

CUNEIFORM CATALYSIS: THE FIRST INFORMATION REVOLUTION

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A few years ago I was cajoled into writing a short contribution on the Assyrian Empire for an encyclopedia of archaeology. Having pursued my informal brief, I was moved to remark to the editor that although I could indeed follow its instructions, the result would not, to my mind, be archaeology, but social and economic history. Since they were paying the piper, I let them call the tune, but I still feel that what I wrote was not what most people would call archaeology. The reason, of course, is that the written sources for the Assyrian Empire contribute so much more to our understanding of its society and economy than archaeology can hope to do. Like so many of our difficulties, the problem is created by our own terminology: the motives of the historian and the prehistorian are identical, and the artificial distinction which seems to have developed only reflects differences in the kind of evidence at their disposal. The archaeology of a prehistoric society merely suffers from the lack of written sources, and it is entirely laudable that prehistorians should attempt to supply the answers to questions in prehistory which will tend to fall in the domain of the historian once written sources become available. There is an Arabic proverb which remarks that "when they run out of camels, they tie saddles on to dogs": sometimes it looks to the historian as though the prehistorians have had to tie saddles to dogs, which stagger slightly under the weight -- but perhaps even dogs are better than nothing at all. Certainly the resultant technical problems have led the prehistorians to develop a range of disciplinary procedures with which the historical archaeologists have often reckoned they need not bother. This may have led to a certain disdain for the impurities of historical archaeology on the part of the pure prehistorian, and a certain impatience on the part of the historical archaeologist on being expected to recover evidence of no apparent interest to the historian. Of course, both are misguided: the correlation of excavated and written evidence possible in historical times offers a form of control which the historical archaeologist should endeavour to observe, and the prehistorian should be eager to exploit.

One way of alleviating the divisive effects of our terminology would be to stop talking about prehistoric or historical archaeology, and to talk instead about the archaeology or history of literate or pre-literate societies. This may seem a small difference but it implies a significant change of emphasis. For to call a society 'historical' means merely that we can read about it; to call it 'literate' tells us something about the society itself, that its members could read and write. The advent of literacy implies a change in the society itself, rather than in our means of perceiving the society. The sheer effect on us of the sudden access of a whole new dimension has tended to obscure from us the possible consequences of the change for those who experienced it at the time.

We shall turn later to examine the impact of literacy on early Mesopotamian society. For the present let us look briefly at some aspects of the added 'historical dimension'. At most periods the broad framework of historical events is laid down by contemporary or later explicitly narrative texts. The major political occurrences undoubtedly tend to correspond with major changes in the archaeological record, and, however suspect some of the ancient authorities may be, the archaeologists are usually content -- sometimes indeed over eager -- to adopt the terminology of the historian for their chronological outline. However, this sort of historical record is not always available -- and again we see the advantage of the term 'literate' against 'historical' -- as for instance with the Greek texts of the 2nd millennium BC: there we have to do with an entirely different kind of historical source, the document or archive. Two parts of the ancient Near East have yielded an immense wealth of such texts: from Egypt the papyri (whether Egyptian, Greek or Aramaic), and from Mesopotamia and her neighbours the cuneiform tablets, preserved because of their durability rather than favourable climatic conditions. The indiscriminate survival of ephemeral documents is a great boon for the archaeologist as well as the historian, but it also poses some serious problems. Perhaps their greatest advantage is that they can be found in their original context -- we find them in the particular layer of the particular house at the particular city where they were abandoned; sometimes even stored in the jar in which they were originally filed. Of course the exact context of a papyrus or tablet is subject to all the same vagaries as any artefact; anyone who has had to work on an archive once whole, but now scattered throughout the museums of the world in consequence of illicit excavations tapped by antique dealers, will appreciate the value of knowing even no more than which site they came from.

