

valuable addition to studies of early trade in the Mediterranean.

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**Emily S.K. Anderson. *Seals, craft and community in Bronze Age Crete*. pp. xv+324, b/w illustrations. 2016. New York: Cambridge University Press. ISBN 978–1–107–13119–4 hardback. \$70.**

After a list of illustrations (191 b/w), acknowledgements, and an introduction, five chapters and a lengthy appendix constitute the core of the book. There then follow references

(bibliography), (end)notes, and an index.\* The book's introduction and five chapters mostly present anthropological theories and constructions of Cretan society in the late PrePalatial period (ca. 2300–1900 BCE) seen through the lenses of other, presumably similar societies, cultures, and ethnologies as studied by a variety of quoted scholars. The chapter titles give an indication of themes, sometimes promising archaeological data (e.g., 'Identity and Relation through Early Cretan Glyptic' [ch. 2], 'In the Hands of the Craftsperson: Innovation and Repetition across Cretan Communities' [ch. 4]), sometimes teasing the reader with poetic playfulness (e.g., 'Rethinking Prepalatial Crete: Social Innovation on an Island of Persistence' [ch. 1], 'Distance and Nearness: Fundamental Changes to the Dynamics of Seal Use in Late Prepalatial Crete' [ch. 3]).

The book has been out almost three years now, but there has been only one review (that this reviewer knows of), by Borja Legarra Herrero,<sup>1</sup> who concentrates on Anderson's more theoretical treatments of early Cretan society and leaves the glyptic material to specialists. Anderson's Introduction basically presents the entire book's foci, which are often repeated separately in the individual chapters. I give here a summary of her three main points: 1) what was the particular nature of power in Prepalatial Crete? 2) 'Indeed, in a rush to identify marked points of social transformation, not only have we likely failed to recognize the impressive perpetuation of Prepalatial lifeways, but we have also potentially contorted data in a desire to see alteration' (p. 2). And 3) 'I develop an alternative approach to late Prepalatial social dynamics that rethinks the underlying nature of change in this period, seeking its impetus within quietly performed and often neglected practices of sociocultural innovation. (...) (F)undamental developments did take form in people's interactive experience, but they came about by means of ongoing, rhythmic creative processes in daily life' (p. 3). This all seems sensible, although the language Anderson uses marks the difference between her theoretical, comparative anthropological approach and the one that this reviewer favors, a language focused on a single culture and artifacts, namely Minoan seals that drive the discussion.

\* Abbreviations for journals and for standard reference works are those followed by the *American Journal of Archaeology*: <https://www.ajaonline.org/submissions/standard-reference> (accessed 8 June 2019), and for ancient authors by the *Oxford Classical Dictionary*: <https://oxfordre.com/classics/page/abbreviation-list/> (accessed 8 June 2019).

<sup>1</sup> Legarra Herrero 2017.

So I pass on to the archaeological evidence presented in the appendix (171–287), leaving the theoretical assessments of early Minoan culture to others. Of the book's more than 320 pages, the appendix occupies a third. Its 117 pages presents discussions of 57 examples of Paul Yule's Parading Lions/Spiral (PL-S) Complex<sup>2</sup> – two pages per seal.

I accepted Anderson's book to review for *JGA* because Yule's Pre- and ProtoPalatial groups of seals have not received much assessment in the 30 years since they first appeared – not that his groups need any revision: they certainly have stood the test of time and are still valid, both stylistically and chronologically. But I was hoping for a modern interpretation of the importance of his PL/S group. Anderson uses the PL/S group to promote a social interpretation of the late PrePalatial period, but it does not seem enlightening to me. She lays great stress on the group's material (almost exclusively hippopotamus ivory), its primary iconography (lions), and the group's few impressions on clay. I think she does all three categories slight justice. Yule's PL/S group originally consisted of 60 seals,<sup>3</sup> almost all of which are cylinders in shape with the carving, not, as in Near Eastern cylinders, around the barrel of the cylinder, but on the two ends (faces); they are therefore bifacial stamp seals, with the larger face almost always carrying the primary motif (often lions, but also often other animals and spiriliform patterns) and the smaller face carrying subordinate curvilinear patterns. Anderson's appendix adds more examples discovered since Yule's day, but selects only seals with lions (and one or two examples with other animals, including men), neglecting those seals whose primary face carries spiriliform patterns. I think this culling does a disservice to the PL/S group, subordinating its significance only to its lion iconography, which the author many times refers to as the 'first iconographical tradition of any kind on the island' (7, and *passim*), as if the earlier lines and hatching on EM I-II seals are beneath consideration.

