

Writing Systems

An Introduction to their Linguistic Analysis

FLORIAN COULMAS



CAMBRIDGE
UNIVERSITY PRESS

CAMBRIDGE UNIVERSITY PRESS

Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo

Cambridge University Press

The Edinburgh Building, Cambridge CB2 2RU, United Kingdom

Published in the United States of America by Cambridge University Press, New York

www.cambridge.org

Information on this title: www.cambridge.org/9780521782173

© Florian Coulmas 2003

This book is in copyright. Subject to statutory exception and to the provision of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published in print format 2002

ISBN-13 978-0-511-07777-7 eBook (NetLibrary)

ISBN-10 0-511-07777-7 eBook (NetLibrary)

ISBN-13 978-0-521-78217-3 hardback

ISBN-10 0-521-78217-1 hardback

ISBN-13 978-0-521-78737-6 paperback

ISBN-10 0-521-78737-8 paperback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this book, and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

Contents

<i>List of illustrations</i>	xi
<i>List of tables</i>	xiv
<i>Acknowledgements</i>	xvii
<i>A note on fonts</i>	xviii
<i>List of abbreviations and conventions</i>	xix

1	What is writing?	1
2	The basic options: meaning and sound	18
3	Signs of words	38
4	Signs of syllables	62
5	Signs of segments	89
6	Consonants and vowels	109
7	Vowel incorporation	131
8	Analysis and interpretation	151
9	Mixed systems	168
10	History of writing	190
11	Psycholinguistics of writing	210
12	Sociolinguistics of writing	223

History of writing

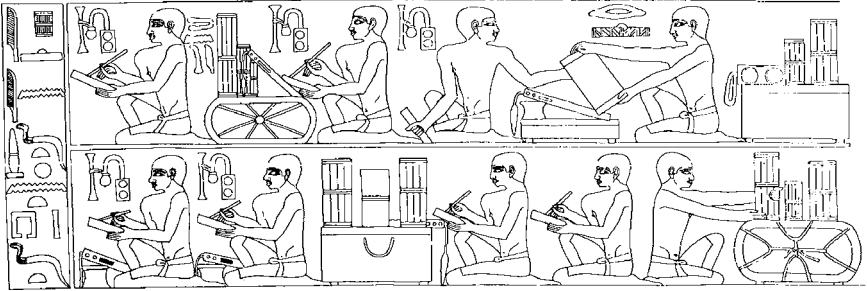


Figure 10.0 *Egyptian office. Mural relief in the tomb of official Ti in Saqqara (fifth dynasty). Mémoires publiés par les Membres de l'Institut Français d'Archéologie Orientale du Caire.*

Inventions usually represent responses to particular needs and result from gradual improvements upon previous achievements. This is certainly true of writing. Asko Parpola

There is a direction in the growth of knowledge related to changes in the means of communication and, specifically, to the introduction of writing.

Jack Goody

Three major issues in the history of writing are the following:

- (1) How did writing come into existence?
- (2) How did writing develop?
- (3) How did writing spread?

If these were just factual questions, they could be dealt with independently, one by one. But this is not so. The meaning of the first question is, of course, dependent on the definition that we have in mind of what writing is, making it hard to avoid a theoretical commitment. The advent of writing by definition marks the transition from prehistory to history, but in the initial stages it is by no means easy to determine whether a visible mark or image should count as writing or some other form of graphic expression, whether a linguistic interpretation is intended and, if so, to

what extent it can be conventionally realized. The idea of writing emerged bit by bit, only gradually revealing its potential as one of the most powerful tools of civilization builders. The second question, similarly, presupposes a point of departure for the development to take off, and, to make things even more complex, it defies neat separation from the third question, because the spreading of scripts to other language areas is a major factor in their development. For instance, the addition of vowel letters to the Semitic consonant alphabet was effected when it was applied to a non-Semitic language, Greek.¹ The adaptation of the Chinese script to Japanese led to the reduction of meaningful characters to meaningless syllabic signs. These are two of the most prominent examples illustrating the interaction of the dispersion and development of writing systems.

As in the history of language, things are quite involved in the history of writing, and I will not pretend otherwise. It would be nice, for example, if we could study the history of writing just in terms of structural developments. However, since system-internal and external factors interact, it is not so easy to distinguish the history of writing from other aspects of the history of civilization. What appear to be superficial material aspects of writing – the surface, the implements, and the mechanics of the hand – have contributed to determining the form and through it the structure of writing systems. The cuneiform writing system, for instance, would never have become what it was had not clay been available in abundance and used as building material in the ancient cities of Mesopotamia. What is more, writing answers certain needs and serves certain functions, which must be assumed to influence the history of its development. This is not to say that causal links can easily be established between structural features of writing systems and literacy practices. Certainly attempts to tie literacy rates or functions to particular types of writing systems, or, conversely, to demonstrate that certain social conditions favour the development of certain types of writing systems have not been very successful. Yet, few would deny that writing grows out of, and has important consequences for, economic, social and cultural developments. Some scholars have viewed the advent of the written word as the watershed between traditional and modern societies (e.g. Ong 1982; Goody 1986). Subsequent researchers have been more cautious, arguing that writing played less a causal role than an ancillary one in social and psychological change (Olson 1994; Christin 2001). That these changes were too profound to fathom within the confines of a single scientific field is, however, generally agreed. In what follows I will, therefore, not