Another great advantage of archival, as opposed to 'narrative', texts is that they cannot lie. As with photographs, if we let them lie to us, it is the fault of our perception. We may have difficulty in translation, or a scribe may have written a grossly sycophantic address to a superior or have just added up wrongly, but whatever the actual words on the tablet or papyrus, the historical fact of its existence is unchallengeable. Indeed, a single document speaks to us on a multitude of levels; Figure 1 illustrates what is meant by this, although I have deliberately kept it fairly simple. It represents the skeleton of an imaginary Sumerian legal document of about 2000 BC, and I have distinguished four levels on which it can communicate information to us.

Evidently, the more general the information, the less often we shall need to be given it; a single document will contribute as much in the third and fourth levels as a thousand, but of course in cases where we have very few such texts, the third and fourth level information is very valuable. It is very helpful to know that Proto-Elamite writing reached as far as Shahr-i Sokhta in Seistan, even though we cannot understand the single tablet which tells us that. Conversely, the more tablets we have, the greater the potential interest of information in levels one and two, since the combination of such data from different

General

1	
2	
3	<u>Contemporaneity of those mentioned</u>
4	<u>Use of writing</u> <u>Existence of legal authority</u>

Enki-mansum, son of Lu-Nanna, sold Ir-Nanna, the slave,

1	<u>Seller's identity</u>	<u>Nature of transaction</u>
2	<u>Father's identity</u>	
3	<u>Patrilineal system</u>	<u>Existence of slavery</u>
4	<u>Pantheon in use</u>	<u>Language in use (Sumerian)</u>

to Geme-Enlila, daughter of Ilum-bani, for 30 shekels of silver.

1	<u>Buyer's identity</u>	<u>Price</u>
2	<u>Identity of father</u>	
3	<u>Women's rights</u>	<u>Use of currency</u>
4	<u>Ethnic groups (Sumerian/Akkadian)</u>	

In the presence of the bailiff. In the presence of witnesses.

1	<u>Identity of authenticators</u>
2	
3	<u>Judicial procedures</u>
4	

Year Amar-Suen became king, Month 3, Day 7.

1	<u>Date of transaction</u>
2	<u>Political conditions</u>
3	<u>Calendar in use</u>
4	

(Impression of seller's seal)

1	<u>Seller's consent</u>
2	
3	<u>Use of (cylinder) seals</u>
4	<u>Bilaterality of document(s)</u>

documents (especially from a single archive) enables us to establish the family and other background of the main actors and so to recover data which are of immediate interest to those wishing to reconstruct ancient society.

Figure 1: An imaginary Sumerian land document of c. 2000 BC.

First level: 'specific and explicit'

This is the particular information which the document was intended to record: that A had done B, that C had witnessed it, that x was paid, etc. This information does not have to be written, since a seal impression on the clay is also a specific piece of information.

Second level: 'specific and implicit'

Information specific to this particular transaction, but only to be read between the lines: that A existed, and was the son of D; that he was contemporary with King E; and that the transaction took place in town F, etc.

Third level: 'general and explicit'

Information conveyed by the wording of the tablet to us on general topics, not part of the message to its contemporaries: such facts as the use and nature of the calendar or the currency, the existence of slavery, and the use of cylinder seals and other judicial procedures.

Fourth level: 'general and implicit'

Facts incidentally conveyed to us by the document or its wording, not stated in any explicit way: the language(s) used, the ethnic affinities of the parties involved, the existence of a legal system and enforcing authority.

But now I want to turn to examine writing not as a mirror of early society, but as an essential and dynamic ingredient in it. The written document has been part of Old World civilisation for 5,000 years, and, though one can envisage complex systems of administration or commerce which were managed without writing (e.g. the Inka) the fact is that these civilisations were literate, and this must have radically affected their nature. I make no apology for concentrating on the Mesopotamian evidence which is familiar to me, since it was a (and probably the) pristine literate society, and can offer an unrivalled range of sources to draw on. Although there are many gaps, we can observe the use of writing spreading into new areas of life as the 3rd millennium BC progresses, until, by 1800 BC, it is quite a general accomplishment applied to the most trivial as well as the most important aspects of life (Figure 2).

