

## THE TRANSACTIONAL VOCABULARY OF MYCENAEAN SEALINGS AND THE MYCENAEAN ADMINISTRATIVE PROCESS

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In this paper<sup>1</sup> I would like to continue work that I have been privileged to do in collaboration with the chief Italian scholars of sealings as administrative devices, specifically the study of sealings as part of an overall administrative process. I am grateful to have been a participant at conferences and sessions organized by E. Fiandra, P. Ferioli, G. G. Fissore and M. Frangipane at Oriolo Romano in 1991 and by Fiandra and Ferioli in Mexico City in 1993. At Oriolo Romano (PALAIMA, T.G. 1994) I discussed *inter alia* the nature of inscribed countermarks on Linear A inscribed sealings and 'transaction signs' on Linear A tablets and suggested that the limited repertory of such written notation at different Minoan sites might be explained by comparison with the limited transactional vocabulary common in Mycenaean texts. In Mexico City (PALAIMA, T.G. 1996) I worried more about the interconnection between sealings and fuller texts within Linear B administration, specifically with regard to the peculiar PY Sh series, the full history of which we can reconstruct: from the original writing of texts on individual single-entry tablets in the so-called Northeast Workshop at Pylos to organizing these tablets with two summary or recapitulative tablets in a transport basket and then to labeling the basket for delivery to Room 7 of the Archives Complex where the tablets and label were discovered in a delivery zone.

We are in a better position now to try to figure out how and why transactional terminology was inscribed upon Mycenaean sealings, and perhaps why it was not. We have the publication of new Linear B inscribed sealings from Thebes (ARAVANTINOS, V. 1990 and PITEROS, C., OLIVIER, J.-P., MELENA, J.L. 1990) and Pylos (SHELMERDINE, C.W., BENNET, J. 1995). These contain many keen observations about how inscribed sealings functioned within the administrative systems of Mycenaean palatial territories. We also have detailed work on elements of transactional vocabulary (KILLEN, J.T. forthcoming, on *o-pa*; HUTTON, W.F. 1990-1991, on *qe-te-o* and related economic vocabulary). These have made clear particular nuances of important transactional vocabulary.

The practice of defining explicitly by writing upon an Mycenaean inscribed sealing the nature of the transaction involved is exceptional, rather than the norm (just as inscriptions themselves on Mycenaean sealings are the exception rather than the rule: statistics in PALAIMA, T.G. 1987).

We have the following transactional terminology attested on sealings<sup>2</sup>:

1. *a-pu-do-si* (and the related verbal form *a-pu-do-ke* and the perhaps distinct *do-ke*) have meanings connected with the notions 'contribute' or 'contribution'.

2. *o-pa* means specifically the process of bringing an already existing manufactured item or a head of livestock into a state of full repair or readiness for its anticipated use: 'refurbish' or, as applied to livestock, 'fatten' or 'finish'.

3. *po-ro-e-ko-to* means perhaps 'has brought forth' (cf. *po-ro-te-ke* 'has set forth' for the prefix *pro-* used in economic bureaucratic vocabulary)<sup>3</sup>.

4. *qe-te-o* and related forms mean 'to be paid (as a religious fine or penalty)'.

Conspicuously unattested on inscribed sealings—as for that matter was *qe-te-o* and related forms until the discovery of the Thebes sealings in 1982—are such important Mycenaean transactional terms as:

a. *e-ke* (and related forms *e-ko-si*, *e-ko-te*) meaning 'have possession of';

b. *o-pe-ro* (and related form *o-pe-ro-si*) meaning 'owed';

c. *ta-ra-si-ja* (and related forms like *a-ta-ra-si-jo*) associated with manufactured goods for which the central authority has allotted the raw materials to specific crafts personnel or organizations within a system that expects finished products in return;

- d. *i-je-si* (again with related forms *i-je-to*, *a-pi-e-ke?*) related to the meaning 'send';
- e. *da-sa-to* (*e-pi-da-to* and *e-pi-de-da-to*) related to the idea of 'distribution' or 'allotment';
- f. *de-ko-to* and *de-ka-sa-to* specifying the 'receipt' of goods or materials;
- g. *o-no* connected with the idea of a 'benefit derived' from some economic process;
- h. particular forms of the root meaning 'to give' (*do-so-mo*, *do-si-mi-jo/-ja*, *a-pe-do-ke*, *a-pu-do-so*);
- i. *a-no-po* (= 'not subject to the work procedure defined by *o-pa*');
- j. *po-ka* meaning a 'plucking' of wool;
- k. *wo-ka* meaning perhaps production 'work' (used for the manufacture of chariots).

We leave aside here transactional vocabulary in the special sphere of landholdings (e.g., *o-pe-ro te-re-ja-e* 'being obligated to perform the service connected with the status of *te-re-ta*'; *o-pe-ro-sa du-wo-u-pi wo-ze-e* 'being obligated to work on two parcels'; *o-na-to* 'a beneficiary right to land') and other ways of specifying the nature of the obligation attached to landholdings: *i-qa-jo e-ne-ka* 'for the sake of a horse' (i.e. 'for pasturage') and *a-no-qa-si-ja e-ne-ka* 'on account of, i.e., in compensation for, manslaughter' and so on. We also leave aside other specifications of a performance obligation for which a benefit was received from an institution which monitored the situation administratively: e.g., *o-pe-ro-ta e-re-e* and *o-pe-ro-te e-re-e* = 'being obligated to row' (of military service on Pylos tablet An 724 which may be connected to the status of being a *ki-ti-ta* 'settler' or being somehow obligated to the king or *wanax* of the community).

A paper needs to be devoted to laying out simply what practical features of economic and administrative organization might explain the absence of some of these terms from inscribed sealings. For example, the transactional vocabulary that is attested on inscribed sealings all is written with the perspective of the action of the party who is obligated to the administration in mind. 'So and So gave/paid/delivered' (*a-pu-do-si* and related forms) or 'So and so performed refurbishing/finishing/fattening work' (*o-pa*) or 'So and so provided livestock that was to be paid as a religious obligation' (*qe-te-o*) and 'So and So has brought forward' (*po-ro-e-ko-to* parallel to *po-ro-te-ke* on Ue 661 from Mycenae). This particular focus might explain the absence so far of transactional vocabulary connected with the 'receipt' or 'holding' of goods that have been released from the control or storage of the central authority—we might even expect such to be found on sealings taken out from the central palatial area. There also might be peculiar aspects of the carefully organized *ta-ra-si-ja* system which made it unnecessary within this sub-system of the economy to monitor through inscribed sealings the movement of raw materials (e.g., *AES* = portions of raw 'bronze') outward to *ka-ke-us-si* 'bronzesmiths' and of finished products (e.g., *a<sub>3</sub>-ka-sa-ma e-ke-si pa-ta-jo-i-qe* 'points for spears and javelins') back to the central palace and its workshops. I shall be approaching the question of transactional vocabulary from a particularist perspective. I therefore shall not answer it fully here.

The current picture site by site of transactional vocabulary on sealings looks as follows:

**Knossos** 25 inscribed sealings 5 with transactional terms:

Wm 1707 and Wm 8493 *do-ke*  
Ws 1704, Ws 8495 and Ws 8498 *o-pa*.

