How many Persepolis Fortification tablets are there?*

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1 Introduction

When Ernst Herzfeld reported on the Persepolis Fortification tablets in a lecture to the Royal Asiatic Society in September 1933, only a few months after the tablets had come to light, he estimated that the find included “about 10,000 intact pieces, 10,000 more or less complete ones, and probably more than 10,000 fragments”. The sum of this estimate, 30,000 or more pieces, remains the most commonly mentioned indication of the size of the Fortification archive*. By this standard the Fortification archive is among the largest single finds of cuneiform texts from the ancient Near East, ranking in size with the discoveries at Nineveh, Sippar, Mari, Hattusa, and elsewhere.

While the Oriental Institute’s excavations at Persepolis continued, reports of news-worthy discoveries sometimes recalled the Fortification find, mentioned with diminishing but still large numbers: 29,000 (Barden 1936: 25), more than 25,000 (New York Times, Feb. 9 1936, second news section, p. 8), 20,000 (Charles Breasted apud Garrison & Root 2001, p 23). Still later, away from the enthusiasm of fresh discovery, those facing the prospect of cataloguing, reading, interpreting and publishing the documents were more restrained. In 1948, George Cameron, with gloomy emphasis on the size and condition of the fragments, estimated that “the total number of complete or worthwhile documents … probably does not exceed five to seven thousand” (Cameron 1948: 18, n. 118).

This estimate — that worthwhile documents were perhaps only 1 in every 4\(\frac{3}{4}\)-6 of the excavated items — may have been influenced by Cameron’s experience with the Persepolis Treasury tablets, whose numbers were small enough that they could be controlled. The excavators reported 746 items: 198 tablets and substantial fragments and 548 smaller fragments (Schmidt 1953: 4, cf. 1939: 33; Cameron 1965: 167), so that the ratio between substantial pieces and smaller fragments was about 1:2\(\frac{3}{4}\), almost the inverse of the 2:1+ ratio in Herzfeld’s initial estimate of the Fortification find. When Cameron wrote in

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1 Anonymous 1934: 231-232; Herzfeld 1938: 11, n. 1; Poebel 1938: 132-133, n. 6; Schmidt 1940, pl. 2 overlay, pl. 4; Koch 1990: 2, etc.
1948, he thought that the 109 items he was publishing included everything with useful text (Cameron 1965 : 167). The 129 Treasury tablets and fragments that he eventually published (Cameron 1948; 1957; 1965) represented about 1 piece in every 5¾ excavated items.

In 1971, after Richard Hallock had published 2,087 Elamite Fortification texts, mentioning about 150 others that Cameron had edited before they were returned to Tehran in 1948, he indicated that he had read another 900 and estimated that there remained “a thousand or so which may contain useful information”, hence about 4,100 useful documents (Hallock 1971 [1985] : 10 [588] n. 1), less than an eighth of Herzfeld’s estimate. As he read more texts — eventually, almost 1,700 more — Hallock became non-committal, referring, for example, to “an unknown, but relatively small number, of well-preserved tablets, and innumerable fragments” (Hallock 1973 : 320, n. 1), leaving open the likelihood that as more was learned about the texts and the archive, more of the fragments would become useful texts.

Describing the size of the Persepolis Fortification archive risks distortion. The archive is like a fossil organism, the relic of a single complex entity; it is made up of several component systems; each of the components includes many elements; many of those elements are damaged, some beyond recovery; many other elements, and perhaps some entire component systems, are lost. The estimated aggregate number of recovered elements is not a false measure of size, but its implications are more limited than its rhetorical effect. Most serious modern students of the Fortification archive have recognized this.

The often frustrated or combative tone of scholarship on the Fortification tablets tends to mask not only a measure of consensus, but also some circumstances that seem favorable in comparison with some Mesopotamian archival studies, including these:

— The tablets are from a single known provenience. Very few of them have been separated from the main find, and very few related texts have been discovered elsewhere. The original find is bounded and essentially intact, hence quantifiable.
— Texts and seal impressions were never dissociated as items of separate text-historical and art-historical study. They have consistently been treated as intimately connected parts of a single information system.
— The texts and seal impressions have not been dissociated from the archival context. Discussions of the archive as such include treatments by Briant, Brosius, Hallock, Henkelman, Hinz, Koch, Root, Vallat, and others, on which we draw here (sometimes without attribution, and usually without noting sharp disagreements on particular matters).
— Despite well-founded dissatisfaction with the available sample of the archive, the edited Elamite texts, published and unpublished, represent a large fraction of the dominant component of the archive. Despite sharp disagreements among individuals and between interpretive schools, there is broad consensus (but not unanimity) on the composition of the archive and on how data in the Elamite texts flowed.
Since suppositions about the composition of the archive will affect estimates of its size and interpretation of those estimates, we reiterate some of the terms of this consensus. We presume that most students of the Persepolis Fortification texts are already aware of much that follows, but perhaps not all are aware of all of it, since not all of it is conspicuous in the published record.