It cannot be entirely accidental that most of the earliest archives come from temples or their surroundings. Except for the 'lexical' texts which were the scribes' essential reference works, virtually all these documents seem to derive from the internal administration of the

temples, which had large staffs and ran extensive estates (Green 1981). Many of the tablets will have been no more than memoranda: as Middle Assyrian officials, c. 1250 BC, would have put it, "Written down so as not to forget it". In other words, these were unilateral documents, which neither recorded nor created any social relationship; the scribe was writing for himself, or at most, the scribes were writing for themselves, storing safely the information needed for the efficient running of the estates. There is no need for anyone outside the temple to read or write.

	Uruk	Early Dynastic			Akkad	Ur III	Old Babylonian
	3200	I 2900	II 2600	III 2300		2000	1700 BC
Administration	-----						
Lexical lists	-----						
Legal documents:							
Land sale: stone		-----					
Land sale: clay		- - -	-----				
House sale			-----				
Slave sale				-----			
Loan texts				- - -	-----		
Court records					-----		
'Lawcodes'						-----	
Business records				- - -	-----		
Letters				- - -	-----		
Royal inscriptions					-----		
Literary texts					-----		
Sealed tablets	-----				-----		

Figure 2: Chart to show currently attested applications of writing in South Mesopotamia.

This does not, of course, mean that they were illiterate; so few non-religious buildings of the period 3200 to 2600 BC have been excavated, that it would be dangerous to claim that other parts of society did not make use of written documents. There is recent convincing evidence that the earliest Sumerian tablets were preceded by a system of clay counters enclosed in sealed clay balls, and some of the earliest tablets are themselves sealed (Schmandt-Besserat 1977; 1981; Powell 1981, 423-424). This implies that they could be used as bilateral

instruments, regulating the relationship between the two independent parties. They may have served this purpose in transactions between a temple and an outsider, but they may equally well have been used quite independently of any temple, for commercial transactions between one private individual and another. The fact that such documents are not certainly attested until after 2600 BC does not necessarily mean that they did not exist, for it is generally agreed now that some of the earliest legal documents we possess come from outside the temple sector.

Traditional dogma amongst Sumerologists, as late as the 1950s, saw the individual cities as totally dominated by the temples and their priests. The convincing rebuttal of this view by I. M. Diakonoff depended in part on his recognition of the implications of a class of document known as 'archaic kudurru'² (Moorgat 1969, Pl. 31-34), land sale deeds carved on stone. A massive edition of these documents by I.J. Gelb is now nearing completion, and should be most illuminating; in the meantime we can hardly do better than to quote Diakonoff, who wrote:

...In the hereditary possession of patriarchal families there existed land which...was sometimes bought up by important personages.... As often as not, the sale was effected by a group of family representatives (brothers or other kinsmen). Other family members...took part in the transaction as witnesses, whereby their agreement to the transaction was made manifest. Such witnesses received a payment (more or less nominal) alongside the vendors.
(Diakonoff 1974, 8)

Before considering the content of these documents, there are two points to be made about the use of stone for them. One is that stone offers an indestructability which is not shared by the more usual clay (even baked clay, and as far as I know there is no evidence at this early date for the deliberate baking of cuneiform tablets). The other is that the written text could be combined with iconographic carving (as on the much later Kassite kudurrus), which accompanies some of the texts. These texts go back perhaps into the Uruk period, say 3000 BC, with the Monuments Blau (e.g. Strommengar 1964, pl. 15) and the carvings -- which have yet to be studied in detail to elicit their significance -- obviously underline the solemnity of the transaction.

