different shapes from the other buildings belonging to the same phase. The identification of Aegean wares with structures that can possibly be associated with specific practices and different social groups indicate that Aegean wares did not acquire an everyday status. In the Ausonian II period, Aegean and especially Nuragic imports are slightly more widespread across the settlement structures (Figures 5.13–14; Campus and Leonelli 2012), which however have significantly decreased in number. It is hazardous to generalise this wider distribution of Nuragic artefacts to other imports, whose identification as such is not always clearly stated to establish a specific pattern. The high concentration of imported artefacts from structure α II could be proportional to the high number of artefacts recovered from this structure. Similarly at Roca Vecchia, already starting from the mature RBA, artefacts displaying external influences seem to be more present across the settlement losing their "luxury status" (Figure 5.15–16; Iacono 2019: 158), as also supported by the Aegean-type sherd recovered outside the settlement (Iacono *et al.* 2024b: 49–50). This being said, SAS IX contained the majority of these artefacts both in RBA and FBA, when were recovered various personal ornaments and luxury items displaying mostly influences from Northern Italy.

At Kommos, imported artefacts could be found in elite structures, suggesting that they held an added value as exotica. However, the disappearance of clear elite structures

in the later period, combined with the widespread distribution of imported artefacts across the settlement, make it difficult to establish whether imports maintained their higher status or even if artefacts from a certain area were given more importance than others with a different origin. At the end of the period analysed, at Lipari Aegean artefacts seem to still concentrate in specific areas, while there is not an apparent difference in the distribution of artefacts of different origins at Kommos and Roca, where however only two areas have been analysed thoroughly for these periods so the sample is smaller. Overall, it seems that artefacts imported to Italian ports initially obtained an exotic status regardless of their origin, while at Kommos Italian artefacts, like other late imports, do not seem to display any additional value due to their exotic provenance. While this could be due to the disappearance of elite structures contemporary to these imports, it could be argued for some sort of developing habit with external interactions and foreign material culture happening at Kommos. A similar process could be argued also for the Italian ports of interactions, with the local production of foreign material culture.

5.2.3. *Areas for Foreigners*

The identification in the archaeological record of specific areas within settlements for mariners and merchants is object of a huge theoretical debate (Stein 2008; Schlüter 2020). Looking at evidence from shipwrecks and "habitat islands", Hulin and German (2018: 361) define specific criteria denoting the presence of mariners on land:

- mariners' personal belongings were recovered "in non-elite settings, in small quantities and in unusual variety" compared with the local context;
- these items would have been characterised by a low status and exotic provenance, having been carried by the mariners from their place of origin as a personal kit. This would include sailors' own table wares; food processing tools as well as other

tools, such as fish hooks, or other items useful for trading, like scales and weights, and various personal possessions, especially of ritual and worship nature;

- other food related wares, meaning cooking and dining vessels as well as small storage jars, would have been recovered in quantities larger than usual to provide for multiple people;
- the presence of mariners in a port can thus be associated with evidence for hospitality, food-related and religious activities.

As mentioned in Chapter 4, adopting these criteria Hulin and German (2018: 362–365) identify at Kommos two areas potentially frequented by mariners, that is buildings N and P. Taking into account that the model developed by Hulin and German relies heavily on the identification of low status contexts and that the same level of social stratification in southern Italian communities is still object of various studies, it would be interesting to verify the feasibility of their application to Roca Vecchia and Lipari. Besides, considering by default mariners as low status does not allow us to explore models of maritime activity in which individuals involved in this kind of activity have more important and active roles in society. In view of these observations, this section will discuss contexts of hospitality, food-related and religious activities, paying particular attention at the presence of exotic personal belongings and other non-local material culture, from the two ports of interactions in Southern Italy to identify and examine the potential presence of allogenous individuals.

Looking at the archaeological evidence from Roca Vecchia and Lipari, the Temple-Hut at Roca Vecchia and huts δ IV and α II at Lipari seem to meet the conditions above. These structures are compared in Table 5.6, which presents the evidence for food-related and religious activities, here identified in the recovery of figurines or miniature vessels, together with artefacts denoting their peculiar context. These buildings were

characterised by significant dimensions within the settlement, being able to host more individuals, whether these were locals or outsiders. A particular mention should be made for hut δ IV in the Capo Graziano II settlement as the only imports from this context are three fragments belonging to drinking pottery, unlike the nearby structures where some concentrations of Aegean pottery were recovered. Generally, the abundant materials from the structures considered include luxury items as well as personal ornaments, weapons, and metal hoards (Falezza 2025a). There is also evidence for preparation and consumption of food, possibly associated with banqueting activities (Falezza 2025a). Clay figurines were also recovered from the Temple-Hut at Roca Vecchia, corroborating the ritual function attributed to the building (Guglielmino 2005b: 646). It is important to clarify that banqueting/ritual functions are not the same as showing the presence of traders and the two should not be confused.

Site	Structure	Food Preparation	Figurines	Hoards	Personal Ornaments
Roca Vecchia	Temple-Hut	Y	Y	Y	Y
Lipari	Δ IV	Y	N	N	Y
	A II	Y	N	Y	Y

Table 5.6—Main structures identified in the ports of interactions analysed (after Falezza 2025a: 12, Table 1.3).

From the archaeological evidence discussed, it appears that the methodology presented by Hulin and German could possibly contribute to the identification of areas for mariners in the southern Italian ports of interactions depending on the status attributed to the areas and artefacts recovered in association with them. The structures here discussed seem to some extent to differentiate themselves from the rest of the settlement and they can hardly be attributed a low status. At the same time, it should not be assumed that low status personal possessions were considered in the same way in a foreign context,

as their exotic provenance could enhanced their value (Helms 1988; 1993). It could be argued that while delegates and tradesmen accessed the settlements, mariners would not leave their quarters nearby or onboard the vessel. A final possible explanation would see the facilities for traders and mariners beyond the settlement boundaries, closer to the actual harbours where excavations have not been conducted and/or are not possible because they have not been preserved, and hence cannot be proven by any evidence.

5.3. Exchange and Administrative Techniques

As discussed in Chapter 1, the trading activities and exchange taking place in the Aegean were different from those in Southern Italy, largely because of their diverse social and political situations. The most immediate hint for the existence of common administrative techniques among communities participating in the trading networks across the Central Mediterranean and Aegean is provided by shared concepts of economic value and similar administrative methods (Iacono 2016b; Ialongo 2018). Iacono (2016b: 410) suggests that the very concepts of "equivalence and convertibility […] were not independently present in Southern Italian societies before contact with the Aegean world", while Ialongo (2018; 2022) arguably identifies weighting system in the Aeolian islands already in the Capo Graziano II period. A major challenge is presented by the existence of a writing system in the Aegean, which however in Southern Italy had not been developed yet. However, this difference itself is an important element for understanding the different administration systems adopted in the three sites analysed. Moreover, there are other indicators for administrative habits, starting from the same notions of value and convertibility (Iacono 2016b). Evidence for this includes pot marks, tokens, seals, balance weights, and metals, which will be discussed below to identify potential similarities and common administrative practices across the three ports of interactions.

5.3.1. Pot marks

Marks, either painted or engraved, on vases and pottery were frequent across the Mediterranean (Bennet 1996), although they could have different functions and did not necessarily imply some sort of communication or common norms among areas providing such evidence. These signs were not necessarily connected to some form of writing system, although they could be influenced by it (Bikaki 1984: 43). The occurrence of similar symbols in different chronological periods and geographical areas is due to the simplicity of these signs (Sacconi 1974: 208). According to Hirschfeld (2002: 49), "potmarks may be applied in the process of manufacture, exchange, use, or deposition of a vase, and they may identify potter, workshop, merchant, owner, quality or quantity of contents price, batch, point of origin, destination, or other information". A decorative function is usually disregarded when marks occur on less visible areas of the pots, like bottoms. While pot marks have generally been interpreted as indicating the potter, if inscribed before firing, and indicating the owner of the vessel, if inscribed after the vase was fired (Sacconi 1974: 208), it is important to consider the entire context, including the type of mark, the media on which they appear and their positioning on them, as well as their method of execution (cf. Hirschfeld 2002; Christakis 2014).

In Roca, the X mark inscribed on a *dolium*, originally associated with administrative purposes, can actually be associated with matters of manufacture, more specifically handle placing as the mark is exactly in correspondence of the handle joints (Iacono 2013b: 261–262; Section 2.3.3). At Lipari, marks appear on different clay objects, including spindle-whorls and vase supports (Figure 5.17), and the patterns of distribution on different shapes and across the site's buildings point towards their association with their producing workshop but also their context of use (Martinelli and Levi 2021).

At Kommos, 31 possible pot marks, including some Aegean inscriptions, were identified. As they are inscribed before firing, most of the marks have been interpreted as related to manufacture, being either the potter's mark or identifying a certain batch (Bennet 1996; Christakis 2014). Moreover, some of these were inscribed in areas normally not very visible if not during production, like on the base for instance. The imported vessels bearing marks, mostly recovered from the Southern Area, display signs which can be associated with the production phase. A possible exception is the Canaanite jar I43 which bears a possible Cypro-Minoan mark. If this was made after firing, as argued by Bennet (1996), it could have been associated with matters of trade and distribution, indicating that the vessel, prior to reaching Crete, would have been on Cyprus, where it was marked with a local sign. The only certain incision made after firing was on an imported vessel and it is almost identical to a sign identified as the metrical unit on a stone weight from Pyla-Kokkinokremos (Figure 5.18, Karageorghis and Demas 1984: 82–83, Plate XXIX, 78; Bennet 1996). The interpretation of such a sign as a metrical unit might suggest that the mark was made on the jar handle to indicate the weight of the vessel after this had been filled.

Pot marks from Kommos find good comparisons across the Aegean and Cyprus (Karageorghis and Demas 1984: 78, 82; Bennet 1996: 321), especially considering that some possible single Linear B signs have also been identified. This is different from the evidence from Lipari, where clear comparisons come only from the Aeolian islands and Aegean influences can be identified only in the stylistic output of the signs (Martelli 2005: 5). Nonetheless, the absence of a shared use of pot marks with distribution purposes did not prevent long distance interactions and economic exchange to take place.

5.3.2. Tokens

Tokens are mnemonic numeric devices, either purposely made or recycled from existing objects, and could also be used as "game pieces, stoppers, identification tools, or as momentos relating to special events" (Militello 2017: 65). The very definition of tokens is vague and similar items could have been used for multiple purposes, making their identification difficult (D'Onofrio 2007: 5; Militello 2017: 64–65; Iacono 2019: 99).

Various tokens made from the body sherds of both local impasto wares and Mycenaean-type pottery have been recovered from Roca Vecchia (Guglielmino 2003: 99; Scarano 2012a: 327–329). Impasto clay tokens date back to the MBA 3 period and were recovered from the third phase of the fortification walls (Figure 5.19; Scarano 2012a: 327–329). Other locally made tokens come from the first three phases of SAS X (Pagliara *et al.* 2007: 342). The possible tokens made with Aegean-type pottery date to the LH IIIB–IIIC period (Figure 5.20) and they were found together with impasto vessels (Guglielmino 2003: 99), indicating that the population generally would have had access to this type of pottery. The recovery of tokens from Roca Vecchia does not provide further information on what was their role within the local administration although these mnemonic numeric devices seem to appear towards the end of the MBA period, when the site experienced the first foreign interactions and thus suggesting a possible connection between the two. It is also possible that these sherds were used as lids of closed containers.

The evidence for tokens from Lipari and Kommos is even more ambiguous than what found at Roca Vecchia, suggesting that these objects were not used for administration purposes both on a large interregional scale and on a smaller intra-site level. There is no evidence for tokens at Kommos, possibly because other administrative systems were used instead, like writing.

5.3.3. Seals

Seals could be used both as administrative tools, sealing containers and parchments, and as labels attached to items through some threads, and as personal ornaments and markers of status (Krzyszkowska 2005: 21). According to Younger (2000: 349), shape and material can provide information on the social position of the owners, while iconography would cast light on their potential administrative role. To possibly understand their function, it is thus essential to consider their shape, material, representation, date and context of recovery (Younger 2000: 349; Krzyszkowska 2005: 21).

The seals recovered from Roca Vecchia and Lipari are two out of the nine examples recovered across Italy (Coluccia 2023: 84–86). Their singularity takes them out of their normal context, where they could have played an administrative function within the Aegean system. On the contrary, the Roca and the Lipari seals (Cucuzza 2006: 73–76) could not have been used in administrative activities but probably belonged to either individuals who had interactions with foreigners, or to foreigners themselves considering that "Aegean seals were not made as tradable commodities" (Krzyszkowska 2005: 774). Both of these items belonged to groups of seals used as identity markers outside palatial contexts, like the MPG seal from Roca made of soft stone, which is similar to the one recovered from the Uluburun shipwreck (Iacono in Radina and Recchia 2010: 371; Younger 2010: 332–334; Guglielmino 2013: 148–149; Krzyszkowska 2019: 582). The Lipari seal belongs to the ISG, comprising the latest hard stone seals produced on Crete (Younger 2010) which have traditionally been associated with Aegean itinerant craftsmen entertaining contacts with Southern Italy (Younger 1987: 61; Coluccia 2023: 85).

The seals at Kommos have all been stylistically dated by the excavators earlier than LM IB, with two possible exceptions which have been dated to MM III–LM IIIA1 and

to LM IIIB (Figure 5.21; Dabney 1996b: 269; Shaw *et al.* 2006a: 739; Shaw *et al.* 2012: 86). Most of them come from House X and were made of soft stone, apart from a LM IA cornelian seal. According to Shaw *et al.* (2012: 86), hard stones like cornelian were imported and "controlled by the palaces and therefore given out to members of the administration", associating the LM IA seal from House X with an individual involved in the central palatial administration and who was present on site. The owner of the serpentine seal with the bird-woman found in Room X7 probably also had a connection with the palaces, but of religious nature rather than administrative (Shaw *et al.* 2012: 86–87). In relation to sealing practices, it is worth mentioning the presence at Kommos of various stoppers, that is the sealing of a vase mouth with clay which is then impressed with a seal (Krzyszkowska 2019: 582), although none of the actual seal impressions have been preserved. Combining the seal and the evidence for sealed stoppers, it seems that Kommos participated in the standard sealing practices characterising the Aegean. Overall, the evidence analysed shows that, while seals were present at all the three sites analysed, sealings could not be found and thus it is difficult to assert that seals were used for administrative purposes. However, some of the seals recovered at Kommos can be attributed an administrative function based on the general knowledge of contemporary sites on Crete. On the contrary, this cannot be said for the Italian ports of interactions, where they appeared as personal ornaments.

5.3.4. Balance Weights and Scale Parts

Balance weights are solid objects whose function is to "represent a specific quantity of weight to a certain degree of accuracy" and therefore are made of materials and shapes which are less susceptible to wear (Petruso 1978: 2). Nonetheless, balance weights can very easily be confused with cobbles, loomweights and weights for fishing nets. According to Ialongo (2018), the identification of balance weights follows a process of

testing hypotheses and, generally, balance weights have a standard shape and lack of wear marks which can be associated with other functions, and they belong to a unit-system (Ialongo and Rahmstorf 2019: 107). The identification of balance weights is usually associated with the idea that different goods can be compared and equalised, but evidence from the wider Mediterranean area, like Egypt, indicates that scales can also be attributed a symbolic meaning (Alberti 2006; Monroe 2009; Iacono 2016b: 110). Balance weights could be carried by mariners or traders as own professional items to facilitate exchange (Hulin and German 2018: 361). Generally, the identification of balance weights displaying exogenous influences might indicate that interactions could result in sharing the same concept of value. For example, similar measures such as wool standards, talent, mina and sheckels were adopted in the Levant and the Aegean in the LBA (Alberti and Parise 2005). It could also happen that different measuring methods could occur in the places experiencing a high degree of interactions, like the Uluburun ship: the balance weights recovered from the shipwreck have different weights as they refer to the Syrian, Mesopotamian, and Karkemish *peyem* standards, including also an Aegean circular lead weight (Pulak 2000a; Alberti and Parise 2005: 387). This section will discuss balance weights identified as such by the excavators as well as potential balance weights whose function is not certain (*sensu* Ialongo and Rahmstorf 2019).

Ialongo *et al.* (2021: 6) argue that, while the employment of weighing technology is diffused by individual traders, new weighting systems develop in new areas through "the continuous negotiation of how much deviation the market could tolerate before the norm was violated". The earliest weighing implement from Italy dates to the first half of the 2nd millennium BC and is a bronze yoke of a scale (Figure 5.22) from a tomb in Castelluccio, Sicily, where it appears in association with the possible other fragments of the scale and a small bronze ball, interpreted as a weight (Cardarelli *et al.* 2001b: 36;

Pare 2013: 512; Iacono 2016b: 110–111). From MBA onwards, weights are more widely present, especially in the Terramare area of Northern Italy with the so-called *pesi ad appiccagnolo* (Cardarelli *et al.* 1997; Iacono 2016b: 111). These weights are characterised by a globular or pear-shaped form and an "appiccagnolo", that is a hole in the upper part through which they were tied to a string and hung (Cardarelli *et al.* 1997; 2001b; Pare 2013). Various samples have also been recovered from Central and Southern Italy and the recovery of one *peso ad appiccagnolo* from a LH IIIC level at Lefkandi might suggest that contemporary interactions with the Aegean were probably facilitated by southern Italian communities who acted as intermediaries (Evely 2006: 276, Fig. 5.5:4; Iacono 2013a; 2015; 2016b; Pare 2013: 512).

The only possible weighing implements recorded from Roca are six fragmented handmade clay cylinders recovered from the postern D (Scarano 2012a: 362). However, clay is notoriously difficult to use for making balance weights as they would lose water in the firing process and hence change their weight. While two of them seem to have similar dimensions and weight, their function is far from clear and, because of the concentration of these cylinders near a hearth slab, a possible relation to cooking activities has been advanced (Scarano 2012a: 323–326). These cylinders could also be interpreted as weights for a fishing net (Iacono personal comment).

Lead disc-shaped weights were found widespread across Kommos and could be used for fishing purposes as well as scale implements (Figure 5.23; Dabney 1996b; Ruscillo 2012: 95; Shaw *et al.* 2012: 77). These were usually disc-shaped and belong to the local tradition as many comparisons have been recovered across Crete (Petruso 1978; Dabney 1996b).

At Lipari, 17 potential weights have been recognised, 11 of which date to the Capo Graziano II period and have a rectangular shape widespread across Central Europe

(Ialongo 2018). No weights belonging to the Milazzese period have been identified. Next to rectangular weights, a sphendonoid and a lenticular weight were identified in the Ausonian I and II periods respectively (Ialongo 2018). While sphendonoid weights had comparisons in the eastern Mediterranean area, with samples recovered from the Uluburun and Cape Gelydonia shiprecks, lenticular weights have various comparisons across Northern Italy and the Alps area (Ialongo 2018).

Looking at the distribution of weights within Lipari, Ialongo (2018) notices that what he identifies as weighing equipment is concentrated in structures with evidence for metal- or textile-related activities, that is where it was necessary to establish the value of raw materials with trading purposes. Such a distribution would actually be consistent with the interpretation of these rectangular plaques, rather than weights, as whetstones or other stone tools used alongside metalworking or other productive activities (see Section 3.3.3). At Kommos, weights do not appear to be concentrated in any specific structure, possibly suggesting that activities involving trade and exchange could be conducted across the entire site of Kommos, while at Lipari, if we accept Ialongo's interpretation, these were concentrated in single areas and probably less frequent.

Generally, Lipari seems to be the only site across the three ports analysed with possible evidence for weights representing set values and standards with comparisons outside their geographical areas. This is unexpected as ports of interactions, being places of exchange between different communities, in the same way of large trading ships, as the above mentioned Uluburun shipwreck, would have provided evidence for weighing tools for different standards, as in the case of Frattesina in Northern Italy (Cardarelli *et al.* 1997: 638). Nonetheless, the very presence of weights indicates the need of quantifying or counting goods and the external influence identified at Lipari corroborates international exchange.

5.3.5. *Hoards and Ingots*

Metal items, including entire artefacts, fragments or scraps, could also cast light on whether the sites analysed shared similar concepts of convertibility and exchange (cf. Iacono 2016b: 111–112). The increasing recovery of similar metal artefacts across continental Europe and the Central and Eastern Mediterranean (cf. metallurgical *koinè*) suggest that their value could have possibly been shared by different agents, in addition to the intrinsic value associated with the material they are made with. For example, the different biographies of use and meanings of bronze artefacts, combined with their increasing use in everyday life, affect their potential to be used as commodities (Vandkilde 2016: 107). Metal artefacts could be gathered within hoards for reasons which are generally widely debated and usually include ritual, economic, safekeeping, and in connection with metallurgical production (Bradley 1998; Bietti Sestieri and Giardino 2019; Borgna 2024). Hoarding could be used as an instrument of competition, occurring in moments of social instability (Driessen and Macdonald 1997: 65–70; Borgna 2023; 2024; Numrich *et al.* 2024). There is a large variety of hoards depending both on their content, for example whether they contained the same or different objects, intact or fragmented, and on their context of recovery (Bradley 1998; Borgna 2024).

At both Roca Vecchia and Lipari metal hoards were buried in association with the main FBA buildings, the Temple-Hut and α II respectively. At Lipari, each metal fragment in the hoard is different from the other both in terms of weight and shape, suggesting that these fragments were not associated with a set economic value. However, these metal artefacts have been dated to a period ranging from the RBA to the FBA 2, leading the excavators to hypothesize that these fragments had been circulating prior to their deposition, which probably happened during the Ausonian II period (Bernabò Brea and Cavalier 1980: 738–739; Borgna 2021). At Roca, the two hoards seem to have

different natures: the Hoard of Gold was characterised by a large variety of items and different materials, including gold, and, because of the recovery context, can be attributed a ritual nature; the Hoard of the Bronzes was made exclusively of bronze artefacts and did not include any kind of personal ornaments (Maggiulli 2009a; 2009b). Iacono (2016b: 111) notices that, with some exceptions, the artefacts recovered from the Hoard of the Bronzes at Roca, many of which belonged to typologies characteristics of Northern Italy and the Balkans (Maggiulli 2009a), did not really match the impressions in the moulds, displaying instead some shapes belonging to the Aegean metallurgical tradition (Guglielmino 2006b). This observation would corroborate the role of Roca Vecchia as a centre of exchange connecting different cultural and geographical areas (Iacono 2016b). More generally, the international nature of most of the artefacts in these hoards and the fact that recent studies have shown that matching fragments were almost never found in the same hoard (Wiseman 2018: 44–45; Ialongo and Lago 2021: 4) support that fragmented metal within the hoards was collected for the sake of its value, rather than with an attention to object integrity and function, and could have been used as value of exchange across Italy and Central Europe (Iacono 2016b; Ialongo and Lago 2021: 111). The recovery of foreign object/types from the Italian sites might be used to suggest the participation of these ports to a wider exchange system.

In addition to the artefacts, both complete and fragmented, recurring within hoards, there are also ingots of different shapes both complete and fragmented (Peroni 2004: 412). These have been recovered from all three sites analysed. A special mention has to be made for oxhide ingots, which have been recovered from both Lipari and Kommos. It could be argued that oxhide ingots provide evidence for standardisation because of their characteristic shape and similar chemical composition (Jones 2007: 6) but these ingots also present different dimensions with a variation of weight of about 10

kg (cf. Budd *et al.* 1995; Pulak 2000b: 141–143). These variations seem to suggest that the oxhide shape was mostly related to ease of transportation and the logistics of shipping rather than having some sort of value per se, as corroborated by the recovery of fragmented oxhide ingots. The value of ingots, regardless of their shape, would have had to be assessed through weighing, possibly in the same way as were the other fragmented bronze artefacts present in the hoards. If this was the case, these artefacts would then lose the added value provided by their exotic provenance or typology and would be evaluated only for their material. Furthermore, it could be argued that the less standardised was the shape of a metal ingot or other object, the more this was valued uniquely through weight equivalence rather than through the concept of "*aes formatum*". The recovery of items from these hoards which had been fragmented without having been used before tends to discard such a purely economic interpretation, suggesting instead that the act of removing items from circulation through deposition would have increased their value (cf. Borgna 2024).

As mentioned in Section 5.2.1, unlike the Italian ports of interactions analysed, neither UBs nor hoards have been identified at Kommos. Various explanations can be suggested for the lack of hoards at Kommos mentioned above, and which are in turn connected to the discussion on the function of these hoards. A general difference in the presence of hoards between the supposed "core area"—the Aegean, and the "periphery"—Italy, was made by Borgna (2024) building on the distinction between archival and sacrificial economies drawn by Wengrow (2011). In the first case, the presence of institutions would encourage the circulation of metal rather than its deposition, unlike what it would happen in sacrificial economies where "value is generated by shortage and limited access, with the sacrifice and destruction of metal as typical behaviours contributing to increase its value" (Borgna 2024: 6).

Focusing more on the ports here analysed, the lack of hoards at Kommos, unlike the Italian case studies, might be associated with a different social and economic organisation of the site, reflecting its belonging to the Aegean palatial society (cf. Iacono *et al.* 2021: 35). While Roca Vecchia and Lipari were likely central sites from a political and organisational point of view, meaning that they did not respond to any other site in the surrounding, Kommos was a subsidiary site rather than central-political, and it is possible that surplus that was obtained through trade at Kommos was redirected somewhere else and did not need to be stored locally. At the same time, the presence of hoards in ports of interactions could relate to the need of having available liquidity for transactions, as in the case of Roca Vecchia and Lipari. Before the collapse of the Aegean palatial system, transactions taking place at Kommos were probably mostly organised by the Palace, which hold the mean of exchange. In addition to trading networks, patterns of presence and distribution of these artefacts could thus also be associated with the re-employment of wealth finance, that is through exchange as a means of liquidity (D'Altroy *et al.* 1985: 188; Privitera 2009b). In this case, metal artefacts would be involved in long-distance movements, substantiating the need for a common understanding of the value attributed to these luxury artefacts, to then be stored in the main political centres. Overall, these macro-political and organisational differences could point toward a more central political role for ports to the west, as will be discussed below.

5.3.6. Trading at Ports of Interactions

All three sites have provided evidence for devices such as balance weights and pot marks which can be employed with economic and trading purposes. However, no evidence for shared administrative values has been identified so far despite the widespread evidence for interactions and influences between Southern Italy and the Aegean. It should be considered that while Italian communities were characterised by a socio-political

fragmentation, Linear B records of the involvement of the Aegean palaces in external trade are at most scarce (see Section 1.5.4). It appears that ports of interactions were more concerned with matters of internal organisation, as for instance indicated by the pot-marks at Lipari, than with the existence of common values of convertibility, even when similar devices, such as balance weights, have been recovered from all three sites, or with influences from the same geographical area. These devices could have possibly been employed as own professional tools by either local or foreign tradesmen, to measure goods prior to their exchange without necessarily requiring the existence of shared economic values.