2 Composition

The excavated Fortification archive has three main components or data-streams: clay tags or tablets with Elamite texts written in cuneiform script (hereafter, Elamite tablets); clay tags or tablets with Aramaic texts written in ink and/or incised (hereafter, Aramaic tablets); clay tags or tablets without texts (sometimes called anepigraphic tablets, hereafter uninscribed tablets). Tablets from all three components bear seal-impressions, a fourth data-stream. The three components, each including formal and/or functional sub-categories, are of unequal size. There are a few unique items (a clay tablet inscribed in Greek script and language, a clay tablet inscribed in what may be Phrygian, a clay tablet inscribed in Old Persian script and language, a clay tablet with unknown — perhaps meaningless — cuneiform characters, and others). For assessing the social setting of the archive, these unique pieces are of exceptional importance, but for estimating the size of the find, they are trivial. The fact that only the Elamite tablets and some of the unique pieces are partially published limits interpretations of the archive as a whole.

2.1 Elamite tablets

About 4,800 Elamite Fortification texts have been edited, about 2,100 of them published. Hallock defined thirty categories and subcategories of Elamite documents, labeled A-W, on the basis of contents of the texts. Most of these texts are on tablets that fall into three or four groups defined by shape. As close readers of Hallock’s work have long understood, and as students of Mesopotamian cuneiform administrative archives would anticipate, the shapes of the tablets are correlated broadly with the contents and functions of the texts.

Most texts of Categories A-S are on tongue-shaped pieces, about 3-5 cm wide, formed around knotted strings that emerged at the corners of the flat left edges, most with one or more seal impressions. They record single transactions, at least in the

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2 PF (2,087) + PF-NN (including PFa) (2,584) + Tehran/Cameron (153) = 4,824. See also Garrison & Root 2001: 3-4; Henkelman 2006: 45-47, with details on the numbers, and on publications of individual texts.

3 Most students of Fortification texts refer to these as “tablets”. Some others prefer to call them (sometimes dismissively) “labels”, “tags”, or “bullae”, on account of their shape and their embedded strings. Some A-S texts are on differently shaped objects: conical, lenticular, pillow-shaped, etc. These variations are especially frequent among Q texts (records of rations for travelers, the largest single category of edited Elamite Fortification texts).
broadest sense. In the functional terminology adapted by Michael Jursa from Robert Englund, they are primary documents, that is, documents that are not based on other written sources, but constitute the first written record of a transaction, whether written at the moment of the transaction or at some distance of space or time.

Fig. 1: Three fragments of tablets with unedited Elamite texts of Category A-S (all kurmin Umaya-na).

All texts of Categories V-W are on rectangular tablets of various sizes, proportions and formats, without embedded strings, about two-thirds with seal impressions. They are Journals (compilations of transactions over a year or more, with entries that often correspond to single-item primary texts of Categories A-S), and Accounts (records of balances, transactions, or other recorded information).
for particular stations for one to five years). In functional terms, they are secondary documents, in the sense that their contents are based on other records, mostly written (primary documents and secondary audits), sometimes explicitly oral.

Fig. 2: Two fragments of rectangular tablets with unedited texts of Categories V and W.

**Texts of Category T** are not always distinguishable by shape when they are intact, and less often distinguishable when they are broken. Most are on tongue-shaped tablets with embedded strings, usually somewhat larger than most tablets with A-S texts, c. 4-7 cm, and sometimes with a distinctive constriction near the left edge. Some, however, are on small rectangular tablets or on tongue-shaped tablets that are indistinguishable from
those with A-S texts. Most are administrative letter-orders, authorizing transactions of the kinds that were to be recorded in documents of Categories A-S. In functional terms, they might be characterized as “pre-primary,” in that they anticipate and authorize acts that generate primary records, but the tablets themselves may be considered among primary records, if the presence of outgoing letters at Persepolis indicates (as some have suggested) the completion of the authorized acts.

**Fig. 3**: Two fragments of tablets with unedited texts of Category T (both letters from Parnaka to Siyana).

**Texts of Category U** are on objects of various shapes — lenticular, conical, ovoid, ellipsoid, irregular — usually small, sometimes very small, with texts of a few words or phrases. Since at least some of them were attached to baskets, jars, shelves, or bags, including containers of records, they are all called “labels”. A formal and functional study remains to be done. We omit them from the primary-secondary continuum.

**Fig. 4**: Three tablets with unedited texts of Category U.
About 110 of the tablets with edited Elamite texts also have short Aramaic epigraphs or “dockets”, written in ink, similar to those on Neo-Assyrian and Neo-Babylonian legal tablets (but less commonly on administrative tablets), a few words correlated with some of the information in the cuneiform texts. Like dockets on Neo-Babylonian administrative tablets, these cannot have been indispensable for archival purposes, and considering variations in their positions on the tablets, they may not even have been very useful for filing and retrieval. An often-cited docket records a total that was evidently the basis for revision of the corresponding cuneiform texts (PF 2072, see Hallock 1969: 644). This invites comparison with a docket on a Neo-Babylonian tablet from the Eanna archive, the Aramaic including information not found in the Babylonian, and therefore apparently stemming from a later stage in the processing and use of information. Both the Fortification tablet and the Eanna tablet reflect episodes in the use of the archives rather than in the operations of the institutions that generated the texts. In functional terms, therefore, at least some of these dockets may be tertiary, or at least post-secondary.

Every serious student has recognized that seal impressions on the Elamite tablets are correlated with contents of the texts in ways that are essential to reconstructing administrative organization and procedure. Although it is common to quote Hallock’s adage that if you are not confused you do not appreciate the problem (Hallock 1977: 127), there is broad agreement on some basics, especially the recognition that some seals represent individuals (or their delegates), some local offices, some regional offices, etc. Such seal impressions are part of the “policing function” of administrative records (Moses Finley’s term, again via Jursa). Of particular significance for present concerns, seal impressions are a kind of information common to all three of the main components of the archive, and impressions of some seals are found on elements of more than one component, assuring what the excavated provenience implies, that all three components are parts of single artifact.