In an agricultural society the importance of land-sale transactions is self-evident, and the formality of the documents is only one aspect of the solemnity of the occasion. Diakonoff has rightly stressed the multiplicity of 'gifts' or 'extra payments' made in connection with the sales, but clearly distinguished from the formal 'price'. The fact that these payments and the names of their recipients were laboriously recorded implies that they were essential to the validity of the transaction, and the same practice is found in more normal field and house sale documents written on clay (notably from Fara, c. 2500 BC). The

details of one of these tablets may convey an idea of the procedures (capital letters stand for persons' names):

12 pounds of copper, price of a field measuring 3 iku; 10 pounds of copper, extra payment; 8 pounds of copper, gift; 2 pounds of wool, a cloth, 20 loaves, 20 cakes, 4...s for B -- they have received the purchase price. 10 loaves, 10 cakes, 2...s for E. F and G, witnesses. Half a shekel of silver, 10 loaves, 10 cakes, 2...s and 1 litre of oil, for H, the field-scribe. Lugal-inim-zida is the purchaser of the field. Eponymate of K. [The field lies in the tract of] the house of Dumuzi (adapted from Edzard 1968, no. 3).

It is hardly necessary to stress the traditional features of such a transaction. Our documents may be the only surviving record of what took place, but the mere fact that persons other than the seller and the purchaser are mentioned means that the transaction required more than just the writing of the document to give it validity. Rules and formalities (by which such a sale secured the general acceptance of society) must have been developed in pre-literate, or at least illiterate, contexts, and initially the written sale documents would only record, and not replace, such formalities. This may partly explain why these early land-sale documents were not sealed: not only the archaic kudurrus proper (perforce, since they were on stone), but also the clay tablets from Fara, which could very well have been authenticated by the sellers' seal impression, as such deeds normally were in the 2nd and 1st millennia BC (except, of course, the genuine kudurru with its elaborate ritual protection of curses and associated iconographic symbols).³

Symbolic ceremonies played a part in other kinds of legal transaction, as we can tell from the occasional mention of their enactment in the documents, and like the additional payments going with land sales, we see that these ceremonies gradually die out between 2500 and 1500 BC. In the earliest slave sales, it seems that the slave was made to step over a pestle, perhaps because one of the principle tasks of the domestic slave was the processing of cereals, involving not only grinding but also the pounding of grain with big wooden pestles (see Edzard 1970). At Girsu in southern Sumer, house sales of c. 2400 BC mention that the official herald also received a gift, and "drove the peg into the wall, and applied the oil to its side" (e.g. Edzard 1968, no. 31.vi.18 and note on p. 70; cf. also Müller 1979). A few of such texts were actually written on a piece of clay which had been formed round a wooden peg with a string wound round its shaft, and it is likely that the peg was (or was made like) the sort to which doors were tied as a primitive form of lock.⁴ Even as late as the age of Hammurapi (c. 1750 BC), the purchaser of land adjoining a canal might waive any claim for land lost to water erosion by the symbolic act of throwing a lump of soil into the canal (Veenhof 1973, 36-37); but by this time the tablet itself had become so essential a component of the legal act that when an

original tablet had gone astray, its validity could be annulled by symbolically breaking a clod of earth in its stead! (Oppenheim et al. 1971).

The point I wish to stress here is that in the course of centuries the symbolic acts became less essential to the sale transactions, while the document itself became more so.⁵ By the time of Hammurapi, indeed, the extreme situation had been reached where some transactions were not valid in law at all, unless documented in writing: the handing over of goods into safe-custody (Code of Hammurapi §§122-3), the inheritance of an unequal share of the paternal estate (§165), or the inheritance of a share from the paternal estate by a priestess (§179). Particularly striking is the provision that "If a man has married a wife, but has not drawn up her (marriage-)contract, that woman is not a wife" (§128). This insistence on a written instrument is not restricted to Babylonia: the regulations governing real estate in Assur about 1400 to 1000 BC were equally insistent on the necessity of a formal written document to establish ownership (Driver and Miles 1935, 429-431). When, or if, the document ceased to be a formal record, or memorandum, and became itself the instrument of the transaction is much less clear: very possibly this distinction, which can be expressed in English as evidentiary vs. constitutive, is too theoretical to have bothered the heads of Mesopotamian lawyers, and it is unlikely to surface in the documents themselves (cf. Hazeltine 1930, xxx-xxxv, using the term "dispositive" in place of "constitutive").