Anderson assumes that the purpose of these stamp-cylinders was to impress clay sealings. She does not characterize the functions of the impressions she lists, but vaguely talks of the seal owners 'stamping impressions on objects (...) as an act of

social incorporation' (131). I think one can be more specific. Anderson cites seven PL/S seals impressing clay objects: an impression on a clay weight (*CMS* II 6.190), three impressed jar handles (*CMS* II 6.191, 223, 225), an impressed jar stopper (*CMS* II 8.6), three object sealings (pressed against boxes?) that were impressed by two different stamps (*CMS* II 8.32, *CMS* VS 3.324). Only the object sealings could imply an administrative function; the impressed jar stopper probably expressed an internal domestic use; the impressed jar handles and weight are probably 'pot marks.'

There is thus still no solid evidence in the Cretan PrePalatial period that seals stamped sealings that were retained by a central administration as receipts for commodities (taxes) rendered (the so-called 'Near Eastern sealing system'). That was the case on the Greek mainland in the slightly earlier EH II period where we have an impressive series of 'Corridor Houses' that taxed outlying districts, received their goods in boxes tied in twine and sealed with clay impressed by bifacial cylinder stamps (like those of the PL/S group); the sealings were ripped off the boxes, their contents (textiles?) were then used (exported?), and the sealings were retained as receipts. Even though Anderson cites M. Heath Wiencke's meticulous studies of the Lerna sealings,<sup>4</sup> and Weingarten's series of interpretative essays on the later, ProtoPalatial development of the 'Near Eastern' sealing system in Crete, she seems to assume that such a system was, however, in use in EM Crete – it was not.<sup>5</sup>

So what was the function of PL/S seals? Anderson does not mention the two unique characteristics of the PL/S stamp cylinders: their two engraved faces and their so-called 'Δ' stringholes. By excising from consideration the spiriliform patterns on the smaller faces of the stamp cylinders she elides their probable functional and semantic meaning in apposition to the larger faces. The Mainland EH II bureaucrats used similar stamp cylinders with two engraved faces, the smaller ones sometimes to 'confirm' or augment the stamped impressions of the larger faces. If the PL/S bifacial stamp cylinders were used similarly, in a domestic situation that would have left little trace in the archaeological record, then people could have used their stamps to secure primary deposits of domestic goods while secondary re-openings could have utilized secondary impressions made by the smaller ends of these seals.<sup>6</sup>

<sup>2</sup> Yule 1977: the stamp-cylinder shapes, pp. 89–90, the stylistic group pp. 208–209.

<sup>3</sup> To Yule's original list Anderson adds 26 additional seals and from it omits 30. The seals she adds all have lions on them; the seals she omits have mostly spiriliform patterns on the primary face and almost no lions. Since several of the seals she adds were known to Yule though he did not include them in his group, she should have explained why she adds them to his group but he did not.

<sup>4</sup> Heath 1958; Heath Wiencke 1969a and 1969b; and Weingarten 1986, 1990, 1992, 2018.

<sup>5</sup> Weingarten 2018: 331.

<sup>6</sup> See Hallaq 1994.