8 Jursa 2004: 158. A typology is still to be developed; cf. Zadok 2003: 538-578 on Aramaic dockets on Neo-Assyrian and Neo-Babylonian tablets.

9 Frame apud Jursa 2004: 159; see also Zadok 2003: 578. Cf. PF 2043, where the docket appears to be an aide-mémoire (reading with Bowman, l-zērn, synonymous with Akkadian taṣṣitu?) concerned with transferring the information (ḫmût ʾıḇḥ, “these sealed [documents]”) to another account (ḫ-bnr).

10 Jursa 2004: 146, 180. Much less plausible, in our view, is the suggestion (Vallat 1997) that seal impressions are useful for information storage and retrieval; similarly, Garrison & Root: 30, n. 91.
2.2 Aramaic tablets

The Aramaic texts are written on tongue-shaped or sub-triangular clay tags formed around knotted strings, similar to the Elamite primary memoranda, but more varied in shape. Most Aramaic texts are in ink, some are incised, some both. Some are written in lines perpendicular to the flattened edge (like the Elamite texts), some in lines parallel to the flattened edge (like many Aramaic legal texts in Neo-Assyrian private archives). Texts are as short as one word, as long as eleven lines. Some are in two different hands, properly speaking two different texts, representing different administrative acts, more or less like an Elamite text with an Aramaic docket.

Raymond A. Bowman made copies and preliminary editions of about five hundred monolingual Aramaic tablets (as well as Aramaic dockets on Elamite tablets). Until Annalisa Azzoni’s revision and elaboration of Bowman’s work is more advanced, there is not a formal or functional typology, nor a systematic comparison with the Elamite Persepolis texts, with other Achaemenid Aramaic administrative records (e.g., the Idumaean ostraca), or with Aramaic legal tablets in Neo-Assyrian archives.

Most longer Aramaic texts deal with the same range of commodities found in the Elamite texts (e.g., food, rations, livestock, seed). Some are (like the unique Greek tablet), counterparts of Elamite records (e.g., records of rations issued to travel parties, rations for animals, rations, for workers distinguished by sex and age); some record similar matters, but in different formal order from that of the Elamite texts. Unambiguous

Fig. 5: Four fragments of Fortification tablets with unedited Aramaic texts.

11 See Azzoni, Dusinberre, this volume.
Aramaic equivalents of the most common Elamite markers of administrative roles are rare or absent 12.

None of the monolingual Persepolis Aramaic tablets is a certain example of the kinds of Aramaic documents sometimes mentioned or implied in the Elamite texts (e.g., travelers’ authorizations presented for rations, drafts or duplicates of letter orders, or copies of texts on leather made by the general director’s staff). None is clearly a secondary text, compiled from other information 13. Dated texts fall in the same interval as the Elamite tablets, Darius year 13-28, most (120 of 146 texts with clear year numbers) in years 21-25.

2.3 Uninscribed tablets 14

![Fig. 6: Six uninscribed, sealed Fortification tablets.](image)

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12 Aramaic *l-yd* = El. *kurmin*? But *l-yd* = *šaramanna* in PF 1212 (following Bowman’s unpublished reading of the docket).

13 But some may be tertiary that is, texts with a single word or name might include filing labels for cuneiform tablets.

14 See Garrison, this volume.
The sealed, uninscribed tablets, formed around knotted strings, roughly the size of the smaller Elamite cuneiform primary memoranda, are documents both in that they carried added information, and in that they were archived with the Elamite and Aramaic tablets. Roughly similar objects are known from almost all periods of Mesopotamian history and from other Achaemenid territories (cf. Henkelman, Jones & Stolper 2004: 40-44). There are at least five or six distinctive tablet shapes, and many variations in seal types and sealing protocols. The formal variety of uninscribed tablets strongly suggests that they served a corresponding variety of recording and administrative purposes.

Some of the seals on uninscribed tablets are also found on Elamite tablets. It is conceivable that some uninscribed pieces were connected — perhaps even literally tied — to particular Aramaic or cuneiform pieces. If so, sealing protocols were even more complex than we have realized, but the possibility of re-establishing connections between pairs of documents is probably lost.

2.4 Missing documents

The Elamite texts mention documents of kinds not represented in the find (copies on leather, travelers’ authorizations, duplicates or copies of letters). There is no recognizable mention in the Elamite texts of waxed writing boards of the kind that carried current operating registers in Neo-Babylonian temple administrations.

3 Data flow

With the conspicuous exception of François Vallat (1997), there is broad consensus on the data flow represented by the Elamite texts: primary memoranda (Categories A-S, on small tongue-shaped tablets) were written, sealed and accumulated at stations in the regions around Persepolis, sometimes audited there, and sent periodically to Persepolis, where the information in them was compiled into secondary records (Categories V-W, on rectangular tablets). Letter-orders of Category T may have been returned along with primary memoranda; at least some of the labels of Category U came from shipments of primary records. Secondary records were compiled in two stages: first into Journals, typically recording transactions of many kinds (but involving a single type of commodity) in a single district; then into Accounts, entering credit, debit and balance information compiled from Journals sometimes supplemented from other sources. Organizing principles of recording reflect organizing principles of the underlying institution: commodity, location, and date. Dates are normally indicated by month and year only. That the king’s name is not mentioned in dates and only rarely mentioned in the bodies of

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15 Some might have been attached to containers of incoming documents, providing the seal information missing from most labels of Category U. For tantalizing suggestions from second-millennium Babylonian texts, cf. CAD s.v. ze’pu mng. 1.

texts is an indication of the ephemeral purpose of all these texts, even the Journals and Accounts at the end of the stream. Accounts commonly cover two or more years, in one case six years, a suggestion of the minimum limit of this ephemeral purpose.