An important aspect to consider is chronology, given that when the sites in Southern Italy are more actively involved in trading and exchange, the Aegean is going through the collapse of the palatial system, one of the results of this being the loss of centralised administrative organisation and economy (Renfrew 1979: 481–483; Rutter 1992: 62; Middleton 2010; Maran and Wright 2020). The absence of clearer shared administrative techniques between the different ports analysed could be explained by the fact that the palatial administrative system, with its related *modus operandi* and devices, is no longer used in the Aegean itself. This lack of continuity undermines the possible establishment of administrative practices shared across the Aegean and Central Mediterranean, despite trade between the two areas continued.

The exchange and trading dynamics taking place in these areas will now be addressed, starting from the nature of these interactions to the identity of the people behind them. Despite Kommos being under the palatial administration, the extent to which the palaces exercised control over international trading activities is another matter, as discussed in Section 1.5.4. The evidence from Kommos (Shaw *et al.* 2006b: 856) seems to indicate that, throughout the period here analysed, the site could have fit all four trade

mechanisms presented by Knapp and Cherry (1994: 127, see Section 1.5.4). Independent trade was conducted at Kommos especially from LM I onwards (Knapp and Cherry 1994: 141), when there is also evidence for palatial administration at the site, as suggested by the recovery of the carnelian seal from House X. The distinction between trading activities under the palatial control and independent ones might not be that straightforward, as there are instances were agents and vehicles could be involved in both, like the Uluburun ship (Manning and Hulin 2005: 4–5). Textual evidence from Ugarit is also helpful as, on document RS 16.238, it is recorded that in the 13th century BC an Ugaritic *tamkar,* probably representing palatial interests as well as making their own interests and private affairs, returned from *kabtu-ri,* that is Caphtor (Nougayrol 1955: 107; Astour 1973: 25–26; Heltzer 1978: 133–134, 155; Singer 2016). The identification of this biblical place is widely debated in the scholarship, although for many Caphtor can be equated with Crete (Dickinson 1994: 244; Bennet 2011: 158; *contra* Strange 1980), providing evidence for people from Ugarit being present on the island for trading purposes (Astour 1973: 25–26; Heltzer 1978: 134, 155; Singer 2016). It thus might be argued that the trade conducted at Kommos might have been both independent and under the palatial control.

The different socio-political situation of Lipari and Roca Vecchia points towards the existence of different trading dynamics on site and causing factors behind them. At first, the interactions of Roca Vecchia and Lipari with the Aegean were most probably on the recipient side. This does not mean that the Italian sites were subjected to contacts in a passive way, as they were probably chosen as destination because of their important role as ports on a regional scale (Dawson 2021). A sense of unity of purpose can be identified, although this does not necessarily imply a change in the type of trade conducted, such as diplomatic exchange for instance (cf. Cline 1994: 86). Iacono (2019:

195) has argued that one of the causes for the mobilisation of the sources and social changes visible in the FBA2 is the will to actively participate in the international networks of interactions. In this later phase, trade could also take the form of gift exchange, which could take place in the large structures identified in both Roca Vecchia and Lipari where feasting and banqueting activities could be conducted. This would also explain the increase in personal ornaments which would play an important part within dynamics of conspicuous consumption.

The identity of some of the foreign agents involved in the trading activities is to a certain degree less obscure: at Kommos, anchors of either Cypriot or Western Anatolian origin have been recovered in the Southern Area (Shaw 1995b; Shaw *et al.* 2006a: 745). These Cypriot anchors point towards the origin of the ships and of the mariners involved in these interregional trading networks. Similar anchors have been found across the Mediterranean, including Sicily and Sardinia, although the Sicilian example presented by Toth (2002) seems to date to a much later period. Recent investigations of some stone anchors recovered off the coast of Cannatello, Sicily, have highlighted strong similarities with the anchors used by LBA cargoes, like the Uluburun ship, travelling across the Mediterranean (Gullì *et al.* 2024). The evidence presented corroborates the undertaking of interregional contacts, which required ships of large dimensions—at least 10 m long—either seagoing cargo vessels or galleys (Tartaron 2013: 83, 186–203; Querci 2023). These vessels would have been able to undertake long journeys in the open sea facing difficult weather conditions, as well as in a minor time frame than if using galleys (Broodbank 2000: 345–346; Tartaron 2013: 82–83). Their large dimensions could have contained a moderate cargo but would also have implied the necessity to stop at sheltered harbours with a sufficient draft (Broodbank 2000: 345–346; Tartaron 2013: 82–83). No further information on the origin of these ships, and hence of their crew, can be obtained

from the evidence from Roca Vecchia and Lipari. However, NAA results on pottery from Roca Vecchia, and evidence for the employment of wood in building activities from the same site, have contributed to suggest that, towards the end of the 13th century, Central Mediterranean societies were initiating navigation enterprises, being involved in shipbuilding activities (Scarano 2012a: 22; Jung *et al.* 2021).

It is difficult to understand whether, in addition to the presence of Aegean people on Italian sites, corroborated by the transmission of new technologies and other factors, other exogenous individuals were present in the Italian ports of interactions or whether the interactions attested with other areas were actively carried out by local individuals. At Kommos, it is most likely that Sardinians visited the site as other Nuragic artefacts have been recovered along the so called southern "international" route from Sardinia to Cyprus (Sabatini and Lo Schiavo 2020). However, the same cannot be argued for Lipari, as being directly connected to Sardinia (Sabatini and Lo Schiavo 2020), it is equally possible that Ausonian individuals were in charge and organised journeys to Sardinia themselves. This hypothesis would align with some of the suggestions of some scholars, already presented in Section 3.4.2, based on the predominance of closed shapes among the Nuragic pottery recovered on Lipari (Contu 1980; Cavalier and Depalmas 2008: 287). However, what would be the factors driving the Lipari inhabitants to embark journeys to Sardinia has yet to be assessed by the scholarship.

5.4. Domestic Economy and Management of Resources

Comparing the evidence for storage areas discussed in section 5.1.1 with the available information on the agricultural and economic strategies adopted in the case studies analysed might point towards the possible existence of similarities, or differences, in their management of resources and domestic economies, and which can be attributed to their nature as ports of interactions. An increase of large storage areas was identified at Roca

Vecchia and Lipari, where however the vessels were not as big as the *dolia* recovered across FBA2 Roca, while an opposite trend seemed to characterise Kommos, with smaller storage areas widespread across the site. This section will focus on the domestic economy of these sites and their strategies for managing the resources to investigate whether ports of interactions had any common characteristics which might have influenced their establishment as important nodes in the mediterranean networks, as well as to understand whether these were in turn influence by long-distance interactions.

Because of their location on the sea and nature as ports, fishing activities were conducted in all three sites. While acknowledging that the attestation of marine fauna can be strongly affected by collection biases, the extent to which these sites relied on fishing for subsistence seems to be variable. The limited evidence from Roca (Pagliara *et al.* 2007; 2008) seems to indicate that in the RBA there was a major consumption of marine resources, which were mostly sourced along the coasts, with some exceptions, including dolphins. The information available from Lipari might indicate that fishing supplemented the resources obtained through agriculture (Dawson 2014: 264; Martinelli *et al.* 2021: 49). At Kommos, fishing was probably conducted both along the coast and in open waters (Shaw 1996a: 381), with marine invertebrates which seemed to have significantly increased their presence in the diet of local inhabitants in the LM III period (Reese *et al.* 1995: 240–273).

The domestic economy of Roca Vecchia seems to maintain its agricultural nature throughout the period analysed, as indicated by the frequent recovery of seeds and fruits in association with food storing, processing, and cooking facilities (Pagliara *et al.* 2007: 352–354; Primavera 2018). Archaeobotanical evidence points towards the mixed cultivation of durum wheat, emmer wheat, and barley (Pagliara *et al.* 2007: 354; Primavera 2018). At the same time, it is not clear whether the selection of field beans

(*vicia faba* var. *minor)* as the only legume is to be associated to dietary habits, to specific agricultural technologies, or to the symbolic meaning of this legume, which could have been deposited and burnt as votive offer, as indicated by the evidence from SAS IX (Pagliara *et al.* 2007: 354; Primavera 2018: 40–49, 91). The recovery of wild fruits reflects the increasing trees' exploitation identified across Southern Italy in the FBA and in the inclusion of wild fruits within the diet of local individuals (Primavera 2018).

In the analysis of the domestic economy and management of resources at Lipari, is important to locate the site within the small world of the Aeolian archipelago, where the high interactions between islands make of the entire archipelago an interconnected hinterland. Individual islands were rarely self-sufficient but could rely on the rest of the archipelago for supplying to their needs (cf. Robb and Van Hove 2003; Dawson 2014). Nonetheless, there is not much evidence for Lipari relying on other islands for imports, pointing towards the existence of agricultural strategies, such as terracing and employment of animals, and a large exploitation of sea resources (Martinelli *et al.* 2021; Speciale 2021). No major changes can be identified in the employment of resources until the Ausonian I period, when an increase in the husbandry activities of pigs and cattle has been identified on the acropolis (Speciale 2021: 130). In this period, the limited evidence suggests a focus on the cultivation of crops and legumes, increasing the similarities between Lipari and Southern Italy, characterised by a "low grapevine representation and higher representation of hulled and free-threshing wheat" (Speciale 2021: 133). This change is contemporary to Lipari becoming the only inhabited island in the archipelago and increasing interactions with Southern Italy, possibly coming to replace the other Aeolian islands in terms of small-scale interactions and trade. This does not imply that Lipari would have relied on other external sources (Speciale 2021: 135), but that the

adoption of specific agricultural and economic strategies might have been influenced by interactions with Southern Italy.

That agricultural activities were conducted in the proximities of Kommos is testified by the recovery on site of stone tools (Blitzer 1995). Archaeobotanical analyses have identified olives, grapes, almonds, figs, legumes and cereals as taxa domesticated and cultivated in the lands around Kommos (Shay *et al.* 1995). Most of the animal remains from the site consist in pigs, sheep and goats, while cattle were only 16% of the overall amount (Shay *et al.* 1995). It seems that up until LM I, Kommos was able to produce agricultural surplus, with food processing facilities available to the entire community (Shaw 1996a: 380). Starting from LM II onwards, facilities for food preparation can be found across the settlement as smaller domestic installations (Shaw 1996a: 383–384), mirroring the trend identified for storage areas. This corresponds to when the site is no longer relying on agricultural production and turns mainly into a productive centre (Blitzer 1995: 531–532; Watrous and Blitzer 1997: 515).

Overall, in the later phases analysed, the domestic economies of both Roca Vecchia and Lipari seem to reflect a wider trend identifiable across Southern Italy, characterised by a general higher exploitation of the territory, including wild fruits, legumes and cereals. On the contrary, domestic economy at Kommos seems to be no-longer based on agricultural products, which are instead exported, possibly together with other local productions like olive oil. It is possible to see a general trend towards specialisation in all three sites analysed, which possibly resulted from their active presence on the long-distance trading network.

5.5. Rituals and the Religious Realm

5.5.1. Symbols and Iconography

Specific ritual and religious activities within ports of interactions are as important as any other activities to understand the role of these sites within the international trading networks. As seen in the discussion of the functional division of space in section 5.1.7, ritual activities were conducted within the three ports of interactions analysed. Cult symbols and iconography can be reproduced on portable items and travel and are particularly susceptible to influence and sharing (Briault 2007). The presence of ritual symbols and iconography in a foreign context provides clear evidence for interactions, but the meaning of the same material symbols and iconography was not necessarily the same and implying the adoption of the same ritual practices and beliefs (Briault 2007). For this reason, it is important to investigate the local reception of such symbols, considering both how they were reproduced, like their media, whether these were imported or a local reproduction, and their context of recovery. This section focuses on the iconography and symbology which can be connected to the ritual sphere, and which are visible in the three case studies. First, the origin of these symbols will be discussed to understand whether their presence in the three case studies can result from foreign interactions. Next, matters of local imitation of foreign symbology and iconography will be discussed with a focus on figurines.

Sites	Double Axes	Bucrania	Birds	Boat	Sun
Roca Vecchia	Y	Y	Y	Y	Y
Lipari	N	Y	Y	Y	N
Kommos	Y	Y	Y	N	N

Table 5.7—Iconography and symbology across the three sites analysed. Y: present; N: absent.

Table 5.7 compares the presence of the same symbols and iconographic representation across the three sites analysed, that is figurines, double axes, bucrania, boat, and sun, whose origin is now discussed. Some of them, like the double-axes and bucrania, belong to the Aegean tradition and are commonly associated with the ritual realm (Briault 2007). Bird iconography was already present in the eastern Mediterranean and Aegean areas already in the EBA, and it diffused across Italy in the RBA (Evans 1928: 109–116; Masseti 1997; Di Fraia 2010; Binnberg 2018; Warren 2018). Other symbols, like the sun and the boat, belong to a wider European tradition and were widely present in different geographical areas. For example, the association of the sun and the boat occurs both in BA Egypt, Mediterranean and Northern Europe (Vianello 2008b). To my knowledge, the earliest representations of ships in Italy date to the early Capo Graziano I *facies* in the Aeolian islands (Figure 5.24; Martinelli *et al.* 2010; Levi *et al.* 2014; Martinelli 2018; 2020: 98). Such an early date would suggest that ship iconography was an independent development rather than the result of interactions with the Aegean (*contra* Vianello 2008b: 32). From the 13th century onwards the sun boat became widespread both in peninsular Italy and the Aegean also in the form of the double bird-shaped protome, which is particularly visible on the sun discs (Bettelli 2002: 155; 2012). This *Vogelbarke*, or bird-boat, builds on the water-bird symbology and started to appear in central Europe starting from 1250 BC, to then spread across Italy and the Mediterranean, with even one example from Tiryns dating to LH IIIC (Romey 2003: 25). At the same time, because of their simplicity, hooked crosses, often interpreted as solar representations, have not been considered in the comparison since these could have easily been reproduced in a spontaneous way, without necessarily being the product of imitations.

Looking at the distribution of these symbols and iconography across the ports of interactions analysed, it appears that those of Aegean origins, that is double axes and bucrania, were present in all three sites. These include graphic representations and three-dimensional renderings. At Roca Vecchia, Iacono (2013b: 186) identified the bow of a boat inscribed on a block originally belonging to the RBA fortification wall and found in secondary deposition, while the only association with solar iconography consists in the gold discs (see Chapter 2). At Lipari, no double axes have been recorded, while various bucrania and birds can be identified in the handles and appendices of many Ausonian mugs and bowls (Damiani 2010: 272–374; Martinelli 2020: 147). At Kommos, no ritual iconography other than typical Aegean symbols have been identified. Table 5.7 shows how most of the symbols considered, originating from both the Aegean and Continental Europe, appear at Roca Vecchia, pointing towards the centrality of this site within the trading networks across the Mediterranean. Generally, it looks like that the Italian sites provide evidence for a wide range of traditions and symbology that do not necessarily root in the Aegean. While this contrasts with the evidence from Kommos, where the local culture remains predominant in terms of iconography and symbology despite the many imports identified on site, might in part be connected to their different sociopolitical reality, it is important to consider the wider Mediterranean and European context. As a matter of fact, when symbols shared across wider areas, such as birds and other animal protomes, appear across the Italian sites, they are part of a wider trend affecting the whole Mediterranean and Europe from the 14th century onwards, while most of the Aegean symbols can be dated earlier.

Generally, in the Aegean figurines were interpreted as personal items with apotropaic functions (Hallager 2009), in the same way as the clay horns recovered across the Milazzese settlement at Lipari. As seen in section 4.3.1, figurines at Kommos are from

both domestic and public areas, while at Lipari and Roca Vecchia, local and imported figurines are less widespread and come from areas which have been attributed a ritual connotation regardless of the presence of figurines, suggesting that animal- and human-shaped figurines might have had a different role in Southern Italy, of a more ritual nature.

Looking at local imitations of foreign symbology and iconography, the clearest example is provided by figurines, which have been recovered across all three case studies. Figure 5.25 provides a diachronic comparison of the figurines recovered across the three case studies analysed. Local imitations have been recovered both in Roca Vecchia and Lipari, where in this latter site an Aegean figurine was even found together with an imported one (Bernabò Brea and Cavalier 1980: 174; van Wijngaarden 2002: 219–221; Guglielmino 2005b). As already discussed, the recovery of combinations of local and imported figurines can indicate a local inclusion of foreign figurines in religious activities (van Wijngaarden 2002: 221). While the figurines identified at Kommos were widespread across the settlement, both in public areas and domestic environments, both imported and locally made figurines in the Italian sites are an exception and were occasional finds. These occurred in areas where some sort of ritual activities, evidenced at Roca Vecchia also by the various paraphernalia and animal depositions recovered in the Temple Hut (see Chapter 2.3.3), were taking place alongside domestic activities such as food processing and consumption, as well as weaving. However, the extent to which these activities involved the entire population is not clear.

5.5.2. Ritual Practices

In terms of ritual activities, the clearest evidence for their identification in the archaeological record is provided by banqueting activities. It is important to clarify that banquets were not always religious, while in the Mycenaean world the act of killing an animal often had a sacrificial and ritual nature (Bendall 2007: 15). Evidence for animal

sacrifices comes from Roca, where at least three cattle, among other animals had been killed and some of their bones deposited as part of ritual practices (Pagliara *et al.* 2008: 270-276). As mentioned above, faunal remains of cattle were largely present at Lipari (Speciale 2021: 99–100), although there is no evidence suggesting that these animals were killed and eaten within ritual activities. This is similar to the picture from Kommos, where there is increasing evidence for the consumption of cattle over time, although this cannot be surely associated with ceremonial and ritual activities (Shaw 1996a: 381). More generally, there is no clear evidence for animal sacrifices being conducted at Lipari and Kommos, although this does not imply their absence.

At Kommos, the earliest example of large-scale banqueting takes place in an area easily accessible to the entire population, that is the Southern Area. From a diachronic point of view, as discussed in Section 5.1.7, it seems that from LM II onwards ritual activities were gradually downsized, especially with the appearance of household shrines. This date corresponds with a minimum in the number of imports just preceding a strong increase and thus there seems not to be an association with the site opening to the wider Mediterranean but rather to changes in its domestic economy. It is difficult to assess whether foreign individuals participated in the large-scale ritual activities taking place in the harbour area or these were restricted to the elite. Beyond that, most of the imports dating from LM III onwards have been recovered from the two structures associated with household shrines, that is House X and the House with the Snake Tube, suggesting that foreign individuals might have been involved in ritual activities. It should be mentioned that Hallager (2009) argues against the identification of Room 4 in the House with the Snake Tube as a household shrine on the basis that there is no other evidence from this area supporting its interpretation as such. The scholar suggests instead that the Snake Tube had been removed from a public town shrine in the settlement, whose existence is

supported by the recovery from the Hilltop Area of the crown of a Goddess with Upraised Hands figurine (Shaw 1996d: 290; Hallager 2009: 112). Snake tubes are usually associated with figurines of the goddess with upraised hands, which can be found in both private and public shrines. At Kommos they have not been recovered together and hence it is difficult to assess whether the LM IIIB shrine was of private or public nature, but in any case, I am more inclined to locate it in proximity of the House with the Snake Tube.

At Roca Vecchia and Lipari, the evidence analysed seems to suggest that, in the later phases, ritual activities, which probably also involved the preparation and consumption of food, were conducted in association with large structures standing out from the rest of the settlement for the richness of the artefacts recovered. This does not necessarily imply an opening up of rituals as in Lipari these structures were probably employed by larger nuclei of co-residency formed by about 15 people and also at Roca these would still be restricted to a part of the population (Basile 2018; Iacono 2019: 210). Ritual banqueting might have also provided an arena for encounter between local and outsiders. Considering the estimated number of people participating in the RBA feastings at Roca against the possible number of people occupying the promontory in the same period (Iacono 2015: 271; see also Chapter 2), it might be suggested that these social banquets would have not involved the entire population but only some delegates. The contemporary diffusion of more prestigious items and personal ornaments, such as brooches and pins, which put more emphasis on the single individual rather than on the entire community, would find a reasonable explanation within the dynamics of conspicuous consumption taking place in these instances. If some sort of closure of banqueting activities could possibly be argued also for Roca Vecchia and Lipari in the final periods identified, this would reflect the same trend identified for Kommos which,

incidentally, mirrors a wider opening to the Mediterranean network, as indicated by the foreign influences and imports.

Overall, it is possible to identify some similarities in the ritual practices conducted within the ports of interactions, both in terms of nature and chronological patterns. In line with many other contemporary sites, banqueting seems to be present in all the three sites, where it was probably used as a means to interact with the foreign individual frequenting the site. However, with the increasing of trading networks, there is a more evident display of personal belongings and items enhancing single individuals, which however are displayed in more restricted contexts.

Finally, it is important to mention the funerary evidence recovered in association with the sites analysed. The only human remains from the site of Kommos consist in a fragmented adult mandible recovered from a LM I dump in the Central Hillside (Reese *et al.* 1995: 194), while the closest cemetery was Kamilari, located about 4 km far away from the harbour site and dating to MM IB–LM IIIA2 (Shaw *et al.* 2006b: 595; Girella 2011). Evans (1928: 88) indicated the possible presence about 400 m south of Kommos of an EM ossuary and tholos tomb (Figure 4.7), later identified as a possible apsidal building (Pendlebury *et al*. 1932–1933: 89). At Roca, a neonatal skeleton was found within an olla in the Temple Hut following the *enchytrismos* practice which started to be widespread across southern Italy from the end of the EBA (Malorgio and Maggiulli 2011: 136). Moreover, some possible LBA/EIA burials have been identified outside the city walls (Scarano 2019). At Lipari, a Capo Graziano II cremation cemetery was identified in Contrada Diana (Bernabò Brea and Cavalier 1980: 723–731; Martinelli *et al.* 2021). There is no evidence for burials in the Milazzese period, while excavations have identified cremations dating to the Ausonian I period nearby the perimeter of some huts on the acropolis, which is the earliest instance in the Aeolian context where cremations had been

found within settlements (Martinelli 2020: 152–153). This practice continues in the Ausonian II period, when a concentration of seven *situlae* with cremations is identified north-east of the hut α II (Bernabò Brea and Cavalier 1980: 68–69). This evidence is contemporary to the nearby Monfalcone necropolis, where cremations were recovered alongside inhumations (Bernabò Brea 1960; Bernabò Brea and Cavalier 1980: 595). The presence of burials within the settlements which occur in the Italian case studies reflects a common pattern in FBA Southern Italy and highlights a deep connection between the domestic and ritual spheres (Iacono 2019: 163; 194). While no similar contexts have been recorded at Kommos, a similar overlapping between the domestic and ritual environments can still be seen, first in the wide distribution of figurines across the site, then in the development of household shrines. While the absence of clearer funerary evidence could be explained by matters of preservation, especially regarding the earlier phases, it could also possibly be associated with their nature as ports of interactions: being lively places of continuous occupation, the lack of burials could possibly be connected also to pattern of expansion that led to their gradual obliteration.

5.5.3. Ritual Areas Outside the Settlements

To better understand the religious aspect within ports of interactions, it is also important to consider the presence of ritual areas located outside the main settlement area, as in the case of Grotta della Poesia, for Roca Vecchia, and Tholos San Calogero, for Lipari. The Grotta della Poesia was a place of cult in the pre-Roman period as testified by the votive inscriptions to the Messapic deity Thaotor Andirahas recovered on the cave walls (Guglielmino and Pagliara 2004: 581). However, there is evidence for its ritual role also in the BA, as suggested by the Aegean symbols carved on the walls. There are different stands on the association of the double-axe and bucrania symbols, both being considered fundamental in the Aegean religious iconography and found combined from the MM IIIB

period onwards, although not necessarily representing the weapon used in bull sacrifice (Nilsson 1950: 227; *contra* Buchholz 1959; Haysom 2010; cf. Marinatos 2010: 116; MacGillivray 2012; Flouda 2015: 43). It is important to consider the natural characteristics of the cave, which is located directly on the sea and could be accessed at least until the 15th century AD, as indicated by references dating to that period, before being invaded by the sea in modern times (de Ferraris 1558: 60; Pagliara 1987a: 311). Moreover, the toponym "Poesia" comes from the later local dialect word "posia" for drinkable water and geomorphological investigations have identified spring water (Pagliara 1987a: 311). The impact of these natural characteristics is visible in the Messapic cults, as the name Thaotor Andirahas was associated with the "underground nature of the cult" (Lomas 2013: 80, n. 60).

The Tholos San Calogero is located about 4 km from the Lipari acropolis and provides an example where a clear expression of the Mycenaean material culture was adopted and employed with a different function from the Aegean tradition, that is as a thermal building rather than as a tomb (Bernabò Brea *et al.* 1991). From the 4th century BC, this area was later used as a cultic area associated with the thermal spring (Bernabò Brea *et al.* 1991: 30), although there is no certain evidence confirming a similar employment of the area in the LBA. However, comparisons with nearby sites does not make me completely reject this hypothesis. The establishment of a ritual area next to a thermal spring finds comparisons on the nearby island of Panarea, where, in the Capo Graziano I period, various underground wells were built in association with the fumaroles at the site of La Calcara (Bernabò Brea and Cavalier 1968: 9–19; Martinelli *et al.* 2021: 36). The identification of other ritual areas associated with volcanic phenomena, such as thermal springs and fumarole, shows that at San Calogero the employment of foreign

architecture did not imply the adoption of the related Aegean habits and rituals, which in this case would reflect local traditions.

Both Grotta dela Poesia and Tholos San Calogero were characterised by the presence of natural features such as springs or caves, which have often assumed a significant role in religious rituals (Bradley 2000). Various reasons have been suggested for the relationship between the sacred sphere and specific natural places, spanning from a connection between the morphology and the deity worshipped (Scully 1962) to the idea that particular locations allowed communication with different worlds because of the deep sensory experience that they would evoke (Hägg 1983; Bradley 2000: 28; Tyree 2001; Lupack 2010: 254–255). This association is frequent and can be found both in local cultures and in the Aegean. For example, the open-air sanctuary at Kato Syme, Crete, was located next to a spring and waterfall and the recovery of "offering tables beside the water" have led Peatfield (1995: 223) to argue for the centrality of this element in the cults conducted on site. It comes naturally to connect the important role played by water in both the ritual areas identified at Roca Vecchia and Lipari with their nature as ports of interactions and the importance that this element played for navigators, both local and foreigners. Going beyond the symbolic and ritual aspect, the association of the water element with the availability of freshwater resources would have been particularly relevant to incoming mariners after having endured long journeys. One of the main differences between these two sites consists in their location as Grotta della Poesia is next to the sea and visible by all the seafarers, including non-local ones, while the Tholos San Calogero is located more than 1 km from the nearest coastal access, on an upland plain at 230–245 m asl (Martinelli *et al.* 2021: 39), and hence visitors needed to know about the existence of this place and go there on purpose. Nonetheless, compared with the evidence

from Kommos, the cults conducted at Roca Vecchia and Lipari seem to have been much more influenced by external interactions.

No cultic area or sanctuary have been identified nearby Kommos in the period analysed. The closest regional sanctuary in the Protopalatial period is the Kamares Cave, located about 19 km away from Kommos (Watrous and Hadzi-Vallianou 2004). However, the absence of ritual places in the proximities of Kommos can be explained with the significant religious role of palaces, especially in the Neopalatial period. Phaistos was the closest palace to Kommos, located at about 6.3 km of distance. Nonetheless, it is important to point out that it is unlikely that foreigners would visit palaces for religious purposes or that the rituals conducted within it could have been shared by allogenous individuals in the same way that could have happened for cults associated with natural elements.