About the  $\Delta$  stringholes: since the stringhole cannot go lengthwise through the cylinder without marring the designs engraved on the faces, there are instead three holes in the barrel of the cylinder, two oblique drill holes that flank and meet a third in the centre (for a drawing, see the PL/S hemisphere, CMS VI 6, based on a drawing and discussion by Yule).<sup>7</sup> Yule and later scholars have interpreted these  $\Delta$  stringholes as implying that the stamp cylinder hung like a pendant, dangling horizontally from a cord or thong around the owner's neck. Such a wear practice would place emphasis on the seal's shape, its horizontal position at the neck, and material; one would have to get very close to see the iconography engraved on the ends. Worn this way, the wearer might find it slightly cumbersome to use the PL/S seal frequently to stamp clay objects. In other words, the  $\Delta$  stringholes imply an infrequent and non-administrative use for these seals.

So, if stamping clay objects was not the primary function of PL/S seals, what was their function? Every culture in the eastern Mediterranean had its own special seal shapes, sometimes materials too, and iconography.<sup>8</sup> One could tell from a distance the ethnicity and class of a person by the shape and material of their seals and, coming nearer, one could detect their political status within the regional polity by their seals' iconography. In other words, PL/S stamps in their limited cylindrical shapes and limited material (hippopotamus ivory) were primarily ethnic identity markers, with two faces denoting primary and secondary (confirmation) uses. Anderson states several times that PL/S seals 'have been discovered at sites across the island' (7, and *passim*). This is not true, and even her distribution map (fig. 3.5) shows a concentration of PL/S seals from Haghia Triada to Pyrgos, with only outliers from farther west and east. PL/S seals are therefore ethnic identity markers primarily of the inhabitants of central Crete.

Anderson also makes a connection between the exotic lion iconography and the exotic hippopotamus ivory material. It is true that lions never inhabited Crete, but they did inhabit the Greek and Balkan mainland,<sup>9</sup> which should mean that even Minoans knew of them (as Legarra Herrero points out)<sup>10</sup> and would not have mistaken the very large hippo tusks and incisors for the much shorter lion teeth (*pace* Anderson).<sup>11</sup> As for the hippo ivory: it is conventional

among glyptic scholars to assume that extant seals represent approximately 5% of the original output.<sup>12</sup> Thus the 57 hippo PL/S seals that Anderson cites may be all that is left of an original 1140 stamp cylinders (57/0.05). If all these were more or less the same size, roughly H. 2 x D. 2 cm., the total amount of hippo ivory needed for these 1140 seals would have been 7,163 cm<sup>3</sup>,<sup>13</sup> and if a single hippo tusk (canine) and incisor is roughly 40+ cm in length and roughly conoid in shape<sup>14</sup> with a base of about 8 cm in diameter, it would have had a volume of ca. 670 cm<sup>3</sup>.<sup>15</sup> If the original PL/S group consisted of 1140 seals, these would have represented<sup>16</sup> ca. 11 hippo canines and incisors, or (with four canines and four incisors per hippo) no more than two animals. I thus imagine a single shipment sometime in the late PrePalatial period of a few hippo tusks. Compare the hippo dentines from the Ulu Burun wreck: six canines and seven incisors, representing roughly two animals. Anderson does not cite the impressive MA thesis by K. Lafrenz<sup>17</sup> that describes and analyses the Ulu Burun dentines. Although Lafrenz could not make a determination of a specific provenance, she does derive them from Egypt, Palestine, or Syria, via the customary cabotage shipping of port-to-port cargo-gathering<sup>18</sup> in a counter clock-wise fashion that travelled north from Egypt, stopping at nightfall along the Levantine coast, and west along the southern Turkish coast into the southern Aegean. Had the Ulu Burun ship reached a Cretan destination, its hippo dentine cargo could have made its way inland across central Crete from the north, as similar cargoes did in Roman times when 'Gnossois' was the main entry harbour and Gortyn, in the middle of the Mesara, was the capital of the province, Crete and Cyrene.<sup>19</sup>

correlation made between the fantastic foreign creatures whose forms were carefully incised on the seals and equally fantastic fangs that provided the surface for those incisions (...). Hippo canines are 50+ cm in length (Lefrenz 2004); lion canines are up to 10 cm and human canines are about 1.5 cm (Cowen 2019). If seal engravers really thought a 50 cm hippo canine belonged to a lion, they would not have engraved them together with people at a proper scale on seals CMS III, nos. 222 and 300; and II6, no. 149.