How the Aramaic tablets and the uninscribed tablets can be connected with this data flow remains to be explored. Considering their appearance, the kind of information they carried, and formal limits of their possible contents, it is plausible to suppose that most or all of them are associated with primary documentation (hence, functionally connected with Elamite texts of Categories A-S), some with tertiary information handling (hence, functionally connected with some labels of Category U), but none with secondary documents.

4 How many?

Although some Persepolitan scholars pretend that the sheer volume of available information and the likely volume of unavailable information are impediments to understanding, most would endorse Mogens Larsen’s response to the vast Old Assyrian record, “Texts are good, lots of texts are better”. They have waited with justified impatience for more texts: full publication of editions in Hallock’s and Bowman’s Nachlässe and ongoing publication of the balance of the archive. This begs questions about the composition of the balance: how many items, and what kind of items? These are tactical questions, guiding triage, conservation, study and publication. They are also descriptive and analytical questions, entailing another: with what implications for characterizing the archive?

As Hallock & Poebel reported, the Fortification tablets came to Chicago in 2,353 numbered cardboard boxes, each holding one to twenty or more items. There were also some larger tins full of fragments thought too small to be useful, thousands of them (Hallock 1969: 1; Poebel 1938: 132, n. 6). Bowman, Cameron, and Hallock removed items from the boxes as they edited them, numbered them, and stored them separately. Photographers recording tablets and seal impressions under a grant from the Federal Works Progress Administration in the early 1940’s removed and replaced items. By 1980, the cardboard boxes and their labels had deteriorated. Between 1980 and 1984, Charles E. Jones supervised a team that transferred the contents, box by box, to padded plastic boxes of approximately equivalent size (c. 18.5 x 13.5 x 5 cm), compiling an inventory that included this information:

— Transcription of the information on the original box labels, written in French, presumably when the tablets were packed in Iran for shipment to Chicago. The labels included the number of items in each box, for many boxes a corresponding series of Fort. Numbers, and a terse verbal characterization; (e.g., Box 1484: “4 tablettes (fractées.) … 9030-9033”); and small diagrams (they might now be called icons) indicating rectangular, tongue-shaped, or triangular tablet formats, and hatched to indicate approximate degree of breakage.
Fig. 7: Persepolis Fortification tablets: Box 0293 after reboxing, 1980.

Fig. 8: Sample pages of Persepolis Fortification tablets inventory, 1980-84.
— Transcription of other notes associated with the box: indications that the box had been checked by Hallock, Bowman and others (not always identifiable by their initials); labels produced or photography by the Works Project Administration project; occasional mysterious notes that some number of pieces had been removed to violet, yellow, blue, etc., boxes.

— Short comments on condition of the contents as of 1980-84; occasional observations on notable features (e.g., presence of a noteworthy seal; presence of Aramaic script).

— Number of items remaining as of 1980-84, including an observed or estimated number of distinct items and/or an observed or estimated minimum and maximum number of original pieces represented by the fragments in the box.

This information provided the basis for two rough counts of the Fortification tablets: first, the number of items in the boxes as they arrived in Chicago, presumably identical with the number as they were packed in Iran within three years of discovery; second, the number of tablets reflected by fragments in the boxes after Cameron, Bowman and Hallock had finished their work. Broadly speaking, the difference between the two numbers ought to be equivalent to the number of tablets that Cameron, Bowman, and Hallock removed and edited.

Some qualifications are in order, however:

— The numbers of boxes are imprecise. The original series included a few numbers applied to two boxes (thus, 0330 and 0330A); the post-1980 series includes more such pairs. The post-1980 series has some gaps. It ends with box number 2360, to which are added seven unnumbered boxes, replacing original cardboard boxes whose labels were no longer legible.

— The terms of the pre-1937 count and the post-1980 count were overlapping, but not identical. The older count identified the number of distinct fragments in each box (though counting frequent “fragmented fragments” as single pieces). The later count attempted to count the number of original documents represented by the fragments in each box.

— The descriptive icons are not always appropriate to the contents of the post-1980 box 17.

— The different pre-1937 and post-1980 counts of individual boxes cannot always be explained by editorial predation. In some cases, the later count is actually higher than the earlier 18.

For these and other reasons, we prefer to compare rounded approximations, rather than convey a false precision with exact numbers:

17 E.g., Box 0293 (Fig. 7), pre-1937 said to have “20 très petits frags. de tabl. [sketch: rectangular, shattered]”, now contains mostly fragments of tongue-shaped and conical tablets, only two fragments of rectangular tablets.