¹ Writing in 440 BCE the Greek historian Herodotus explains that ‘the Phoenicians . . . introduced into Greece upon their arrival a great variety of arts, among the rest that of writing, whereof the Greeks till then had been ignorant’ (*The History of Herodotus*, Book V, translated by George Rawlinson). He was right about the Phoenician source of the alphabet, but apparently was unaware that writing had been present in Greece in the form of the Minoan scripts earlier (cf. Woodard 1997).

hesitate to venture across disciplinary boundaries where such excursions promise to help us better to understand that part of the unfolding of human communication systems that consists of visual marks of some durability interpreted as language.

Origin

Most scripts would not have come into existence if others had not spread. This much can be said with certainty, since the vast majority of all scripts past and present can be traced back to a handful of original creations. In the past, from the nineteenth to the mid-twentieth century, the question of a single or multiple origin of writing dominated the discussion. The monogenetic theory enjoyed a certain support which was not always grounded in disinterested research. Religious notions of humanity as a divine creation and a hierarchy of peoples closer or further removed from God were allowed to contaminate scholarship. The Sumerians whose Gilgamesh epic, rediscovered in the 1870s, speaks of the deluge, casting new light on the Bible, were commonly credited with inventing the ancestor script from which all others derive. In the meantime, however, evidence for the independent origins of writing in Mesopotamia, China, Mesoamerica and elsewhere has been piling up. No connections with other scripts can be established for some undeciphered scripts such as Proto-Elamite (Damerow and Englund 1989), developed around the end of the fourth millennium BCE in Susa, western Iran, Linear A (Palaima and Sikkenga 1999), used by the Minoans in Crete (ca 1800–1450 BCE), and the Indus script (Parpola 1994), which came into existence around the middle of the third millennium BCE in the Indus Valley. Monogeneticism is, therefore, no longer considered a viable theory. Everything in present knowledge points to the fact that writing was engendered independently by several relatively advanced sedentary civilizations characterized by urbanization, division of labour, and a surplus economy. Although, since the first spectacular decipherments of ancient scripts early in the nineteenth century, progress in the historiography of writing has been considerable, the tapestry that tells the whole story is still full of holes and ragged spots waiting for reconstruction.

The origin of Mesopotamian cuneiform is well documented by a wealth of clay tablets. Little doubt remains that accounting and administration of the temple economy were the primary functional context of this writing system (Nissen, Damerow and Englund 1990). At its beginning were crude pictures scratched into wet clay. Their referents were natural objects and artifacts, cattle, sheep, bushels of wheat, clay vessels. When these pictorial signs were given a linguistic interpretation, writing was born. From archaeological evidence we know that this

happened in the Uruk Period, late in the fourth millennium BCE. Pictures, then, are at the root of Sumerian writing, but there was another accounting system consisting of variously shaped clay tokens, which were used in many parts of the Middle East for thousands of years prior to the appearance of writing. Several correspondences between clay impressions of these tokens and early Sumerian inscriptions have been discovered (Schmandt-Besserat 1992), opening up the possibility that there was another input into the formation of the Sumerian writing system. To what extent this was the case is still a matter of debate.

The pictorial basis of another ancient writing system that emerged at the western end of the fertile crescent, Egyptian, is even more striking because it was never lost. The significance of the pictorial signs, that is, the underlying semiotic relationship, changed much like in the Sumerian case when they came to be interpreted as signs of names of objects rather than as signs of objects (figure 10.2). But unlike cuneiform signs, which lost all iconic features, the ornate pictorial appearance of hieroglyphics was as clear when the Egyptian writing system finally fell into disuse in the fourth century CE as in the earliest stages. This is precisely what makes the origin of Egyptian writing more enigmatic than that of cuneiform, because it commences suddenly in full bloom without any precursors or primitive stages. The earliest Egyptian hieroglyphs appear around 3000 BCE, a bit later than Sumerian writing. Since there *were* influences of the advanced Mesopotamian culture upon Egypt, and since it seems unlikely that a major innovation such as writing should not be adopted by a budding civilization, it has been suggested that the Egyptians adopted the idea of writing from the Sumerians by ‘stimulus diffusion’. However, this is no more than speculation, for Egyptian hieroglyphics show no similarity with the Sumerian system (Fischer 1989). What is more, cult and the creation of a centralized state rather than economic imperatives seem to have precipitated the creation of writing in Egypt.