**Mycenae** 8 inscribed sealings 0 with transactional terms.

**Midea** 2 inscribed sealings 0 with transactional terms.

**Pylos** 24 inscribed sealings 6 with transactional terms:

Wr 1325, 1330, 1331, 1332, 1333 *o-pa*  
Wr 1457 *a-pu-do-si*

**Thebes** 56 inscribed sealings 16 with transactional terms:

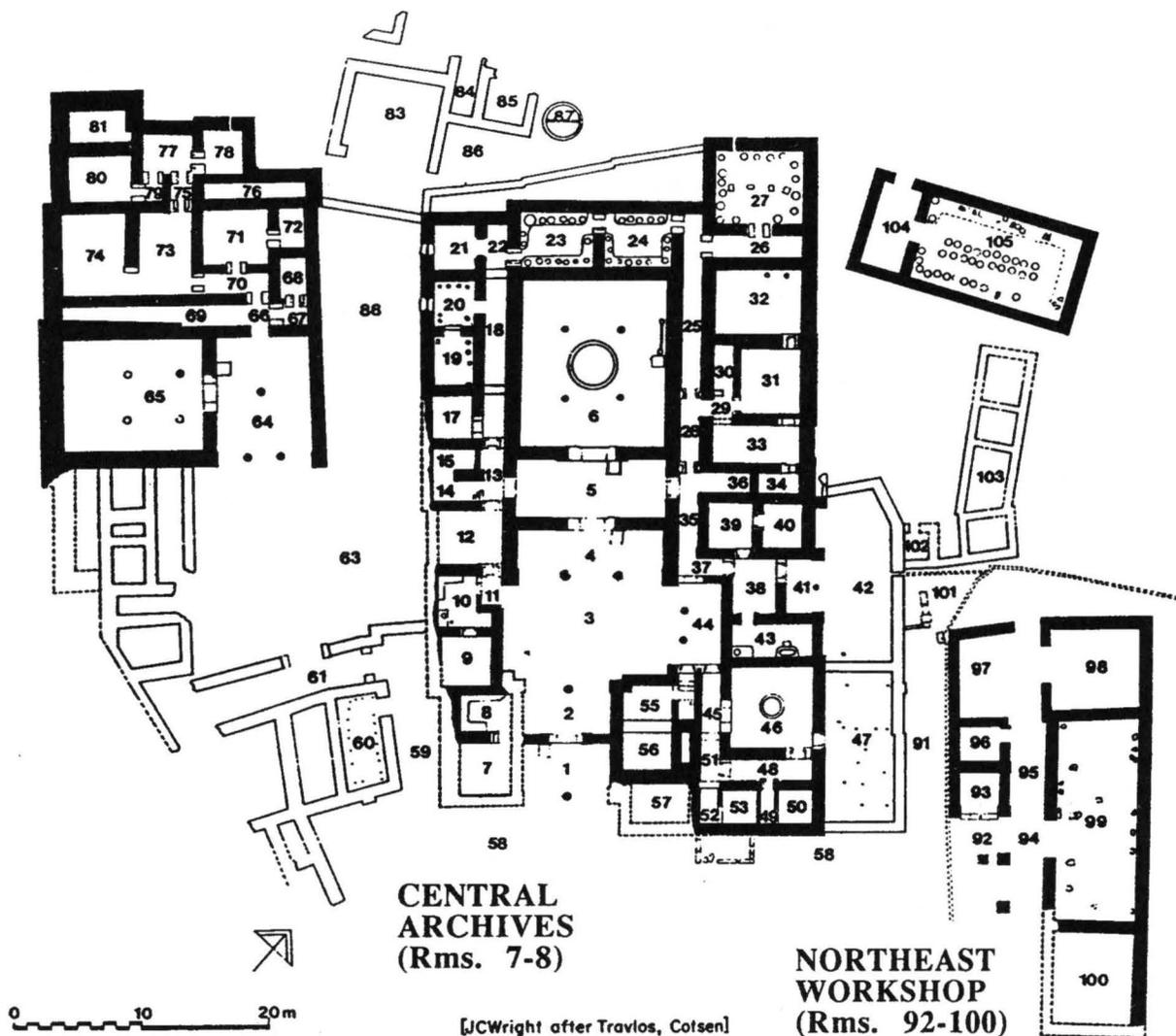
Wu 46, 56, 58, 64, 76, 88 *o-pa*  
Wu 49, 50, 51, 53, 63, 65, 96 *qe-te-o*  
Wu 76, 92 *po-ro-e-ko-to*  
Wu 89 *a-pu-do-ke*.

This list could be expanded slightly by including such terms and phrases as:

- *a-ko-ra* and *a-ko-ra-jo* a 'collection' of livestock and animals belonging thereto;
- *i-je-ro/-ra* a description of livestock as 'sacred'<sup>4</sup>;
- *pa-ro* + PERSONAL/INSTITUTIONAL NAME indicating that goods or materials are in the possession of or under the control of an individual or an institution; or
- place designations (in dative/locative or with allative suffix) indicating where items are located or where they are being transported

as somehow 'transactional'. But then we would similarly have to expand the list of such vocabulary on the tablets. My suspicion is that we would end up in the same or worse relative position in terms of sealings vs. tablets. Many Linear B inscribed sealings, and even of sets of sealings, would lack such terminology.

It is also important to notice the absence of such terms from sets since this would rule out a universal explanation that the norm was for one sealing in a set to contain an explicit recording of the nature of the transaction, which could then be omitted from others in the same group. This cannot, however, be ruled out as an occasional practice. The PY Sh tablets indicate how a single tablet in a set (Sh 736) can be used to record information about the nature of a transactional process (commodity involved: *to-ra-ke* 'body armor'; responsible party: *a-me-ja-to* = 'of the individual named *a-me-ja*'; specific nature of the work performed: *o-pa* 'refurbishing'; specific work fulfilled *wo-ke*, *ne-wo*) while 10 other tablets simply register the kind of basic descriptive information about the commodity (armor and its



component platelets) that is appropriate to sealings. We shall also see below how scribes in tablets with subjects related to those on inscribed sealings (e.g., Pylos Un mixed commodity tablets) often let information in a heading or in a prior entry do service for subsequent entries, i.e., there is a scaling-down of written information section by section. The same tendency might at times be discernible in groups of sealings and might explain the relatively low proportion of inscribed to uninscribed sealings at sites like Pylos and Knossos.

Some of the terms just listed also are sometimes recorded on a single sealing along with the transactional terminology *stricto sensu* and do not, except by implication, specify the exact nature of what is being done in a transactional sense with the goods and materials.

I am particularly interested here in reconstructing the *reality* of the sealing process as a component of overall administration. Why is some information added and not other information? Why is a particular kind of transaction specified and another not? What determines when an administrator finds it necessary to specify the nature of particular transactions even in tablets? How does tablet information at a given site relate to sealing information? Here I shall limit myself to questions that arise from studying a few specific groups of sealings (and tablets) mainly from Thebes and Pylos.