18 E.g., Boxes 1232-1399: 738 (pre-1937) vs. 949 (post-1980). Similarly, the “various discrepancies” mentioned by Garrison & Root 2001: 28, n. 82.
— The pre-1937 count is about 23,200.
— The post-1980 count is about 16,200 (plus fragments in the tins).
— The pre-1937 count is about 25% below Herzfeld’s widely cited estimate of 30,000; the sum of the post-1980 count and the texts edited by Bowman, Cameron, and Hallock is slightly lower still, about 21,500, about 93% of the older count, about 72% of Herzfeld’s guess.

The sketches of tablet shapes that accompanied the original box labels allow a crude estimate of how the unedited balance of the archive is composed. The sketches indicating rectangular tablets and fragments represent secondary documents, Elamite texts of Categories V and W. The sketches of tongue-shaped tablets appear to indicate tongue-shaped Elamite cuneiform tablets, hence mostly primary documents, texts of Categories A-S, T and U. The sketches of triangular tablets probably indicate uninscribed pieces, and perhaps also Aramaic monolingual tablets. In the transcriptions of box labels, only these combinations occur: rectangular; rectangular and tongue-shaped; tongue-shaped and triangular. Hence, arithmetic expedients to separate tongue-shaped and triangular are inappropriate.

The estimate that these marks of tablet shapes support is the ratio between pieces of secondary documents (rectangular) and pieces of other documents (tongue-shaped and triangular). In the post-1980 count, the numbers are approximately equal, somewhat more than 8,000 of each.¹⁹

Original large tablets broke more often and into more pieces than original small tablets. Conversely, editorial predation, as Bowman, Cameron and Hallock removed tablets for study, was much heavier on small tablets than on large ones. Hence, in guessing the numbers of original documents represented by these numbers of fragments, the number of secondary, rectangular documents ought to be lowered more than the number of small, mostly primary documents. As a first hypothesis, reducing the number of small tablets by a quarter and the number of large tablets by a half gives about 10,000 documents, about 4,000 rectangular, secondary documents, and about 6,000 small, primary and other. Adding the Elamite and Aramaic tablets already taken from the boxes gives about 15,300 items, about 4,300 secondary, and about 11,000 primary and others.

On this first estimate, in the Persepolis find as a whole the ratio between secondary Elamite tablets and all other documents (other Elamite tablets, Aramaic tablets, and uninscribed tablets) may be as high as 1:1 and as low as 1:2 or 1:3. As anticipated, this differs sharply from the edited sample of Elamite texts, where c. 320 V-W texts stand to c. 4,504 A-U texts in a ratio c. 1:14.

¹⁹ These estimates are obtained by adding the entries in columns headed “number” and “minimum”, but numbers of tablets, minimums and maximums are not always entered in the inventory. When two tablet shapes are indicated, the number is divided evenly between them; in the case of odd numbers, the larger number is assigned to the first shape indicated; this expedient is certainly unrealistic in most individual cases, but the aggregate error may be self-correcting.
In 2006, to make better estimates (among other purposes), we re-examined the contents of more than 600 boxes, about a quarter of the total. We counted numbers of fragments from Elamite texts of Categories A-S, Categories T and U (where distinguishable), and various formats of Categories V and W; monolingual Aramaic tablets and fragments; uninscribed tablets and fragments; and miscellany. We counted the edited texts that had been removed from the boxes by Bowman, Cameron and Hallock. And we compared the pre-1937 and post-1980 counts. The state of preservation of the fragments imposed some imprecision:

— Many large fragments of rectangular tablets bearing texts of Categories V and W could easily be sorted into subcategories by size, shape and/or contents, but this information is not consistently available, so fragments from these tablets have been aggregated as a single subtotal of secondary Elamite texts.
— Enough could be read or seen on some smaller Elamite tablets of Categories A-S that they could be assigned to specific Categories, but this information is also inconsistent. Although tablets with texts of Categories T and U could sometimes be recognized, they could not be consistently distinguished by shape alone. Fragments of non-rectangular cuneiform tablets presumed to have texts of Categories A-U have been aggregated as a single subtotal.

As in the post-1980 count, we attempted to gauge the number of distinct original documents represented by fragments in each box, not including nondescript fragments, or fragments without recognizable surface information.

The pre-1937 count of these boxes, calculated as described above, included about 6,900 items, about 30% of the total pre-1937 count. The original contents of these boxes included 631, about 30%, of the tablets published in PFT; 786, about 30%, of the tablets edited by Hallock as PF-NN; 150, about 30%, of the monolingual Aramaic tablets edited by Bowman (about 34% of those for which original box numbers are recorded); 38, about 25%, of the Elamite texts edited by Cameron and returned to Tehran; altogether 1,605, about 30%, of previously edited texts — a distinctly higher percentage than the number of boxes would lead us to expect if it were a representative sample. Nevertheless, the post-1980 count of the contents of these boxes, calculated as above, is about 4,360, about 27%.

20 The selection of boxes is not statistically random. It includes the first few in the numbered series (0001-0028), the last few (2347-2360), and groups of 65-85 consecutively numbered boxes at irregular intervals throughout the series (0253-0337, 0675-0758, 0843-0926, 1179-1261, 1415, 1417, 1514-1592, 1846-1911, 2220-2304, 2333-2335). In these sequences, 13 boxes were missing and 13 other original numbers were split into pairs; hence 613 original numbers, 613 current boxes, 26% of the original total number of boxes.

21 We also made low-resolution snapshots of all of the boxes, low-resolution snapshots of some distinctive or exceptional pieces, partial transliterations of about 110 fragmentary texts, and notes on others.