As a mechanism for regulating human affairs writing was adopted earlier for some purposes than others. As far as our evidence goes at present, letters and loans (or other debt documents), which much outnumbered deeds of sale in the 2nd and 1st millennium BC, came into common use rather later. When they did appear, they must have had an immediate effect on two fundamental sectors of Mesopotamian society, trade and agriculture. Loan documents first appear in the Dynasty of Akkad (c. 2300 BC); there are a few tablets from a century or two earlier which mention loans, but these are not bilateral legal documents, only unilateral notes or lists drawn up by, or for, the creditor (Steinkeller 1981, 141 note 76, quoting Bamer). Yet evidently the absence of loan documents cannot mean that loans were not made. Indeed the inscriptions of king Enmetena of Lagash (c. 2450 BC) mention that he freed his populace from corn debts, and even refer to a government loan to his neighbour Umma, which had accumulated a positively South American backlog of interest payments (Steinkeller 1981, 143-144; Cooper 1983, 28-29). Perhaps international loans were set down in clay already, but in humbler circles it seems clear that most loans were underwritten. As with cash sales, there were doubtless traditional ways of formalising the transaction and witnesses to confirm it, though it is only the witnesses that survive in the texts. Within any one village, a witnessed loan transaction was probably as secure in oral form as in writing, but writing could extend the range of possible transactions, geographically, socially, and in terms of complexity. Memories in an illiterate society are much superior to ours, but to have a loan in

writing would have been an extra security for the creditor and protection for the debtor, since there must have been the occasional disagreement over amount or repayment dates, however trustworthy the witnesses. As soon as the confines of the village are crossed, the bonds of mutual trust and the potential social sanctions are progressively weakened: man's honour need not reach far beyond the circle of his acquaintance. The written document, therefore, must have greatly facilitated loans from the city-dweller to the peasant. In Mesopotamia, as elsewhere, this relationship was one of the principal axes of society, leading in bad times to the progressive commercial exploitation of the countryside by the city, through the sequence of loan, pledge of land, pledge of person, to debt enslavement (e.g. Diakanoff 1965, 25-27). While the written document may thus have saved the occasional villager from starvation, it may also in the long run have brought in radical changes in the structure of society.

The needs of the farmer are simple, and his transactions tend to be simple too. This cannot be said of some of the business activities of the Mesopotamian merchant. Anyone who has attempted to follow the complexities of one of the Old Assyrian business ventures, recovered from the trading factory of Kanesh (=Kultepe) 1500 km to the north-west, will surely admit that they could not have managed without their scribes and tablets (most recently Larsen 1976). Writing is not of course a necessary precondition of long-distance trade, but the letters and accounts of the merchant houses of Assur certainly gave them greater commercial flexibility, and enabled a wider range of transactions.

What applies to farmers and businessmen is equally valid in the public sector. The administration of the law was one of the prime duties of the Mesopotamian ruler. No doubt, tradition played a large part here too, but from at least the time of Ur-Nammu (c. 2100 BC) kings began to produce the collections of legal prescriptions which are dignified by the name of "Codes". Hammurapi takes the trouble to explain the purpose of his code:

Let the wronged man who has a case go before my monument called 'The King of Justice' and read my inscribed stelae and hear my precious words. Let my stelae explain the case to him, and let him find his judgement.
(Driver and Miles 1955, 92).