In the conclusion of their study of the inscribed sealings from Thebes<sup>5</sup>, Piteros, Olivier and Melena deal with the important question of the interface between sealings and final tablet documentation. They rightly emphasize the significant role sealings would have played as primary documents in Mycenaean administration, since sealings were carefully manufactured documents capable of transmitting handily over distances important economic information about goods, commodities and responsible parties. They also make the often overlooked point that most of our Mycenaean sealings were not normally intended for preservation or for less than ephemeral archival storage, so we have only the most haphazard view of their prevalence.

Piteros, Olivier and Melena also compare the collected Thebes sealings, which constitute an intentional 'set' of records pertinent to a single occasion such as a commensal banquet, with tablet texts pertaining to similar activities at Pylos (Un 2 and Un 138). In the case of the two Pylos tablets we do not possess the primary sealing documents that would have been used to register the receipt of commodities for these ceremonial occasions. However, we might take a look at a selection of Pylos sealings Wr 1325 and the group Wr 1331, 1332, 1333, 1334, and even Wr 1458 and 1459 (the last six all impressed with seal no. 329 and coming, when known, from the Northeast Workshop) that can give us some insight into what a forming collection of sealings for an activity like a commensal banqueting ceremony might have looked like. These Pylos sealings were connected with livestock or products from livestock used for a different ultimate purpose than the Thebes sealings or the Pylos mixed commodity tablets. But the procedures are comparable. The Thebes sealings offer a view of what a fairly full aggregate collection of sealings does look like.

Two questions concern me most:

(1) What is lost in the translation from the stage of sealings to the stage of tablet recording?

(2) What choices do scribes on sealings and on tablets make in recording 'transactional' information?

Let us start with the Pylos sealings just mentioned and activities of the the Northeast Workshop at Pylos. The inscribed sealings impressed by seal CMS I, no. 329 vary in the written information they provide document by document<sup>6</sup>:

sealing	facets		
	.a	.β	.γ
Wr 1331	OVIS <sup>m</sup>		<i>o-pa</i>
Wr 1332	<i>WI</i>	<i>o-pa</i>	
Wr 1333			<i>o-pa</i> [facet .β is mutilated]
Wr 1334	CAP <sup>m</sup>		
Wr 1458	]E[ <sup>7</sup>		[facet .γ is mutilated]
Wr 1459			<i>e-ri</i> [
Wr 1325	CAP <sup>m</sup>	<i>o-pa</i>	

Wr 1330

*o-pa*

Although the find-spots of the last two sealings are unknown, one can make a case that they do belong to the same 'set'<sup>8</sup>. The readings on Wr 1458 and Wr 1459 are the result of recent work by Bennett since the last full transcription of the Pylos texts (BENNETT, E.L. JR., OLIVIER, J.-P. 1973). *e-ri*[ replaces the former reading of *pi-ri*[. *E* replaces the former reading of a fragmentary ideographic sign perhaps designating female gender.

Let us assume that these sealings do belong to a forming 'set'. Wr 1331-1334 are all inscribed by the same individual (S1331-Ci) and all come from Room 99 of the NE Workshop. Wr 1458 and Wr 1459 are from unknown findspots and so far cautiously unattributed to Stylus group. Killen in his recent discussion of *o-pa*<sup>9</sup> and without the benefit of the most recent readings of Wr 1458 and 1459 makes clear that in contexts connected with livestock and manufactured items *o-pa* refers to 'finishing', i.e., bringing things into a state of full repair or readiness for their specific function. With animals this refers to the process of 'fattening'. The situation is complicated here by the ideogram *WI* for which the only suitable and sound suggestion is 'oxhide'. Killen imagines a situation in which an animal subject to an *o-pa* obligation has died and its hide is being delivered. This is supported by the interpretation of *e-qi-ti-wo-e* on TH Wu 75<sup>10</sup>. The alternative is to imagine that the oxhide here was itself subject to *o-pa* work.

Whatever the answer for this particular sealing, we should note the variety that otherwise prevails. Is the absence of *o-pa* on Wr 1334 meaningful or is it omitted just as the livestock ideogram (or *WI*) is omitted from at least the sealed facet *.α* on Wr 1333? Wr 1458 has facet *.γ* missing, so one could posit that *o-pa* would have been inscribed thereon. However Wr 1459 is preserved on all surfaces and it, too, has no designation of the particular nature of the transaction. Might the answer here lie in the designation of the animal? We might propose here that *e-ri*[ be restored as the *hapax e-ri-po* = *ἐριφος* = 'baby goat', 'kid', 'chevreau', 'chevrette' (CHANTRAINE, P. 1968-80, s.v.). This would provide a practical motive why *o-pa* might be inapplicable in this instance, since the young goat could not be brought up to full status. We might then even reconstruct how the scribe (or at least the user of seal no. 329) proceeded. A goat was to be delivered to the Northeast Workshop. The scribe registered this at first on Wr 1334 by means of the standard ideographic designation for goat. There are two possibilities:

1. The goat referred to in Wr 1334 was adult and 'fattened' = 'finished' and the omission of *o-pa* was either inadvertent or thought superfluous given the use of the term in Wr 1331-1333.

2. The goat was not adult and therefore not 'fattened' and 'finished', i.e., it was a 'kid', and the omission of *o-pa* is meaningful.

If we choose option 2, we might then argue that, when the occasion arose to register another 'baby goat', the scribe chose to do so by writing out the very word lexically: *e-ri-po* (Wr 1459). When he then had yet a third to register, he chose to abbreviate the word by means of a phonetic abbreviation/ideogram: *E* (Wr 1458). We should compare the writing out of *tu-ro*<sub>2</sub> lexically before the first occurrence of the phonetic-ideographic version of 'cheese' on Un 718, but omitting it thereafter. On Wr 1458 and Wr 1459, too, the absence of *o-pa* might be attributable to the fact that a young animal was not brought to 'completion'.

One could then explain the entire set logically except for the missing designation of animal on Wr 1333 (unless it there irregularly was written on missing facet *.β*). We should note also that Wr 1325 from Room 98 is also inscribed by the same stylus. He there records CAP<sup>m</sup> *o-pa* on a sealing impressed by seal no. 319. This fits the pattern conjectured above of careful attention by the scribe to registering information, and not omitting a transactional designation when it applies to an animal.

One oddity is that S1331-Ci also inscribes *o-pa* on Wr 1330 without any designation of animal or item. This sealing is impressed by seal no. 312. Seal no. 312 also impresses sealing Wr 1326 from Room 98. It was written by a different scribe (one belonging to Ciii). The quandary now becomes whether to link Wr 1330 with the rest of the output of its scribe (Wr 1331-1334) or with the sealing impressed by the same seal. That sealing has the single sign-group *de-mi-ni-jo* = 'bedding' written on it. Killen does both. He relates the *o-pa* work on Wr 1330 to the fattening of livestock for leather which would then be used in 'bedding'. However, Wr 1330-1332 are closely linked by findspot in Room 99 (PALAIMA, T.G. 1988, pp. 155-159) and so the omission of the ideogram confounds to a degree the precision found in the work of this stylus in the set of seal no. 329. This omission makes it impossible to understand the subject of the *o-pa*

work in sealings associated by find context. This might have one of three implications:

1. Sealing Wr 1330 was inadvertently clustered with others in Room 99 and really belongs with the *de-mi-ni-jo* work.

2. The subject of sealing Wr 1330 was readily recoverable from the seal impression because the user of seal no. 312 dealt only in a specific kind of transaction (involving some stage of production of *de-mi-ni-jo*) at the administrative moment when the sealing was made. Scribe S1331-Ci became involved simply because he was at work in the NE Workshop, not necessarily because this sealing has anything to do with the work and commodities with which Wr 1331-1334, 1458-1459 are associated.