22 For example, some U tablets are conical or lenticular, but not all conical or lenticular tablets have texts of Category U.
of the total post-1980 count, corresponding reasonably closely to the number of boxes as a percentage of all the boxes, 26%.

If we were limited to the sketches of tablet shape as crude indications tablet format and type, counted as above, the ratio of pieces from rectangular tablets to pieces from non-rectangular tablets would be about 1:1.3 using the pre-1937 count, but about 1:1.1 using the post-1980 count. Since we have re-examined the contents, however, we can provide more definite estimates:

— c. 1,715 pieces of rectangular tablets with Elamite texts, hence tablets with texts of Categories V-W, all secondary records.
— c. 1,560 pieces of tongue-shaped tablets with Elamite texts, hence tablets with texts of Categories A-U, mostly primary records.
— c. 1,480 fragments of uninscribed, sealed tablets.
— 47 fragments of monolingual Aramaic tablets (and 15 Aramaic dockets on cuneiform tablets).
— The ratio of rectangular to other is c. 1:1.8, distinctly lower than the estimates above drawn from the sketches and numbers of the box inventories.

These numbers refer mostly to fragments, so to obtain estimates of original documents, they need to be adjusted. Table 1 displays results of such adjustments. We follow the assumptions made above, lowering the number of fragments from rectangular cuneiform tablets by about a half, and the number of fragments from smaller tongue-shaped, etc., cuneiform tablets by about a third. We assume that the number of uninscribed tablets and fragments should be lowered by much less, since no pieces of this kind were removed from the boxes, leaving a higher proportion of complete pieces, and since relatively many fragments that can be confidently identified as pieces of uninscribed tablets are larger than many fragments of cuneiform tablets. Hence, we lower the number of fragments of uninscribed pieces by a fifth. The number of monolingual Aramaic tablets and fragments is not to be lowered at all. On the contrary, it is likely that there were originally more Aramaic texts in ink than can now be recognized, either obscured by dirt and salt or faded beyond easy recognition during summary cataloging.

The total of unedited Fortification tablets of all kinds is between 16,000 and 20,000 and the total of tablets and fragments of all kinds in the Fortification find, edited and unedited\textsuperscript{23}, is between 20,000 and 25,000 (conforming to the pre-1937 overall count). At least two-fifths of these and perhaps almost half of them are pieces of Elamite primary documents (tablets with texts of Categories A-S); at least a quarter and perhaps a third are pieces of secondary documents (Elamite Journals and Accounts, Categories V-W); and at least a fifth are pieces of uninscribed, sealed tags; fewer than a twentieth are pieces of Aramaic monolingual tablets.

\textsuperscript{23} We have omitted from consideration the smaller fragments, deemed “hardly useful”, in the tins, and the c. 37,000 smaller fragments returned to Tehran in 1951. We assume that many of these came from tablets that have been broken into so many pieces that neither a plausible way of counting them nor a plausible estimate of the average number of pieces per tablet can be estimated; and that many more of these pieces joined fragments already counted here.
If our assumptions about the relations between tablets and fragments are plausible, the total of distinct documents represented by the Persepolis find may be estimated at 15,000-18,000. About half are Elamite primary documents; about a fifth are secondary records; about a quarter are uninscribed, sealed clay tags; less than a twentieth are monolingual Aramaic tablets.

If these results are not surprising, they nevertheless add a measure of substance to what have otherwise been more or less informed guesses and a measure of definition to the shape of the archive:

— The proportion of secondary documents, the Journals and Accounts at the end of the data stream is, as anticipated, much larger than the published sample alone would have suggested.
— The primary Elamite documents remain numerically preponderant, suggesting that a very large volume of information was not yet reduced to final form when the composition of the archive as we have it was determined.
— The number of uninscribed, sealed tablets, if not as high as earlier “unofficial estimates”, is nevertheless prodigious, assuring that our understanding of the data stream is seriously incomplete.
— The number of Aramaic tablets, immense among Imperial Aramaic text groups, nevertheless constitutes a small fraction of the preserved archive.

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24 Our own, cited by Garrison & Root 2001: 3.
<table>
<thead>
<tr>
<th>613-Box Sample</th>
<th>Elamite Categories V-W</th>
<th>Elamite Categories A-U</th>
<th>Uninscribed, Sealed</th>
<th>Aramaic</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counted fragments</td>
<td>1,715 (35.6%)</td>
<td>1,562 (32.5%)</td>
<td>1,486 (30.1%)</td>
<td>47 (1%)</td>
<td>4,810</td>
</tr>
<tr>
<td>Adjustment</td>
<td>≅ 0.50</td>
<td>≅ 0.67</td>
<td>≅ 0.80</td>
<td>≅ 1.0</td>
<td></td>
</tr>
<tr>
<td>Estimated original tablets</td>
<td>858 (27.4%)</td>
<td>1,041 (33.2%)</td>
<td>1,118 (37.9%)</td>
<td>47 (1.5%)</td>
<td>3,064</td>
</tr>
</tbody>
</table>

| Counted fragments | 1,715 | 1,562 | 1,486 | 47 |
| Estimated total count (if 25%) | 6,860 (35.8%) | 6,248 (32.6%) | 5,844 (31.1%) | 188 (1%) | 19,140 |
| Adjustment | ≅ 0.50 | ≅ 0.67 | ≅ 0.80 | ≅ 1.0 | |
| Estimated total original tablets | 3,430 (27.3%) | 4,186 (33.3%) | 4,755 (37.9%) | 188 (1.5%) | 12,559 |