5.6. Conclusion

At this point, it seems evident that the ports of interactions analysed share some elements characterising the physical organisation of the site. From a structural point of view, the building techniques employed in all the three case studies do not seem to be influenced by the increasing external interactions, rather reflecting the morphological characteristics as well as the materials available of each site. Ports were generally characterised by the presence of specific areas dedicated to the productive activities, both at a domestic and more industrialised level. More specialised productive activities are coeval to the identification of large storage areas but not necessarily to the periods with higher intensity of foreign interactions, as suggested by the numbers of both imports and locally made artefacts displaying strong external influences. Ritual activities, especially in the form of banqueting, were being conducted in all ports of interactions although with some characteristics, namely their location within the settlement and their degree of opening to

the entire community, which could vary through time and between ports analysed. However, there seems to be some sort of correlation between the nature of these activities and the presence of these sites in the wider Mediterranean trading network.

Overall, the ports analysed facilitated the interactions between local and external individuals. However, local needs and agency are strong and overcome external influences especially in terms of local administration of trade and exchange, as no shared practices have been identified even if they were all involved in long distance interactions. It thus appears that, despite having common elements and characteristics which were to be expected by foreigners, local needs and features were highly present in the ports of interactions analysed.

Ports of interactions were all highly interconnected with their hinterlands and seascapes, which however, rather than a consequence, was probably one of the factors for their initial development. This high connectivity characterised all the three sites despite their different geo-political situations, with the Italian sites playing a central role on a regional scale and therefore combining characteristics, like ritual and political importance, which would have been out of place in a third-order site like Kommos. Moreover, Kommos was more important as a harbour than as a settlement, with the latter developing as a consequence of the first, which is the opposite to what appears from the analysis of the Italian case studies. Roca Vecchia and Lipari already differentiated themselves from the surroundings prior to the intense trans-Mediterranean interactions that characterised their history, although they benefitted and further developed because of it.

Another pivotal factor affecting the presence or absence of common elements across ports of interactions is their chronological context. First, the chronological changes in the different political geographies, as visible in the growing importance of the Italian

sites across their geographical area, dictate the presence or absence of elements which can be associated with main centres, like hoards for instance. Next, it is important to bear in mind the wider trends across the Mediterranean and continental Europe to put potential similarities into context and understand whether they are the result of external influences from specific interactions or belong to a wider phenomenon. This is the case of the metallurgical *koiné* or of the appearance of part of the symbols identified across Italian ports of interactions and which find many comparisons across a wide geographical area. Finally, the different destruction events recorded through the period analysed have an impact on social stability, which in turn can influence trading activities, and more generally the identification of potential differences and similarities between the case studies.

6. CONCLUSIONS

6.1. Ports, Interactions and Influences

This thesis has investigated the role of ports in the interactions between societies in Southern Italy and the Aegean. More specifically, ports of interactions have been shown to be particularly useful as a category to analyse the social interactions and external influences on the organisation of communities in the LBA. The case studies selected, Roca Vecchia, Lipari, and Kommos, were located in three different areas of the Mediterranean, with the purpose of assessing whether the characteristics of ports of interactions were unique to specific geographical areas or were more widely shared, with a particular focus on Southern Italy and the Aegean. Both similarities and differences have been identified between these three sites, and these do not always reflect their geographical location, meaning that the patterns identified at Kommos are not necessarily different because of its location. There are some elements which indeed seem to characterise the ports of interactions located in Southern Italy, like the presence of hoards. However, there are some similarities between sites located in different geographical areas, such as the presence of roads within Kommos and Roca Vecchia, but lacking in Lipari. Overall, there seem to be more similarities between Roca Vecchia and Lipari, but the evidence analysed suggests that rather than geographical locations, other factors such as chronology, political geography, and trading networks, have contributed to define differences and similarities between different ports of interactions. Some of these factors can in part be influenced by the geographical constraints of the sites analysed, but this is not the only reason.

By looking at the foreign artefacts analysed and their contexts of recovery, combined with a diachronic, quantitative and spatial analyses, it was possible to suggest that foreign material culture in southern Italian ports of interactions seems initially to be

given a luxury status because of their exotic provenance regardless of what was their status in their original context. This is not necessarily true for the Aegean ports of interactions (or at least not the one examined), where in the later phases imported artefacts from Southern Italy appear distributed across the settlement, without displaying any potential additional value.

Finally, it was possible to investigate the different levels of interaction and influence between societies with different socio-political complexities within the middle ground context of ports of interactions, which facilitate these encounters. The evidence presented indicates that the same types of activities would take place within ports of interactions, regardless of where these were situated. For example, banqueting was one way through which interactions probably took place across all three ports of interactions. At Kommos, there seems to be a correlation between the nature of the ritual sphere and the increase in the number of imports. Some sort of association between the nature of banqueting and feasting activities and the level of presence in the wider Mediterranean trading network can be argued also for the ports of interactions in Southern Italy. From an economic point of view, trade and exchange took place between these areas but the three case studies analysed did not necessarily share practices for administrating these activities. Overall, in terms of influence, local agency played an important part in determining what foreign elements to adopt and how.

6.2. How did it go?

Fewer common aspects than originally expected have been identified from the comparison of ports of interactions, although this result reflects the profound geopolitical differences between the sites analysed. Similar practices were conducted by people at these sites, but these behaviours followed the local organisation rather than displaying a

more “international” nature. This denotes a strong local agency across all three sites analysed, which was not to be taken for granted, considering the middle ground context characterising ports of interactions (see Chapter 1).

While the interactions between the Aegean and Southern Italy in the LBA have widely been addressed in the literature, no previous study has focused on ports of interactions and on their role in shaping these social dynamics. Wardle (2004: 2) discussed ports of trade, but her aim was “first, to obtain an overview of the local cultures; second, to examine the routes and focal points of Mycenaean 'trade'; and third, to ascertain the effect of this contact on the native populations in terms of changes in material culture, and where possible in terms of social interaction, fusion and acculturation”. The present thesis instead has built on Wardle’s argument that Mycenaean interactions were of economic nature (2004: 442) and focused on port cities rather than wider areas and cultures. Moreover, the analysis of these ports has shown particularly relevant to shed light on the social, economic and political interactions taking place on site. At the same time, increasing studies on ports and on their social aspect have made this research particularly timely. By comparing these sites as ports rather than as Aegean and Italian, it was possible to adopt a more unbiased approach, putting them all on the same level.

Because of the comparative nature of this thesis, it was important to limit the discussion to the main elements, while the amount of information could have led to a much wider and deeper discussion for each different aspect analysed. Moreover, the fact that only in Kommos the actual harbour area was excavated partially affected the comparability with Roca Vecchia and Lipari, where similar areas have not been excavated and hence are difficult to compare. Unexpectedly, some challenges were met from working on published materials coming from important—and extensively excavated—sites which have been investigated and discussed by different scholars and using different

terminologies, hence clarity was not always present, with the risk of duplicating the data inserted. To limit such risks, when possible, the different artefacts inventories were recorded in the database adopting a unique code and, in the case of Roca, it was decided to exclude data published earlier than the main source adopted (Iacono 2013b), where this could have already been present.

6.3. Looking Ahead

My research has analysed three LBA ports of interaction, but it would significantly benefit from the inclusion of other case studies from both areas already considered in this thesis and from new areas of the Mediterranean. In the first case, the addition of further sites from Southern Italy and the Aegean would allow us to corroborate or reject the results obtained in this thesis, testing with more accuracy the relevance of geographical location and political situation in the role of ports of interactions across the Mediterranean. In the second case, the geographic factor would be further tested by expanding the analysis to sites in the Eastern Mediterranean, like Bates' Island (White 2002; 2003), or more western areas, like Nuraghe Antigori in Sardinia (Jones *et al.* 2014). Through the analysis of multiple sites and areas, it may be possible potentially to identify some recurring characteristics within ports of interactions to be added to the already existent ones. The more samples considered, the more accurate would this model be.

Another possible development of this study would consist in stepping back from the single ports of interactions and looking at their regional context more widely. For example, by surveying the island of Kythera, Broodbank and Kiriatzi (2014) noticed that the recovery of large amounts of pottery scattered along the coast corresponded to the absence of main active ports in that period and vice versa. Considering that surveys have been conducted at all three case studies (Simpson *et al.* 1995; Watrous *et al.* 2004; Nomi

and Speciale 2017; Iacono *et al.* 2020; 2024b), I sense that the analysis of the data collected focusing on the impact of ports of interactions on the surrounding sites could offer valuable insights. Finally, exploring new areas at some of these sites could yield more “port-like” evidence to light.

REFERENCE LIST

Primary Sources

Diodorus Siculus. *Bibliotheca Historica*.

Secondary Sources

Albanese Procelli, R. M. (2003) *Sicani, siculi, elimi: forme di identità, modi di contatto e processi di trasformazione.* Milano: Longanesi.

Albanese Procelli, R. M., Lo Schiavo, F., Cavalier, M., and Vanzetti, A. (2004) 'Articolazioni cronologiche e differenziazioni locali', in Cocchi Genick, D. (edn), *L'età del Bronzo Recente in Italia: Atti del Congresso Nazionale di Lido di Camaiore, 26–29 Ottobre 2000.* Viareggio: Mauro Baroni Editore, pp. 313–326.

Alberti, G. (2017) 'New light on old data: Toward understanding settlement and social organization in Middle Bronze Age Aeolian Islands (Sicily) through quantitative and multivariate analysis', *Journal of Archaeological Science: Reports,* 11, pp. 310–329.

Alberti, M. E. (2006) 'Changing in time: some aspects of Aegean and Cypriot Balance weights', in Alberti, M. E., Ascalone, E., and Peyronel, L. (eds), *Weights in context. Bronze age weighing systems of Eastern Mediterranean: chronology, typology, material and archaeological contexts. proceedings of the International colloquium, Roma 22nd-24th November 2004.* Roma: Istituto italiano di numismatica, pp. 315–340.

Alberti, M. E. and Parise, N. (2005) 'Towards an unification of mass-units between the Aegean and the Levant', in Laffineur, R. and Greco, E. (eds), *Emporia: Aegeans in the central and eastern Mediterranean. Proceedings of the 10th international Aegean conference = 10e rencontre égéenne internationale, Athens, Italian school of archaeology, 14-18 April 2004.* Volume I, Liège: Université de Liège, pp. 381–391.

Albore Livadie, C. (2020) ‘Une coiffe cérémonielle dans la cabane 2’, in Albore-Livadie, C. and Vecchio, G. (eds), *Nola—Croce del Papa: Un villaggio sepolto dall’eruzione vesuviana delle Pomici di Avellino.* Collection du Centre Jean Bérard, 54. Napoli: Centre Jean Bérard, pp. 251–255.

Albore Livadie, C., Cazzella, A., Marzocchella, A., and Pacciarelli, M. (2003) ‘La struttura degli abitati del Bronzo Antico e Medio nelle Eolie e nell'Italia Meridionale’, *Atti della XXXV Riunione Scientifica. Le Comunità Della Preistoria italiana. Studi E Ricerche Sul Neolitico E Le Età Dei Metalli. Castello di Lipari, Chiesa di S. Caterina 2–7 Giugno 2000 in memoria di Luigi Bernabò Brea*. Florence: Istituto Italiano di Preistoria e Protostoria, pp. 113–238.

Allison, P. M. (1999) ‘Introduction’, in Allison, P. M. (edn), *The Archaeology of Household Activities.* London: Routledge, pp. 1–18.

Andreadaki-Vlazaki, M. and Papadopoulou, E. (2005) ‘The Habitation at Khamalevri, Rethymnon, during the 12th century BC’, in D'Agata, A. L. and Moody, J. A. (eds), *Ariadne's threads : connections between Crete and the Greek mainland in Late Minoan III (LM IIIA2 to LM IIIC): proceedings of the International workshop held at Athens, Scuola archeologica italiana, 5-6 April 2003.* Atene: Scuola archeologica italiana di Atene, pp. 353–397.

Antonaccio, C. M. (2013) ‘Networking the Middle Ground? The Greek Diaspora, Tenth to Fifth Century BC’’, in van Pelt, W. (edn), *Archaeological and Cultural Mixture.* Cambridge: Department of Archaeology, University of Cambridge, pp. 237–251.

Arends-Tóth, J. and van de Vijver, F. J. R. (2004) ‘Domains and dimensions in acculturation: Implicit theories of Turkish–Dutch’, *International Journal of Intercultural Relations,* 28 (1), pp. 19–35.

Asensio, D., Francés, J., and Pons, E. (2002) ‘Les implicacions econòmiques i socials de la concentració de reserves de cereals a la Catalunya costanera en època ibèrica’, *Cypsela,* 14, pp. 125–140.

Astour, M. C. (1973) ‘Ugarit and the Aegean. A Brief Summary of Archaeological and Epigraphic Evidence’, in Gordon, C. H. and Hoffner, H. A. (eds), *Orient and Occident. Essays presented to Cyrus H. Gordon on the occasion of his sixty-fifth birthday.* Kevelaer: Butzon & Bercker, pp. 17–27.

Augé, M. (1995) *Non-Places: Introduction to an Anthropology of Supermodernity.* London: Verso.

Bachhuber, C. and Roberts, R. G. (2009) ‘Editors’ Preface’, in Bachhuber, C. and Roberts, R. G. (eds), *Forces of Transformation. The End of the Bronze Age in the Mediterranean.* Oxford: Oxbow Books, pp. v–vi.

Basile, C. (2018) ‘Nuove prospettive di studio sull’Ausonio II di Lipari: il complesso dei vasi della capanna AG’, in Bernabò Brea, M., Cultraro, M., Gras, M., Martinelli, M. C., Pouzadoux, C., and Spigo, U. (eds), *A Madeleine Cavalier.* 49, Naples: Collection du Centre Jean Bérard, pp. 179–196.

Beck, C. W. (1986) ‘Spectroscopic Investigations of Amber’, *Applied Spectroscopy Reviews,* 22 (1), pp. 57–110.

Begemann, F., Schmitt-Strecker, S., Pernicka, E., and Lo Schiavo, F. (2001) ‘Chemical composition and lead isotopy of copper and bronze from Nuragic Sardinia’, *European Journal of Archaeology,* 4 (1), pp. 43–85.

Belardelli, C. (1994) ‘La ceramica grigia’, in Peroni, R. and Trucco, F. (eds.), *Enotri e Micenei nella Sibaritide. Volume I: Broglio di Trebisacce*. Taranto: Istituto per la storia e l'archeologia della Magna Grecia, pp. 265–346.

Bellintani, P. (2010a) ‘Ambra, una materia prima dal nord (ma non solo)’, in Radina, F. and Recchia, G. (eds), *Ambra per Agamennone: Indigeni e Micenei tra Adriatico, Ionio ed Egeo.* Bari: Mario Adda Editore, pp. 141–146.

——— (2010b) ‘Materiali vetrosi in Puglia nell'età del Bronzo Medio’, in Radina, F. and Recchia, G. (eds), *Ambra per Agamennone: Indigeni e Micenei tra Adriatico, Ionio ed Egeo.* Bari: Mario Adda Editore, pp. 147–149.

Benassi, F., Carella, M., and Heins, F. (2022) ‘Migration in the Mediterranean region: A response to crises and an emergency in its own right’, *Investigaciones Geográficas,* 77, pp. 15–36.

Bendall, L. M. (2004) ‘Fit for a king? Hierarchy, exclusion, aspiration and desire in the social structure of Mycenaean banqueting’, in Halstead, P. and Barrett, J. C. (eds), *Food, Cuisine and Society in Prehistoric Greece.* Oxford: Oxbow Books, pp. 105–135.

——— (2007) *Economics of Religion in the Mycenaean World. Resources Dedicated to Religion in the Mycenaen Palace Economy.* Oxford: School of Archaeology University of Oxford.

——— (2014) ‘Gifts to the Goddesses: Pylian Perfumed Olive Oil Abroad?’, in Nakassis, D., Gulizio, J. and James, S. A. (eds), *KE-RA-ME-JA. Studies Presented to Cynthia W. Shelmerdine.* Philadelphia: INSTAP Academic Press, pp. 141–162.

——— (2017) ‘Where was da-wo?’, in Nosch, M. L. and Landenius Enegren, H. (eds), *Aegean Scripts: Proceedings of the 14th International Colloquium on Mycenaean Studies, Copenhagen, 2-5 September 2015*. 1, Rome: Istituto di Studi sul Mediterraneo Antico, pp. 301–346.

Bennet, J. (1985) ‘The Structure of the Linear B Administration at Knossos’, *American Journal of Archaeology,* 89 (2), pp. 231–249.

——— (1990) ‘Knossos in Context: Comparative Perspectives on the Linear B Administration of LM II-III’, *American Journal of Archaeology,* 94(2, April), pp. 193–211.

——— (1996) ‘Marks on Bronze Age Pottery from Kommos’, in Shaw, J. W. and Shaw, M. C. (eds), *Kommos I: The Kommos Region and Houses of the Minoan Town. Part 2: The Minoan Hilltop and Houses.* Princeton: Princeton University Press, pp. 313–321.

——— (2011) ‘The geography of the Mycenaean kingdoms’, in Duhoux, Y. and Mopurgo Davies, A. (eds), *A Companion to Linear B: Mycenaean Greek Texts and their World.* 2, Louvain-la-Neuve: Peeters, pp. 137–168.

Bernabò Brea, L. (1960) ‘Necropoli a incinerazione della Sicilia preistorica’, in Laurenzi, L. (edn), *Civiltà del ferro: studi pubblicati nella ricorrenza centenaria della scoperta di Villanova.* Bologna: Arnaldo Forni Editore, pp. 147–164.

——— (1976–1977) ‘Eolie, Sicilia e Malta nell'età del bronzo.’, *Kōkalos,* 22–23, pp. 33–108.

——— (1985) *Gli Eoli e l'inizio dell'età del bronzo nelle isole Eolie e nell'Italia meridionale: archeologia e leggende.* Napoli: Istituto universitario orientale, Dipartimento di studi del mondo classico e del Mediterraneo antico.

Bernabò Brea, L. and Cavalier, M. (1957) ‘Stazioni preistoriche nelle isole Eolie’, *Bullettino di Paletnologia Italiana,* 66, pp. 97–151.

——— (1960) *Meligunìs Lipára. Vol. I La stazione preistorica della contrada Diana e la necropoli protostorica di Lipari. IV. L’acropoli di Lipari nella preistoria*. Palermo: S. F. Flaccovio, Editore.

——— (1968) *Meligunìs Lipára. Vol. III Stazioni Preistoriche delle isole Panarea, Salina e Stromboli.* Palermo: S. F. Flaccovio, Editore.

——— (1980) *Meligunìs Lipára. Vol. IV L'acropoli di Lipari nella Preistoria.* Palermo: S. F. Flaccovio, Editore.

Bernabò Brea, L., Cavalier, M., and Belli, P. (1991) 'La tholos termale di San Calogero nell'isola di Lipari', *Studi Micenei ed Egeo Anatolici*, pp. 1–78.

Bernardini, M. (1934) 'Melendugno. —Scavi di Roca', *Notizie degli Scavi d'Antichità comunicate alla R. Accademia Nazionale dei Lincei per ordine di S. E. il Ministro dell'Educazione Nazionale e pubblicate d'accordo col R. Istituto di Archeologia e Storia dell'Arte Scuola Normale Superiore di Pisa,* XII, pp. 182–199.

——— (1952) 'Gli scavi di Rocavecchia dal 1928 al 1944', *Archivio Storico Pugliese,* V(1–4), pp. 78–97.

——— (1956) 'Gli scavi di Rocavecchia dal 1945 al 1954', *Studi Salentini,* I(1), pp. 20–65.

Betancourt, P. P. (1990) *Kommos II: The Final Neolithic through Middle Minoan III Pottery.* II. Princeton: Princeton University Press.

——— (2006) 'The Apsidal Structure', *Hesperia Supplements,* 36, pp. 55–66.

Bettelli, M. (1997) 'Elementi di culto nelle terramare', in Bernabò Brea, M., Cardarelli, A., and Cremaschi, M. (eds), *Le terramare: la più antica civiltà padana.* Milano: Electa, pp. 720–741.

——— (2002) *Italia meridionale e mondo miceneo: ricerche su dinamiche di acculturazione e aspetti archeologici, con particolare riferimento ai versanti adriatico e ionico della penisola italiana.* Firenze: All'insegna del giglio.

——— (2006) 'Offerte votive e simboli di culto dall'Italia all'Egeo nel secondo millennio a.C.', in Naso, A. (edn), *Stranieri e non cittadini nei santuari Greci.* Firenze: Le Monnier, pp. 140–157.

——— (2009a) ‘Le ceramiche figuline dell’età del bronzo: importazioni, imitazioni e derivazioni locali’, in Bettelli, M., De Faveri, C., and Osanna, M. (eds), *Prima delle colonie: organizzazione territoriale e produzioni ceramiche specializzate in Basilicata e in Calabria settentrionale ionica nella prima età del ferro. Atti delle Giornate di Studio Matera, 20-21 novembre 2007.* Matera: Osanna Edizioni, pp. 17–35.

——— (2009b) ‘Handmade burnished ware e ceramica grigia tornita in Egeo nella tarda età del bronzo: una messa a punto’, *Studi Micenei ed Egeo Anatolici,* 51, pp. 95–121.

——— (2012) ‘Variazioni sul sole: immagini e immaginari nell’Europa protostorica’, *Studi Micenei ed Egeo Anatolici,* 54, pp. 185–205.

Bettelli, M. and Levi, S. T. (2003) ‘Lo sviluppo delle produzioni ceramiche specializzate in Italia meridionale nell’età del Bronzo in rapporto ai modelli egei e alla ceramica di impasto indigena’, *Atti della XXXV Riunione Scientifica. Le Comunità Della Preistoria italiana. Studi E Ricerche Sul Neolitico E Le Età Dei Metalli.* Volume 1, Florence: Istituto Italiano di Preistoria e Protostoria, pp. 435–454.

Bettelli, M. and Damiani, I. (2005) ‘I pettini di materia dura animale nell’età del bronzo italiana: alcune considerazioni’, in Vagnetti, L., Bettelli, M., and Damiani, I. (eds), *L’avorio in Italia nell’età del Bronzo.* Roma: CNR–Istituto di Studi sulle civiltà dell’Egeo e del Vicino Oriente, pp. 17–26.

Bianco, S. (1991–1992) ‘Nuovi dati da Calabria, Basilicata e Puglia Meridionale’, *Rassegna di Archeologia,* 10, pp. 509–522.

Bietti Sestieri, A. M. (1984a) ‘L’Abitato di Frattesina’, *PADUSA,* XX, pp. 413–427.

——— (1984b) ‘Lo scavo dell’abitato protostorico di Frattesina di Fratta Polesine (Rovigo)’, *PADUSA,* XX, pp. 429–464.

——— (1985) ‘Contact, exchange and conflict in the Italian Bronze Age: the Mycenaeans and the Tyrrhenian coasts and islands’, in Malone, C. and Stoddart, S. (eds), *Papers in Italian Archaeology IV: The Cambridge Conference.* Oxford: BAR International Series, pp. 305–337.

——— (1988) ‘The Mycenaean Connection and its Impact on the Central Mediterranean Societies’, *Dialoghi di Archeologia,* 6(1), pp. 23–51.

——— (2010) ‘Frattesina’, in Radina, F. and Recchia, G. (eds), *Ambra per Agamennone: Indigeni e Micenei tra Adriatico, Ionio ed Egeo.* Bari: Mario Adda Editore, pp. 153–159.

——— (2013a) ‘Peninsular Italy’, in Fokkens, H. a. H., A. (edn), *The Oxford Handbook of the European Bronze Age.* Oxford: Oxford University Press, pp. 633–653.

——— (2013b) ‘The Bronze Age in Sicily’, in Fokkens, H. and Harding, A. (edn), *The Oxford Handbook of the European Bronze Age.* Oxford: Oxford University Press, pp. 654–668.

Bietti Sestieri, A. M. and Giardino, C. (2019) ‘Il ripostiglio n. 1 e i ripostigli “da fonditore” di Frattesina’, in Bietti Sestieri, A. M., Bellintani, P., and Giardino, C. (eds), *Frattesina: un centro internazionale di produzione e di scambio nella tarda età del bronzo del veneto.* Roma: Bardi edizioni, editore commerciale, pp. 173–195.

Bikaki, A. H. (1984) *Ayia Irini: the Potters' Marks.* IV, Mainz on Rhine: Verlag Philipp von Zabern.

Binnberg, J. K. (2018) *Birds in the Aegean Bronze Age.* PhD thesis.University of Oxford.

Blackman, D. J. (2013) ‘Research and Investigation of ancient shipsheds’, in Blackman, D. J., Rankov, N. B., Baika, K., Gerding, H., and Pakkanen, J. (eds), *Shipsheds of the ancient Mediterranean.* Cambridge: Cambridge University Press, pp. 4–15.

Blake, E. (2008) 'The Mycenaeans in Italy: a minimalist position', *Papers of the British School at Rome,* 76, pp. 1–34.

——— (2014) *Social networks and regional identity in Bronze Age Italy.* New York, NY: Cambridge University Press.

Blanton, R. E., Feinman, G. M., Kowaleski, S. A. and Peregrine, P. N. (1996) 'A Dual-Processual Theory for the Evolution of Mesoamerican Civilization', *Current Anthropology*, 37(1), pp. 1–14.

Blegen, C. W. (1937) *Prosymna, the Helladic settlement preceding the Argive Heraeum.* Cambridge: The University Press.

Blitzer, H. (1995) 'Minoan implements and industries', in Shaw, J. W. and Shaw, M. C. (edn), *Kommos. An Excavation on the South Coast of Crete, Volume 1: The Kommos Region, Ecology, and Minoan Industries.* Princeton: Princeton University Press, pp. 403–535.

Blue, L. K. (1997) 'Cyprus and Cilicia: the Typology and Palaeography of Second Millennium Harbors', in Swiny, S., Hohlfelder, L., and Wylde Swiny, H. (eds), *RES MARITIMAE. Cyprus and the Eastern Mediterranean from Prehistory to Late Antiquity. Proceedings of the second international symposium "Cities on the Sea". Nicosia, Cyprus, October 18–22, 1994.* Atlanta, Georgia: Scholars Press, pp. 31–43.

Borgna, E. (2009) 'Patterns of Bronze circulation and deposition in the Northern Adriatic at the close of the Late Brinze Age', in Borgna, E. and Càssola Guida, P. (eds), *Dall'Egeo all'Adriatico: organizzazioni sociali, modi di scambio e interazione in età Postpalaziale (XII–XI sec. a.C.)—From the Aegean to the Adriatic: social organisations, modes of exchange and interaction in Postpalatial times (12th-11th B.C.).* Rome: Quasar, pp. 289–309.

——— (2012) ‘From Minoan Crete to Mycenaean Greece and beyond’, in Maran, J. and Stockhammer, P. (eds), *Materiality and social practice: transformative capacities of intercultural encounters.* Oxford: Oxbow, pp. 137–151.