<sup>12</sup> Younger 2018: 339, based on Betts and Younger 1982: 116–117.

<sup>13</sup> Volume of a cylinder:  $\pi r^2 h = 3.1416 \times 1^2 \times 2 \times 1140 = 7163 \text{ cm}^3$ .

<sup>14</sup> See <https://en.wikipedia.org/wiki/Hippopotamus>, photo of a tusk from Naqada tomb 1419.

<sup>15</sup> Volume of a cone:  $\pi r^2 \times h/3 = 3.1416 \times 4^2 \times 40/3 = 670.208 \text{ cm}^3$ .

<sup>16</sup> 7163 cm<sup>3</sup> total amount of hippo dentine needed for the PL/S group divided by 670 cm<sup>3</sup> per hippo canine = 10.69 hippo tusks/canines.

<sup>17</sup> Lafrenz 2004.

<sup>18</sup> Herodotos 1.1 describes such a cabotage boat arriving at the port of Argos from Phoenicia and spreading its trinkets on a cloth to attract barterers.

<sup>19</sup> Sanders 1982; Younger 1969. Due to wind and sea currents, travel along the north coast of Crete went west to east; and along the south coast, east to west. Consequently a short-cut across the middle of the island would have been preferable to a dangerous sea voyage around the east end and south coast of the island – as St Paul found out.

<sup>7</sup> Yule 1977: 61.

<sup>8</sup> Younger 2018: 341.

<sup>9</sup> Thomas 2014.

<sup>10</sup> Legarra Herrero 2017: 2.

<sup>11</sup> Anderson, 94: 'While the lion as a factual being 'in the flesh' was also unknown to Cretans, we might assume that there was a

Finally, I'm not sure why Anderson divides her PL/S seals into the 10 subgroups discussed at length in the appendix. She implies that they might represent different creators of the PL/S seals or 'different subtraditions' (178). But since Anderson places several seals in two different subgroups, one face in one subgroup and the other in another,<sup>20</sup> is she implying two different engravers worked on one seal? I feel uncomfortable with such precision: the material of the seals is organic and veined (full of dentine tubules); the number of seals discussed is small, made within a very limited period of time in a rather small region. And I feel even more uncomfortable since I am not sure Anderson has examined the PL/S seals by autopsy, by actually holding them in her hands.<sup>21</sup>

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<sup>20</sup> E.g., CMS III 1, no. 336, face a with lions in her group 8 ('Elongated Heavy-headed') and face b with a star and leaves in her group 4 ('Single Lions').

<sup>21</sup> Anderson mentions that she has studied the silicon casts of the seals kept in the CMS archives, now at Heidelberg (p. xiii). These casts were made in the 1960s (I have a complete set of photos of them, that I took in the 1970s); many of the dentine seals from the Mesara were consolidated with wax and glue in the 20th century (I have handled many of the cylinders, especially those from Platanos and Lebena). And though Anderson thanks the staff of the Herakleion Museum for their 'kind assistance' and the director of the museum, Stella Mandalaki, for 'providing crucial material' (p. xiv), Anderson nowhere specifically says that she actually has handled the seals she is writing about.