| Counted fragments | 1,715 | 1,562 | 1,486 | 47 |
| Estimated total count (if 30%) | 5,206 (32.5%) | 5,717 (35.7%) | 4,953 (30.1%) | 156 (1%) | 16,032 |
| Adjustment | ≅ 0.50 | ≅ 0.67 | ≅ 0.80 | ≅ 1.0 | |
| Estimated total original tablets | 2,603 (24.7%) | 3,811 (36.2%) | 3,962 (37.6%) | 156 (1.5%) | 10,352 |

| Edited tablets | 320 (8.7%) | 4,504 (81.9%) | 0 | 501 (9.4%) | 5,325 |

| Total Fort. tablets and fragments | | | | |
| if 25% sample | 7,180 (29.4%) | 10,752 (43.9%) | 5,844 (23.9%) | 689 (2.8%) | 24,465 |
| if 30% sample | 5,526 (25.9%) | 10,221 (47.9%) | 4,953 (23.2%) | 657 (3.1%) | 21,357 |

| Estimated total original documents | | | | |
| if 25% sample | 3,750 (21.0%) | 8,690 (48.6%) | 4,755 (26.6%) | 689 (3.9%) | 17,884 |
| if 30% sample | 2,923 (18.4%) | 8,315 (52.4%) | 3,962 (25.0%) | 657 (4.1%) | 15,857 |

**Table 1**: Estimates of Persepolis Fortification tablets and fragments, based on the contents of 613 boxes.
5 Characteristics

In the terms propounded by Van Driel, Bongenaar, Jursa and others, especially to characterize Neo-Babylonian legal archives, the Fortification archive appears to be “dead”. That is, it is a group of documents of no use to current operations, culled and discarded or put in storage (Jursa 2004: 148 with references). Henkelman’s study of preserved dates, building on Hallock’s introduction to the topic, sorts dated Elamite Fortification texts by functional groups of Categories (i.e., primary vs. secondary documents, Henkelman 2006: 106-110). The results show the marks of archival deadness: secondary records (Journals and Accounts) are concentrated in early years; primary records (memoranda of various transactions, but also letter orders), are concentrated in later years, with an especially heavy concentration (about 40% of the whole sample) in years 22-23, and there are very few dated texts of any kind in the latest attested years. It must be stressed that this characterizes only the edited sample of Elamite texts, in which secondary texts are drastically underrepresented. Nevertheless, the dated Aramaic texts, presumed to be mostly primary records, conform broadly to this pattern.

Most known big cuneiform archives are dead by these criteria, but deadness is a matter of circumstance and degree. Henkelman (2006: 106-107) prefers to see the Fortification archive as “dormant”, presenting two views of the administrative environment that are not fully integrated: information from the early years, fully processed, is largely reduced to Journals and Accounts, hence gives a view dominated by outcomes; processing of primary documents from years 22-23 was interrupted for an unknown reason, giving a view dominated by primary activity, and this view, amplified by the unrepresentative ratio between primary and secondary documents in the edited sample, dominates overall. Possibilities for observations of changing behaviors or circumstances over time are therefore small.

Alexander’s burning of Persepolis might have been expected to preserve stored records as of 330 B.C. 25 All the same, the mere absence of later Fortification texts is not a reason to infer that the underlying system of administration and recording was abandoned after about Darius year 29, and there is reason to think otherwise 26. Neither is it a reason to expect that other sets of such records were necessarily preserved and still to be recovered. We stipulate that the Fortification find as we have it is a meaningfully structured, dead or dormant archive (Garrison & Root 2001: 28-29; Henkelman 2006: 96-110); that the whole group represents an episode in a longer institutional life; and that the individual items were ephemera.

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25 Registers of current operations, if they were on waxed writing boards, would have been thoroughly destroyed. The supposition that the Fortification archive as we have it was accidentally preserved by baking in the destruction of Persepolis (Hornblower 1994: 46) is erroneous. The Persepolis Treasury tablets were accidentally burned by the destruction of the building where they were housed (Schmidt 1953: 4), but the Fortification tablets were not fired in antiquity.

26 Elamite Treasury tablets from the reigns of Xerxes and Artaxerxes, including information on successors to administrators named in the Fortification texts, argue against this.
The index of ephemerality is in the final products of the reconstructed archival process. The edited Accounts (as the chart of Henkelman 2006: 107 displays to striking effect) could be culled after as little as two years, or after as much as sixteen years or more, but most were culled after ten to twelve years. This seems apt for the “policing” function attributed to such records. That is, supposing that the main underlying purpose of such recording is not to monitor the commodities themselves, but to monitor administrators’ responsibility for commodities, then ten or twelve years is a reasonable period for a generation of accountable administrators to serve and be succeeded, making the records of their tenure of little further use except for occasional questions of transition.

It is harder to assess the Fortification records on the “minimalist/maximalist” continuum or opposition. On Jursa’s paraphrase of Steinkeller, a minimalist opinion holds that some or all Mesopotamian administrative archives serve primarily or solely a policing function, tracking obligations; a maximalist opinion, that they were a basis, perhaps the main basis, for general planning and policy (Jursa 2004: 146-147, 178-184). Restraints on judgment here include the observation that the Fortification records represent only one branch of an administration that must have had other wings; the absence of consensus — or even solid information — on the operations of implied contemporary institutions, e.g., farms and estates, markets for non-administrative exchanges of commodities, contractors; and the sharp geographical and demographic difference between Achaemenid Persia and Babylonia during earlier densely documented periods.