3. The sealings found in Rooms 98 and 99 had already served their purposes and their discovery in specific contexts had nothing to do with any systematic filing for future retrieval and examination. Thus any ambiguity in the textual message only comes into play when one tries to reconstruct its message in retrospect divorced from its original 'active' use. When Wr 1330 was 'functioning' as an 'active' document, it would have had a proper association that made it contextually understandable through the kind of object it was connected with or through other sealings that made up for its omissions.

We might compare here the process of information entry in the Un mixed commodity tablets from Pylos which are used as models for the kinds of final documents that would be compiled or extracted from collections like the Thebes sealings. Let us include here not only the two tablets upon which Piteros, Olivier and Melena concentrate (Un 2 and Un 138) but also two other texts (Un 47 and Un 718) which are useful for our purposes. I present the texts of the tablets in a scheme of translation<sup>11</sup> which I hope makes the technical details of the texts clear to non-specialists. I shall, however, discuss some of the structure and phrasing using original Mycenaean terms. I present each translated tablet at the end of the final paragraph of discussion of it.

Tablet Un 2 contains a listing of wheat, *cyperus*, spelt, olives, honey, figs, a bull, 26 rams, 6 ewes, 2 he-goats, 2 she-goats, a fatted pig, 6 sows, 585.6 liters of wine, and cloth. It has already transcended the stage of being interested in the nature of collection of individual animals. That is, whether the obligation under which an animal or group of animals was collected fell under the heading of *qe-te-o*, *o-pa*, *a-pu-do-ke*, or *po-ro-e-ko-to* no longer concerns the scribe. In the heading, the scribe lists the occasion on which these items would be used and specifies the agent/official (*o-pi-te<-u>-ke-e-u* = 'one in charge of *teukhea*') who was concerned with their 'sanctification' or 'safekeeping' or even 'transmission' (depending on the interpretation of *a-pi-e-ke*):

*pa-ki-ja-si* , *mu-jo-me-no* , *e-pi* , *wa-na-ka-te* , *a-pi-e-ke* , *o-pi-te-ke-e-u*.

One would not know from this heading that sealings with specifications as to the obligatory kinds of contributions were ever used in amassing these animals, foodstuffs and materials. The sealings that lie behind this text are perfectly invisible.

PY Un 2 .1 at *pa-ki-ja-ne*<sup>PL</sup>, at the initiation of the *wanax*  
 .2 *a-pi-e-ke*<sup>12</sup>, the overseer of *teukhea*<sup>13</sup>  
 .3 WHEAT 1574.4 l. CYPERUS+PA 14.4 l. owed 8 l.  
 .4 SPELT 115.2 l. OLIVES 307.2 l. \*132 19.2 l. ME 9.6 l.  
 .5 FIGS 96 l. OX<sup>X</sup> 1 RAM 26 EWE 6 HE-GOAT 2 SHE-GOAT 2  
 .6 F-PIG 1 SOW 6 WINE 585.6 l. CLOTH 2

Tablet Un 138 (a five-line tablet) brings us into contact with the sealing process. One has a listing of mixed commodities of a similar nature (8 yearlings, 1 ewe, 13 he-goats, 12 pig, 1 fatted pig, a female bovid, 2 male bovids) in two sections. The text is headed:

*pu-ro* , *qe-te-a<sub>2</sub>* , *pa-ro* , *du-ni-jo*<sup>PE</sup>.

This tablet heading serves also as the first sectional entry, or rather the scribe in a kind of shorthand has written:

"This tablet concerns Pylos (*pu-ro*) / specifically items that are 'to be paid as a religious obligation' (*qe-te-a<sub>2</sub>*) / and the first batch of items is 'under the control of' (*pa-ro*) / an individual named *du-ni-jo*.

We have, as with certain Thebes sealings, specification of the nature of the contribution (*qe-te-a<sub>2</sub>*),

the individual in whose care the contribution now rests (*pa-ro*, *du-ni-jo*), and the center which is concerned with the material (*pu-ro*). In proceeding to the second section of mixed commodities the scribe now has set up the formula and understands all but the name of the responsible individual which he duly enters, even omitting the preposition *pa-ro* which is used as a marker of personal or institutional control almost universally in the Linear B records:

*me-za-wo-ni*<sup>PE</sup>

He may have done this with the purpose of fitting the text to the tablet; nevertheless he considered the shorthand acceptable here in a way in which it was not, for example, in the meticulously formulaic E-series at Pylos, where the same detailed formulaic information is repeated line by line as if the text itself is a standard or quasi-legal form. Our question then becomes would any or all of the sealings connected with the foodstuffs and livestock recorded on Un 138 likewise have suppressed information for the sake of expediency, if one administrator was overseeing the entire operation and could understand the nature of the transactions? This is the same kind of question we posed with regard to PY Wr 1333 and 1334.

PY Un 138 .1 at Pylos<sup>PL</sup>, *qe-te-a<sub>2</sub>*, *pa-ro*, *du-ni-jo*<sup>PE</sup>  
 .2 WHEAT 1776 l. food<sup>14</sup> OLIVES 420.8 l.  
 .3 WINE 374.4 l. RAM 15 YEARLING 8 EWE 1 HE-GOAT 13 PIG 12  
 .4 F-PIG 1 COW 1 BULL 2  
 .5 *me-za-wo-ni*<sup>PE</sup> WHEAT 462.4 l. fruits OLIVES 672 l.<sup>15</sup>

Un 47 (another, unfortunately fragmentary, five-line tablet) moves us onto the level not of individual responsibility, but of responsibility of a local district or center, as seen also in some of the Thebes sealings in the references to sites like *a-ma-ru-to* (Amarynthos), *ka-ru-to* (Karystos), and so on. On Un 47 foodstuffs and livestock (13 rams, 8 ewes, and an unpreserved number of yearling[s]?) in a familiar mix are listed beneath the heading: *ro-u-so*, *ro-u-si-jo*, *a-ko-ro*[. It is possible that some specification of the nature of the contribution here is missing at the end of line 1, but the text might have worked well without it, if the contribution was in the nature of a standard donation expected by the central administration. Here again we might reconstruct a sealing collection, certain information from which was suppressed as unessential to the tablet administration.

