PROTO-ELAMITE HISTORY

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"Proto-Elamite" is the term for a writing system in use in the Susiana plain and the Iranian highlands east of Mesopotamia between ca. 3050 and 2900 B.C.E., a period generally considered to correspond to the Jamdat Nasr/Uruk III through Early Dynastic I periods in Mesopotamia. This span is represented in Iran by levels 16-14B in the Acropole at Susa (Le Brun, 1971), as well as Tepe Yahya (Yahyâ) IVC, Sialk (Sîâlk) IV2, and Late Middle Banesh (Baneš). Proto-Elamite tablets are the earliest complex written documents from the region; the script consists of both numerical and ideographic signs, the latter sometimes assumed to represent a genetically related precursor of the Old Elamite language (see iv, below). This supposed precursor language is, however, unknown, and the script itself has been only partially deciphered. Nevertheless, conclusions about the contents of the Proto-Elamite texts can be drawn from contextual analyses and formal similarities to proto-cuneiform tablets from Mesopotamia. In particular, the structure of published documents containing accounts and the use of numerical signs and of certain signs for objects in bookkeeping can be somewhat clarified.

History of decipherment

Since the first Proto-Elamite documents were discovered at the turn of the century (Scheil, 1900, pp. 130-31; Friberg, I, pp. 22-26) approximately 1,450 Proto-Elamite tablets from Susa have been published. Recent excavations at other sites have proved that the script and numerical systems known from Susa were in use at administrative centers ranging across Persia as far as the Afghan border, including the sites of Sialk, Malyan (Malîân), Yahya, and Shahr-i Sokhta (Šahr-e Sûkhta; Damerow and Englund, 1989, pp. 1-2; Stolper, 1985, pp. 6-8; Sumner, 1976; Carter and Stolper, p. 253; Nicholas, p. 45). The texts, written on clay tablets, seem without exception to be administrative documents: receipts and transfers of grain, livestock, and laborers; rationing texts; and so on. There are neither literary nor school texts of the sort known as "lexical lists" from contemporary Mesopotamia. The earlier "numerical tablets" from Godin (Gowdîn) Tepe V and Chogha Mish (Chogha Mîš, q.v.), generally dated contemporary with Uruk IVb and level 17 in the Acropole at Susa, lack ideographic signs and are thus not classified as Proto-Elamite (Weiss and Young, pp. 9-10; Porada, p. 58)

Some scholars have attempted to demonstrate a link between the Proto-Elamite and Linear Elamite scripts (see v, below; Hinz, 1975; Meriggi, 1971-74, I, pp. 184-200; Andre, and Salvini), but adducing syllabic values proposed for Linear Elamite has not led to successful deciphering of Proto-Elamite. A preliminary graphotactical analysis of the Proto-Elamite texts has also met with only modest success (Meriggi, 1975; idem, 1971-74, I, pp. 172-84; Brice, 1962-63, pp. 28-33; Gelb, 1975). Other scholars have attempted to establish a connection between Proto-Elamite and proto-cuneiform, which first appeared in Uruk IVa (ca. 3200-3100 B.C.E.) and thus seems to predate Proto-Elamite by about a century (Langdon, p. viii; de Mecquenem, p. 147; Gelb, 1952, pp. 217-20; Meriggi, 1969; Damerow and Englund, 1989, pp. 11-28).

Advances in the decipherment of Proto-Elamite have been hindered to a certain degree by the absence of necessary philological tools. A first step would be a sign list sufficiently dependable and cleansed of redundant variants to offer an approximate idea of the number and frequency of signs in the scribal repertoire, as well as providing a transcriptional instrument for analysis of sign combinations and simple contexts. Such textual work is a pre-requisite for a complete edition of the Proto-Elamite texts.

Sign lists provided by early editors (Scheil, 1905; idem 1923; idem, 1935; de Mecquenem; Meriggi, 1971-74) have proved wanting (Damerow and Englund, 1989, pp. 4-7). The first serious attempt at a formal description and decipherment of Proto-Elamite script was undertaken in the 1960s and early 1970s (Brice, 1962-63; idem, 1963;

Meriggi, 1971-74; Vaiman, 1989a). Most recent advances have resulted from a new understanding of the structure of the numerical sign systems, which has provided a powerful tool for semantic identification of a number of ideograms, including those for grain products, animals, and, it seems, human beings (Vaiman, 1989a; Friberg, I; Damerow and Englund, 1989).