——— (2021) ‘Il ripostiglio di Lipari nel quadro della circolazione e delle pratiche di deposizione del metallo tra Italia ed Egeo alla fine dell'età del Bronzo: alcune osservazioni. Atti del Convegno Internazionale Catania – Siracusa, 7-9 ottobre 2021’, in Militello, P. M., Nicoletti, F., and Panvini, R. (eds), *La Sicilia Preistorica. Dinamiche interne e relazioni esterne.* Palermo: Regione siciliana. Assessorato dei Beni Culturali e dell'identità siciliana, pp. 449–460.

——— (2023) ‘The sword and the axe. Symbols of value in the Bronze Age social and economic exchange networks linking the Aegean to Italy within a diachronic perspective’, in Wilkinson, T. C. and Sherratt, S. (eds), *Circuits of Metal Value: Changing Roles of Metals in the Early Aegean and Nearby Lands.* Oxford and Philadelphia: Oxbow, pp. 77–115.

——— (2024) ‘Hoards and hoarding from the Alps to the Aegean: a comparative view’, in Borgna, E. (edn), *Natura e funzione della deposizione del metallo tra Europa e Mediterraneo: ripostigli della tarda età del bronzo.* Trieste: EUT Edizioni Università di Trieste, pp. 1–18.

Borgna, E. and Levi, S. T. (2015) ‘The Italo-Mycenaean connection: Some consideration on the technological transfer in the field of pottery production’, in Gauß, W., Klebinder-Gauß, G., and von Rüden, C. (eds), *The Transmission of Technical Knowledge in the Production of Ancient Mediterranean Pottery: Proceedings of the International Conference at the Austrian Archaeological Institute at Athens 23rd–25th November 2012.* Wien: Österreichisches Archäologisches Institut, pp. 115–138.

Boskamp, A. (1996) ‘Minoan storage capacities (1): graffiti on pithoi in the Palace Magazines at Knossos’, *The Annual of the British School at Athens,* 91, pp. 101–112.

Bouzek, J. (1985) *The Aegean, Anatolia, and Europe: cultural interrelations in the second millennium B.C.* Vyd. Prague: Academia, Publishing House of the Czechoslovak academy of sciences.

Bozzini, B., Giovannelli, G., Pagliara, C., Guglielmino, R., and Maggiulli, G. (2004) ‘Ceremonial Gold Artefacts of the Late Bronze Age from the Deposition Site of Roca: A Metallurgical Investigation’, *Proceedings International Conference “Archaeometallurgy in Europe”. 24th-26th september 2003, Milan, Italy*. I, Milan, pp. 267–276.

Bradley, R. (1998) *The passage of arms : an archaeological analysis of prehistoric hoards and votive deposits.* 2nd edn.Oxford: Oxbow Books.

——— (2000) *An Archaeology of Natural Places.* London: Routledge.

Branigan, K. (1982) ‘Minoan Metallurgy and Cypriot Copper’, in Muhly, J. D., Maddin, R., and Karageorghis, V. (eds), *Early metallurgy in Cyprus, 4000-500 B.C. Acta of the International Archaeological Symposium, Early Metallurgy in Cyprus, 4000-500BC.* Nicosia: The Foundation, pp. 203–211.

——— (2001) ‘Aspects of Minoan Urbanism’, in Branigan, K. (edn), *Urbanism in the Aegean Bronze Age.* London: Sheffield Academic Press, pp. 38–50.

Braudel, F. (1995) *The Mediterranean and the Mediterranean World in The Age of Philip II.* English translation by Reynolds, S. Berkeley/Los Angeles/London: University of California Press.

Briault, C. (2007) ‘High fidelity or Chinese whispers? Cult symbols and ritual transmission in the Bronze Age Aegean’, *Journal of Mediterranean Archaeology,* 20(2), pp. 239–265.

Brodbeck-Jucker, S. (1986) *Mykenische Funde von Kephallenia im Archäologischen Museum Neuchâtel.* Roma: Giorgio Bretschneider Editore.

Broodbank, C. (2000) *An Island Archaeology of the Early Cyclades.* Cambridge: Cambridge University Press.

——— (2013) *The Making of the Middle Sea: a History of the Mediterranean from the Beginning to the Emergence of the Classical World.* London: Thames and Hudson.

Broodbank, C. and Kiriatzi, E. (2014) ‘Pottery mobility, landscape survey and maritime activity: a view from Kythera’, in Galanakis, Y., Wilkinson, T. C., and Bennet, J. (eds), *Athyrmata: Critical Essays on the Archaeology of the Eastern Mediterranean in Honour of E. Susan Sherratt.* Oxford: Archaeopress, pp. 41–50.

Brunelli, D., Levi, S. T., Fragnoli, P., Renzulli, A., Santi, P., Paganelli, E., and Martinelli, M. C. (2013) ‘Bronze Age pottery from the Aeolian Islands: definition of Temper Compositional Reference Units by an integrated mineralogical and microchemical approach’, *Applied Physics A,* 113, pp. 855–863.

Brysbaert, A. (2008) *The power of technology in the Bronze Age eastern Mediterranean: the case of the painted plaster.* London: Equinox Pub.

Buchholz, H. G. (1959) *Zur Herkunft der kretischen Doppelaxt: Geschichte und auswärtige Beziehungen eines minoischen Kultsymbols.* München: Kiefhaber & Elbl.

Buchholz, H. G. and Karageorghis, V. (1973) *Prehistoric Greece and Cyprus: an archaeological handbook.* London: Phaidon.

Budd, P., Pollard, A. M., Scaife, B., and Thomas, R. G. (1995) 'Oxhide Ingots, Recycling and the Mediterranean Metals Trade', *Journal of Mediterranean Archaeology,* 8(1), pp. 1–32.

Campus, F. and Leonelli, V. (2012) 'Tra Bronzo Finale e I Ferro. Analisi dei contesti sardi alla luce del riesame del sito dell'Ausonio II di Lipari', in Bernardini, M. and Perra, M. (eds), *I Nuragici, i Fenici e gli altri. Sardegna e Mediterraneo tra Bronzo Finale e Prima Età del Ferro. Atti del I Congresso Internazionale in occasione del venticinquennale del Museo "Genna Maria" di Villanovaforru 14-15 dicembre 2007.* Sassari: Carlo Delfino editore, pp. 142–164.

Caracuta, V., Fiorentino, G., and Martinelli, M. C. (2012) 'Plant Remains and AMS: Dating Climate Change in the Aeolian Islands (Northeastern Sicily) During the 2nd Millennium BC', *Radiocarbon,* 54 (3-4), pp. 689–700.

Carancini, G. L. and Peroni, R. (1997) 'La koinè metallurgica', in Bernabò Brea, M., Cardarelli, A., and Cremaschi, M. (eds), *Le terramare: la più antica civiltà padana.* Milano: Electa, pp. 595–601.

Cardarelli, A., Pacciarelli, M., and Pallante, P. (1997) 'Pesi da bilancia dell'età del bronzo?', in Bernabò Brea, M., Cardarelli, A., and Cremaschi, M. (eds), *Le terramare: la più antica civiltà padana.* Milano: Electa, pp. 629–642.

Cardarelli, A., Pacciarelli, M., Pallante, P., and Bellintani, P. (2001a) 'Pesi e bilance ell'età del Bronzo Italiana', in Corti, C. and Giordani, N. (eds), *Pondera. Pesi e MIsure nell'Antichità.* Modena: Libra 93, pp. 33–58.

Cardarelli, A., Pacciarelli, M., and Pallante, P. (2001b) 'Pesi e bilance dell'Età del Bronzo Italiana', in Corti, C. and Giordani, N. (eds), *Pondera. Pesi e Misura nell'Antichità.* Modena: Libra, pp. 33–58.

Cardarelli, A., Pacciarelli, M., and Pallante, P. (2004) ‘Pesi e bilance nell’età del bronzo italiana: quadro generale e nuovi dati’, in De Sena, E. C. and Dessales, H. (eds), *Archaeological Methods and Approaches: Industry and Commerce in Ancient Italy.* Oxford: Archaeopress, pp. 80–88.

Carlier, P. (1984) *La royauté en Grèce avant Alexandre.* Strasbourg: AECR.

Càssola Guida, P. (2014) ‘Tra cielo e mare: ancora qualche nota sull’iconografia del viaggio del sole’, in Bandelli, G. and Chiabà, M. (eds), *Hoc quoque laboris praemium: scritti in onore di Gino Bandelli.* Trieste: EUT, Edizioni Università di Trieste, pp. 33–52.

Castellana, G. (1998) *Il santuario castellucciano di Monte Grande e l'approvvigionamento dello zolfo nel Mediterraneo nell'età del bronzo.* Palermo: Regione Sicilia, Assessorato beni culturali ed ambientali e della pubblica istruzione.

Castellano, A., D’Innocenzo, A., Pagliara, C., and Raho, F. (1996) ‘Composition and origin of Iapygian pottery from Roca Vecchia, Italy’, *Archaeometry,* 38 (1), pp. 59–65.

Castro-Martínez, P. V., Escanilla-Artigas, N., Escoriza-Mateu, T., Oltra-Puigdomènech, J., and Sarkis-Fernández, D. (2013) ‘Domestic Units, Definition and Multiform Archaeological Appearance. Economy and Politics in Unlike Domestic Prehistoric Groups of the Western Mediterranean’, in Madella, M., Kovács, G., Kulcsarne-Berzsenyi, B., and Briz i Godino, I. (eds), *The archaeology of household.* Oxford: Oxbow Books, pp. 86–111.

Catling, H. W. (1964) *Cypriot bronzework in the Mycenaean world.* Oxford: Clarendon Press.

Cavalier, M. (1985–1986) ‘Nuovi rinvenimenti sul castello di Lipari’, *Rivista di Scienze Preistoriche,* XL, pp. 225–254.

——— (2004) ‘L’Ausonio I a Lipari’, in Cocchi Genick, D. (edn), *L’età del Bronzo Recente in Italia: Atti del Congresso Nazionale di Lido di Camaiore, 26–29 Ottobre 2000.* Viareggio: Mauro Baroni Editore, pp. 185–190.

Cavalier, M. and Vagnetti, L. (1984) ‘Materiali Micenei Vecchi e Nuovi dall’Acropoli di Lipari’, *Studi Micenei ed Egeo Anatolici,* 25, pp. 143–154.

Cavalier, M. and Depalmas, A. (2008) ‘Materiali sardi nel villaggio di Lipari. I frammenti ceramici e le correlazioni.’, *Rivista di Scienze Preistoriche,* LVIII, pp. 281–230.

Cazzella, A. (2009) ‘La formazione di centri specializzati nell’Italia sud-orientale durante l’età del Bronzo’, *Scienze dell’Antichità,* 15, pp. 294–310.

——— (2010a) ‘Introduzione’, in Editore, M. A. (edn), *Ambra per Agamennone: Indigeni e Micenei tra Adriatico, Ionio ed Egeo.* Bari, pp. 25–27.

——— (2010b) ‘L’organizzazione sociale delle comunità dell’Italia sud-orientale durante il II millennio a. C.’, in Radina, F. and Recchia, G. (eds), *Ambra per Agamennone: Indigeni e Micenei tra Adriatico, Ionio ed Egeo.* Bari: Mario Adda Editore, pp. 91–96.

Cazzella, A. and Recchia, G. (2001) ‘Coppa Nevigata: campagne di scavo 1999 e 2000’, in Gravina, A. (edn), *Atti del 21° Convegno Nazionale sulla Preistoria-Protostoria- Storia della Daunia. San Severo 24–26 november 2000.* San Severo: Archeoclub d’Italia, pp. 153–170.

——— (2004) ‘Spazi abitativi tradizionali: una riconsiderazione del potenziale informativo per l'interpretazione dei contesti archeologici’, in Brogi, M. and Lugli, F. (eds), *Atti del 2° Convegno Nazionale di Etnoarcheologia.* Rimini: Raffaelli Editore, pp. 221–231.

——— (2009a) ‘The ‘Mycenaeans’ in the central Mediterranean: a comparison between the Adriatic and the Tyrrhenian seaways’, *PASIPHAE*, pp. 27–40.

——— (2009b) ‘Sleeping, eating, meeting, working: problems and methods in the study of structures in southeastern Italy settlement during the Bronze Age’, in Cavulli, F. (edn), *Defining a Methodological Approach to Interpret Structural Evidence.* Lisbon: Archaeopress-BAR IS, pp. 75–81.

——— (2013a) ‘Bronze Age fortified settlements in Southern Italy and Sicily’, *Scienze dell’Antichità,* 19 (2–3), pp. 45–64.

——— (2013b) ‘The human factor in the transformation of Southern Italy Bronze Age societies: Agency theory and Marxism reconsidered’, *Origini,* 35, pp. 191–210.

——— (2017) ‘L’abitato fortificato di Coppa Nevigata e il suo ruolo nel sistema economico e politico della Puglia settentrionale’, in Radina, F. (edn), *Preistoria e Protostoria della Puglia. Atti XLVII Riunione Scientifica IIPP, Ostuni 9-13 ottobre 2012.* Firenze: Istituto italiano di preistoria e protostoria, pp. 465–471.

——— (2019) ‘Cultures and societies in Bronze Age Italy: case studies from the South-Eastern regions’, in Danckers, J., Cavazzuti, C., and Cattani, M. (eds), *Facies e culture nell'età del Bronzo italiana?*, XI, Turnhout: Brepols, pp. 65–78.

——— (2021) ‘Coping with Changes: Social and Economic Developments at Coppa Nevigata during the 12th Century BC’, in Jung, R. (edn), *Punta Zambrone I.* Vienna: Orea, pp. 425–444.

Cazzella, A., Moscoloni, M., and Recchia, G. (2006) ‘Gli scavi 2003-05 nell’insediamento fortificato dell’età del Bronzo di Coppa Nevigata (Manfredonia)’, in Gravina, A. (edn), *Atti del 26° Convegno Nazionale sulla Preistoria-Protostoria-Storia della Daunia. San Severo 10–11 dicembre 2005*. Archeoclub d’Italia, pp. 145–168.

Cazzella, A., Minniti, C., Moscoloni, M., and Recchia, G. (2004) 'L'insediamento dell'età del Bronzo di Coppa Nevigata (Foggia) e la più antica attestazione della produzione della porpora in Italia', *Preistoria Alpina,* 40, pp. 177–182.

Chadwick, J. (1973) 'Relations between Knossos and the rest of Crete at the time of the Linear B tablets', *Πεπραγμενα του Γ'Διεθνους Κρητολογικου Συνεδριου (Ρεθυμνον, 18-23 Σεπτεμβριου 1971).* A, pp. 39–45.

Chapman, A. C. (1957) 'Port of trade enclaves in Aztec and Maya Civilizations', in Polanyi, K., Arensberg, C. M., and Pearson, H. W. (eds), *Trade and market in the early empires: economies in history and theory.* Glencoe: Free Press & Falcon's Wing Press, pp. 114–153.

Chapouthier, F. and Demargne, P. (1942) *Fouilles exécutées à Mallia. Troisième rapport, Exploration du palais: bordures orientale et septentrionale (1927, 1928, 1931, 1932).* Paris: P. Geuthner.

Cherry, J. F. (1984) 'The emergence of the state in the prehistoric Aegean', *Proceedings of the Cambridge Philological Society,* 30(310), pp. 18–48.

——— (1986) 'Polities and palaces: some problems in Minoan state formation', in Renfrew, C. and Cherry, J. F. (eds), *Peer polity interaction and socio-political change.* Cambridge: Cambridge University Press, pp. 19–45.

Christakis, K. S. (1999) 'Pithoi and Food Storage in Neopalatial Crete: A Domestic Perspective', *World Archaeology,* 31 (1), pp. 1–20.

——— (2014) *The Sanctuary of Hermes and Aphrodite at Syme Viannou. V Σημεια Κεραμεων. Potters' marks from Syme and other sites of Bronze Age Crete.* Athens: Hē en Athēnais Archaiologikē Hetaireias.

Clément, N. (2020) 'The prestige of warriors: Bell Beaker archers' equipment in Central Europe', *Préhistoires Méditerranéennes,* 8, pp. 1–63.

Cline, E. H. (1994) *Sailing the Wine-Dark Sea. International Trade and the Late Bronze Age Aegean.* Oxford: BAR International Series.

Cocchi Genick, D. (2004) *L'età del Bronzo Recente in Italia: Atti del Congresso Nazionale di Lido di Camaiore, 26–29 Ottobre 2000.* Viareggio: Mauro Baroni Editore.

Coldstream, J. N. (2003) *Geometric Greece: 900-700 BC.* Oxford: Taylor & Francis Group.

Colomer, L. (2017) 'Heritage on the move. Cross-cultural heritage as a response to globalisation, mobilities and multiple migrations', *International Journal of Heritage Studies,* 23 (10), pp. 913–927.

Coluccia, L. (2017) 'Progettare e costruire a Roca alla fine dell'età del Bronzo', in Radina, F. (edn), *Preistoria e Protostoria della Puglia. Atti XLVII Riunione Scientifica IIPP, Ostuni 9-13 ottobre 2012.* Firenze: Istituto italiano di preistoria e protostoria, pp. 557–564.

——— (2023) 'Un sigillo minoico-miceneo dall'acropoli di Castro (LE)', *Pelargòs,* 4, pp. 79–92.

Contu, E. (1980) 'Appendice V. Ceramica Sarda di età Nuragica a Lipari', in Bernabò Brea, L. and Cavalier, M. (eds), *Meligunìs Lipára. Vol. IV L'acropoli di Lipari nella Preistoria.* Palermo: S. F. Flaccovio, Editore, pp. 827–836.

Coppola, D. (1998) 'Torre Santa Sabina', in Cinquepalmi, A. and Radina, F. (eds), *Documenti dell'età del bronzo: ricerche lungo il versante adriatico pugliese.* Fasano di Brindisi: Schena, pp. 147–152.

Coppola, D. and Raimondi, P. (1995) 'L'insediamento dell'età del Bronzo di Torre S. Sabina (scavi 1990)', *Taras,* XV(2), pp. 375–394.

Corretti, A., Dinielli, G., and Merico, M. (2010) ‘Roca. Indizi di attività cerimoniali dell'età del Ferro’, *Annali della Scuola Normale Superiore di Pisa. Classe di Lettere e Filosofia,* 5, pp. 160–180.

Costin, C. L. (1991) ‘Craft specialization: Issues in defining, documenting, and explaining the organization of production’, *Archaeological Method and Theory,* 3, pp. 1–56.

——— (2007) ‘Thinking about Production: Phenomenological Classification and Lexical Semantics’, *Archeological Papers of the American Anthropological Association,* 17(1), pp. 143–162.

Crispino, A. (2022) ‘La necropoli’, in Crispino, A. (edn), *Castelluccio: Ambiente, commercio e simboli nella Sicilia Sud Orientale.* San Gregorio di Catania: Giuseppe Maimone Editore, pp. 55–60.

Crowley, J. L. (2008) ‘Mycenaean Art and Architecture’, in Shelmerdine, C. W. (edn), *The Cambridge Companion to the Aegean Bronze Age.* Cambridge: Cambridge University Press, pp. 258–288.

Cucuzza, N. (2006) ‘Un sigillo Miceneo da Lipari?’, *Studi Micenei ed Egeo Anatolici,* 48, pp. 73–88.

——— (2008) ‘Dall’Egeo alla Sicilia: testimonianze micenee’, in Gandolfo, L. (edn), *Pulcherrima Res: Preziosi ornamenti del passato.* Palermo: Regione Siciliana, pp. 34–37.

D’Agata, A. L. (1997–2000) ‘Ritual and Rubbish in Dark Age Crete: The Settlement of Thronos/Kephala (Ancient Sybrita) and the Pre-Classical Roots of a Greek City’, *Aegean Archaeology,* 4, pp. 45–59.

D'Altroy, T. N., Earle, T. K., Browman, D. L., La Lone, D., Moseley, M. E., Murra, J. V., Myers, T. P., Salomon, F., Schreiber, K. J., and Topic, J. R. (1985) ‘Staple

Finance, Wealth Finance, and Storage in the Inka Political Economy [and Comments and Reply]', *Current Anthropology,* 26 (2), pp. 187–206.

D'Onofrio, A. M. (2007) 'Tallies, Tokens & Counters: An Introduction.', in D'Onofrio, A. M. (edn), *Tallies, Tokens & Counters. From the Mediterranean to India.* Naples: Università degli Studi di Napoli "L'Orientale", pp. 1–7.

Dabney, M. K. (1996a) 'Lead Objects', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos I: The Kommos Region and Houses of the Minoan Town. Part 2: The Minoan Hilltop and Houses.* Princeton: Princeton University Press, pp. 270.

——— (1996b) 'Jewellery and Seals', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos I: The Kommos Region and Houses of the Minoan Town. Part 2: The Minoan Hilltop and Houses.* Princeton: Princeton University Press, pp. 263–269.

Damiani, I. (2010) *L'età del bronzo recente nell'Italia centro-meridionale.* Firenze: All'Insegna del Giglio.

Danckers, J. (2019) 'Introduzione', in Danckers, J., Cavazzuti, C., and Cattani, M. (eds), *Facies e culture nell'età del Bronzo italiana?*, XI, Turnhout: Brepols, pp. 13–26.

Davis, J. L. (2008) 'Minoan Crete and the Aegean islands', in Shelmerdine, C. W. (edn) *The Cambridge Companion to the Aegean Bronze Age.* Cambridge: Cambridge University Press, pp. 186–208.

Davis, J. L. and Bennet, J. (1999) 'Making Mycenaeans: Warfare, Territorial Expansion, and Representations of the Other in the Pylian Kingdom', in Laffineur, R. (edn), *Polemos : le contexte guerrier en Egée à l'âge du Bronze: actes de la 7e Rencontre égéenne internationale, Université de Liège, 14-17 avril 1998.* Liège, Belgique; Austin, Tx, U.S.A.: Université de Liège; University of Texas at Austin, Program in Aegean Scripts and Prehistory, pp. 105–120.

Dawson, H. (2014) *Mediterranean Voyages: The Archaeology of Island Colonisation and Abandonment.* Walnut Creek, California: Left Coast Press, Inc.

——— (2021) 'At the heart of Mare Nostrum: Islands and "small world networks" in the central Mediterranean Bronze Age', in Dawson, H. and Iacono, F. (eds), *Bridging social and geographical space through networks.* Leiden: Sidestone Press, pp. 71–87.

Dawson, H. and Nikolakopoulou, I. (2020) 'East Meets West: Aegean Identities and Interactions in the Late Bronze Age Mediterranean', *eTopoi. Journal for Ancient Studies*, pp. 155-192.

de Ferraris, A. (1558) *De situ Iapygiae.* Basel: Per Petrum Pernam.

De Giorgi, C. (1888) *La provincia di Lecce: bozzetti di viaggio.* Lecce: Congedo Editore.

De Juliis, E. M. (1977) *La ceramica geometrica della Daunia.* Firenze: G.C. Sansoni.

De Juliis, E. M., Galeandro, F., and Palmentola, P. (2006) *La ceramica geometrica della Messapia.* Bari: La biblioteca.

De Simone, L. G. (1877) *Note japygo-messapiche.* Torino: Stamperia Reale.

Deger-Jalkotzy, S. (2008) 'Decline, Destruction, Aftermath', in Shelmerdine, C. W. (edn), *The Cambridge Companion to the Aegean Bronze Age.* Cambridge: Cambridge University Press, pp. 387–416.

Deger-Jalkotzy, S. and Lemos, I. S. (2006) 'Introduction', in Deger-Jalkotzy, S. and Lemos, I. S. (eds), *Ancient Greece: from the Mycenaean palaces to the Age of Homer.* Edinburgh: Edinburgh University Press, pp. 1–3.

Deshayes, J. (1960) *Les outils de bronze, de l'Indus au Danube (IVe au IIe millénaire).* II,Paris: Librairie orientaliste. Geuthner.

Di Fraia, T. (1995) ‘L’abitato dell’età del Bronzo Finale di Fonte Tasca (Comune di Archi, Chieti). Studio preliminare su alcune classi di manufatti’, *Origini,* 19, pp. 447–477.

——— (2010) ‘Immagini ornitomorfe e motivi solari nel Bronzo Recente e Finale in Italia’, *Actes des congrès nationaux des sociétés historiques et scientifiques*. Paris: Editions du CTHS, pp. 7–22.

Dickinson, O. T. P. K. (1994) *The Aegean Bronze Age.* Cambridge: Cambridge University Press.

——— (2006) *The Aegean from Bronze Age to Iron Age.* London and New York: Routledge.

——— (2010) ‘The Collapse at the End of the Bronze Age’, in Cline, E. H. (edn), *The Oxford Handbook of the Bronze Age Aegean.* Oxford: Oxford University Press, pp. 483–490.

Dietler, M. (2001) ‘Theorizing the Feast: Rituals of Consumption, Commensal Politics, and Power in African Contexts’, in Dietler, M. and Hayden, B. (eds), *Feasts: archaeological and ethnographic perspectives on food, politics, and power.* Washington, D.C./London: Smithsonian Institution Press, pp. 65–114.

Dietler, M. and Hayden, B. (2001) ‘Digesting the Feast: Good to Eat, Good to Drink, Good to Think’, in Dietler, M. and Hayden, B. (eds), *Feasts: archaeological and ethnographic perspectives on food, politics, and power.* Washington, D.C.; London: Smithsonian Institution Press, pp. 1–20.

Dinielli, G. (2016) ‘Roca Vecchia, attività di scavo tra passato e presente’, *Forma Urbis,* 2, pp. 6–9.

Dinielli, G., Mazzotta, C., and Rugge, M. (2016) ‘Roca Vecchia: il contesto ambientale’, *Forma Urbis,* 2, pp. 10–13.

Doonan, O. (1993) *Domestic Architecture of the Sicilian Bronze Age: A study of architectural innvoation and social tranformation.* (Brown University.).

——— (2001) 'Domestic Architecture and Settlement Planning in Early and Middle Bronze Age Sicily: Thoughts on Innovation and Social Process', *Journal of Mediterranean Archaeology,* 14 (2), pp. 159–188.

Drews, R. (1993) *The End of the Bronze Age: Changes in Warfare and the Catastrophe ca. 1200 B.C.* Third Edition edn. New Haven: Princeton University Press.

Driessen, J. (2008) 'Daidalos' Designs and Ariadne's Threads. Reading Minoan Town Plans', in Preston, L. and Owen, S. L. S., Cambridge University (eds), *Inside the City in the Greek World. Studies of Urbanism from the Bronze Age to the Hellenistic Period.* Oxford: Oxbow Books, pp. 41–54.

Driessen, J. and Macdonald, C. F. (1997) *The troubled island: Minoan Crete before and after the Santorini eruption.* Liège, Belgique/Austin, Texas: Université de Liège, Histoire de l'art et archéologie de la Grèce antique/University of Texas at Austin, Program in Aegean Scripts and Prehistory.

Earle, J. W. (2016) 'Melos in the Middle: Minoanisation and Mycenaeanisation at Late Bronze Age Phylakopi', in Gorogianni, E., Girella, L., and Pavúk, P. (eds), *Beyond Thalassocracies: understanding processes of Minoanisation and Mycenaeanisation in the Aegean.* Oxford: Oxbow Books, pp. 94–115.