PY Un 47 .1 at *Lousos*<sup>PL</sup> the territory of *Lousos* [  
 .2 FIGS 91.2 l. *i*[  
 .3 *CYP+O* 328 l. WINE [  
 .4 WHEAT 3952 l. *ka*[  
 .5 RAM 13 EWE 8 YEARLING[

Let us compare the Thebes group of sealings designated as *a* (PITEROS, C., OLIVIER, J.-P., MELENA, J.L. 1990, pp. 146 and 170: Wu 46 - 56 - 58 - 76 - 88?)<sup>16</sup>. Each of these texts contains: an animal ideogram, the transactional item *o-pa*, and a different personal name (in two cases—Wu 46 and Wu 58—the personal name is clearly in the genitive-possessive case; in others the form is likely to be nominative-subject case perhaps as a ‘rubric’ entry). These points of information are always written in the same sequence: animal ideogram / personal name / *o-pa*. Three texts also contain an additional secondary ideogram \*171, most likely a kind of fodder from *cyperus* and measured in bales or bundles each suitable for a day’s feeding (PITEROS, C., OLIVIER, J.-P., MELENA, J.L. 1990, pp. 162-163). One text alone (Wu 58) contains the specification of locale: *a-ma-ru-to*. Since these were all impressed with the same seal and written by the same scribe, we could posit that the seals were inscribed in the environs of Thebes upon the arrival of different individuals who were bringing ‘finished’ livestock. This would make it possible, but not necessary, for *a-ma-ru-to* to refer to only the single individual on Wu 58. [These five individuals could have arrived together in the environs of Thebes where the sealing was manufactured.] Or we may posit that the scribe was in fact *in situ* at the site of *Amarunthos* (in Euboea) where the sealing was manufactured in order to be a documentary guarantor of an individual’s right to be bringing an animal to the center. Whether *a-ma-ru-to* refers to just one or all five sealings, we should note that the sealings takes us down to the level of

personal obligation. It is this which tablet Un 47 suppresses as a record in the central palatial archives, which records the amounts of foodstuffs and livestock associated with a collective territorial group within a specific regional center. We should note that this specific set, to which Wu 88 is only tentatively assigned, gives us four different kinds of livestock.

TH Wu 46	.α	SHE-GOAT	<i>supra sigillum</i> C [5]
	.β	of Praus <sup>PE</sup> , <i>o-pa</i> work	
	.γ	<i>cyperus</i> -fodder 30	
TH Wu 56	.α	HE-GOAT	<i>supra sigillum</i> C [5]
			<i>sup. mut.</i>
	.β1	Ophelastas <sup>PE</sup>	
	.β2	<i>o-pa</i> work	
	.γ	<i>cyperus</i> -fodder 30	
TH Wu 58	.α	SUS	<i>supra sigillum</i> C [5]
	.βa	<i>o-pa</i> work	
	.βb	of Therios <sup>PE</sup>	
	.γ	(at) Amarynthos <sup>PL</sup>	
	.βb	Written (and thus read) before .βa.	
TH Wu 76	.α	COW <sup>f</sup>	<i>supra sigillum</i> C [5]
	.β1	a-e-ri-qo <sup>PE</sup>	
	.β2	<i>vacat</i>	
	.γ	<i>o-pa</i> work <i>cyperus</i> -fodder 30	
TH Wu 88	.α	GOAT <sup>x</sup>	<i>supra sigillum</i> C [5]
			<i>inf. mut.</i>
	.β	ra-mi-jo <sup>PE</sup> , <i>o-pa</i> work	
	.γ	<i>deest</i>	

Pylos Un 718 again lists mixed commodities and livestock and it functions very much like Un 138 in its structure. There is a full heading specifying the nature of the transaction and the recipient (in this case divine):

*sa-ra-pe-da , po-se-da-o-ni , do-so-mo*<sup>17</sup>

i.e., we are dealing here with ‘donations’ (*dosmoi*) to Poseidon. Then follows the first section which specifies that the individual named *e-ke-ra<sub>2</sub>-wo* (= ? the *wanax* of Pylos) will give (*do-se*) so much of a donation (*do-so-mo*, *to-so*) to the sheep flayers (*o-wi-de-ta-i*). The next section specifies ‘and thus the *damos*’. The third section: ‘and so much (of a contribution) the *lawagetas* will give’. The fourth section: ‘and so much the *worgioneion kama*’ (*scil.* ‘will give?’). Sections 2-4 suppress *do-so-mo*. Section 3 alone follows section 1 in using the transactional and prospective verb *do-se*. Sections 2-4 omit *o-wi-de-ta-i* (if it indeed should be understood). It is impossible to know whether the use of the transactional verb with the distinguished personages (‘king?’ and ‘military leader’) and not with the two collective groups (*damos* and *worgioneion kama*) is significant. In any case we might imagine that each of the two personages and each of the two social institutions would have eventually gathered their prospective contributions through sealings that would verify the parties responsible for the livestock and foodstuffs. These sealings are not extant.

PY Un 718

- .1 *sa-ra-pe-da* donation(s) to Poseidon
- .2 to the sheep-flayers<sup>ONrel</sup> a donation of such an amount *Ekhelawon*<sup>PE</sup>
- .3 will contribute BARLEY 384 l. WINE 86.4 l. BULL 1

- .4 cheese CHEESE 10 units sheepskin HIDE 1  
 .5 of HONEY 4.8 l.  
 .6 **blank line**  
 .7 thus also the *demos* BARLEY 192 l. WINE 57.6 l.  
 .8 RAM 2 CHEESE 5 units anointing oil ANOINTING OIL 3.2 l. HIDE 1  
 .9 and so much the *lawagetas* will contribute  
 .10 RAM 2 flour SPELT 57.6 l.  
 .11 WINE 19.2 l. thus also the *worioneion ka-ma*  
 .12 BARLEY 57.6 l. WINE 9.6 l. CHEESE 5 units HONEY[  
 .13 [ ] 1 v 1<sup>18</sup>

Thus we see that central archival tablets, in their sectional entries or in their differences one from the other, display a variation in the explicit information they provide that is comparable to the variation seen in sealings within sets. The tablets from the central archives also reflect the collection of goods and materials through processes that would have employed sealings to note or guarantee responsibility for particular transactions. The tablets, however, do not preserve or duplicate the information provided on the sealings, because the tablets have a different order of administrative purpose.

To close, I would like to return to the Northeast Workshop and specifically to like questions raised by discussion of the new Pylos sealing Wr 1480 published recently by Shelmerdine and Bennet. The text of this sealing:

PY Wr 1480 .a wa *sigillum* (traces approximate CMS I, no. 375)  
 .β pa-ta-jo  
 .γ do-ka-ma

according to their reading (SHELMEARDINE, C.W., BENNET, J. 1995, pp. 129-132 and nn. 24 and 32) gives as the referend for the sealing: 'of javelins/darts (*pa-ta-jo*), handles (*do-ka-ma*)' and refers to wooden handles that would have been used for javelins by affixing the kinds of bronze points *a<sub>3</sub>ka-sa-ma* referred to in PY Jn 829, a tablet which monitors the collection of used temple bronze from the major political centers of the two provinces of Pylos—the 'mayors' and 'vice-mayors' of these districts are made responsible for specific standard quantities and again might have collected the used bronze through a process monitored by sealings<sup>19</sup>.

In their discussion Shelmerdine and Bennet, following suggestions of John Killen, link the subject matter of Wr 1480 with tablet An 1282 from the Northeast Workshop. They also discuss Va 1324 and Wr 1328 for particular points. If we study these texts as an ensemble together with Va 1323 and Wr 1329, and compare them with the contents of tablet Vn 10 from the Central Archives Complex, we can see clearly how information is changed as it moves from one administrative level and context to another. Of the tablets and sealings from the the Northeast Workshop: Wr 1328 comes from Room 98 while An 1282, Va 1323 and 1324 comes from Room 99.