If the consensus on the relationship between primary and secondary documents in the Fortification archive is right (that is, if most of the Elamite texts on rectangular tablets represent two steps of compiling information from most of the smaller texts, and perhaps even from some of the other non-Elamite tablets), then most of the secondary documents will have been older than most of the primary documents (that is, the phenomenon observed by Henkelman in the edited sample will be true of the entire corpus, despite the unrepresentative distribution of types in the edited sample). If we postulate annual Journals for five groups of commodities, and Accounts done on a two- or three-year cycle, then complete documentation of 40-50 administrative stations for 15 years would have produced about 4-5,000 journals and accounts, and the estimated amount of such texts in the Fortification find would represent three-fifths to three-quarters of this number.

The primary texts are ephemeral records of single transactions. About three quarters of the edited Elamite texts are records of consumption (and most of the consumers are travelers moving through the region or crews of workers moving around districts27). The secondary texts are less ephemeral only in the tautological sense that they are older.

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27 Among the edited texts, the largest categories of primary documents are Q (disbursements of rations to travelers; c. 725 texts, c. 17% of A-S texts, c. 15% of all edited Elamite texts); L1-L3 (disbursements of monthly rations; c. 650 texts, c. 15% of A-S texts, c. 13% of all edited Elamite texts); C1-C6 (deposits, exchanges, records of balances carried forward, disposition of sheep and goats taken in as “tax”; c. 400 texts, c. 9% of A-S texts, c. 8% of all edited Elamite texts); M (payments of special rations, c. 360 texts, c. 8½% of A-S texts, c. 7½% of all edited Elamite texts); S1-S3 (regular, special and travel rations for animals, c. 350 texts, c. 8½% of A-S texts, c. 7½% of all...
They are compiled from primary records, so they also mostly tabulate consumption — barley eaten ten years earlier, or a balance of barley carried forward and then eaten nine years earlier.

So is judgment of the archive’s aims and ethos changed by supposing a much larger volume and proportion of older secondary records than is represented by the published and edited sample? In the absence of counterpart information from other administrative branches, we see no way to assert a “maximalist” planning purpose, but perhaps some nuance can be given to the “policing” idea.

The consensus view holds that primary records were made off-center, at district administrative nodes, and that secondary records were compiled at Persepolis itself, the institutional center, where little or none of the recorded storage and consumption took place. The flow of documents and the flow of commodities were not parallel. Commodities stayed in the surroundings; primary records (or copies of them) flowed into the center; comparatively durable records of accountability accumulated there. Our estimate hypothesizes that Persepolis kept complete records of accountability on district nodes for ten or twelve years at a time. This is not an obvious way to do things. It begs two questions.

First, why the cumbersome work of shipping tablets with primary records to Persepolis? On-the-spot bookkeeping could have produced journals and final accounts, to be sent in to Persepolis if necessary. It is demonstrated that some of the upper-level administrators and teams of auditors traveled through the region. Their work, it has been cogently suggested, was an independent source for the final Accounts. In these circumstances, the shipment of primary records to Persepolis seems a costly redundancy. It implies a strongly perceived need for verification.

Second, why accumulate Journals and Accounts and keep them for ten or twelve years or more? The stocks of barley and wine were consumed years earlier. Even the accountability for particular annual stocks was no longer actionable information. If the large number of secondary documents held in the archive were, as we speculate, nearly comprehensive records of the overall performance of a generation of administrators at most of the district nodes in the region around Persepolis, we further speculate that one motive for this accumulation was political, responding to a need to knit a regional system of fortresses, storehouses, estates and villages — a system that certainly existed before the reign of Darius and probably existed before the Achaemenid imperial expansion — into a network under palace control.28

The circumstances of the mid-reign of Darius included recent establishment of a new dynasty and a consolidation of court politics; construction at Persepolis; occasional residence of the court there; and the recent arrival of large numbers of people who were

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28 At least two of the towns in the Fortification texts are known also known from Babylonian texts dated in the reign of Cambyses: Matezzī/Fumadešu near Persepolis, probably already the regional center before construction of the Persepolis terrace began; and Matannan (Kleber & Henkelman 2007). Neo-Elamite administrative texts from Susa offer antecedents for at least some of the details of recording.
not part of the regional society but who were identified by royal control, including not only captive or conscript workers, but also transient official travelers. These circumstances would provide strong incentives for centralizing oversight. We do not suggest that we have the Fortification tablets only because of these circumstances. We do not suggest that the archive as we have it was closed because these circumstances abated and the things recorded stopped. We merely speculate that in this, as in other things, the reign of Darius was a period of rapid adaptation and consolidation, that the visible form of the Fortification institution was affected by this historical moment.
How many Persepolis Fortification tablets are there?

Bibliography

Cameron, G. G. 1948, Persepolis Treasury Tablets (OIP 65), Chicago, The University of Chicago Press.
Herzfeld, E. 1938, Altpersische Inschriften (AMI Erg. 1), Berlin, Dietrich Reimer.
Responses. Political and Cultural Interaction with(in) the Achaemenid Empire, Swansea, p. 163-176.