Evans, A. (1928) *The Palace of Minos at Knossos. Volume 2.* London: Macmillan.

——— (1935) *The Palace of Minos at Knossos. Volume 4.* London: Macmillan.

Evely, R. D. G. (1993) *Minoan crafts: tools and techniques, an introduction.* Göteborg: P. Aström.

——— (2006) ‘The small finds’, in Evely, R. D. G. (edn), *Lefkandi IV: the Bronze Age. The late Helladic IIIC settlement at Xeropolis.* 39, London: The British School of Athens, pp. 265–302.

Fabbri, P. F. (2002) ‘Tafonomia di un gruppo di individui del bronzo medio scoperti nel passaggio C delle fortificazioni di Roca Vecchia’, in Gorgoglione, M. A. (edn), *Strutture e modelli di abitati del Bronzo tardo da Torre Castelluccia a Roca Vecchia: rapporti ed interrelazioni sull'arco ionico da Taranto al canale d'Otranto e sul versante adriatico: atti del Convegno di studio, 28–29 novembre 1996, Pulsano (Ta), Castello De Falconibus.* Manduria (TA): Filo, pp. 193–203.

Falezza, A. (2025a) ‘Mediterranean Ports of Interactions: Aegean and Southern Italy in the Late Bronze Age’, in Laurenti, C. and Dinges, J. (eds), *Water Flowing through Archaeology: Proceedings from the 2023 Graduate Archaeology at Oxford Conference.* Oxford: BAR, pp. 5–16.

——— (2025b) ‘“Go the Distance”: Late Bronze Age Ports of Interactions’, *Journal of Eastern Mediterranean Archaeology and Heritage Studies,* 13 (4), pp. 458–478.

Feuer, B. (1999) ‘The Mycenaean periphery: some theoretical and methodological considerations’, in Dakronia, F. (edn), *Η περιφέρεια του Μυκηναϊκού Κόσμου, Α' διεθνές διεπιστημονικό συμπόσιο, Λαμία, 25-29 Σεπτεμβρίου 1994.* Υπουργείο Πολιτισμού, ΙΔ Εφορεία Προϊστορικών και Κλασικών Αρχαιοτήτων, pp. 7–14.

——— (2011) ‘Being Mycenaean: A View from the Periphery’, *American Journal of Archaeology,* 115 (4), pp. 507-536.

Fiorentino, G. (2002) ‘Paleo-ambiente e paleo-economia nel Golfo di Taranto durante l’Età del Bronzo’, in Gorgoglione, M. (edn), *Strutture e modelli di abitati del Bronzo tardo da Torre Castelluccia a Roca Vecchia: rapporti ed interrelazioni sull'arco ionico da Taranto al canale d'Otranto e sul versante adriatico : atti del*

Convegno di studio, 28-29 novembre 1996, Pulsano (TA), Castello De Falconibus. Manduria (TA): Filo, pp. 141–153.

Fiori, F., Curci, A., and Cattani, M. (2024) 'L'avorio importato nel Mediterraneo Centrale durante l'età del Bronzo: la zanna di un giovane elefante dal sito di Mursia (Pantelleria, TP)', in Curci, A., Maini, E., and Serrone, E. (eds), *Atti del 9° Convegno Nazionale di Archeozoologia. Ravenna 28 novembre–1 dicembre 2018.* Bologna: Associazione Italiana di Archeozoologia, pp. 125–130.

Flouda, G. (2015) 'Materiality and Script: constructing a narrative on the Minoan inscribed axe from the Arkalochori cave', *Studi Micenei ed Egeo Anatolici: Nuova Serie,* 1, pp. 43–56.

Foxhall, L. and Forbes, H. A. (1982) 'Sitometria: The role of grain as a staple food in Classical antiquity', *Chiron,* 12, pp. 41–90.

French, E. (1971) 'The development of Mycenaean terracotta figurines', *Annual of the British School at Athens,* 66, pp. 101–187.

——— (1985) 'The Mycenaean Spectrum', in Malone, C. and Stoddart, S. (eds), *Papers in Italian archaeology IV: the Cambridge Conference.* Oxford: BAR, pp. 295–303.

——— (2002) *Mycenae: Agamemnon's Capital. The Site in Its Setting.* Stroud: Tempus.

Furumark, A. (1941) *The Mycenaean Pottery: Analysis and Classification.* Stockholm: Victor Pettersons Bokindustriaktiebolag.

Galanakis, I. (2013) *The Aegean world: a guide to the Cycladic, Minoan and Mycenaean antiquities in the Ashmolean Museum.* Oxford: Ashmolean Museum.

Gale, N. H. (2006) 'Lead isotope studies - Sardinia and the Mediterranean', *Instrumentum: Bulletin du Groupe de travail europeén sur l'artisanat et les productions manufacturées dans l'Antiquité,* 23, pp. 29–34.

Gallet de Santerre, H. and Tréheux, J. (1947) ‘Rapport sur le dépôt égéen et géométrique de l'Artémision à Délos’, *Bulletin de Correspondance Hellénique,* 71–72, pp. 148–254.

Gesell, G. C. (1985) *Town, palace, and house cult in Minoan Crete.* Göteborg: Paul Åströms Förlag.

Girella, L. (2011) ‘The Kamilari Project Publication’, *Rivista di Archeologia,* 35, pp. 123–136.

Girella, L., Gorogianni, E., and Pavúk, P. (2016) ‘Introduction: methodological considerations’, in Gorogianni, E., Girella, L., and Pavúk, P. (eds), *Beyond Thalassocracies: understanding processes of Minoanisation and Mycenaeanisation in the Aegean.* Oxford: Oxbow Books, pp. 1–14.

Google (2015) *Google Satellite*. Available at: https://www.google.com/maps/ (Last Accessed: 9 October 2025).

Gopinath, C. (2018) *Globalization: A Multi-Dimensional System, Third Edition.* Edward Elgar Publishing.

Graziadio, G. and Guglielmino, R. (2011) ‘The Aegean and Cypriot imports to Italy as evidence for direct and indirect trade in the 14th and 13th centuries BC’, in Duistermaat, K., Regulski, I., Jennes, G., and Weiss, L. (eds), *Intercultural contacts in the ancient Mediterranean: proceedings of the international conference at the Netherlands-Flemish Institute in Cairo, 25th to 29th October 2008.* Leuven/Paris/Walpole, MA: Peeters, pp. 309–326.

Grier, C. (2003) ‘Dimensions of Regional Interaction in the Prehistoric Gulf of Georgia’, in Mackie, Q., Coupland, G., and Matson, R. G. (eds), *Emerging from the Mist: Studies in Northwest Coast Culture History.* Vancouver, CANADA: University of British Columbia Press, pp. 170–187.

Guglielmino, R. (1996) ‘Materiali egei e di tipo egeo da Roca Vecchia (Melendugno, Lecce). Nota preliminare’, *Studi di Antichità,* 9, pp. 259–286.

——— (1999) ‘I dolii cordonati di Roca Vecchia (LE) e il problema della loro derivazione egea’, in La Rosa, V., Bernabò Brea, L., Pugliese Carratelli, G., Palermo, D., and Vagnetti, L. (eds), *ἐπὶ πόντον πλαζόμενοι. Simposio italiano di studi egei, dedicato a Luigi Bernabò Brea e Giovanni Pugliese Carratelli: Roma, 18-20 febbraio 1998.* Roma: Scuola archeologica italiana di Atene, pp. 475–486.

——— (2003) ‘Il sito di Roca Vecchia: testimonianze di contatti con l’Egeo’, in Lenzi, F. (edn), *L'archeologia dell'Adriatico dalla preistoria al Medioevo: atti del convegno internazionale, Ravenna, 7-8-9 giugno 2001.* Firenze: All'insegna del giglio, pp. 91–119.

——— (2005a) ‘Due manufatti di avorio d'ippopotamo rinvenuti negli scavi di Roca Vecchia (Lecce)’, in Vagnetti, L., Bettelli, M., and Damiani, I. (eds), *L’avorio in Italia nell’età del Bronzo.* Roma: CNR—Istituto di studi sulle civiltà dell’Egeo e del Vicino Oriente, pp. 35–43.

——— (2005b) ‘Rocavecchia: nuove testimonianze di Relazioni con l’Egeo e il Mediterraneo orientale nell’età del Bronzo’, in Laffineur, R. and Greco, E. (eds), *Emporia: Aegeans in the central and eastern Mediterranean. Proceedings of the 10th international Aegean conference = 10e rencontre égéenne internationale, Athens, Italian school of archaeology, 14-18 April 2004.* Volume II, Liège: Université de Liège, pp. 637–651.

——— (2006a) ‘Roca Vecchia (Lecce): New Evidence for Aegean Contacts with Apulia During the Late Bronze Age’, *Accordia Research Papers,* 10, pp. 87–102.

——— (2006b) ‘Roca Vecchia (Lecce): testimonianze di attività metallurgiche e di contatti con l’Egeo in un sito costiero del Bronzo Finale’, in Adembri, B. (edn),

Aei Mnestos. Miscellanea di Studi per Mauro Cristofani. I, Firenze: Centro Di, pp. 32–50.

——— (2008) 'Alcune considerazioni sul ruolo di Roca nei rapporti tra Creta e l'Italia nel II millennio a. C.', *Creta Antica.* 9, pp. 27–46.

——— (2009) 'Le relazioni tra l'adriatico e l'Egeo nel Bronzo Recente e Finale. La testimonianza di Roca.', in Borgna, E. and Càssola Guida, P. (eds), *Dall'Egeo all'Adriatico: organizzazioni sociali, modi di scambio e interazione in età Postpalaziale (XII–XI sec. a. C.). Atti del Seminario internazionale (Udine, 1–2 dicembre 2006).* Rome: Quasar, pp. 185–204.

——— (2012) 'Minyan, Minyanizing and Pseudominyan wares from Southern and Insular Italy', in Graziadio, G., Guglielmino, R., Lenuzza, V. and Vitale, S. (eds), *Φιλική Συναυλία – Miscellaneous Studies in Mediterranean Archaeology offered to Mario Benzi.* Oxford: Archaeopress, pp. 177–191.

——— (2013) 'Roca. I rapporti tra l'Italia e l'Egeo nell'età el bronzo e il ruolo di Roca. Alcuni spunti di riflessione', *Annali della Scuola Normale Superiore di Pisa. Classe di Lettere e Filosofia,* 5(2), pp. 131–280.

——— (2014) 'Roca. Problemi di demografia e di organizzazione territoriale nella Puglia protostorica. Il paradigma di Coppa Nevigata e l'anomalia di Roca', *Notizie degli Scavi di Antichità Comunicate dalla Scuola Normale Superiore di Pisa,* 5(2), pp. 93–112.

——— (2016) 'Genti indigene e genti d'oltremare nella Puglia dell'età del bronzo. La testimonianza di Rocavecchia', *ΚΩΚΑΛΟΣ,* LIII, pp. 71–99.

Guglielmino, R. and Pagliara, C. (2004) 'Nuove Ricerche a Roca', *Notizie degli Scavi di Antichità Comunicate dalla Scuola Normale Superiore di Pisa,* 9(2), pp. 561–581.

——— (2012) ‘Roca. Sviluppi e risultati delle ricerche recenti’, *Notizie degli Scavi di Antichità Comunicate dalla Scuola Normale Superiore di Pisa,* 5(4, 2), pp. 65–71.

——— (2017) ‘Vent’anni di ricerche archeologiche nell’insediamento protostorico di Roca. Bilancio e prospettive’, in Radina, F. (edn), *Preistoria e Protostoria della Puglia. Atti XLVII Riunione Scientifica IIPP, Ostuni 9-13 ottobre 2012*. Firenze: Istituto italiano di preistoria e protostoria, pp. 515–521.

Guglielmino, R., Levi, S. T., and Jones, R. (2010a) ‘Relations between the Aegean and Apulia in the Late Bronze Age: the evidence from an archaeometric study of the pottery at Roca (Lecce)’, *Rivista di Scienze Preistoriche,* 60, pp. 257–282.

Guglielmino, R., Pagliara, C., and Rugge, M. (2010b) ‘Gli avori di Roca’, in Radina, F. a. R., G. (edn), *Ambra per Agamennone: Indigeni e Micenei tra Adriatico, Ionio ed Egeo.* Bari: Mario Adda Editore, pp. 137–140.

Guglielmino, R., Iacono, F., and Rugge, M. (2011) ‘Before the Stream: the social and economic role of exotica in the central Mediterranean. The case of ivory items from Roca.’, in Vianello, A. (edn), *Exotica in the prehistoric Mediterranean.* Oakville, CT: Oxbow Books, pp. 172–185.

Guglielmino, R., Iacono, F., and Coluccia, L. (2017) ‘Roca e il mondo egeo tra il XVI e l'XI sec. a.C.: una messa a punto’, in Radina, F. (edn), *Preistoria e Protostoria della Puglia. Atti XLVII Riunione Scientifica IIPP, Ostuni 9-13 ottobre 2012.* Firenze: Istituto italiano di preistoria e protostoria, pp. 172–185.

Gullì, D., Maurici, F., Olivieri, F. and Vanzetti, A. (2024) ‘Ancore litiche presso Cannatello (Agrigento) e connettività marittima’, *Rivista di Scienze Preistoriche,* LXXIV S4, pp. 439–445

Hägg, R. (1983) ‘Epiphany in Minoan Ritual’, *Bulletin of the Institute of Classical Studies,* 30, pp. 184–185.

Hahn, H. (2004) ‘Global Goods and the Process of Appropriation’, in Probst, P. and Spittler, G. (eds), *Between Resistance and Expansion. Dimensions of Local Vitality in Africa.* Münster: Lit, pp. 211–231.

Hallager, E. (1977) *The Mycenaean palace at Knossos: evidence for final destruction in the III B period*. Stockholm: Medelhavsmuseet.

Hallager, B. P. (2003) ‘The Late Minoan IIIB:2 pottery’, in Hallager, E. and Hallager, B. P. (eds), *The Greek-Swedish Excavations at the Agia Aikaterini Square Kastelli, Khania, 1970–1987 and 2001: Results of the Excavations under the Direction of Yannis Tzedakis and Carl-Gustaf Styrenius. Vol. III:1 The Late Minoan IIIB:2 Settlement.* Stockholm: Paul Aströms Förlag, pp. 197–265.

——— (2009) ‘Domestic Shrines in Late Minoan IIIA2-Late Minoan IIIC Crete: Fact or Fiction?’, *Hesperia Supplements,* 42, pp. 107–120.

——— (2010) ‘Crete’, in Cline, E. H. (edn), *The Oxford Handbook of the Bronze Age Aegean.* Oxford: Oxford University Press, pp. 149–159.

Halstead, P. (1989) ‘The economy has a normal surplus: economic stability and social change among early farming communities of Thessaly, Greece’, in O'Shea, J. and Halstead, P. (eds), *Bad Year Economics: Cultural Responses to Risk and Uncertainty.* Cambridge: Cambridge University Press, pp. 68–80.

——— (2014) *Two oxen ahead: pre-mechanized farming in the Mediterranean.* Chichester: Wiley-Blackwell.

Hamilakis, Y. and Konsolaki, E. (2004) ‘Pigs for the gods: Burnt animal sacrifices as embodied rituals at a Mycenaean sanctuary’, *Oxford Journal of Archaeology,* 23, pp. 135–151.

Hassan, F. A. (1981) *Demographic archaeology.* New York: Academic Press.

Hayden, B. (2009) 'The Proof Is in the Pudding: Feasting and the Origins of Domestication', *Current Anthropology,* 50(5), pp. 597–601.

Haysom, M. (2010) 'The Double-Axe: A Contextual Approach to the Understanding of a Cretan Symbol in the Neopalatial Period', *Oxford Journal of Archaeology* 29(1), pp. 35–55.

Helms, M. W. (1988) *Ulysses' sail: an ethnographic odyssey of power, knowledge, and geographical distance.* Princeton: Princeton University Press.

——— (1993) *Craft and the kingly ideal: Art, trade, and power.* Austin: University of Texas Press.

Heltzer, M. (1978) *Goods, prices and the organization of trade in Ugarit (Marketing and transportation in the Eastern Mediterranean in the second half of the II Millenium B. C. E.).* Wiesbaden: Reichert.

Herskovits, M. J. (1938) *Acculturation: the study of culture contact.* New York: J. J. Augustin.

Hiller, S. (2011) 'Religion and Cult', in Duhoux, Y. and Davies, A. M. (eds), *A companion to linear B: Mycenaean Greek texts and their world.*, Volume 2., Louvain-la-Neuve: Peeters, pp. 169–211.

Hirschfeld, N. (2002) 'Marks on pots: Patterns of use in the archaeological record at Enkomi', in Smith, J. S. (edn), *Script and Seal Use on Cyprus in the Bronze and Iron Ages.* Boston: Archaeological Institute of America, pp. 49–109.

Hodos, T. (2006) *Local Responses to Colonization in the Iron Age Mediterranean.* Abingdon: Routledge.

——— (2017) ‘Globalization: Some basics. An introduction to The Routledge Handbook of Archaeology and Globalization’, in Hodos, T. (edn), *The Routledge Handbook of Archaeology and Globalization.* London: Routledge, pp. 3–11.

Holloway, R. R. (1981) *Italy and the Aegean, 3000-700 B.C.* Louvain-la-Neuve: Institut supérieur d'archéologie et d'histoire de l'art, Collège Erasme.

Hood, S. (1985) ‘Warlike destruction in Crete ca 1450 B.C.’, *Pepragmena tou 5. Diethnous krētologikou synedriou (Hagios Nikolaos, 25 septemvriou - 1 oktōvriou 1981).* Hērakleio Krētēs: Genikē Epimeleia: Kathēgētēs Theokharēs Detorakēs, pp. 170–178.

Hooker, J. T. (1976) *Mycenaean Greece.* London: Routledge and Kegan Paul.

Horden, P. and Purcell, N. (2000) *The corrupting sea: a study of Mediterranean history.* Oxford: Blackwell.

Hoyle, B. S. (1989) ‘The Port-City Interface: Trends, Problems and Examples’, *Geoforum,* 20(4), pp. 429–435.

Hulin, L. and German, S. (2018) ‘Up from the Sea: Mariner Networks in Ports across the Late Bronze Age Eastern Mediterranean’, in Horejs, B., Schwall, C., Müller, V., Luciani, M., Ritter, M., Guidetti, M., Salisbury, R., Höflmayer, F., and Bürge, T. (eds), *Proceedings of the International Congress on the Archaeology of the Ancient Near East Proceedings of the 10th ICAANE 2016.* Wiesbaden: Harrassowitz Verlag, pp. 357–368.

Iacono, F. (2013a) ‘Westernizing Aegean of LH III C’, in Alberti, M. E. and Sabatini, S. (eds), *Exchange Networks and Local Transformations. Interaction and Local Change in Europe and the Mediterranean from the Bronze Age to the Iron Age.* Oxford: Oxbow Books, pp. 60–79.

——— (2013b) *Opening the Sea Gates of Europe: Interaction in the Southern Adriatic Sea during the Late Bronze Age.* Unpublished PhD thesis. University College London.

——— (2015) 'Feasting at Roca: Cross-Cultural Encounters and Society in the Southern Adriatic during the Late Bronze Age', *European Journal of Archaeology,* 18(2), pp. 259–281.

——— (2016a) 'From Networks to Society: Pottery Style and Hegemony in Bronze Age Southern Italy', *Cambridge Archaeological Journal,* 26(1), pp. 121–140.

——— (2016b) 'Value, Power, and Encounter between the Eastern and Central Mediterranean during the Late Bronze Age', *Studi Micenei ed Egeo Anatolici: Nuova Serie,* 2, pp. 101–118.

——— (2017) 'The exception and the rule. Making sense of the diversity in patterns of Aegean interaction in LBA Central Mediterranean', in Fotiadis, M., Laffineur, R., Lólos, Y., and Vlachopoulos, A. G. (eds), *ΕΣΠΕΡΟΣ / Hesperos : the Aegean seen from the West : proceedings of the 16th International Aegean Conference, University of Ioannina, Department of History and Archaeology, Unit of Archaeology and Art History, 18-21 May 2016.* Leuven: Peeters, pp. 205–213.

——— (2019) *The archaeology of late Bronze Age interaction and mobility at the gates of Europe: people, things and networks around the southern Adriatic Sea.* London, UK/New York: Bloomsbury Academic, an imprint of Bloomsbury Publishing Plc.

Iacono, F., Spagnolo, V., De Neef, W., and Coluccia, L. (2020) 'Roca Archaeological Survey: Inquadramento e primissimi risultati', *FOLD&R,* 13, pp. 1–14.

Iacono, F., Alessandri, L., Spagnolo, V., Agostini, G., and Ceccato, Z. (2024a) 'Paesaggio e Mobilità nel sud-est Italiano: I risultati preliminari delle fasi pre-protostoriche

della Roca Archaeological Survey', *Rivista di Scienze Preistoriche,* LXXIV S4, pp. 227–239.

Iacono, F., Alessandri, L., Magrì, A., Ceccato, Z., Agostini, G., Spagnolo, V., and Salvin, A. (2024b) 'Landscapes of mobility: the results of the Roca Archaeological Survey (Part 1)', *GROMA: Documenting Archaology,* 8(1), pp. 37–54.

Iacono, F., Borgna, E., Cattani, M., Cavazzuti, C., Dawson, H., Galanakis, Y., Gori, M., Iaia, C., Ialongo, N., Lachenal, T., Lorrio, A., Micó, R., Molloy, B., Nafplioti, A., Peche-Quilichini, K., Rihuete Herrada, C., and Risch, R. (2021) 'Establishing the Middle Sea: The Late Bronze Age of Mediterranean Europe (1700–900 BC)', *Journal of Archaeological Research*.

Ialongo, N. (2018) 'The Earliest Balance Weights in the West: Towards an Independent Metrology for Bronze Age Europe', *Cambridge Archaeological Journal,* 29(1), pp. 103–124.

——— (2022) 'Weight-Based Trade and the Formation of a Global Network: Material Correlates of Market Exchange in Pre-literate Bronze Age Europe (c. 2300–800 BC)', in Frangipane, M., Poettinger, M. and Schefold, B. (eds) Ancient Economies in Comparative Perspective: 207–32 (Frontiers in Economic History). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-031-08763-9_11.

Ialongo, N. and Rahmstorf, L. (2019) 'The identification of balance weights in pre-literate Bronze Age Europe: Typology, chronology, distribution and metrology', in Rahmstorf, L. and Stratford, E. (eds), *Weights and Marketplaces from the Bronze Age to the Early Modern Period. Proceedings of Two Workshops Funded by the European Research Council (ERC).* Wachholtz Verlag Kiel/Hamburg: Murmann Publishers, pp. 105–126.

Ialongo, N. and Lago, G. (2021) ‘A small change revolution. Weight systems and the emergence of the first Pan-European money’, *Journal of Archaeological Science,* 129, pp. 1–14.

Ialongo, N., Hermann, R., and Rahmstorf, L. (2021) ‘Bronze Age weight systems as a measure of market integration in Western Eurasia’, *Proceedings of the National Academy of Sciences,* 118(27).

Isaakidou, V., Halstead, P., Davis, J. L., and Stocker, S. (2002) ‘Burnt animal sacrifice at the Mycenaean ‘Palace of Nestor’, Pylos’, *Antiquity,* 76, pp. 86–92.

Jennings, J. (2017) ‘Distinguishing Past Globalizations’, in Hodos, T. (edn), *The Routledge Handbook of Archaeology and Globalization.* London: Routledge, pp. 12–28.

Jones, M. R. (2007) *Oxhide Ingots, Copper Production, and the Mediterranean Trade in Copper and Other Metals in the Bronze Age.* MA thesis. Texas A&M University.

Jones, R. E., Levi, S. T., Bettelli, M., and Vagnetti, L. (2014) *Italo-Mycenaean pottery : the archaeological and archaeometric dimensions.* Roma: CNR, Istituto di studi sul Mediterraneo antico.

Jones, R. E., Levi, S. T., Bettelli, M., and Cannavò, V. (2021) ‘Italo-Mycenaean and other Aegean-influenced pottery in Late Bronze Age Italy: the case for regional production’, *Archaeological and Anthropological Sciences,* 13(1), pp. 23.

Jung, R. and Pacciarelli, M. (2017) ‘Greece and Southern Italy 1250-1050 BC: manifold patterns of interaction’, in Fotiadis, M., Laffineur, R., Lolos, Y., and A., V. (eds), *ΕΣΠΕΡΟΣ / HESPEROS: The Aegean Seen From The West. Proceedings of the 16th International Aegean Conference, University of Ioannina, Department of History and Archaeology, Unit of Archaeology and Art History, 18–21 May 2016.* Leuven/Liège: Peeters, pp. 185–204.

Jung, R., Guglielmino, R., Iacono, F., and Mommsen, H. (2021) ‘Neutron Activation Analysis of Aegean and Aegeanising Ceramics from Roca Vecchia and the Circulation of Pottery in Southern Italy’, in Jung, R. (edn), *Punta Zambrone I.* Vienna: Orea, pp. 459–490.

Karageorghis, V. and Demas, M. (1984) *Pyla-Kokkinokremos: A Late 13th-Century B.C. Fortified Settlement in Cyprus.* Nicosia: Published for the Republic of Cyprus by the Department of Antiquities, Cyprus.

Kellerman, A. (2020) *Globalization and Spatial Mobilities: Commodities and People, Capital, Information and Technology.* Edward Elgar Publishing.

Kilian, K. (1983) ‘Civiltà micenea in Grecia: nuovi aspetti syorici ed interculturali’, in Vagnetti, L. (edn), *Magna Grecia e mondo miceneo : atti del convegno. XXII Convegno di studi sulla Magna Grecia, Taranto, 7-11 ottobre 1982.* Taranto: Istituto per la storia e l'archeologia della Magna Grecia, pp. 53–96.

——— (1988) ‘Mycenaeans up to date: Trends and changes in recent research’, in French, E. B. and Wardle, K. A. (eds), *Problems in Greek prehistory: papers presented at the Centenary Conference of the British School of Archaeology at Athens, Manchester April 1986*. Bristol: Bristol Classical Press, pp. 115–152.

——— (1990) ‘Mycenaean colonization: norm and variety’, in Descœudres, J.-P. and Trendall, A. D. (eds), *Greek colonists and native populations: proceedings of the First Australian Congress of Classical Archaeology held in honour of emeritus professor A.D. Trendall, Sydney, 9-14 July 1985.* Canberra/Oxford: Humanities Research Centre/Clarendon Press, pp. 445–467.

——— (2007) *Die Handgemachte Geglättete Keramik Mykenischer Zeitstellung.* Wiesbaden: Reichert.

Killen, J. T. (1985) ‘The Linear B Tablets and the Mycenaean Economy’, in Mopurgo Davies, A. and Duhoux, Y. (eds), *Linear B: A 1984 Survey.* Louvain-la-Neuve: Peeters, pp. 241–305.

——— (1994) ‘Thebes Sealings, Knossos Tablets and Mycenaean State Banquets’, *Bulletin of the Institute of Classical Studies*, 39, pp. 67–84.