Format and semantic hierarchy

Proto-Elamite texts are written on clay tablets similar in general shape and proportions to Mesopotamian clay tablets of the 3rd millennium B.C.E., including Uruk III proto-cuneiform tablets of the later phase. The tablets are thick oblongs, their height and width normally in a ratio of 2:3. Following the convention established in the earliest proto-cuneiform phase, Proto-Elamite scribes used both sides of the tablet. Regardless of the space remaining after two or more entries on the obverse, the scribe usually rotated the tablet around a vertical axis and recorded the totals along the upper edge of the reverse. Larger accounts could have a more complex format (Brice, 1962-63, pp. 20-21; Vaiman, 1989a, pp. 130-32; Damerow and Englund, 1989, pp. 11-13; Figure 1).

Three features distinguish Proto-Elamite tablets from proto-cuneiform documents, however. First, the Proto-Elamite documents were written in a linear script. Second, the first signs on a tablet, the heading, have approximately the same function as the proto-cuneiform "colophon," which is usually inscribed together with the final total on the reverse of the tablet; Proto-Elamite headings never contain numerical notations, however. Third, each entry normally includes an ideogram followed by a numerical notation, a divergence from the strict sequence of numerical sign followed by ideogram in proto-cuneiform texts.

The heading of a Proto-Elamite tablet generally specifies the purpose and
authorizing person or institution; the best known such ideographic
designation is the so-called "hairy triangle", which seems to represent a leading institution or possibly kin group in Elam. Qualifying ideograms were inscribed within this sign, apparently to designate subordinate institutions or groups (Dittmann, 1986a, pp. 332-66; Lamberg-Karlovsky, p. 210; Damerow and Englund, 1989, p. 16). Following these introductory sign combinations are the individual entries, in horizontal registers without regard to formal arrangement into columns (*Figures 2 & 3*). The ideograms in Proto-Elamite text entries seem almost exclusively to denote persons, quantified objects, or both; sign combinations seeming to designate persons invariably precede those designating quantified objectswhen both appear in one notation. A sign or sign combination representing a person or title is often introduced by a sign representing his position. Objects are generally designated by ideograms in combination with qualifiers; as yet, however, there are no statistical means of testing the probability that certain signs functioned as qualifiers of presumed substantives.
In Proto-Elamite documents there can be multiple entries with different levels of internal organization. A text may consist simply of a sequence of entries of exactly the same type; an example would be a list of grain rations for a number of different recipients. A text may also embody a hierarchical order of transmitted information, as in the oft-encountered alternation of two different types of entry, perhaps a number of workers followed by the amount of grain allotted to them. In this instance the two entries may be considered to be combined in a more comprehensive text unit. A text may also, however, be highly structured, with many identifiable levels, reflecting, for instance, the organizational structure of a labor unit (Figures 2-3; Nissen, Damerow, and Englund, pp. 116-21).

That all entries seem to contain numerical notations suggests that they represent a bookkeeping system, rather than the distinct sentences or other comparable semantic units of a spoken language. This semantic structure is evidence of a close relation between Proto-Elamite and proto-cuneiform texts. Proto-Elamite headings correspond to the "colophons" that often accompany totals on proto-cuneiform texts. Entries in Proto-Elamite documents correspond to the physically encased notations on proto-cuneiform texts; curiously, the hierarchical structure of individual Proto-Elamite entries is not reflected in a syntactical structure, whereas in Mesopotamian texts this hierarchy continues to be represented in some measure by the graphic arrangement of cases and subcases. Despite different graphic forms, Proto-Elamite texts thus exhibit the same general semantic structure as that of proto-cuneiform texts. This relationship must be considered a strong indication of their relative chronology: The more developed linear syntax apparent in Proto-Elamite texts, in which the graphical arrangement of semantic units has been dispensed with, implies that proto-cuneiform is earlier. This