Egypt’s importance for the history of writing is not limited to its being the birthplace of hieroglyphics and one of the world’s greatest literary cultures. It is also a strong contender for the ultimate honour of being the homeland of the Semitic consonant alphabet that, through its Greek and Latin descendants, has spread to more languages than any other writing system. Hard proof is still scanty, but since the great British Egyptologist Alan Gardiner first suggested it in 1916 in a famous article, ‘The Egyptian Origin of the Alphabet’, evidence has been accumulating to support the theory that there is an Egyptian inspiration behind the invention of the Semitic alphabet. The first traces of alphabetic writing were discovered in the Sinai desert, where early in the second millennium BCE turquoise miners at Serabit el-Khadim left behind a number of short inscriptions in an unknown script. The number of distinct signs in these inscriptions was less than thirty, too small for a syllabary. Since the Egyptians had a set of pure phonograms embedded

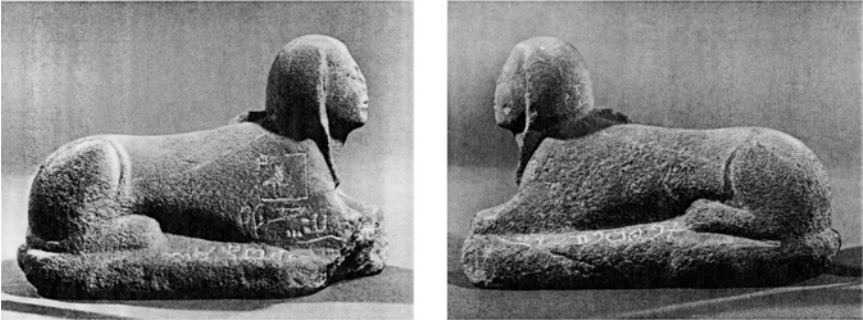









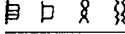




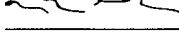




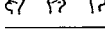



Figure 10.1 *Sandstone sphinx from the Middle Kingdom temple at Serabit el-Khadim with inscriptions in Egyptian hieroglyphs, 'Beloved of Hathor, [Mistress] of turquoise', left, and in the Proto-Sinaitic script, 'Ba'alat', right.*

in their writing system, which they used for writing foreign names, Gardiner² surmised that the Sinaitic signs were modelled on these hieroglyphs. He further assumed that the signs were pictographic and that their phonetic interpretation, like that of phonographic hieroglyphs, was acrophonic, the initial sounds of the names of the depicted objects being the sound values of the letters. For a group of four recurrent signs that along with a hieroglyphic inscription referring to Hathor, goddess of turquoise, appear on a little sandstone sphinx (figure 10.1), he suggested the reading *b- ' -l-t* which could be interpreted as *Ba'alat*, the Semitic equivalent of Hathor. Gardiner's analysis was carried on by American orientalist William Albright, who called the script 'Proto-Sinaitic' and suggested that the language it encoded was West Semitic. Albright identified the Egyptian models of twenty-three Proto-Sinaitic letters and their Semitic interpretations (table 10.1), lending further credence to the hypothesis that there is indeed an Egyptian-Semitic link, which could very well explain the origin of Semitic consonant writing. Where exactly the Proto-Sinaitic script originated – in Sinai, in Egypt or in Palestine – is, however, uncertain, and further epigraphic discoveries are hoped for to resolve this question.

Turning next to the Far Eastern cradle of writing, the origin of the Chinese script, too, is uncertain and waiting to be elucidated by further archaeological findings. The pictorial source of Chinese characters is uncontested, but new artifacts keep coming to light, forcing history to be rewritten. A small stamp seal excavated by Fredrik T. Hiebert, archaeologist of the University of Pennsylvania, at Anau depe close to the Iranian border in Turkmenistan in the summer of 2000 has been carbon-dated to about 2300 BCE. It bears an inscription of four characters

² See Gardiner, Peet and Černý 1952, Albright 1948, and Sass 1988 for details of the Proto-Sinaitic decipherment.

Table 10.1. *Proto-Sinaitic signs. From Sass 1988, Table 4.*

Sign (with variants)	Transliteration
	3
	b
	g(?)
	d
	h
	w
	d
	h
	γ
	k
	l
	m
	n
	' (?)
	p
	s
	q
	r
	s
	t
	signs with unknown value

of an unknown system, which, some Sinologists (Victor Mair (2001) among them) claim, look very Chinese. Since the first appearance of Chinese writing, in the form of 'oracle-bone inscriptions' and bronze moulds, known so far dates from the Shang dynasty (from the seventeenth century BCE to about 1025 BCE), this finding is very puzzling. For if the new finds prove to be Chinese, they hold the potential of pushing back the origin of Chinese writing by as much as a millennium. What is more, the discovery may lead to a reappraisal of writing

in China for which Chinese scholars have always claimed an indigenous origin. The inscription on the little stamp seal makes the question of whether there was a Western connection worth pursuing. Rare as discoveries such as the Anau inscription are, they remind us that the early history of writing is still very much work in progress.