Knapp, A. B. and Cherry, J. F. (1994) *Provenience studies and Bronze Age Cyprus : production, exchange and politico-economic change.* Madison, Wis: Prehistory Press.

Knapp, A. B. and Blake, E. (2005) ‘Prehistory in the Mediterranean: the connecting and corrupting sea’, in Blake, E. and Knapp, A. B. (eds), *The archaeology of Mediterranean prehistory.* Malden, Mass.-Oxford: Blackwell, pp. 1–23.

Kopcke, G. (1987) ‘The Cretan Palaces and Trade’, in Hägg, R., Marinatos, N., and Svenska institutet i Athen. (eds), *The Function of the Minoan palaces: proceedings of the Fourth International Symposium at the Swedish Institute in Athens, 10-16 June, 1984.* Stockholm: Svenska institutet i Athen, pp. 255–259.

Krzyszkowska, O. (1981) *The bone and ivory industries of the aegean bronze age: a technological study.* PhD thesis. University of Bristol.

——— (1990) *Ivory and related materials: an illustrated guide.* London: Institute of Classical Studies.

——— (2005) *Aegean seals: an introduction.* London: Institute of Classical Studies, School of Advanced Study, University of London.

——— (2019) ‘Seals and Sealings’, in Kotsonas, A. and Lemos, I. S. (eds), *A Companion to the Archaeology of Early Greece and the Mediterranean.* Hoboken, NJ: Wiley-Blackwell, pp. 571–588.

La Rosa, U. (1995) *Sicily and its islands: a complete guide.* Palermo: La Rosa Publisher.

La Rosa, V. (2005) ‘Pour une reflexion sur le premère présence égéenne en Sicilie’, in Laffineur, R. and Greco, E. (eds), *EMPORIA: Aegeans in the Central and Eastern Mediterranean. Proceedings of the 10th International Aegean Conference/ 10e Rencontre Égéenne Internationale. Athens, Italian School of Archaeology, 14–18 April 2004.* Volume II, Bruxelles: Université de Liège Histoire de l'art et archéologie de la Grèce antique, pp. 571–584.

Legarra Herrero, B. (2016) ‘An elite-infested sea: interaction and change in Mediterranean paradigms’, in Molloy, B. (edn), *Of odysseys and oddities. Scales and modes of interaction between prehistoric Aegean societies and their neighbours.* Oxford; Philadelphia: Oxbow Books, pp. 25–51.

Leighton, R. (1999) *Sicily before history: an archaeological survey from the Palaeolithic to the Iron Age.* London: Duckworth.

Letesson, Q. and Knappett, C. (2017) ‘Introduction: Minoan Built Environment’, in Letesson, Q. and Knappett, C. (eds), *Minoan architecture and urbanism: new perspectives on an ancient built environment.* Oxford: Oxford University Press, pp. 1–20.

Levi, S. T., Martinelli, M. C., Vertuani, P., and Williams, J. L. (2014) ‘Old or new waves in Cap Graziano decorative styles?’, *Origini,* XXXVI, pp. 213–244.

Levi, S. T., Cannavo, V., Brunelli, D., and Di Renzoni, A. (2019) *Atlas of Ceramic Fabrics 2. Italy: Southern Tyrrhenian. Neolithic - Bronze Age.* Oxford: Archaeopress.

Levi, S. T., Cannavò, V., Martinelli, M. C., Bettelli, M., Brunelli, D., and Williams, J. L. (2020) ‘Tradition and innovation: pre and protohistoric pottery at Lipari in a wider environmental and cultural perspective’, *Rivista di Scienze Preistoriche,* LXX, pp. 5–28.

Lindgren, M. (1987) ‘The Function of the Minoan Palaces—Myth and Reality’, in Hägg, R. and Marinatos, N. (eds) *The Function of the Minoan Palaces. Proceedings of the Fourth International Symposium at the Swedish Institute in Athens, 10–16 June, 1984.* Stockolm: Skrifter utgivna av Svenska Institutet i Athen, pp. 39–42.

Lis, B. (2008) ‘Cooked Food in the Mycenaean Feast — Evidence from the Cooking Pots’, in Hitchcock, L., Laffineur, R., and Crowley, J. L. (eds), *DAIS: The Aegean Feast. Proceedings of the 12th International Aegean Conference/12e Rencontre Egeenne Internationale, University of Melbourne, Centre for Classics and Archaeology, 25–29 March 2008.* Liege: Universite de Liege, Histoire de l'art et archeologie de la Grece antique, pp. 141–150.

——— (2009) ‘Handmade and Burnished Pottery in the Eastern Mediterranean at the End of the Bronze Age: towards an explanation for its diversity and geographical distribution’, in Bachhuber, C., Roberts, R. G., and British Association for Near Eastern Archaeology (eds), *Forces of transformation: the end of the Bronze Age in the Mediterranean. Proceedings of an international symposium held at St. John's College, University of Oxford, 25-6th March, 2006.* Oxford/Oakville, CT: British Association for Near Eastern Archaeology—David Brown Bk. Co., pp. 152–163.

Lo Schiavo, F. (2006) ‘Ipotesi sulla Circolazione dei metalli nel Mediterraneo Centrale’, *Atti della XXXIX Riunione Scientifica. Materie Prime e scambi nella preistoria Italiana nel cinquantenario della fondazione dell’Istituto Italiano di Preistoria e Protostoria.*, III, Firenze: Istituto Italiano di Preistoria e Protostoria, pp. 1319–1337.

——— (2008) ‘Oxhide ingots in the Central Mediterranean: recent perspectives’, in Tzachilē, I. (edn), *Aegean metallurgy in the bronze age: proceedings of an*

international symposium held at the University of Crete, Rethymnon, Greeece, on November 19-21, 2004. Athens: Ta Pragmata, pp. 227–245.

——— (2018) 'Lingotti oxhide e oltre. SIntesi ed aggiornamenti nel Mediterraneo e in Sardegna.', in Giumlia-Mair, A. and Lo Schiavo, F. (eds), *Bronze Age Metallurgy on Mediterranean Islands.* Drémil-Lafage: Editions Mergoil, pp. 15–41.

Lo Schiavo, F., Albanese Procelli, R. M., and Giumlia-Mair, A. (2009) 'Oxhide Ingots in Sicily', in Lo Schiavo, F., Muhly, J. D., Maddin, R., and Giumlia-Mair, A. (eds), *Oxhide ingots in the central Mediterranean* Roma: A.G. Leventis Foundation; CNR-Istituto di studi sulle civiltà dell'Egeo e del vicino oriente, pp. 135–221.

——— (2018) 'Il ripostiglio sotto la capanna *alpha* II sull'acropooli di Lipari. Uno studio archeometallurgico', in Bernabò Brea, M., Cultraro, M., Gras, M., Martinelli, M. C., Pouzadoux, C., and Spigo, U. (eds), *A madeleine Cavalier.* 49, Naples: Collection du Centre Jean Bérard, pp. 163–177.

Lomas, K. (2013) 'Language, Identity, and Culture in Ancient Italy', *Bulletin of the Institute of Classical Studies,* 120, pp. 71–92.

Lukesh, S. S. (1995) 'The Pottery and Objects in Terracotta', in Holloway, R. R., Lukesh, S. S., and Cruz-Uribe, K. (eds), *Ustica I: the results of the excavations of the Regione Siciliana, Soprintendenza ai beni culturali ed ambientali provincia di Palermo in collaboration with Brown University in 1990 and 1991.* Providence, R.I.: Louvain-la-Neuve, Belgium: Center for Old World Archaeology and Art, Brown University–Département d'archéologie et d'histoire de l'art, Collège Erasme, pp. 25–61.

Lupack, S. (2010) 'Minoan Religion', in Cline, E. H. (edn), *The Oxford Handbook of the Bronze Age Aegean.* Oxford: Oxford University Press, pp. 252–262.

MacGillivray, J. A. (2012) 'The Minoan Double Axe Goddess and Her Astral Realm.', in Stampolidis, N. C., Kanta, A., and Giannikouri, A. (eds), *Athanasia. The Earthly, the Celestial and the Underworld in the Mediterranean from the Late Bronze and the Early Iron Age. International Archaeological Conference Rhodes 2009.* Herakleion: University of Crete, pp. 117–128.

Macnamara, E. (1970) 'A group of bronzes from Surbo: new evidence for Aegean contacts with Apulia during Mycenaean III B and C', *Proceedings of the Prehistoric Society,* 36, pp. 241–260.

Maggiulli, G. (2006) 'I dischi solari di Roca (Lecce): dati di scavo e analisi preliminare', *Studi di protostoria in onore di Renato Peroni.* Borgo San Lorenzo (FI): All'insegna del giglio, pp. 125–132.

——— (2009a) 'Metallurgia e produzioni metallurgiche a Roca (Lecce): i ripostigli del Bronzo Finale', *Rivista di Scienze Preistoriche*, LIX, 307–334.

——— (2009b) 'I ripostigli di Roca Vecchia (Lecce): analisi dei materiali e problematiche archeologiche', in Borgna, E. and Càssola Guida, P. (eds), *Dall'Egeo all'Adriatico: organizzazioni sociali, modi di scambio e interazione in età Postpalaziale (XII–XI sec. a. C.). Atti del Seminario internazionale (Udine, 1–2 dicembre 2006).* Rome: Quasar, pp. 205–218.

Maggiulli, G. and Malorgio, I. (2017) 'La grande struttura incendiata dell'età del Bronzo Finale di Roca (SAS IX): nuovi dati dall'area N', in Radina, F. (edn), *Preistoria e Protostoria della Puglia. Atti XLVII Riunione Scientifica IIPP, Ostuni 9-13 ottobre 2012.* Firenze: Istituto italiano di preistoria e protostoria, pp. 539–547.

Malkin, I. (2002) 'A colonial middle ground: Greek, Etruscan, and local elites in the bay of Naples', in Lyons, C. L. and Papadopoulos, J. K. (eds), *Oikistes: Studies in*

Constitutions, Colonies, and Military Power in the Ancient World, Offender in Honor of A. J. Graham. Malibu: The Getty Research Institute, pp. 151–181.

Malorgio, I. and Maggiulli, G. (2011) 'Roca (Lecce), SAS IX: la struttura incendiata dell'età del bronzo finale: scavo e analisi del contesto', *Rivista di Scienze Preistoriche,* LXI, pp. 123–156.

Manni, M., Coltelli, M., and Martinelli, M. C. (2019) 'Volcanic events that have marked the anthropic history of the Aeolian Islands', *Annals of Geophysics,* 62, pp. 1–16.

Manning, S. W. (2010) 'Chronology and Terminology' in Cline, E. H. (edn), *The Oxford Handbook of the Bronze Age Aegean*. Oxford: Oxford University Press, pp. 11–28.

Manning, S. W. and Hulin, L. (2005) 'Maritime commerce and geographies of mobility in the Late Bronze Age of the eastern Mediterranean: problematisations', in Blake, E. and Knapp, A. B. (eds), *The Archaeology of Mediterranean Prehistory.* Oxford: Blackwell, pp. 270–302.

Maran, J. and Wright, J. C. (2020) 'The Rise of the Mycenaean Culture, Palatial Administration and Its Collapse', in Lemos, I. S. and Kotsonas, A. (eds), *A Companion to the Archaeology of Early Greece and the Mediterranean.* Newark, United States: John Wiley & Sons, Incorporated, pp. 97–132.

Marinatos, N. (2010) *Minoan Kingship and the Solar Goddess. A Near Eastern Koine*. Urbana, Chicago and Springfield: University of Illinois Press.

Martelli, I. (2005) 'I Contrassegni e i "Segni" Eoliani', in Martinelli, M. C. (edn), *Il Villaggio dell'età del Bronzo medio di Portella a Salina nelle Isole Eolie.* Firenze: Istituto Italiano di Preistoria e Protostoria, pp. 211–229.

Martinelli, M. C. (2018) 'The tale of the sea. The Bronze Age cup of Filicudi (Aeolian Islands)', in Bettelli, M., Del Freo, M., and van Wijngaarden, G. J. (eds),

Mediterranea Itinera, Studies in Honour of Lucia Vagnetti. Rome: CNR Istituto di Studi sul Mediterraneo Antico, pp. 369–380.

——— (2020) *Isole vicine: l'arcipelago delle Isole Eolie e le comunità umane nella preistoria mediterranea.* Roma: Edizioni di storia e studi sociali.

Martinelli, M. C. and Mastelloni, M. A. (2015) *Archaeological Museum.* Palermo: Sicily Region, Department of cultural and Sicilian identity.

Martinelli, M. C. and Giordano, L. (2017) 'La facies di Capo Graziano nelle Isole Eolie: nuove scoperte in Contrada Diana (Lipari)', *Rivista di Scienze Preistoriche,* LXVII, pp. 255–271.

Martinelli, M. C. and Levi, S. T. (2021) 'I contrassegni eoliani: classificazione e distribuzione', *Rivista di Scienze Preistoriche,* LXXI, pp. 169–192.

Martinelli, M. C., Tykot, R. H., and Vianello, A. (2019) 'Lipari (Aeolian Islands) Obsidian in the Late Neolithic. Artifacts, Supply and Function', *Open Archaeology,* 5 (1), pp. 46–64.

Martinelli, M. C., Dawson, H., Lo Cascio, P., Levi, S. T., and Fiorentino, G. (2021) 'Blowin' in the Wind: Settlement, Landscape and Network Dynamics in the Prehistory of the Aeolian Islands', *Journal of Mediterranean Archaeology,* 34 (1), pp. 28–57.

Martinelli, M. C., Fiorentino, G., Prosdocimi, B., D'Oronzio, C., Levi, S. T., Mangano, G., Stellati, A., and Wolff, N. (2010) 'Nuove ricerche nell'insediamento sull'istmo di Filo Braccio a Filicudi. Nota preliminare sugli scavi 2009', *Origini,* 32, pp. 285-314.

Masseti, M. (1997) 'Representations of Birds in Minaon art', *International Journal of Osteoarchaeology,* 7, pp. 354–363.

Mazzotta, C. (2016) ‘L’età medievale e moderna a Roca Vecchia’, *Forma Urbis,* 2, pp. 34–41.

McEnroe, J. (1982) ‘A Typology of Minoan Neopalatial Houses’, *American Journal of Archaeology,* 86(1), pp. 3–19.

Michailidou, A. (2008) ‘Late Bronze Age Economy: Copper / Bronze in Linear B Script and Material Evidence’, in Sacconi, A., Del Freo, M., Godart, L., and Negri, M. (eds), *Colloquium Romanum: Atti del XII Colloquio Internazionale di Micenologia. Roma 20– 25 Febbraio 2006.* Volume II, Pisa–Roma: Fabrizio Serra Editore, pp. 521–540.

Middleton, G. D. (2010) *The Collapse of Palatial Society in LBA Greece and the Postpalatial Period.* Oxford: Archaeopress.

Militello, P. M. (2017) ‘Management, power and non-literate communication in Prepalatial and Palatial Messara’, in Jasink, A. M., Weingarten, J., and Ferrara, S. (eds), *Non-scribal Communication Media in the Bronze Age Aegean and Surrounding Areas. The semantics of a-literate and proto-literate media (seals, potmarks, mason’s marks, seal-impressed pottery, ideograms and logograms, and related systems).* Firenze: Firenze University Press, pp. 55–72.

Mokrišová, J. (2016) ‘Minoanisation, Mycenaeanisation, and Mobility: a view from Southwest Anatolia’, in Gorogianni, E., Girella, L., and Pavúk, P. (eds), *Beyond Thalassocracies: understanding processes of Minoanisation and Mycenaeanisation in the Aegean.* Oxford: Oxbow Books, pp. 43–57.

Möller, A. (2000) *Naukratis: Trade in Archaic Greece.* Oxford: Oxford University Press.

Molloy, B. (2023) ‘Was There a 3.2 ka Crisis in Europe? A Critical Comparison of Climatic, Environmental, and Archaeological Evidence for Radical Change

during the Bronze Age–Iron Age Transition', *Journal of Archaeological Research,* 23, pp. 331–294.

Monroe, C. M. (2009) *Scales of fate: trade, tradition, and transformation in the eastern Mediterranean, ca. 1350-1175 BCE.* Münster: Ugarit-Verlag.

Montanari, A. (2021) 'The Euro-Mediterranean region: human mobility and sustainable development', *Belgeo,* 1. doi : https://doi.org/10.4000/belgeo.49993

Morris, I. (2003) 'Mediterraneanization', *Mediterranean Historical Review,* 18(2), pp. 30–55.

Moscetta, M. P. (1988) 'Il ripostiglio di Lipari. Nuove considerazioni per un inquadramento cronologico culturale', *Dialoghi di Archeologia*, 6, pp. 53–77.

Mountjoy, P. A. (1993) *Mycenaean pottery: an introduction.* Oxford: Oxford University Committee for Archaeology.

——— (1999) *Regional Mycenaean Decorated Pottery.* Rahden/Westf: Verlag Marie Leidorf GmbH.

Mourtzas, N. and Kolaiti, E. (2020) 'Palaeogeographic reconstruction of the Messara Gulf and Matala Bay (Crete, Greece): Coastal response to sea level changes during prehistoric and historic times', *Alpine and Mediterranean Quaternary,* 33 (1), pp. 1–27.

Muhly, J. D., Maddin, R., and Stech, T. (1988) 'Cyprus, Crete and Saridnia: Copper Ox-Hide Ingots and the Bronze Age Metals Trade', *Report of the Department of Antiquities Cyprus,* 1, pp. 281–298.

Müller-Karpe, H. (1966) *Handbuch der Vorgeschichte.* 4(3), München: C.H. Beck'sche Verlagsbuchhandlung.

Murray, S. C. (2023) *Long-Distance Exchange and Inter-Regional Economies.* Cambridge: Cambridge University Press.

Mylonas, G. E. (1977) *Mykēnaikē thrēskeia: naoi, vomoi kai temenē — Mycenaean religion: temples, altars and temenea.* Athēnai: Grapheion Dēmosieumatōn tēs Akadēmias Athēnōn.

Naroll, R. (1962) 'Floor Area and Settlement Population', *American Antiquity,* 27 (4), pp. 587-589.

Nevett, L. C. (2010) *Domestic space in classical antiquity.* Cambridge: Cambridge University Press.

Niemeier, W. -D. (2005) 'Minoans, Mycenaeans, Hittites and Ionians in Western Asia Minor: New Excavations in Bronze Age Miletus-Millawanda', in Villing, A. (edn) *The Greeks in the East.* The British Museum Research Publication 157. London: The British Museum, pp. 1–36.

Nilsson, M. (1950) *The Minoan-Mycenaean Religion and its Survival in Greek Religion.* 2nd ed. edn.Lund: Biblo and Tannen.

——— (2014) 'A note on domestic vs communal grain storage in the Early Helladic period', *Opuscula. Annual of the Swedish Institutes at Athens and Rome,* 7, pp. 223–239.

Nixon, L. (1987) 'Neo-Palatial Outlying Settlements and the Function of the Minoan Palace', in Hägg, R., Marinatos, N., and Svenska institutet i Athen. (eds), *The Function of the Minoan palaces: proceedings of the Fourth International Symposium at the Swedish Institute in Athens, 10-16 June, 1984.* Stockholm: Svenska institutet i Athen, pp. 95–98.

Nomi, F. and Speciale, C. (2017) 'Castellaro (Lipari, ME)', *Notiziario di Preistoria e Protostoria,* 4 (3), pp. 87-90.

Nougayrol, J. (1955) *Le palais royal d'Ugarit. III Textes accadiens et hourrites des archives est, ouest et centrales.* Paris: Imprimerie Nationale.

Numrich, M., Lockhoff, M., Scarano, T., Gonzato, F., Pernicka, E., and Jung, R. (2024) 'Investigation of Italian Bronze Age Gold Artefacts with portable Laser Ablation ICP-MS', *Rivista di Scienze Preistoriche,* LXXIV S4, pp. 63–77.

Oleson, J. P. and Hohlfelder, L. (2011) 'Ancient harbours in the Mediterranean.', in Catsambis, A., Ford, B., and Hamilton, D. L. (eds), *The Oxford handbook of maritime archaeology.* Oxford: Oxford University Press, pp. 809–833.

OpenStreetMap contributors (2015) *OpenStreetMap*. Available at: https://www.openstreetmap.org (Last Accessed: 15 February 2026).

Orfanou, V., Bruyère, C., Karydas, A. G., Jovanović, D., Francović, F., Spasić, M., Koledin, J., Jacanović, D., Cerović, M., Davidović, J., and Molloy, B. (2024) 'A community of practice approach to the management of metal resources, metalworking and hoarding in Bronze Age societies', *Scientific Reports,* 14(16153).

Pacciarelli, M. (2021) 'Sul consumo sociale del cibo nelle comunità protostoriche dell'Italia peninsulare e dell'area siciliano-eoliana', in Damiani, I., Cazzella, A., and Copat, V. (eds), *Preistoria del cibo: l'alimentazione nella preistoria e nella protostoria.* Firenze: Istituto italiano di preistoria e protostoria, pp. 699–718.

Pagliara, C. (1987a) 'La grotta Poesia di Roca (Melendugno - Lecce). Note preliminari', *Annali della Scuola Normale Superiore di Pisa. Classe di Lettere e Filosofia,* 17(2), pp. 267–328.

——— (1987b) 'Melendugno (Lecce), Grotta Poesia', *Taras,* VII(1–2), pp. 140–141.

——— (2001) 'Roca.', in Nenci, G. and Vallet, G. (eds), *Bibliografia topografica della colonizzazione greca in Italia e nelle isole tirreniche.* 16, Pisa: Scuola normale superiore, pp. 197–229.

——— (2003) ‘Il sito di Roca Vecchia nell’età del bronzo’, in Lenzi, F. (edn), *L'archeologia dell'Adriatico dalla preistoria al Medioevo: atti del convegno internazionale, Ravenna, 7-8-9 giugno 2001.* Firenze: All'insegna del giglio, pp. 67–90.

——— (2005) ‘Roca Vecchia (Lecce) il sito, le fortificazioni e l’abitato dell’età del bronzo’, in Laffineur, R. and Greco, E. (eds), *Emporia: Aegeans in the central and eastern Mediterranean. Proceedings of the 10th international Aegean conference = 10e rencontre égéenne internationale, Athens, Italian school of archaeology, 14-18 April 2004.* Volume II, Liège: Université de Liège, pp. 629–637.

Pagliara, C. and Guglielmino, R. (2005) ‘Roca: dalle curiosità antiquarie allo scavo stratigrafico’, in Settis, S. and Parra, M. C. (eds), *Magna Græcia: archeologia di un sapere.* Milano/Catanzaro: Electa/Università degli studi Magna Graecia, pp. 298–321.

Pagliara, C., Guglielmino, R., Coluccia, L., Malorgio, I., Merico, M., Palmisano, D., Rugge, M., and Minonne, F. (2008) ‘Roca Vecchia (Melendugno, Lecce), SAS IX: relazione stratigrafica preliminare sui livelli di occupazione protostorici (campagne di scavo 2005-2006)’, *Rivista di Scienze Preistoriche,* 58, pp. 239–280.

Pagliara, C., Maggiulli, G., Scarano, T., Pino, C., Guglielmino, R., Mazzorin, J., Rugge, M., Fiorentino, G., Primavera, M., D'Elia, M., and Quarta, G. (2007) ‘La sequenza cronostratigrafica delle fasi di occupazione dell'insediamento protostorico di Roca (Melendugno, Lecce). Relazione preliminare della campagna di scavo 2005 - Saggio X’, *Rivista di Scienze Preistoriche,* 57, pp. 311–362.

Paglietti, G. (2013) ‘Da Barumini a Lipari. Due contesti del Bronzo Finale a confronto.’, *Rivista di Scienze Preistoriche,* LXIII, pp. 171–194.

Palaima, T. G. (2008) ‘Mycenaean Religion’, in Shelmerdine, C. W. (edn), *The Cambridge Companion to the Aegean Bronze Age.* Cambridge: Cambridge: Cambridge University Press, pp. 342–361.

Pantou, P. A. (2014) ‘An Architectural Perspective on Social Change and Ideology in Early Mycenaean Greece’, *American Journal of Archaeology*, 118(3, July), pp. 369–400.

Pare, C. (1999) ‘Weights and weighing in Bronze Age central Europe’, *Eliten in der Bronzezeit: Ergebnisse zweier Kolloquien in Mainz und Athen.* Mainz/Bonn: Verlag des Römisch-Germanischen Zentralmuseums, pp. 421–514.

——— (2013) ‘Weighing, Commodification, and Money’, in Fokkens, H. and Harding, A. (eds), *The Oxford Handbook of the European Bronze Age.* Oxford: Oxford University Press, pp. 508–527.

Peatfield, A. (1995) ‘Water, Fertility, and Purification in Minoan Religion’, *Bulletin of the Institute of Classical Studies,* 63, pp. 217–227.

Pendlebury J. D. S., Money-Coutts M. B., and Eccles E. (1932–1933) ‘Journeys in Crete, 1934’, *The annual of the British School at Athens*, 33, pp. 80–100.

Perna, M. (2005) ‘L’alun dans les documents en linéaire B’, in Borgard, P., Brun, J.-P., and Picon, M. (eds), *L'alun de Méditerranée: colloque international, Naples 4-5-6 juin 2003, Lipari 7-8 juin 2003.* Naples: Publications du Centre Jean Bérard, pp. 39–42.

Pernicka, E. (1999) ‘Trace element fingerprinting of ancient copper: A guide to technology or provenance?’, in Young, S. M. M., Pollard, A. M., Budd, P., and Ixer, R. A. (eds), *Metals in Antiquity.* Oxford: Archaeopress, pp. 163–171.

Pernier, L. (1935) *Il Palazzo Minoico di Festòs. Scavi e Studi della Missione Archeologica Italiana a Creta dal 1900 al 1934.* Volume I: Gli strati più antichi e il primo palazzo, Roma: La Libreria dello Stato.

Pernier, L. and Banti, L. (1951) *Palazzo minoico di Festòs: scavi e studi della Missione archeologica italiana a Creta dal 1900 al 1950. Volume II: Il secondo palazzo.* Roma: Libreria dello Stato.

Peroni, R. (1994) 'Le comunità Enotrie della Sibaritide ed i loro rapporti con i navigatori Egei', in Peroni, R. and Trucco, F. (eds), *Enotri e Micenei nella Sibaritide. Volume II: Altri siti della Sibaritide.* Taranto: Istituto per la storia e l'archeologia della Magna Grecia, pp. 831–879.

——— (1996) *L'Italia alle Soglie della Storia.* Bari: Laterza.

——— (2004) 'Sistemi transculturali nell'economia, nella società, nell'ideologia', in Cocchi Genick, D. (edn), *L'età del Bronzo Recente in Italia: Atti del Congresso Nazionale di Lido di Camaiore, 26–29 Ottobre 2000.* Viareggio: Mauro Baroni Editore, pp. 411–428.

Petruso, K. M. (1978) *Systems Of Weight In The Bronze Age Aegean.* PhD thesis. Indiana University.

Pilides, D. (1991) *Handmade burnished wares of the late Bronze Age in Cyprus.* PhD thesis. University of London.