**A. Bernard Knapp. *Seafaring and seafarers in the Bronze Age Eastern Mediterranean*. pp. 296. 52 colour b/w plates, 5 maps, 5 tables. 2018. Leiden: Sidestone Press. ISBN 97–90–8890–554–4 paperback. €34.95.**

This well-priced short paperback (176 pages of text) has full references, an index, well-chosen and striking illustrations (the cover showing a Balearic scene) and several useful tables listing Ugaritic, Egyptian, Akkadian and Hittite text references of significance to the topic, as well as 5 maps, on which the lettering is somewhat too small for easy use. It will serve an informed public or student audience well as an expert guide to the known facts about how shipping and trade operated in the Bronze Age east Mediterranean, especially the Late Bronze Age (64 pages against 15 on the Early BA and 22 on the Middle BA). The presentation aims at straightforwardness (e.g. bullet-pointing themes at the start of chapters), and addresses texts and material culture in a balanced way. Having spent much of his career interpreting the evidence for trade and interaction in the region during the LBA, Knapp is well-qualified to sift data to illustrate his theme. Like much of his academically-targeted work, this is essentially a working-over of secondary material retrieved within others' research projects. Knapp does not feel a need here to put forward specific new arguments to make an analytical contribution, move interpretation forward, or drive new research. He chooses to focus exclusively on presenting the evidence for the mechanics and operation of shipping, including the personnel involved (the latter mainly in a functional sense). This is a subject more restricted than his usual reach and one which he rather mystifyingly states in the preface to be peripheral to his interests, though the statement 'There are several scholars better trained and equipped than I am to write a book such as this.' (p. 11) would contradict this. The lack of personally-generated new data or new arguments may explain why there is considerable repetition of data between the broadly chronological main chapters (Early, Middle and Late Bronze Age, 3–5) each subdivided by region (Egypt and the Levant, Cyprus, Anatolia) and also by categories of text or material object (Ports and Harbours, Ships Representations, Maritime Transport Containers, Stone Anchors/Fishing and Fishing Equipment): the same categories are also covered in some depth in his main introductory chapter 2 'Maritime Matters and Materials', inevitably causing repetition later on. In an evidence guide focused overtly on shipping/

seafarers, the inevitable incompleteness of the record for each period/area requires interpretative cross-support from the others. In addition, much evidence e.g. for ports and harbours crosses the periods in question. Thus by the end of the book we have heard a very great deal about the same evidence - e.g. Byblos; Ulu Burun; Ugarit; the Sea Peoples reliefs. Knapp could instead have filled out the book by a wider consideration of the factors and contexts affecting maritime operations, of which he is well aware as a specialist and around which there are lively and pertinent debates. It would have been possible to add this depth in a sophisticated way without making the book inaccessible to general readers (potentially improving the offer for the more specialised reader).

Important up-to-date primary and secondary source work on material culture which Knapp relies on heavily include continuing analyses and re-evaluations of Ugarit material, new work and publication at Dor, J. Webb's work at Lapithos, the recent excavations and surveys around Izmir conducted/analysed by V. Şahoğlu, and work at Akko and Tel Abu Hawam, as well as recently published wrecks like Hishuley Carmel and Hisarönü. Knapp also usefully foregrounds older material not widely discussed in these contexts from Wadi Gawasi on the Red Sea. One senses gaps, however, selective or otherwise, e.g. in his lists of likely BA ports - what of Tel Mor (near Ashdod) and Gaza, for example? We can note Knapp's ability to authoritatively summarise and interpret data on what he calls MTCs (maritime transport containers) as a result of his recent work on the subject with S. Demesticha.<sup>1</sup> It is useful to have this discussion sitting side by side with information on shipping and summaries of the results of recent organic residue analyses. Among analytical works on shipping and travel heavily relied on here (with no new technical observations or clarifications, and the same accepted narrative of MBA masted ship and LBA galley/merchantman development) are those of S. Wachsmann, M. Wedde, C. Monroe and C. Broodbank.<sup>2</sup> Knapp excludes Aegean evidence from his focus, despite having to reference the many Aegean links of east Mediterranean shipping, especially in the LBA. Perhaps this is to avoid addressing the overtones of Classical archaeology scholarship (though the issue of Mediterranean research history/discipline history is not addressed here anyway) or because the data have been already well published on (much evidence discussed here is, notwithstanding, equally

<sup>1</sup> Knapp and Demesticha 2017.

<sup>2</sup> E.g. Wachsmann 1998; Wedde 2000; Monroe 2009; Broodbank 2014.