#### NE Workshop Room 99

An 1282.1 a-qi-ja-i VIR 18 a-mo-si VIR 18  
 .2 ki-u-ro-i VIR 13 po-qe-wi-ja-i VIR 5  
 .3 do-ka-ma-i VIR 36  
 .4-5 *vacant*

Va 1323 a-ko-so-ne , ka-zo-e 32

Va 1324.1 e-ke-i-ja 30  
 .2 pe-di-je-wi-ja 20 a-ko-so-ne 2

#### NE Workshop Room 98

Wr 1328 .a *sigillum* (CMS I, no. 318)

	.β	pe-di-e-	
	.γ	-wi <ja>	
	.βγ	The two facets are not clearly delimited; the text is arranged as if the two were a single surface	
Wr 1329	.α	<i>sigillum</i> (CMS I, no. 317)	
	.β	20	
	.γ	<i>vacat</i>	

#### Stray from NE Workshop

Wr 1480	.α	wa	<i>sigillum</i> (traces approximate CMS I, no. 375)
	.β	pa-ta-jo	
	.γ	ḏo-ka-ma	

#### Central Archives Complex Room 8

Vn 10	.1	o-di-do-si , du-ru-to-mo ,
	.2	a-mo-te-jo-na-de , e-pi-[ . ]-ta 50
	.3	a-ko-so-ne-qe 50
	.4	to-sa-de , ro-u-si-jo , a-ko-ro , a-ko-so-ne
	.5	100 , to-sa-de , e-pi-[ . ]-ta 100

Let us here make clear that we accept that *a-qi-ja-i* is a *lapsus* for *i-qi-ja-i*. We then have here a fairly vibrant picture of a workshop operation. Notice however how minimalistic the texts from the Northeast Workshop are in comparison with the text from the Central Archives. Vn 10<sup>20</sup> follows the pattern we saw above in Un 718 and Un 138 of making transactional details—and here details that could have been registered on sealings: ‘thus they are giving’ (*o-di-do-si*) and ‘to the wheel assembly workshop’ (*a-mo-te-jo-na-de*)—explicit in a heading and/or first section and then letting them be understood and unexpressed subsequently. The text of Vn 10 has always been read with the subject of the first entry plural: “thus the wood-cutters give to the wheel assembly workshop: saplings 50 and axles 50.” The second entry: “And so many the territory of *Lousos*<sup>21</sup> (give): axles 100 and so many saplings 100.” One can imagine that individual woodcutters would have, at some earlier stage, contributed their raw materials in a transactional operation requiring sealings. The central administration is concerned here about specifying the nature of the transaction of the bulk shipment from two different sources to the wheel assembly workshop. This workshop seems indeed archaeologically to be the Northeast Workshop, judging from the references to *a-ko-so-ne* found on tablets therein. Given the diverse workshop activities that would have been conducted in this area, the designation \**a-mo-te-jo* = *harmotejōn* would be a ‘generic’ reference to the Northeast Workshop according to its primary and most significant function.

The texts from the Northeast Workshop contain no reference to persons, collective groups, or institutions who might be responsible for these materials nor do they record any obligations or transactions that might have been associated with gathering, working on, or disbursing these materials. The laconic nature of the texts from the Northeast Workshop can be explained in one of two ways:

1. The texts are in the nature of inventories, both of materials and workers, that would be needed for planning aspects of work.
2. The texts reflect transactional processes that would have been clear in sealings and which are understood here by the administrators who use these tablets for reference *in the workshop environment*. The understood information might have been just as inscrutable to administrators in the Central Archives as it is to us out of context.

An 1282 records men involved in different kinds of work:

- |    |                          |        |             |        |
|----|--------------------------|--------|-------------|--------|
| .1 | for chariots             | MEN 18 | for wheels  | MEN 18 |
| .2 | for flint points         | MEN 13 | for halters | MEN 5  |
| .3 | for shafts <sup>22</sup> | MEN 36 |             |        |

Va 1323 records:  
axles of inferior quality 32

Va 1324 records:  
.1 shafts for spears<sup>23</sup> 30  
.2 shafts for infantry javelins 20 axles 2.

Va 1323 and 1324 look very much like culling inventories, perhaps documents that estimate, through inspection, the quality of individual pieces in a delivery of the kind recorded in Vn 10 and then determine what the raw pieces are best suited for. In this case we should open ourselves to the possibility that the 'saplings' in Vn 10 might not be exclusively for chariot arcades, but might have been useful for the shafts of smaller hurling weapons. We might wonder whether it is a coincidence that the shafts here add up to 50 as in the contribution of 'saplings' from *du-ru-to-mo* on Vn 10.

Wr 1480 seems to indicate that a single sealing accompanied a group of spear shafts in the NE Workshop and that these somehow fell into the sphere of the *wanax* (abbreviated *wa*). The key here is the interpretation of *pa-ta-jo* as a genitive plural which requires that *do-ka-ma* likewise be plural. If it were possible to take *pa-ta-jo* as a dative singular or a nominative singular of rubric, then one could argue that this sealing accompanied a single shaft that was selected out, in the culling process which we have posited for Va 1324, as the shaft for the special javelin of the king.

Wr 1328 is without number and without any information as to its sphere of concern or its particular transaction:

Wr 1328 shafts for infantry javelins

Still we should note that Wr 1329 from the same Room 98 gives only the number 20 (with a different seal countermark than 1328). This is too good a coincidence with the entry of the like number of shafts for infantry javelins in Va 1324 to be without significance. It is also too good a coincidence then to separate Wr 1328 from Wr 1329. Together they make up a record<sup>24</sup>:

Wr 1328 shafts for infantry javelins  
Wr 1329 20

We can then reconstruct the following activities and understand the records kept of them on sealings and tablets. A shipment of ca. 50 'saplings' arrives in the NE Workshop. It is inspected in the large main Room 99 and culled into 20 pieces suitable for infantry javelins, 30 pieces suitable for spears, and 2 pieces are found to be of a size that actually qualifies them to be axles. Two responsible parties are involved. Each makes a countermark on a sealing. One sealing indicates by writing that this is a batch for infantry javelins, the second that they are 20 in number. The sealings, if not the materials with which they are associated, are eventually taken to Room 98. In Room 99 a scribe of a different Class (Class ii) than the scribe who wrote the text of Wr 1328, writes up the record Va 1324. The central administration is only concerned with recording the general fulfilment of a delivery obligation by particular 'parties'. It therefore has made for it and deposited in the Central Archives a record (Vn 10) that includes the shipment of 50 'saplings'. This text makes explicit the collective/institutional, rather than the individual, sources and the destination of all the raw materials delivered, undoubtedly as a record that would both attest to the fulfilment of obligations by the 'woodcutters' and the territorial collective of *Lousos*. The text might also be useful in managing and planning the rate of general production work going on in the environs of the central palace.