Platon, E. M. (1988) *The workshops and working areas of Minoan Crete: the evidence of the palace and town of Zakros for a comparative study.* PhD thesis. University of Bristol.

Platon, N. (1955) 'Ἡ Αρχαιολογική Κίνησις εν Κρήτη κατά το Έτος 1955', *Κρητικά Χρονικά: Κείμενα και Μελέται Κρητικής Ιστορίας,* 9, pp. 553–569.

Polanyi, K. (1957) ‘The economy as instituted process’, in Polanyi, K., Arensberg, C. M., and Pearson, H. W. (eds), *Trade and market in the early empires: economies in history and theory.* Glencoe: Free Press & Falcon's Wing Press, pp. 243–270.

Prats, G., Antolín, F., and Alonso, N. (2020) ‘Household storage, surplus and supra-household storage in prehistoric and protohistoric societies of the Western Mediterranean’, *PLOS ONE,* 15(9), pp. 1–30.

Pratt, M. L. (1992) *Imperial eyes: travel writing and transculturation.* London: Routledge.

Primas, M. and Pernicka, E. (1998) ‘Der Depotfund von Oberwilflingen. Neue Ergebnisse zur Zirkulation von Metallbarren.’, *Germania,* 76, pp. 25–65.

Primavera, M. (2018) *Roca e le dinamiche uomo-ambiente in Puglia durante l’età del Bronzo. Le piante e l’uomo tra ambiente paesaggio economia e culto.* Monteroni di Lecce: edizioni esperidi.

Primavera, M., D’Oronzo, C., Muntoni, I. M., Radina, F., and Fiorentino, G. (2015) ‘Environment, crops and harvesting strategies during the II millennium BC: Resilience and adaptation in socio-economic systems of Bronze Age communities in Apulia (SE Italy)’, *Quaternary International,* XXX, pp. 1–13.

Primavera, M., D’Oronzo, C., and Fiorentino, G. (2017) ‘Dinamiche paleoambientali e caratteristiche paleoeconomiche della Puglia nel II millennio a.C.’, in Radina, F. (edn), *Preistoria e Protostoria della Puglia. Atti XLVII Riunione Scientifica IIPP, Ostuni 9-13 ottobre 2012*. Firenze: Istituto italiano di preistoria e protostoria, pp. 443–448.

Privitera, S. (2009a) ‘Il ‘raccolto’ di da-wo (KN F[2] 852) e la misura di superficie GRA nel regno miceneo di Cnosso’, in Camia, F. and Privitera, S. (eds), *Obeloi:*

Contatti, scambi e valori nel Mediterraneo antico. Studi offerti a Nicola Parise. Paestum: Pandemos, pp. 65–76.

——— (2009b) 'Contabilità e staple finance nei regni micenei: archeologia e filologia a confronto', *Annali dell'Istituto Italiano di Numismatica,* 55, pp. 11–28.

Pugliese Carratelli, G. (1958) 'Per la storia delle relazioni micenee con l'Italia', *La Parola del Passato,* 13, pp. 205–220.

——— (1976) *Scritti sul mondo antico : Europa e Asia, espansione coloniale, ideologie e istituzioni politiche e religiose.* Napoli: G. Macchiaroli.

Pulak, C. (2000a) 'The Balance Weights from the Late Bronze Age Shipwreck at Uluburun', in Pare, C. F. E. (edn), *Metals Make the World Go Round: The Supply and Circulation of Metals in Bronze Age Europe. Proceedings of a Conference Held at the University of Birmingham in June 1997.* Oxford: Oxbow, pp. 247–266.

——— (2000b) 'The Copper and Tin Ingots from the Late Bronze Age Shipwreck at Uluburun', *Anatolian Metal,* I, pp. 137–157.

——— (2005) 'Who were the Mycenaeans aboard the Uluburun ship?', in Laffineur, R. and Greco, E. (eds), *Emporia: Aegeans in the central and eastern Mediterranean. Proceedings of the 10th international Aegean conference = 10e rencontre égéenne internationale, Athens, Italian school of archaeology, 14-18 April 2004.* Volume I, Liège: Université de Liège, pp. 295–312.

——— (2008) 'The Uluburun Shipwreck and Late Bronze Age Trade', in Aruz, J., Benzel, K., and Evans, J. M. (eds), *Beyond Babylon: art, trade, and diplomacy in the second millennium B.C.* New York, N.Y./New Haven, Conn./London: Metropolitan Museum of Art, Yale University Press, pp. 289–310.

Quagliati, Q. (1900) ‘Taranto—Relazione degli scavi archeologici che si eseguirono nel 1899 in un abitato terramaricolo, allo scoglio del Tonno, presso la città’, *Notizie degli Scavi di Antichità Comunicate alla Accademia dal Ministero della Pubblica Istruzione*, pp. 411–464.

Querci, A. (2023) *“In fretta le navi correvano i sentieri pescosi”: un’ipotesi di ricostruzione delle rotte di collegamento fra area egea e Mediterraneo Orientale (1700 - 1200 a.C.).* Oxford: Archaeopress Publishing Ltd.

Radina, F. and Recchia, G. (2010) *Ambra per Agamennone: indigeni e micenei tra Adriatico, Ionio ed Egeo.* Bari: Mario Adda.

Rainville, L. (2015) ‘Investigating traces of everyday life in households: some methodological considerations’, in Müller, M. (edn), *Household studies in complex societies: (micro) archaeological and textual approaches. Papers from the Oriental Institute seminar Household Studies in Complex Societies, held at the Oriental Institute of the University of Chicago, 15-16 March 2013.* Chicago, Illinois: The Oriental Institute of the University of Chicago, pp. 1–28.

Rankov, N. B. (2013) ‘Piraeus’, in Blackman, D. J., Rankov, N. B., Baika, K., Gerding, H., and Pakkanen, J. (eds), *Shipsheds of the ancient Mediterranean.* Cambridge: Cambridge University Press, pp. 420–488.

Rapoport, A. (1969) *House Form and Culture.* Englewood Cliffs, N. J.: Prentice-Hall.

Raymond, A., Kaiser, I., Rizzotto, L.-C., and Zurbach, J. (2016) ‘Discerning Acculturation at Miletus: Minoanisation and Mycenaeanisation’, in Gorogianni, E., Girella, L., and Pavúk, P. (eds), *Beyond Thalassocracies : understanding processes of Minoanisation and Mycenaeanisation in the Aegean.* Oxford: Oxbow Books, pp. 58–74.

Recchia, G. and Ruggini, C. (2009) 'Sistemi abitativi dell'età del Bronzo nel territorio di Cisternino', in Burgers, G.-J. and Recchia, G. (eds), *Ricognizioni archeologiche sull'altopiano delle Murge. La Carta Archeologica del territorio di Cisternino (Brindisi).* Foggia: Claudio Grenzi Editore, pp. 33–61.

Reese, D. S. and Krzyszkowska, O. (1996) 'Elephant Ivory at Minoan Kommos', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos I: The Kommos Region and Houses of the Minoan Town. Part 2: The Minoan Hilltop and Houses.* Princeton: Princeton University Press, pp. 324–326.

Reese, D. S., Rose, M. J., and Payne, S. (1995) 'The Minoan Fauna', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos I: The Kommos region and houses of the Minoan town. Part 1: The Kommos Region, Ecology and Minoan Industries.* Princeton: Princeton University Press, pp. 163–291.

Reger, G. (2016) 'Nodes of sea and sand: Ports, Human Geography, and Networks of Trade', in Höghammar, K., Alroth, B., and Lindhagen, A. (eds), *Ancient Ports. The Geography of Connections, Proceedings of an International Conference at the Department of Archaeology and Ancient History. Uppsala University, 23-25 September 2010.* Uppsala: Acta Universitatis Upsaliensis, pp. 9–36.

Rehak, P. (1997) 'Aegean art before and after the LMIB destructions.', in Laffineur, R. and Betencourt, P. P. (eds) *TEXNH. Craftsmen, Craftswomen, and Craftsmanship in The Aegean Bronze Age. Proceedings of the 6th International Aegean Conference, Philadelphia, Temple University, 18-21 April 1996*. Volume I. Liège: Service d'Histoire de l'art et d'archéologie de la Gréce antique, pp. 51–63.

Renfrew, C. (1972) *The emergence of civilisation: the Cyclades and the Aegean in the third millennium BC.* London: Methuen & Co Ltd.

——— (1975) ‘Trade as action at a distance: Questions of integration and communication’, in Sabloff, J. A. and Lamberg-Karlovsky, C. C. (eds), *Ancient civilization and trade.* Albuquerque: University of New Mexico Press, pp. 3–59.

——— (1979) ‘Systems Collapse as Social Transformation: Catastrophe and Anastrophe in Early State Societies’, in Renfrew, C. and Cooke, K. L. (eds), *Transformations: Mathematical Approaches to Culture Change.* London: Academic Press, pp. 481–506.

Rice, P. M., Adams, W. Y., Ball, J. W., Davis, W. M., Earle, T., Fry, R. E., Hodder, I., Joesink-Mandeville, L. R. V., Kolb, C. C., Nishimura, M., Kojo, Y., Dorado, M. R., Stark, B. L., and Van Der Leeuw, S. E. (1981) ‘Evolution of Specialized Pottery Production: A Trial Model [and Comments and Reply]’, *Current Anthropology,* 22(3), pp. 219–240.

Rizio, A. (2005) ‘Vivara: an “international” port in the Bronze Age’, in Laffineur, R. and Greco, E. (eds), *Emporia: Aegeans in the central and eastern Mediterranean. Proceedings of the 10th international Aegean conference = 10e rencontre égéenne internationale, Athens, Italian school of archaeology, 14-18 April 2004.* Volume II, Liège: Université de Liège, pp. 623–628.

Robb, J. and Van Hove, D. (2003) ‘Gardening, foraging and herding: Neolithic land use and social territories in Southern Italy’, *Antiquity,* 77(296), pp. 241–254.

Roberts, R. G. (2009a) ‘Identity, choice and the year 8 reliefs of Ramesses III at Medinet Habu’, in Bachhuber, C. and Roberts, R. G. (eds), *Forces of Transformation. The End of the Bronze Age in the Mediterranean.* Oxford: Oxbow Books, pp. 60–68.

——— (2009b) *The Sea Peoples and Egypt.* Unpublished PhD thesis. University of Oxford.

Rogers, A. (2013) ‘Introduction: Social Archaeological Approaches in Port and Harbour Studies’, *Journal of Maritime Archaeology,* 8(2), pp. 181–196.

Romey, K. (2003) *The Vogelbarke of Medinet Habu.* PhD thesis. Texas A&M University.

Ruscillo, D. (2012) ‘The Faunal Remains’, in Shaw, M. C. and Shaw, J. W. (eds), *House X at Kommos: A Minoan Mansion near the Sea. Part 1: Architecture, Stratigraphy, and Selected Finds.* Philadelphia, Pennsylvania: INSTAP Academic Press, pp. 92–117.

Russell, A. and Knapp, A. B. (2017) ‘Sardinia and Cyprus: an alternative view on Cypriotes in the Central Mediterranean’, *Papers of the British School at Rome,* 85, pp. 1–35.

Rutter, J. and Van de Moortel, A. (2006) ‘Minoan Pottery from the Southern Area’, in Shaw, J. W. and Shaw, M. C. (eds), *Kommos V: The monumental Minoan buildings at Kommos.* Princeton, N. J./Oxford: Princeton University Press, pp. 261–715.

Rutter, J. B. (1992) ‘Cultural Novelties in the Post-Palatial Aegean World: Indices of Vitality or Decline?’, in Ward, W. A. and Joukowsky, N. S. (eds), *The Crisis Years: the 12th Century B.C.: from Beyond the Danube to the Tigris.* Dubuque: Kendall/Hunt Publishing Company, pp. 61–78.

——— (1999) ‘Cretan External Relations during Late Minoan IIIA2–B (ca. 1370– 1200 BC): A View from the Mesara’, in Phelps, W., Lolos, Y., and Vichos, Y. (eds), *The Point Iria Wreck: Interconnections in the Mediterranean ca. 1200 B.C. Proceedings of the International Conference, Island of Spetses, 19 September 1998.* Athens: Hellenic Institute of Marine Archaeology, pp. 139–186.

——— (2000) ‘The Short-Necked Amphora of the Post-Palatial Mesara’, *Πεπραγμένα του Η’Διεθνούς Κρητολογικού Συνεδρίου, Ηράκλειο, 9-14 Σεπτεμβρίου 1996.*, Α3: Ηταιρια Κρητικων Ιστορικων Μελετων, pp. 177–188.

——— (2001) ‘The Prepalatial Bronze Age of the Southern and Central Greek Mainland’, in Cullen, T. (edn) *Aegean Prehistory: A Review*. Boston: Archaeological Institute of America, pp. 95–147.

——— (2004) ‘Ceramic Sets in Context: One Dimension of Food Preparation and Consumption in a Minoan Palatial Setting’, in Halstead, P. and Barrett, J. C. (eds), *Food, Cuisine and Society in Prehistoric Greece.* Oxford: Oxbow, pp. 63–89.

——— (2017a) ‘Late Minoan IIIB at Kommos: An Abundance of Deposits, a Dearth of Clear Sub-Phases, and Probably a Gradual Desertion of the Site’, in Langohr, C. (edn), *How Long is a Century? Late Minoan IIIB Pottery Relative Chronology and Regional Differences.* Louvain-la-Neuve: Presses universitaires de Louvain, pp. 243–281.

——— (2017b) *House X at Kommos. A Minoan Mansion near the sea. Part 2. The Pottery. An Excavation on the South Coast of Crete by the University of Toronto.* Philadelphia: INSTAP Academic Press.

Sabatini, S. and Lo Schiavo, F. (2020) ‘Late Bronze Age Metal Exploitation and Trade: Sardinia and Cyprus’, *Materials and Manufacturing Processes,* 35(13), pp. 1501–1518.

Sacconi, A. (1974) *Corpus delle iscrizioni vascolari in lineare B.* Roma: Edizioni dell’Ateneo.

Sakellarakis, I. A. (1971) ‘Elephantinon plion ek Mykinon’, *Archaiologike Ephemeris*, pp. 188–233.

Sanmartí, J. (2015) ‘Long-Term Social Change in Iron Age Northern Iberia (ca. 700–200 BC)’, in Knapp, A. B. and Van Dommelen, P. (eds), *The Cambridge Prehistory of the Bronze and Iron Age Mediterranean.* Cambridge: Cambridge University Press, pp. 454–470.

Scarano, G. (2011a) ‘L’abitato di Castelluccia’, in Campanelli, A. (edn), *Dopo lo tsunami: Salerno antica*. Napoli: Arte'm, p. 138–145.

Scarano, T. (2006) ‘La ceramica decorata di tipo appenninico dei livelli del Bronzo Medio di Rocavecchia (Lecce): contributo per una rilettura di alcuni aspetti archeologici e cronologici della facies appenninica nella Puglia centro-meridionale’, *Studi di protostoria in onore di Renato Peroni.* Borgo San Lorenzo (FI): All'insegna del giglio, pp. 133–145.

——— (2009) ‘Le strutture della Porta Monumentale nelle mura di fortificazione del Bronzo Medio a Roca (Melendugno, Lecce): il cantiere di scavo 2007’, in Guaitoli, M. and Ippoliti, A. (eds), *Quaderni del Laboratorio di Restauro Architettonico 1. Conservare l’Identità. I territori dell’Architettura.* Rome: De Luca Editori d’Arte, pp. 101–109.

——— (2010a) ‘The Burnt Layer of the Apennine Fortification Walls of Roca (Lecce, Italy): the Typological Classification of Pottery Assemblages as an Instrument for Functional Characterisation of Archaeological Contexts’, in Horejs, B., Jung, R., and Pavùk, P. (eds), *Analysing Pottery. Processing-Classification-Pubblication.* Bratislava: Comenius University in Bratislava, pp. 245-262.

——— (2010b) ‘Roca. Le fortificazioni della media età del Bronzo’, *Annali della Scuola Normale Superiore di Pisa. Classe di Lettere e Filosofia,* 5, pp. 151–159.

——— (2011b) ‘Refuge or dwelling place? the MBA fortification wall of Roca (Lecce, Italy): the spatial and functional analysis of postern C’, *Rivista di Scienze Preistoriche,* 61, pp. 95–122.

——— (2012a) *Roca I: le fortificazioni della media età del Bronzo : strutture, contesti, materiali.* Foggia: Claudio Grenzi Editore.

——— (2012b) ‘Roca. Le fortificazioni della media età del Bronzo nel quadro delle testimonianze relative agli insediamenti fortificati della prima metà del II millennio a.C. nella Puglia meridionale’, *Annali della Scuola Normale Superiore di Pisa. Classe di Lettere e Filosofia,* 4(2), pp. 72–194.

——— (2016) ‘L'assedio di Roca: il volto della guerra’, *Archeologia Viva,* 177, pp. 40–53.

——— (2017a) ‘Roca. L’insediamento della media età del Bronzo e le mura di fortificazione’, in Radina, F. (edn), *Preistoria e Protostoria della Puglia. Atti XLVII Riunione Scientifica IIPP, Ostuni 9-13 ottobre 2012*. Firenze: Istituto italiano di preistoria e protostoria, pp. 523–530.

——— (2017b) ‘La fortificazione del Bronzo Medio di Roca: forma e funzione degli accessi minori’, in Cupitò, M., Vidale, M., and Angelini, A. (eds), *Beyond Limits: studi in onore di Giovanni Leonardi.* Padova: Padova University Press, pp. 229–236.

——— (2017c) ‘Gli insediamenti costieri fortificati della Puglia meridionale nella prima metà del II millennio a.C.’, in Radina, F. (edn), *Preistoria e Protostoria della Puglia. Atti XLVII Riunione Scientifica IIPP, Ostuni 9-13 ottobre 2012*. Firenze: Istituto italiano di preistoria e protostoria, pp. 965–969.

——— (2019) ‘Una struttuta funeraria ipogeica dell’Età del Bronzo presso Grotta Poesia a Roca Vecchia (Melendugno, LE): I dati della campagna di scavo 2008 nel

quadro dei costumi funerari protostorici in Puglia', *Studi di Antichità,* 17, pp. 35–61.

Scarano, T. and Maggiulli, G. (2014) 'The golden sun discs from Roca (Lecce, Italy): archaeological and cultural context.', in Meller, H. H., Risch, R., and Pernicka, E. (eds), *Metals of power. Early gold and silver. 6th Archaeological Conference of Central Germany, October 17-19, 2013 in Halle (Saale).* Halle: Tagungen des Landesmuseums für Vorgeschichte, pp. 505–525.

Schiffer, M. B. (1983) 'Toward the Identification of Formation Processes', *American Antiquity,* 48(4), pp. 675-706.

Schlüter, S. (2020) 'Social Theories and Old Assyrian Kaneš: Overview, Comments, Developments', *Distant Worlds Journal,* 5, pp. 23–37.

Schneider, J. (1977) 'Was there a 'Re-Capitalist' World-System?', *Peasant Studies,* 6, pp. 20–29.

Schoep, I. (2006) 'Looking beyond the First Palaces: Elites and the Agency of Power in EM III–MM II Crete', *American Journal of Archaeology,* 110(1, January), pp. 37–64.

Schwab, K. A. (1996) 'Stone Vessels', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos I: The Kommos Region and Houses of the Minoan Town. Part 2: The Minoan Hilltop and Houses.* Princeton: Princeton University Press, pp. 271–282.

Scully, V. (1962) *The Earth, the Temple, and the Gods: Greek Sacred Architecture.* New Heaven: Yale University Press.

Settis, S. and Parra, M. C. (2005) *Magna Græcia: archeologia di un sapere.* Milano/Catanzaro: Electa/Università degli studi Magna Graecia.

Shackleton, J. C., van Andel, T. H., and Runnels, C. N. (1984) 'Coastal Paleogeography of the Central and Western Mediterranean during the Last 125,000 Years and Its

Archaeological Implications', *Journal of Field Archaeology,* 11(3, Autumn), pp. 307–314.

Shapland, A. (2022) *Human-Animal Relations in Bronze Age Crete: A History through Objects.* Cambridge: Cambridge University Press.

Shaw, J. W. (1977) 'Excavations at Kommos (Crete) during 1976', *Hesperia: The Journal of the American School of Classical Studies at Athens,* 46(3, July–September), pp. 199–240.

——— (1979) 'Excavations at Kommos (Crete) during 1978', *Hesperia: The Journal of the American School of Classical Studies at Athens,* 48(2), pp. 145-173.

——— (1982) 'Excavations at Kommos (Crete) during 1981', *Hesperia: The Journal of the American School of Classical Studies at Athens,* 51(2), pp. 164–195.

——— (1984) 'Excavations at Kommos (Crete) during 1982-1983', *Hesperia: The Journal of the American School of Classical Studies at Athens,* 53(2), pp. 251-287.

——— (1985) 'Epilogue', in Shaw, J. W. and Shaw, M. C. (eds), *Proceedings of the Kommos Symposium held at the Royal York Hotel, Toronto, Canada on December 29, 1984*. pp. 55–57.

——— (1986) 'Excavations at Kommos (Crete) during 1984–1985', *Hesperia: The Journal of the American School of Classical Studies at Athens,* 55(3, July–September), pp. 219–269.

——— (1989) 'Phoenicians in Southern Crete', *American Journal of Archaeology,* 93(2), pp. 165–183.

——— (1990) 'Bronze Age Aegean Harboursides', in Hardy, D. A., Doumas, C. G., Sakellarakis, J. A., and Warren, P. M. (eds), *Thera and the Aegean World III. Vol.*

1: Archaeology. Proceedings of the Third International Congress, Santorini, Greece, 3–9 September 1989. London: The Thera Foundation, pp. 420–436.

——— (1995a) 'The Exploration and Excavation of the Kommos Site', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos I: The Kommos region and houses of the Minoan town. Part 1: The Kommos Region, Ecology and Minoan Industries.* Princeton: Princeton University Press, pp. 8–29.

——— (1995b) 'Two three-holed stone anchors from Kommos, Crete: their context, type and origin', *The International Journal of Nautical Archaeology,* 24(4), pp. 279–291.

——— (1996a) 'Domestic Economy and Site Development', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos I: The Kommos Region and Houses of the Minoan Town. Part 2: The Minoan Hilltop and Houses.* Princeton: Princeton University Press, pp. 379–400.

——— (1996b) 'Introduction to the Kommos Site', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos I: The Kommos Region and Houses of the Minoan Town. Part 2: The Minoan Hilltop and Houses.* Princeton: Princeton University Press, pp. 1–14.

——— (2000) 'Ritual and Development in the Greek Sacntuary', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos IV: The Greek Sanctuary, Part 1.* Princeton, N. J./Oxford: Princeton University Press, pp. 669–731.

——— (2001) 'The excavation and the structure of the kiln', in Shaw, J. W., Van de Moortel, A., Day, P., and Kilikoglou, V. (eds), *A LM IA Ceramic Kiln in South-Central Crete: Function and Pottery Production.* Princeton: American School of Classical Studies at Athens, pp. 5–24.

——— (2004) 'Kommos: The Sea-Gate to Southern Crete', in Day, L. P., Mook, M. S., and Muhly, J. D. (eds), *Crete Beyond the Palaces: Proceedings of the Crete 2000*

Conference. Prehistory Monographs 10. Philadelphia: INSTAP Academic Press, pp. 43–51.

——— (2006a) *Kommos: a Minoan harbor town and Greek sanctuary in southern Crete.* Athens: American School of Classical Studies at Athens.

——— (2006b) 'The Architecture and Stratigraphy of the Civic Buildings', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos V: The monumental Minoan buildings at Kommos.* Princeton, N. J./Oxford: Princeton University Press, pp. 1–116.

——— (2015) *Elite Minoan architecture: its development at Knossos, Phaistos, and Malia.* Philadelphia, Pennsylvania: INSTAP Academic Press.

——— (2019) 'The earliest harbour installations on Aegean foreshores', *The International Journal of Nautical Archaeology,* 48(1), pp. 85–102.

Shaw, J. W. and Shaw, M. C. (1993) 'Excavations at Kommos (Crete) during 1986–1992', *Hesperia,* 62, pp. 129–190.

——— (1996) *Kommos I: The Kommos Region and Houses of the Minoan Town. Part 2: The Minoan Hilltop and Houses.* Princeton: Princeton University Press.

——— (1997) '"Mycenaean Kommos"', in Driessen, J. and Farnoux, A. (eds), *La Crète mycénienne. Actes de la Table ronde internationale organisée par l'École française d'Athènes [26-28 mars 1991].* Athènes: L'École française d'Athènes, pp. 423–434.

——— (2006) *Kommos V: The monumental Minoan buildings at Kommos.* Princeton, N. J./Oxford: Princeton University Press.

——— (2010) 'Kommos', in Cline, E. H. (edn), *The Oxford Handbook of the Bronze Age Aegean*. Oxford: Oxford University Press, pp. 543–545.

Shaw, J. W., Van de Moortel, A., Day, P., and Kilikoglou, V. (2001) *A LM IA Ceramic Kiln in South-Central Crete: Function and Pottery Production.* Princeton: American School of Classical Studies at Athens.

Shaw, J. W., Shaw, M. C., and Ruscillo, D. (2006a) 'Catalogue of Miscellaneous Finds from the Southern Area', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos V: The monumental Minoan buildings at Kommos.* Princeton, N. J./Oxford: Princeton University Press, pp. 716–844.

Shaw, J. W., Shaw, M. C., Rutter, J., and Van de Moortel, A. (2006b) 'Conclusions: The History and Functions of the Monumental Minoan Buildings at Kommos', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos V: The monumental Minoan buildings at Kommos.* Princeton, N. J./Oxford: Princeton University Press, pp. 845–878.

Shaw, J. W., Shaw, M. C., and Younger, J. G. (2012) 'The Miscellaneous Finds', in Shaw, M. C. and Shaw, J. W. (eds), *House X at Kommos: A Minoan Mansion near the Sea. Part 1: Architecture, Stratigraphy, and Selected Finds.* Philadelphia, Pennsylvania: INSTAP Academic Press, pp. 75–92.

Shaw, M. C. (1996c) 'Town Arrangements and Domestic Architecture', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos I: The Kommos Region and Houses of the Minoan Town. Part 2: The Minoan Hilltop and Houses.* Princeton: Princeton University Press, pp. 345–378.

——— (1996d) 'Terra-cotta Sculpture', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos I: The Kommos Region and Houses of the Minoan Town. Part 2: The Minoan Hilltop and Houses.* Princeton: Princeton University Press, pp. 282–302.

——— (2012a) 'Architecture, Stratigraphy, and Diachronic Use of House X', in Shaw, M. C. and Shaw, J. W. (eds), *House X at Kommos: A Minoan Mansion near the*

Sea. Part 1: Architecture, Stratigraphy, and Selected Finds. Philadelphia, Pennsylvania: INSTAP Academic Press, pp. 1–51.

——— (2012b) 'Summary and General Perspective', in Shaw, M. C. and Shaw, J. W. (eds), *House X at Kommos: A Minoan Mansion near the Sea. Part 1: Architecture, Stratigraphy, and Selected Finds.* Philadelphia, Pennsylvania: INSTAP Academic Press, pp. 117–129.