In fact the code is not by any means a 'Compleat Litigator': it seems to reaffirm some older laws, revise others, and promulgate new ones, but large areas of the law are ignored altogether. The king presents it as a response to his religious obligations as supreme judge, but it is also, more pragmatically, an affirmation of his political authority. Hammurapi, like Ur-Nammu, had just created an 'empire' from recently conquered independent city-states. In theory, the "king's writ" ran in every city in the land, and he was the ultimate judicial authority in each one. Yet each city had its different traditions: they differed not only in legal terminology and the formats of documents, but in

substantive points of law, such as inheritance practices (e.g. Charpin 1980). Too much local variation was undesirable; foreign merchants, no doubt, accustomed themselves to the laws of the land they chanced to find themselves in, but when the lands are unified politically, there is a strong incentive to standardise. Hence the codification of law was designed as a unification, not for the last time, and it is evident that the process was greatly enabled by the use of writing. Law can exist unwritten, and no doubt did: there is a famous 600 year old court in Valencia which deals with water-rights, and is conducted entirely orally; but it is no coincidence that it is thematically and geographically so restricted (Fairén Guillén 1975). No doubt a Sumerian city could have operated in much the same way (e.g. Jacobsen 1970, 193-214), but as soon as the geographical horizons expands, oral traditions become inoperable because they differ from place to place, and to reconcile them to the advantages of a written authority are obvious and almost indispensable. Yet the incompleteness of the codes we have confirms that much law remained in the realm of tradition, and suggests that the written prescriptions were only intended to deal with the points which had proved, or might prove, troublesome.

The codification of laws was only one component of a 'package' of administrative reforms favoured by successful Mesopotamian rulers. Ur-Nammu's son, Shulgi, for instance, standardised weights and measures and reorganised the calendar, and several kings tried, with questionable success, to fix prices (see recently Edzard 1976, 153-154; Grayson 1972, 20-21). Shulgi's most striking reform concerned the administration of the state: as with laws, so with administration the vastly expanded geographical horizon almost demanded the use of writing. Only so could commands and information be efficiently conveyed backwards and forwards to every corner of the land. A complex bureaucratic hierarchy was created, and it could only function by virtue of written instruments because the interactions between officials outstripped the systems of personal acquaintanceship, and authority could only be transmitted by writing on a sealed tablet. The Sumerians seem to have taken to bureaucracy like ducks to water: the relatively recent practice of committing private loans to writing provided the means for regulating transactions within the administration but between officials who were total strangers, and every least event was committed to clay. A sheep could not die within the public sector without its sealed death certificate. The 50,000 or more published administrative records of the time (let alone the greater number languishing in museums) give clinical details of aspects of life that no-one thought of recording before, and probably only sociologists since: one account records 7206.2 (sic!) work-days in a pottery workshop, listing exactly how many of more than 30 different kinds of pot were made, and exactly how many person-days were spent on each (Waetzoldt 1971). Entries were made by the scribes as occasions arose; these were grossed by the responsible official at the end of the month, and the monthly accounts condensed into an annual balance sheet. One annual wool balance sheet from Ur gives us the state's turnover of wool as 600 tons or more, while a triennial record of animals runs from over 300,000 sheep to 457 bears (Jacobsen 1970, 422 note 5).⁷

By this date there is no doubt that the mathematical and geometrical skills of the cuneiform scribes were well developed, although they remained pragmatic. The slightly later mathematical exercises from the time of Hammurapi are concerned with practicalities, such as the calculation of field areas, or how much barley would be needed as rations for workers deepening a canal of known width and length. Their competence in handling quite elaborate computations raises the possibility that some of the balanced accounts were not merely the consumption of a manic bureaucrat -- as one is sometimes tempted to assume -- but were rather a deliberate attempt to provide the government with the statistics required for forward planning of the economy. Ten-year accounts of agricultural production were not required for audit purposes, since responsibility for the minutest transaction was lovingly tracked from office to office within the system, and they are therefore a genuine attempt to monitor and control the agriculture from above (Maekawa 1981, text BM 18060).