conclusion is in full accord with the established stratigraphic correspondences between Susa and Uruk (Dittmann, 1986a, pp. 296-97, 458 table 159e; Dittmann, 1986b, p. 171 n. 1).
Numerical sign systems. Early work on the numerical notations in Proto-Elamite texts was hampered by inadequate identification of individual signs and in particular of sign systems, which were applied in Mesopotamia and Elam to record different types of objects. Initially there was an attempt to combine a large number of what are now recognized as incompatible numerical notations into a single "decimal" system (Scheil, 1905, pp. 115-18; idem, 1923, p. 3). This attempt was abandoned in 1935, when it was recognized that different numerical systems had been in use in Mesopotamia, particularly for enumeration of discrete objects and for measuring grain by capacity (Scheil, 1935, pp. i-vi). It was, however, mistakenly assumed that the sign had the same decimal value 10 x (instead of 6 x) when representing grain measures as when representing numbers of discrete objects (Thureau-Dangin, p. 29; Langdon, pp. v, 63-68; Vaiman, 1989a), which prevented understanding of capacity notations until the late 1970s (Friberg, 1978-79). Although detailed documentation of the various numerical systems has not yet been undertaken, the formal structure of these systems and their dependence upon the older proto-cuneiform systems are now clear (Damerow and Englund, 1987, pp. 117-21, 148-49 n. 12; idem, 1989, pp. 18-30).

As the semantic analysis of Proto-Elamite is largely dependent upon examination of the contexts in which signs are used, the close connection with proto-cuneiform sources in the numerical systems has been helpful in establishing correspondences between Proto-Elamite and proto-cuneiform ideograms. For example, the sexagesimal system used in Meso-potamia for most discrete objects, including domestic and wild animals, human beings, tools, products of wood and stone, and containers (sometimes in standard measures), is also well attested in the Susa administrative texts, though the field of application seems limited to inanimate objects like jars of liquid and arrows (Damerow and Englund, 1989, pp. 52-53). A decimal system used in Proto-Elamite texts for counting animals and human beings has no proto-cuneiform counterpart. Bisexagesimal notations qualify barley products, as in contemporary Mesopotamian documents. The numerical system for indicating grain capacity involves signs from the sexagesimal system but with entirely different arithmetical values. This system is well attested in both Proto-Elamite and proto-cuneiform sources and seems to have had the same area of application. In particular, the small units inscribed below are qualifying ideograms for grain products, thus denoting the quantity of grain in one unit of the product. The Proto-Elamite system differs from the proto-cuneiform system in that below the sign only units that are multiples of one another appear (e.g. 1/2, 1/4, 1/8), a simpler system than the somewhat cumbersome use of fractions in proto-cuneiform texts (Damerow and Englund, 1987, pp. 136-41). As with the proto-cuneiform texts, in the Proto-Elamite texts there are numerical systems graphically derived from the basic systems but perhaps applied to different sorts of discrete objects or grain (*Figure 3*). All these similarities together suggest that the Proto-Elamite systems, with the exception of the decimal system, were borrowed from Mesopotamia; even signs in the decimal system were apparently borrowed from the Mesopotamian bisexagesimal system to represent the higher values 1,000 and 10,000.

Ideograms
Semantic analysis of the objects counted by the decimal system has led to
the probable identification of a number of ideograms. The most important
are the two signs (Symbol 3) and (Symbol 4) . The graphic form, as well as the association, of the ideogram (Symbol 3) with other signs strongly resembling proto-cuneiform signs known to represent domestic animals, in particular sheep and goats (Symbol 5), suggests the interpretation of this sign as "sheep" *(Figure 1)*. In texts from the essentially rural economy of ancient Persia the large numerical notations qualifying this ideogram and related signs seem to confirm the identification. The fact that the signs are on the whole abstract forms may suggest either a set of symbols for domestic animals common in Mesopotamia and Susiana before the inception of written documents or, more likely, signs borrowed in altered form from Uruk (Damerow and Englund, 1989, pp. 53-55).

It appears that the very common sign (Symbol 4) was used to qualify personal names. All signs or sign combinations in a text may be introduced by it, though more commonly it introduces only the first entry (Damerow and Englund, 1989, pp. 53-55). The same sign was used as an ideogram for objects, together with decimal notations commonly used for counting animals. This double function suggests that the sign denotes a category of workers or slaves. The use of the sign in both ways is firmly established in the text illustrated in Figures 2-3 (Damerow and Englund, 1989, pp. 56-57; Nissen, Damerow, and Englund, pp. 116-21). In the same text numbers of objects represented by this ideogram correspond to a

regular capacity measure of barley of 1/2 (Symbol 2), parallel to texts known from contemporary Mesopotamia. Finally, the sign is often used parallel to signs that may

thus also be interpreted as referring to persons. One of them is a clear graphic equivalent of the proto-cuneiform sign SAL (Symbol 6), so that both the graphic and semantic correspondences of proto-Elamite (Symbol 4) to proto-cuneiform (Symbol 7), meaning "male slave/laborer" (Vaiman, 1989b), seem clear.

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