I hope that this discussion of the relationship between tablets and sealings at Mycenaean sites makes clear how these different kinds of record-keeping and controlling-monitoring devices served the varying needs of individuals and institutions at different levels of the Mycenaean economic and administrative systems and also provides some insight for non-specialists into the transactional processes involved in Mycenaean administration.

- 1 I dedicate this paper to the memory of Piera Ferioli. I thank Massimo Perna for his leading role in the organization and publication of the papers of this conference. I also thank him for his human understanding and patience. See figure 1 for the location of the Northeast Workshop (Rooms 92-100) and the Central Archives (Rooms 7-8) at Pylos.
- 2 For the range of interpretation of particular Mycenaean word-units, cf. AURA JORRO, F. 1985 and 1993. I present here those meanings which, in my opinion, make best sense of the current data.
- 3 Accepting the interpretation of the term as an athematic aorist: PITEROS, C., OLIVIER, J.-P., MELENA, J.L. 1990, pp. 158-159.
- 4 PITEROS, C., OLIVIER, J.-P., MELENA, J.L. 1990, p. 157.
- 5 PITEROS, C., OLIVIER, J.-P., MELENA, J.L. 1990, p. 171-184.
- 6 The identifiable ideograms in Linear B are transcribed in small caps in Latin, while raised small letters designate whether the animals are <sup>m</sup> = male or <sup>f</sup> = female. Phonetic characters can also be used as logograms either individually or in ligatures. They often stand for the the first letter or syllable of the word for the item thus recorded, e.g., *NI* = *nikuleon* = 'fig'. Mycenaean sealings have three surfaces or 'facets' upon which writing can be placed: the facet formed by the seal impression and the two 'rear' or 'side' facets formed by the fingers which held the lump of clay while the seal was impressed into the front facet .a. The most important piece of information—most commonly the actual ideogram of the commodity involved in the sealing transaction—is generally placed on facet .a.
- 7 The editor comments that here the sign is probably a phonetic logographic abbreviation but with some possibility that it is an ideogram for ANIMAL<sup>m</sup>.
- 8 See PALAIMA, T.G. 1988 for full discussion of the palaeographical assignment of texts to scribal hands and stylus groups and for the archaeological and administrative contexts of the Linear B documents from Pylos. Therein the non-specialist will also find an explanation of the classification scheme for identification of the individuals who wrote particular documents.
- 9 KILLEN, J.T. forthcoming, pp. 15-17 and n. 43 of the draft text distributed in Salzburg.
- 10 ARAVANTINOS, V. 1990, p. 159 n. 61, with parallels from Mari; PITEROS, C., OLIVIER, J.-P., MELENA, J.L. 1990, pp. 156-157 nn. 206-207 with parallels from Larsa.
- 11 <sup>PL</sup> = place name; <sup>PE</sup> = personal name; <sup>ON</sup> = occupational designation; <sup>rel</sup> = religious; F-PIG = 'fatted pig'; l. = liters; ] = broken at left; [ = broken at right; subscript dots indicate that a reading of a sign or another element of the text has reasonable grounds on the actual tablet for being proposed, but is not certain.
- 12 The term *a-pi-e-ke* is a compound verb, the root of which means either 'send' or 'dedicate' or 'hold'.
- 13 *teukhea* as an element of the compound either means 'equipment' in a general sense or military equipment, i.e., 'weapons'.
- 14 The term 'food' is a description of OLIVES, i.e., they are intended for eating, not for use in making oil, perfumed or otherwise.
- 15 In line .5 *pa-ro* is to be understood before the **PE**; and 'fruit' is a description of OLIVES just as 'food' is in line .2. What the distinction is between 'food' OLIVES and 'fruit' OLIVES is not entirely clear.
- 16 In translating the personal names, I give acceptable reconstructions. Others are possible. *ra-mi-jo* = *Lamios vel sim.*, an ethnic adjective used as a personal name.
- 17 *sa-ra-pe-da* is either the designation of a particular kind of landholding or it is a place name.
- 18 It cannot be determined whether the '1' refers to a wet or a dry commodity. Therefore the amount in liters cannot be reconstructed.
- 19 Shelmerdine and Bennet dismiss for *do-ka-ma* a meaning of 'handful' which they otherwise consider appropriate here, on the grounds that there are difficulties deriving *do-ka-ma* from *dekhomai*. However, one can still arrive at this interpretation from the same root \**drag-* that yields 'hafts or handles' (J.L. Melena *per litteras*). *do-ka-ma* on this reading would be a standard measure 'what one grasps'. In any case, it does seem that the best interpretation here is 'handles or hafts' given that we are dealing with javelins whose handles should be relatively thick and be counted and not measured by the handful. For our purposes, it is enough to rule out, on the basis of context, *do-ka-ma* as a transactional term from *dekhomai*.
- 20 A full discussion of Vn 10 is found in PALAIMA, T.G. 1980.
- 21 Cf. Un 47.1 for the same expression defining a territorial organization within the district of *ro-u-so*.
- 22 Shafts of javelins.
- 23 Understanding *do-ka-ma*.
- 24 This association of Wr 1328 and Wr 1329 makes it clear that Killen's proposal about a *lapsus* on Wr 1328 for *pe-di-e-wi-<ja* is most probable.

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## DISCUSSION

KANTA

Thank you, Tom, for a very interesting discussion, and now some brief questions.

SCAFA

I have a small question. You said that the fragment *e-ri*[ on Wr 1459 can be restored as *e-ri-po* in the sense of 'baby goat'. That is possible, but in my personal opinion, published in *Kadmos* 16 (1977) 175, the expression for 'baby goat' or 'kid' is the word *e-po*. Pylos tablet Vn 493 has the heading *a-ke-ro*, *e-po*, *a-ke-ra-te*, followed by a list of herdsmen at different locations followed by numbers (20-50) that are reasonable for goats.

It is possible, of course, that we have two different spellings: a short form *e-po* = *erphos* and a fuller spelling *e-ri-po* = *eriphos* (cf. *ko-to-na* vs. *ko-to-i-na*). But I think it is difficult to hypothesize that in the same administration we would find two different forms such as *e-po* and *e-ri-po*. Your hypothesis for how these sealings relating to livestock from the NE Workshop are used is interesting and I believe in large measure correct. But I think interpreting *e-ri*[ as *e-ri-po* poses a difficult problem.

PALAIMA

Thank you, Enrico, for this question. Indeed I am aware of your discussion of the alternation *\*er-/\*eri-* since it is central to your proposal that *e-po* = *erphos*, the interpretation which Aura Jorro in the standard Mycenaean lexicon finds «más plausible.» We have *e-po*, of course, in a suitable context to mean 'kid' also on KN Ce 283 and the animals seem to be abbreviated acrophonically as *E* on KN U 5717. What is very telling is the new reading of PY tablet Cn 418 wherein we now have sequences of *male sheep*, *male goat*, *yearling* and *CAP+E*. This context is virtually matched in the sealings under discussion: Wr 1331 Wr 1332 Wr 1333 Wr 1334 Wr 1458 and Wr 1459, which refer to *male sheep*, *male goat*, *E* and then *e-ri*[. This gives me confidence in my proposal.