The elaborate house-keeping of the IIIrd Dynasty of Ur was only the culmination of a long tradition of institutional management, reaching back through the archives of the Bau Temple at Girsu (which we can read) to the earliest tablets known, from the Eanna complex at Warka (which we cannot). We are all familiar with the fact that institutions need to record things which private homes need not bother with: lists of members, purchases, menus, etc. Gradually, of course, efficient house-keeping is transformed into creeping bureaucracy; procedures are formalised to a level which would be self-defeating in a free merchantile context, and unnaturally conserved by the vested interests of those in control. Styles of government are very tenacious, across time and space, as anyone who has witnessed the hybrid offspring of Ottoman and Victorian bureaucracy in the Near East today would recognise. One of Mesopotamia's most successful exports, whether through conquest or through neighbourly emulation, was its system of institutional management complete with written formulations. As early as 2300 BC one palace in Syria has adapted cuneiform script to the needs of its own administration -- leaving us with 10,000 or so tablets found in the burned palace at Ebla in 1976 (Biggs 1980, now slightly outdated). But this adoption of cuneiform remained within the ruling class: there is no evidence, as far as I know, in the Levant for the use of written documents this early outside the palaces, and writing had not penetrated relations between individual citizens.⁸ There are no private letters or loans, nor any of the bilateral documents from the realm of law which are so characteristic of Mesopotamia and owe nothing to the temple or palace authorities. The same applies more or less to the archives of Ugarit and Alalakh, each encapsulated in their palace, and indeed to the tablets of Knossos and Pylos. One could of course plead the lack of excavation in suitable private contexts, but it seems likelier that in all these secondary palace civilisations literacy was not substantial beyond the circles of state administration, and writing was hardly more than an instrument of exploitation.

Conclusion

To sum up, writing enables information to be conveyed across time, space and social divisions, and it was exploited in Mesopotamia to a degree unrivalled at the time and rarer later. It meant that the purchase of a house could remain valid and demonstrable long after the purchaser, the vendor, their grandchildren and the witnesses had passed on; that a businessman in Assur could conduct business simultaneously in Babylonia and Cappadocia; and that a villager and city merchant, who have never been aware of the other's existence, can conclude a bilateral agreement in the knowledge that the resulting document will confer the sanctions of the law on the transaction. These are mechanisms of human interaction which must have caused and enabled fundamental changes in the economy and society of the time, and therefore the clay tablets concern the archaeologist not merely because of the information they transmit explicitly, but equally for the implications of their sheer existence.

This article has perforce had to avoid some complications and ramifications. From the invention of writing to the time of Hammurapi is after all some 1400 years, and the maximum penetration of literacy through society belongs only at the end of this time-span; the process is less likely to have been gradual than a series of leaps and bounds, and to chart it in detail would demand careful consideration of many loopholes in the record, and continual monitoring of simultaneous changes in society and politics. I have concentrated on those aspects of literacy which directly affected the society and economy, and might therefore have archaeologically detectable correlates -- but this should not obscure the changes in human thought (or 'cognition') which accompany the application of writing to the transmission, formalisation and finally composition of literary or religious texts. The impact of literacy in this sphere has recently been described for Egypt,⁹ and M.T. Larsen is currently considering the same issues from a Mesopotamian angle. While of paramount interest for the development of human thought, these changes had relatively little effect on social institutions, except in the realm of political and religious ideology.

Notes

1. I have not entered into detail as to how widespread writing was within Old Babylonian society; one significant fact is that at least four sites in the 40 x 10 km Hamrin Basin yielded Old Babylonian tablets (Sib plus Haddad; Khallaweh; Yelkhi; Suleimeh: Postgate and Watson 1979).
2. The term kudurru is in fact anachronistic and a misnomer, since it refers strictly to the carved boundary-stones of Kassite Babylonia (after 1500 BC), but it is retained here to underline the fact that these documents are on stone.
3. I have steered clear of the important and interesting issue of the authentication of documents, which can be done either with seals, or with the more purely symbolic use of a finger-nail or garment

hem. The use of seals is curiously hesitant, dying out on tablets after the Uruk period and reappearing only in late ED III on legal documents, but authentication in the form of sealings does go back before the invention of writing, and thus the concept of a bilateral document is probably as old as, or older than, writing itself.