Shaw, M. C. and Nixon, L. (1996) 'The Hilltop Settlement at Kommos', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos I: The Kommos Region and Houses of the Minoan Town. Part 2: The Minoan Hilltop and Houses.* Princeton: Princeton University Press, pp. 15–138.

Shaw, M. C. and Shaw, J. W. (2012) *House X at Kommos: A Minoan Mansion near the Sea. Part 1: Architecture, Stratigraphy, and Selected Finds.* Philadelphia, Pennsylvania: INSTAP Academic Press.

Shay, J. M. and Shay, C. T. (2004) 'Environment, Land Capability, and Botanical Studies in the Western Mesara', in Watrous, L. V., Hadzi-Vallianou, D., and Blitzer, H. (eds), *The Plain of Phaistos: Cycles of Social Complexity in the Mesara Region of Crete.* Los Angeles: Cotsen Institute of Archaeology, University of California, pp. 59–110.

Shay, C. T., Shay, J. M., Frego, K. A., and Zwiazek, J. (1995) 'The Modern Flora and Plant Remains from Bronze Age Deposits at Kommos', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos I: The Kommos region and houses of the Minoan town. Part 1: The Kommos Region, Ecology and Minoan Industries.* Princeton: Princeton University Press, pp. 91–162.

Shelmerdine, C. W. (1985) *The perfume industry of Mycenaean Pylos.* Göteborg: Paul Åströms Förlag.

——— (2001) ‘Review of Aegean Prehistory VI: The Palatial Bronze Age of the Southern and Central Greek Mainland’, in Cullen, T. (edn), *Aegean prehistory: a review.* Boston: Archaeological Institute of America, pp. 329–377.

Shelmerdine, C. W. and Bennet, J. (2008) ‘Economy and administration’, in Shelmerdine, C. W. (edn) *The Cambridge Companion to the Aegean Bronze Age.* Cambridge: Cambridge University Press, pp. 144–164.

Sherratt, A. (1993) ‘What would a Bronze-Age world system look like? Relations between temperate Europe and the Mediterranean in later prehistory’, *Journal of European Archaeology Archive,* 1(2), pp. 1-58.

——— (1994) ‘Core, periphery and margin: perspectives on the Bronze Age’, in Mathers, C. and Stoddart, S. (eds), *Development and decline in the Mediterranean Bronze Age.* Sheffield: J.R. Collis, pp. 335–345.

Sherratt, A. and Sherratt, S. (1991) ‘From luxuries to commodities: the nature of Mediterranean Bronze Age trading systems’, in Gale, N. H. (edn), *Bronze Age trade in the Mediterranean: papers presented at the conference held at Rewley House, Oxford, in December 1989.* Jonsered: Paul Åströms Förlag, pp. 351–386.

——— (1998) *Small worlds: interaction and identity in the Ancient Mediterranean.* Liège, Belgique-Austin, Tx, U.S.A.: Université de Liège-University of Texas at Austin, Program in Aegean scripts and prehistory.

Sherratt, S. (2000) ‘Circulation of metals and the end of the Bronze Age in the Eastern Mediterranean’, in Pare, C. F. E. (edn), *Metals Make the World Go Round: the Supply and Circulation of Metals in Bronze Age Europe. Proceedings of a conference held at the University of Birmingham in June 1997.* Oxford: Oxbow Books, pp. 82–98.

——— (2017) ‘A globalizing Bronze and Iron Age Mediterranean’, in Hodos, T. (edn), *The Routledge Handbook of Archaeology and Globalization.* London: Routledge, pp. 602–617.

Sigaut, F. (1981) ‘Identification des techniques de conservation et de stockage des grains’, in Gast, M., Sigaut, F., and Bruneton-Governatori, A. (eds), *Les techniques de conservation des grains à long terme: leur rôle dans la dynamique des systèmes de cultures et des sociétés.* 2, Paris: Editions du CNRS, pp. 156–180.

Simpson, R. H., Betancourt, P. P., Callaghan, P. J., Harlan, D. K., Hayes, J. W., Shaw, J. W., Shaw, M. C., and Watrous, L. V. (1995) ‘The Archaeological Survey of the Kommos Area’, in Shaw, J. W. a. S., M. C. (edn), *Kommos. An Excavation on the South Coast of Crete, Volume 1: The Kommos Region, Ecology, and Minoan Industries.* Princeton: Princeton Legacy Library, pp. 325–402.

Singer, I. (2016) ‘A political history of Ugarit’, in Watson, W. and Wyatt, N. (eds), *Handbook of Ugaritic Studies.* Leiden, The Netherlands: Brill, pp. 603–733.

Smith, T. R. (1987) *Mycenaean trade and interaction in the West Central Mediterranean 1600-1000 B.C.* Oxford: BAR.

Speciale, C. (2021) *Human-Environment Dynamics In the Aeolian Islands During the Bronze Age: A Paleodemographic Model.* Oxford: BAR Publishing.

Speciale, C., D’Oronzo, C., Stellati, A., and Fiorentino, G. (2016) ‘Ubi Minor…deinde summa? Archaeobotanical data from the prehistoric village of Filo Braccio (Filicudi, Aeolian Archipelago): spatial analysis, crop production and paleoclimate reconstruction’, in Cazzella, A., Guidi, A., and Nomi, F. (eds), *Ubi minor... Le isole minori del Mediterraneo centrale dal Neolitico ai primi contatti coloniali. Convegno di Studi in ricordo di Giorgio Buchner, a 100 anni dalla nascita (1914-2014)*. 22, Roma: Scienze dell’antichità, pp. 281–296.

Steele, P. M. (2017) ‘Writing «systems»: Literacy and the transmission of writing in nonadministrative contexts’, in Jasink, A. M., Weingarten, J. and Ferrara, S. (eds) *Nonscribal Communication Media in the Bronze Age Aegean and Surrounding Areas: The semantics of a-literate and proto-literate media (seals, potmarks, mason’s marks, sealimpressed pottery, ideograms and logograms, and related systems).* Florence: Firenze University Press, pp. 153–172.

Stein, G. (2008) ‘A Theoretical Model for Political Economy and Social Identity in the Old Assyrian Colonies of Anatolia’, *TÜBA-AR,* 11, pp. 25–40.

Stockhammer, P. W. (2007) *Kontinuität Und Wandel Die Keramik Der Nachpalastzeit Aus Der Unterstadt Von Tiryns.* PhD thesis. University of Heidelberg.

——— (2011) ‘Conceptualizing Cultural Hybridization in Archaeology’, in Stockhammer, P. W. (edn), *Conceptualizing Cultural Hybridization: A Transdisciplinary Approach.* Berlin/Heidelberg: Springer, pp. 43–58.

——— (2013) ‘From Hybridity to Entanglement, From Essentialism to Practice’, *Archaeological Review from Cambridge,* 28, pp. 11–28.

Strange, J. (1980) *Caphtor/Keftiu: A New Investigation.* Leiden: Brill.

Swiny, S. (1980) ‘Bronze Age gaming stones from Cyprus’, *Report of the Department of Antiquities Cyprus*, pp. 54–78.

Tanasi, D. (2005) ‘Mycenaean pottery imports and local imitations: Sicily vs Southern Italy’, in Laffineur, R. and Greco, E. (eds), *Emporia: Aegeans in the central and eastern Mediterranean. Proceedings of the 10th international Aegean conference = 10e rencontre égéenne internationale, Athens, Italian school of archaeology, 14-18 April 2004.* Volume II, Liège: Université de Liège, pp. 561–569.

——— (2009) ‘Sicily at the end of the Bronze Age: ‘catching the echo'’, in Bachhuber, C., Roberts, R. G., and British Association for Near Eastern Archaeology. (eds),

Forces of transformation: the end of the Bronze Age in the Mediterranean. Proceedings of an international symposium held at St. John's College, University of Oxford, 25-6th March, 2006. Oxford/Oakville, CT: British Association for Near Eastern Archaeology, pp. 51–58.

Tartaron, T. F. (2008) 'Aegean Prehistory as World Archaeology: Recent Trends in the Archaeology of Bronze Age Greece', *Journal of Archaeological Research,* 16, pp. 83–161.

——— (2013) *Maritime networks in the Mycenaean world.* New York, NY: Cambridge University Press.

Taylour, W. (1958) *Mycenean pottery in Italy, and adjacent areas.* Cambridge Cambridge University Press.

——— (1980) 'Appendice III. Aegean sherds found at Lipari', in Bernabò Brea, L. and Cavalier, M. (eds), *Meligunìs Lipára. Vol. IV L'acropoli di Lipari nella Preistoria.* Palermo: S. F. Flaccovio, Editore, pp. 792–817.

Tomlinson, J. E. (1999) *Globalization and culture.* Cambridge: Polity Press.

Tomlinson, J. E., Rutter, J. B., and Hoffmann, S. M. A. (2010) 'Mycenaean and Cypriot Late Bronze Age ceramic imports to Kommos: An Investigation by Neutron Activation Analysis', *Hesperia: The Journal of the American School of Classical Studies at Athens,* 79(2), pp. 191–231.

Toth, J. A. (2002) 'Composite stone anchors in the ancient Mediterranean', *Acta Archaeologica Academiae Scientiarum Hungaricae,* 53, pp. 85–118.

Tournavitou, I. (1992) 'Practical use and social function: a neglected aspect of Mycenaean pottery', *The Annual of the British School at Athens*, 87, pp. 181–210.

Tsougarakis, D. and Angelomatis-Tsougarakis, H. (2004) 'A province under Byzantine, Venitian, and Ottoman rule', in Watrous, L. V., Hadzi-Vallianou, D., and Blitzer,

H. (eds), *The Plain of Phaistos: Cycles of Social Complexity in the Mesara Region of Crete.* Los Angeles: Cotsen Institute of Archaeology, University of California, pp. 359–439.

Tsountas, C. (1899) 'Kykladika II', *Archaiologikē Ephēmeris*, 17, pp. 73–134.

Tunzi Sisto, A. M. and Lo Zupone, M. (2008) 'Il santuario dell'età del Bronzo di Trinitapoli', in Gravina, A. (edn), *Atti del 28° Convegno Nazionale sulla Preistoria-Protostoria-Storia della Daunia. San Severo 25–26 novembre 2007.* San Severo: Archeoclub d'Italia, pp. 187–210.

Tunzi, A. M., Lo Zupone, M., Gasperi, N. and Bubba, D. (2012) 'Area produttiva e insediamento di facies Palma Campania a Posta Rivolta (Foggia), in Gravina, A. (edn), *Atti del 32° Convegno Nazionale sulla Preistoria-Protostoria- Storia della Daunia. San Severo 12–13 november 2011.* San Severo: Archeoclub d'Italia, pp. 127–154.

Tykot, R. H. (2011) 'Obsidian Finds on the Fringes of the Central Mediterranean: Exotic or Eccentric Exchange?', in Vianello, A. (edn), *Exotica in the prehistoric Mediterranean.* Oakville, CT: Oxbow Books, pp. 33–44.

——— (2019) 'Geological Sources of Obsidian on Lipari and Artifact Production and Distribution in the Neolithic and Bronze Age Central Mediterranean', *Open Archaeology,* 5, pp. 83–105.

Tykot, R. H., Iovino, M. R., Martinelli, M. C., and Beyer, L. (2006) 'Ossidiana da Lipari: le fonti, la distribuzione, la tipologia e le tracce d'usura', *Atti della XXXIX Riunione Scientifica. Materie Prime e scambi nella preistoria Italiana nel cinquantenario della fondazione dell'Istituto Italiano di Preistoria e Protostoria.* I, Firenze: Istituto Italiano di Preistoria e Protostoria, pp. 592–597.

Tyree, L. ‘Diachronic Changes in Minoan Cave Cult’, in Laffineur, R. and Hägg, R. (eds), *Potnia: deities and religion in the Aegean Bronze Age: proceedings of the 8th International Aegean Conference/8e Rencontre égéenne internationale, Göteborg, Göteborg University, 12-15 April 2000.* Bruxelles: Austin: Université de Liège, Histoire de l'art et archéologie de la Grèce antique/University of Texas at Austin, Program in Aegean Scripts and Prehistory, pp. 39–50.

Ugas, G. (2016) *Shardana e Sardegna: i popoli del mare, gli alleati del Nordafrica e la fine dei grandi regni (15.-12. secolo a.C.).* Cagliari: Edizioni della Torre.

Usai, A. (2021) ‘The Nuragic Adventure: Monuments, Settlements and Landscapes’, in Stoddart, S., Aines, E. D., and Malone, C. (eds), *Gardening time: Monuments and landscape from Sardinia, Scotland and Central Europe in the very long Iron Age.* Cambridge: McDonald Institute for Archaeological Research, pp. 151–158.

Vagnetti, L. (1982) *Magna Grecia e mondo miceneo: nuovi documenti. XXII Convegno di studi sulla Magna Grecia, Taranto, 7-11 ottobre 1982.* Taranto: Istituto per la storia e l'archeologia della Magna Grecia.

——— (1983) ‘I Micenei in Occidente. Dati acquisiti e prospettive future’, *Modes de Contacts et Processus de Transformation dans les Sociétés Anciennes. Actes du colloque de Cortone (24-30 mai 1981).* Rome: École Française de Rome, pp. 165–185.

——— (1993) ‘Mycenaean pottery in Italy: fifty years of studies’, in Zerner, C., Zerner, P., Winder, J., and American School of Classical Studies at Athens. (eds), *Wace and Blegen: pottery as evidence for trade in the Aegean Bronze age, 1939-1989. Proceedings of the international conference held at the American School of Classical Studies at Athens, December 2-3, 1989.* Amsterdam: J.C. Gieben, pp. 143–154.

Van de Moortel, A. (2001) 'The area around the kiln, and the pottery from the kiln and the kiln dump', in Shaw, J. W., Van de Moortel, A., Day, P., and Kilikoglou, V. (eds), *A LM IA Ceramic Kiln in South-Central Crete: Function and Pottery Production.* Princeton: American School of Classical Studies at Athens, pp. 25–110.

van Dommelen, P. (2012) 'Colonialism and Migration in the Ancient Mediterranean', *Annual Review of Anthropology,* 41(1), pp. 393-409.

Van Dommelen, P. and Rowlands, M. J. (2012) 'Material concerns and colonial encounters', in Maran, J. and Stockhammer, P. (eds), *Materiality and social practice: transformative capacities of intercultural encounters.* Oxford: Oxbow, pp. 20–31.

van Wijngaarden, G. J. (2002) *Use and appreciation of Mycenaean pottery in the Levant, Cyprus and Italy (1600-1200 BC).* Amsterdam: Amsterdam University Press.

Vandkilde, H. (2016) 'Bronzization: The Bronze Age as Pre-Modern Globalization', 91(1), pp. 103–123.

VanValkenburgh, P. (2013) 'Hybridity, Creolization, Mestizaje: A Comment', *Archaeological Review from Cambridge,* 28, pp. 301–322.

Venturo, D. (2010) 'Ambiente ed insediamento dell'età del Bronzo nell'alta Murgia', in Todisco, L. (edn), *La Puglia Centrale dall'Età del Bronzo all'Alto Medioevo, Archeologia e Storia, Atti del Convegno di Studi, Bari 15-16 giugno 2009*. Roma: Giorgio Bretschneider Editore, p. 49–55.

Versluys, M. J. (2017) 'The global Mediterranean: A material–cultural perspective.', in Hodos, T. (edn), *The Routledge Handbook of Archaeology and Globalization.* London: Routledge, pp. 597–601.

Vianello, A. (2005) *Late Bronze Age Mycenaean and Italic products in the West Mediterranean: a social and economic analysis.* Oxford: Archaeopress.

——— (2008a) 'Late Bronze Age Aegean Trade Routes in the Western Mediterranean', in Whittaker, H. (edn), *The Aegean Bronze Age in relation to the Wider European Context. Papers from a session at the Eleventh Annual Meeting of the European Association of Archaeologists, Cork, 5–11 September 2005.* Oxford: BAR Publishing, pp. 7-34.

——— (2008b) 'The ship and its symbolism in the European Bronze Age', in Coimbra, F. and Dimitriadis, G. (eds), *Cognitive Archaeology as Symbolic Archaeology.* Oxford: Archaeopress, pp. 27–34.

——— (2009) 'Late Bronze Age exchange networks in the West Mediterranean', in Bachhuber, C., Roberts, R. G., and British Association for Near Eastern Archaeology (eds), *Forces of transformation: the end of the Bronze Age in the Mediterranean. Proceedings of an international symposium held at St. John's College, University of Oxford, 25-6th March, 2006.* Oxford/Oakville, CT: British Association for Near Eastern Archaeology—David Brown Bk. Co., pp. 44–50.

Voskos, I. and Knapp, A. B. (2008) 'Cyprus at the End of the Late Bronze Age: Crisis and Colonization or Continuity and Hybridization?', *American Journal of Archaeology,* 112, pp. 659-684.

Wallerstein, I. M. (1974) *The modern world-system: Capitalist Agriculture and the Origins of the European World-Economy in the 16th Century.* New York/London: Academic Press.

Wardle, N. M. H. (2004) *Centre and Periphery: the Impact of Mycenaean Civilization on its Neighbours.* Unpublished PhD Thesis. University of Bristol.

Warren, P. M. (1987) ‘The genesis of the Minoan Palace’, in Hägg, R., Marinatos, N., and Svenska institutet i Athen. (eds), *The Function of the Minoan palaces: proceedings of the Fourth International Symposium at the Swedish Institute in Athens, 10-16 June, 1984.* Stockholm: Svenska institutet i Athen, pp. 47–56.

——— (1988) *Minoan religion as ritual action.* Göteborg: Gothenburg University.

——— (1991) ‘A merchant class in Bronze Age Crete?’, in Gale, N. H. (edn), *Bronze Age trade in the Mediterranean: papers presented at the conference held at Rewley House, Oxford, in December 1989.* Jonsered: Paul Åströms Förlag, pp. 295–301.

——— (2018) ‘More Birds at Late Minoan Knossos’, in Bettelli, M., Del Freo, M. and van Winjngaarden, G. J. (edn), *MEDITERRANEA ITINERA: Studies in Honour of Lucia Vagnetti* Roma: CNR—Istituto di Studi sul Mediterraneo Antico, pp. 223–232.

Watrous, L. V. (1992) *Kommos III: The Late Bronze Age Pottery.* III,Princeton: Princeton University Press.

——— (1997) ‘Response and Discussion to P. M. Warren’, in Hallager, E. and Hallager, B. P. (eds), *Late Minoan III pottery: chronology and terminology : acts of a meeting held at the Danish Institute at Athens, August 12-14, 1994.* Athens: The Institute, pp. 185–192.

——— (2007) ‘Harbors as Agents of Social Change in Ancient Crete’, in Betancourt, P. P., Nelson, M. C., and Williams, H. (eds), *Krinoi kai limenes. Studies in honor of Joseph and Maria Shaw.* Philadelphia, Pa.: INSTAP Academic Press, pp. 101–106.

Watrous, L. V. and Blitzer, H. (1997) ‘Central Crete in Late MInoan II–IIIB1: The archaeological background of the Knossos tablets.’, in Driessen, J. and Farnoux,

A. (eds), *La Crète mycénienne. Actes de la Table ronde internationale organisée par l'École française d'Athènes [26-28 mars 1991].* Athènes: L'École française d'Athènes, pp. 511–516.

Watrous, L. V. and Hadzi-Vallianou, D. (2004) 'Palatial rule and collapse (Middle Minoan IB–Late Minoan IIIB)', in Watrous, L. V., Hadzi-Vallianou, D., and Blitzer, H. (eds), *The Plain of Phaistos: Cycles of Social Complexity in the Mesara Region of Crete.* Los Angeles: Cotsen Institute of Archaeology, University of California, pp. 277–304.

Watrous, L. V., Hadzi-Vallianou, D., Pope, K., Mourtzas, N., Shay, J. M., Shay, C. T., Bennet, J., Tsoungarakis, D., Angelomati-Tsoungarakis, E., Vallianos, C., and Blitzer, H. (1993) 'A survey of the Western Mesara Plain in Crete: preliminary report of the 1984, 1986, and 1987 field seasons', *Hesperia,* 62, pp. 191–248.

Watrous, L. V., Hadzi-Vallianou, D., and Blitzer, H. (2004) *The Plain of Phaistos: Cycles of Social Complexity in the Mesara Region of Crete.* Los Angeles: Cotsen Institute of Archaeology, University of California.

Wengrow, D. (2011) ''Archival' and 'Sacrificial' Economies in Bronze Age Eurasia: an Interactionist Approach to the Hoarding of Metals', in Wilkinson, T. C., Sherratt, S., and Bennet, J. (eds), *Interweaving Worlds: Systemic Interactions in Eurasia, 7th to 1st Millennia BC.* Oxford: Oxbow Books, pp. 135–144.

White, D. (2002) *Marsa Matruh I, The excavation : the University of Pennsylvania Museum of Archaeology and Antrhopology's excavations on Bate's Island, Marsa Matruh, Egypt 1985-1989.* Philadelphia: INSTAP Academic Press.

——— (2003) 'Multum in Parvo: Bates's Island on the NW Coast of Egypt', in Stampolidis, N. C. (edn), *Ploes/sea routes: interconnections in the Mediterranean, 16th-6th c. BC: proceedings of the international symposium held*

at Rethymnon, Crete, September 29th-October 2nd, 2002. Athens: A.G. Leventis Foundation, pp. 71–82.

Whitelaw, T. (2001a) 'Reading between the Tablets: assessing Mycenaean Palatial Involvement in Ceramic Production and Consumption', in Voutsaki, S. and Killen, J. T. (eds) *Economy and Politics in the Mycenaean Palace States. Proceedings of a Conference held on 1–3July 1999 in the Faculty of Classics, Cambridge*. Cambridge: Cambridge Philological Society, pp. 51–79.

——— (2001b) 'From Sites to Communities: Defining the Human Dimensions of Minoan Urbanism', in Branigan, K. (edn), *Urbanism in the Aegean Bronze Age.* London: Sheffield Academic Press, pp. 15–37.

——— (2017) 'The Development and Character of Urban Communities in Prehistoric Crete in their Regional Context–A Preliminary Study', in Letesson, Q. and Knappett, C. (eds), *Minoan Architecture and Urbanism. New perspectives on an ancient built environment.* Oxford: Oxford University Press, pp. 114–180.

——— (2018) 'Recognising polities in prehistoric Crete', in Relaki, M. and Papadatos, Y. (eds), *From the Foundations to the Legacy of Minoan Archaeology. Studies in honour of Professor Keith Branigan.* Oxford: Oxbow Books, pp. 210–255.

Whittaker, H. (1996) 'Stone Slabs with Depressions', in Shaw, J. W. and Shaw, M. C. (eds), *Kommos I: The Kommos Region and Houses of the Minoan Town. Part 2: The Minoan Hilltop and Houses.* Princeton: Princeton University Press, pp. 321–323.

Wiener, M. (1984) 'Crete and the Cyclades in LM I: The Tale of the Conical Cups', in Hägg, R. and Marinatos, N. (eds), *The Minoan Thalassocracy: Myth and Reality. Proceedings of the Third International Symposium at the Swedish Institute in Athens, 31 May–5 June, 1982.* Stockholm: Paul Åströms Förlag, pp. 17–26.

——— (1987) ‘Trade and Rule in Palatial Crete’, in Hägg, R., Marinatos, N., and Svenska institutet i Athen. (eds), *The Function of the Minoan palaces : proceedings of the Fourth International Symposium at the Swedish Institute in Athens, 10-16 June, 1984.* Stockholm: Svenska institutet i Athen, pp. 261–266.

Wilk, R. R. and Netting, R. M. (1984) ‘Households: Changing Forms and Functions.’, in McC. Netting, R., Wilk, R. R., and Arnould, E. J. (eds), *Households: Comparative and Historical Studies of the Domestic Group.* Berkeley: University of California Press, pp. 1–28.

Wilkens, B. (1998) ‘Le risorse animali’, in Cinquepalmi, A. and Radina, F. (eds), *Documenti dell’età del Bronzo: Ricerche lungo il versante adriatico pugliese.* Fasano di Brindisi: Schena Editore, pp. 223–247.

Williams, J. L. and Levi, S. T. (2008) ‘The Ausonian Pottery of Lipari (Aeolian Island, Sicily)-a Typological and Petrological Assessment’, *Proceedings of the Prehistoric Society,* 74, pp. 141–170.

Winthrop, R. H. (1991) *Dictionary of Concepts in Cultural Anthropology.* Greenwood Press.

Wiseman, R. (2018) ‘Random accumulation and breaking: The formation of Bronze Age scrap hoards in England and Wales’, *Journal of Archaeological Science,* 90, pp. 39–49.

Wolf, E. R. (1997) *Europe and the people without history.* London: University of California Press.

Wright, J. C. (1987) ‘Death and power at Mycenae: changing symbols in mortuary practice.’, in Laffineur, R. (edn), *Thanatos: les coutumes funéraires en Egée à l'age du bronze: actes colloque de Liège, 21-23 avril 1986.* Liège: Liège:

Université de l'Etat, Histoire de l'art et archéologie de la Grèce antique, pp. 171–184.

——— (2004) ‘A Survey of Evidence for Feasting in Mycenaean Society’, in Wright, J. C. (edn), *The Mycenaean feast.* Princeton, NJ: American School of Classical Studies at Athens, pp. 13–58.

——— (2008) ‘Early Mycenaean Greece’, in Shelmerdine, C. W. (edn) *The Cambridge Companion to the Aegean Bronze Age*. Cambridge: Cambridge University Press, pp. 230–257.

Wright, J. C. and McEnroe, J. (1996) ‘The Central Hillside at Kommos’, in Shaw, J. W. and Shaw, M. C. (eds), *Kommos I: The Kommos Region and Houses of the Minoan Town. Part 2: The Minoan Hilltop and Houses.* Princeton: Princeton University Press, pp. 139–242.

Yntema, D. G. (1985) *The matt-painted pottery of southern Italy: a general survey of the matt-painted pottery styles of southern Italy during the final Bronze Age and the Iron Age.* Utrecht: Drukkerij Elinkwijk.

Younger, J. G. (1984) ‘Aegean seals of the Late Bronze Age: masters and workshops. III. The first generation Mycenaean masters’, *Kadmos,* 23, pp. 38–64.

——— (1987) ‘Aegean seals of the Late Bronze Age: stylistic groups. VI. Fourteenth-century mainland and later fourteenth-century Cretan Workshops’, *Kadmos,* 26 (1), pp. 44–73.

——— (2000) ‘The Spectatcle-Eyes Group: An Assessment of Its Iconography, Techniques, and Style’, in Müller, W. (edn), *Minoisch-mykenishe glyptik: Stil, Ikonographie, Funktion. V. Internationales Siegel-Symposium, Marburg, 23–25 September 1999.* Berlin: Mann, pp. 347–360.

——— (2010) ‘Mycenaean Seals and Sealings’, in Cline, E. H. (edn), *The Oxford Handbook of the Bronze Age Aegean.* Oxford: Oxford University Press, pp. 330–340.

Zorea, C. R. (2021) *Sea peoples in Canaan, Cyprus and Iberia (12th to 10th centuries BC).* PhD thesis. Universidad Complutense de Madrid.