As to the discovery of spelling alternations within a given administration, in my full-scale study of Pylian scribal administration *The Scribes of Pylos* (Rome 1988), I concentrated specifically on spelling alternations between scribes as corroborating evidence for scribal hand identifications. Such lists of variations can be quite extensive for major scribes. Particular scribes like Hand 24 who wrote Er 312 and Un 718 can even introduce key *dialectal* variants such as *pe-ma* vs. *pe-mo*. John Chadwick has written on one possible source of such variants. Chadwick emphasizes the source of information a scribe was using in writing a tablet and how it might lead to oral-aural variations. I think that this process would have been even more fully at work in the sphere of sealings which were used frequently where the central palace was interfacing with outside individuals and institutions. In such circumstances scribes would be likely to hear words spoken in provincial ways, the language of people outside the environs of the palatial complex. Someone, in fact, needs to do a study of key spelling alternations and how they relate, not merely to scribes, but to the subjects and administrative spheres (central palatial, workshop, outlying communities) of the texts on which they occur.

KANTA

Another question?

CARLIER

I did not study all the texts pertaining to *do-ka-ma*. But while reading the new text Wr 1480, I had an idea that is based on historical archival documents in Classical Greek. There if we find, as we do, the expressions 'obelon drachmai' or 'obelon drachma' we would not translate them as 'shafts of *obeloi*' or

'shaft of obeloi' but as 'handful(s) of obeloi'. This in fact is a fairly frequent expression in archaic inscriptions. I know we are sure that *do-ka-ma* = *dorkhma* = *drakhma*, but are we sure it means 'shaft'?

#### PALAIMA

In order to be brief, I did not discuss this point in full. When I first encountered the new text of Wr 1480, having been kindly sent it before its publication by Bennet and Shelmerdine, which relies on the interpretation of John Killen, my first instinct was to try to construe it as from the root *dekh-* and to mean a 'receiving', i.e., an aggregate that has been received by a given party (cf. the transactional term *de-ka-sa-to*). Since this interpretation did not work very well in context, the alternative was to construe it as from the root *\*drag-* > *dorkhma* = 'handful' or 'handle'. I tried the reading about which you are wondering: 'handful' of javelins. On grounds of economy of hypothesis, this does not work so well, because on An 1282, as I discuss in my paper, we have *do-ka-ma-i* without any specification of what 'handfuls' are being recorded. In the context of the other items on An 1282 upon which groups of men are assigned to work: chariots, wheels, flint points and halters, the preferable interpretation is 'for handles'. We cannot be 100% sure that on Wr 1480 *do-ka-ma* is not singular meaning 'handful', but that is a less economical hypothesis. I stress again, however, that it is not implausible. We do have Mycenaean sign-groups that clearly mean different things in different contexts. The most notorious are perhaps *pa-si* = 'to all' and 'he says' and *pa-te* = 'father' and 'all' (nom. plural masculine). You are quite right, as usual, Pierre.

#### ARAVANTINOS

Only a couple of notes. We have a second sealing from Midea with an ideogram over sigillum and in light of the Thebes sealings which, of course, were for a sacrificial banquet, I think we cannot underestimate that we have in Room 93 in the NE Workshop a small sanctuary. I think there is good evidence that the animals listed in the texts and sealings from the NE Workshop were for sacrifice and then for banqueting (with all the kylikes, we like to think).

#### PALAIMA

Thank you for this observation, Vassilis. Even the clear reference to *WI* = 'hides' does not rule out the possibility that the animals themselves would have been consumed. As I noted in my *Studia Mycenaea* (1988) on the Mycenaean use of cattle, in Aegean prehistory and in the Texas Hill Country of the 19th century, cattle would have been used for all of their resources: meat, tallow, sinews, hide, horn, neat's foot oil and so on. Your treatment of the Thebes sealings in *Aegean Seals, Sealings and Administration* (1990) brings clear ancient parallels to bear on how such animals would have been used for banqueting and how their carcasses would have then been used for other things.

#### KANTA

Erik Hallager.

#### HALLAGER

Did I understand you correctly as saying that two sealings were made in Room 99 and then moved, after they had sorted out the shafts, into Room 98? What would be the further purpose of those two sealings?

#### PALAIMA

In their discussion of the Thebes sealings, Olivier, Piteros and Melena stressed how prevalent the use of sealings must have been. I think that the banquet 'ingredients' on texts of the Pylos Un series would at some stage of their collection, delivery and storage, almost all have had sealings connected with them. These would have specified the individuals or institutions responsible for delivering or receiving or overseeing storage, the types of animals and products, and the conditions or obligations pertaining to such transactions. On rare occasion we are lucky enough to have caches of such sealings which make this process clearer. The Thebes sealings are what one could call an 'instantaneous archives'. Who knows how long they would have remained collected in that spot? We are fortunate the deposit was destroyed by fire when it was.

We do not have very good evidence for sealings being kept for long periods, and even in the earliest depositions of sealings (before writing) such as those studied by Ferioli and Fiandra at Arslantepe, we have regular cycles of discard. With these Pylos sealings from the NE Workshop, I think we are fortunate in having a temporary collection that reflects work and administration at the moment. My own sense of what is happening is this. A shipment of axle-sized 'shafts' of wood and somewhat slighter 'shafts' called 'saplings' is delivered to the NE Workshop. Let us concentrate on the 50 saplings from the woodcutters (*drutomoî*). The central Archives Complex only needs to know that they and a rural collective have fulfilled their obligations to deliver raw wood suitable for chariot work and for weapons such as spears and javelins.

In the NE Workshop, the 50 saplings arrive. A worker there examines them and determines what each piece can be used for. He culls them and says, «Here are 20 good for infantry spears. Here are 30 good for regular spears. Here are two extra big enough to be used as axles.» I think then that these sorted pieces of wood were bundled, most likely right outside the NE Workshop. For the pile of 20, some party or parties devised a sealing with the counter-inscription 'infantry spears'. Then he or they formed another sealing upon which the number 20 (by exception) was alone written. These may have been taken into Room 98 or the sealings alone may have been taken there. The main point to stress is that these sealings, like their more famous counterparts from Thebes and even from the Pylos Wine Magazine and the Mycenae House of the Sphinxes, are temporary *deposits* which we are fortunate to possess for the information they give about ongoing administrative processes.

HALLAGER

Thank you.

YOUNGER

May I ask for plain terminology again, please? Are you talking here about labels?

PALAIMA

No, these are two-holed nodules with seal impressions. All my references in this paper are to such nodules.

YOUNGER

Am I clear in understanding that these objects are not being sealed and archived, but are being labeled for use or eventual use?

PALAIMA

I think I understand the point you are making, John. The very word *sealing* might imply a certain kind of security measure often associated with locking things away in storage or 'archiving' them. We in fact do not know, for example, how the Thebes sealings were transported along with the single animals they identify or even where they were made. These 'sealings' and those from Pylos are lumps of clay (also known as 'nodules') formed around knotted string. The lumps of clay are impressed by a seal. The resulting three-sided piece of clay could then be inscribed. The string itself might be attached or made to hang from objects or even carried in human hands. These devices derive their name *sealing* from the seal impression made upon them. They could in fact make any tampering with an object verifiable. But they are not primarily intended to lock something up.