4. Edzard 1968, nos. 31-34. No. 32a, which I have collated myself in the Iraq, has the clear impression of a wooden peg, 3.5 cm in diameter, around which string had been tightly wound several times; perhaps the same is true of the Louvre examples, which are not described in such detail but were certainly hollow. It is clear that the writing itself is therefore only additional to the sealings of a symbolic 'peg' by the neutral agency of the 'herald', not an agency in its own right.
5. A similar trend may be observed in other legal systems; not for the first time, a comparison between Anglo-Saxon England and Babylonia is stimulating. In England, the practice of placing a turf on an altar is referred to in 7th-8th century documents, but not thereafter. Aethelbald gave a monastery with its lands to a church, and "in order that his donation might be the more enduring (my italics), he sent a sod from the same land and all the deeds..., and ordered them to be laid upon the altar" (AD 789; Whitelock 1979, 505). The function of the symbolic act as a kind of reinforcement of the transaction is already present in about AD 670, when land in Fontmell was granted to an abbot, and the giver writes "Now I have placed for more security sods of the above-mentioned lands on the gospels" (Whitelock 1979, 481). I have to thank Simon Keyes for showing me these passages, as well as the passage of Hazeltine quoted in the text.
6. I am very grateful to Prof. J.A. Jolowicz for telling me about the Valencia water-rights court and for lending me the referenced book.
7. For 6,435 tons read 643.5 tons; the incoming wool of the year was only about 185 tons (implying herds of 185,000 animals), but since another text appears to mention 3,250 (metric) tonnes this amount may apply to only a part of the country.
8. Making an exception for the Uruk period tablets found at Habuba Kabira on the Euphrates east of Aleppo, which are part of a pure Sumerian trading colony.
9. This is a successful attempt to supply some of the detail of literacy in early civilisations (which is conspicuously lacking in Goody 1977); I am grateful to Barry Kemp for the reference.

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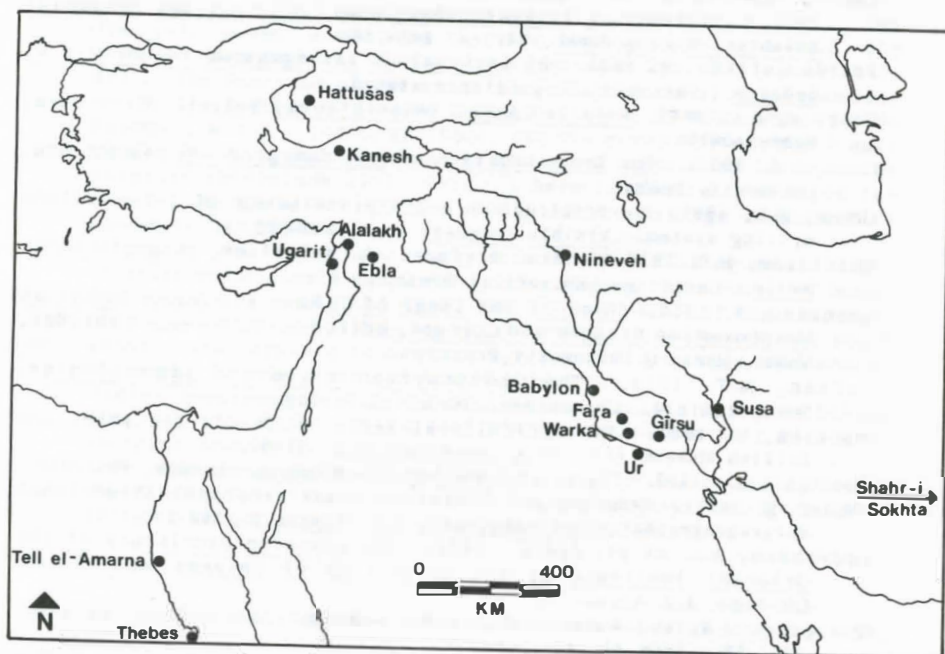


Figure 3: The Ancient Near East.