This is certainly true of the dozen or so autochthonous writing systems of Mesoamerica. The earliest monumental inscriptions were made by the Zapotec in the seventh century BCE (Coe 1992). But they already represent a sophisticated culture with stone monuments, massive buildings and a complex dating system that has much in common with the Maya calendar. Little is known of the early forms of this civilization, how it relates to the Olmec and the Maya (Justeson and Kaufmann 1993), and what caused visible signs to be transformed into writing. It seems that pictures and iconographic signs were gradually given linguistic interpretations as logographic signs with phonetic components being added as the script developed. But this is no more than a most general enumeration of logical steps, while the particulars of the origin of Mesoamerican scripts lie in the dark. 'The relationships between the scripts is not well understood, and there is lack of agreement about which is the earliest' (Macri 1996: 172).

Two points, then, can be noted here about the origin of writing: (1) it is rooted in pictures, and (2) it happened several times. Writing grew out of drawing. In addition to the recognizable imagery of the earliest written symbols, indirect evidence for this can be seen in the fact that several ancient languages, such as Egyptian, Chinese and Greek, had only one verb meaning both 'writing' and 'drawing'. Yet pictures do not become writing naturally. A major conceptual transformation is necessary to turn a picture, more generally, a visual sign of a natural object, into a sign of the name of an object (figure 10.2). Present evidence suggests that this remarkable reinterpretation was effected independently at least four times in different parts of the world, Mesopotamia, Egypt, China and Mesoamerica. However, many details of the full story remain to be filled in, details as to how this was brought about, how things and their names were conceptually separated, and how Sumerian, Egyptian, Chinese and Zapotec draughtsmen reinvented themselves as scribes, replacing objects by words as the primary referent of the visible marks they inscribed on clay, stone and bone.

Development

Once pictorial signs are conventionally linked with a linguistic interpretation, the foundations of writing are in place. Then begins its development from a

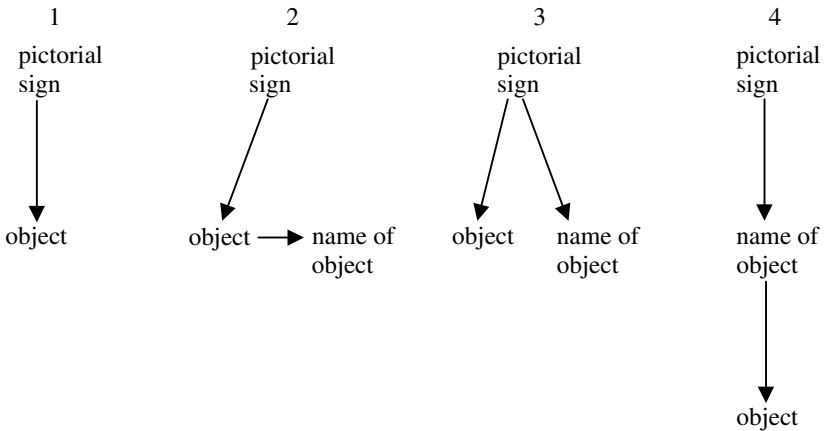


Figure 10.2 *Sign system to writing system: changing semiotic relationships.* (1) A picture refers to an object; (2) a picture refers to an object and its name, the object being the primary referent; (3) a pictorial sign can refer to either an object or its name; (4) the primary referent of the pictorial sign is the name of an object which in turn refers to the object.

rough recording system to a flexible instrument of visual communication, accurate, unequivocal and capable not only of expressing every nuance of human language, but also, and more significantly, of opening up new dimensions of linguistic expression. Some essential features and tendencies common to the development of all ancient writing systems are the following: pictographic origin, linguistic interpretation, the rebus principle of exploiting homophony, graphic stylization, normativism and historicity. The question is whether a general theory of the development of writing can be derived from these commonalities. Gelb (1963) made a first attempt to provide such a theory based on the quasi-Darwinian notion of 'unidirectional development'. He was convinced that development meant progress, that writing evolved not only in a particular direction but also toward a particular goal, the roman alphabet.

'What this means in the history of writing is that in reaching its ultimate development writing, whatever its forerunners may be, must pass through the stages of logography, syllabography, and alphabetography in this, and no other, order' (Gelb 1963: 201). Gelb's outstanding service to the study of writing was that by advancing a clearly formulated theory he gave a highly complex and diverse field a common direction. His theory provided a basis for the comparative analysis of writing systems, a hypothesis that could be tested, a model that could be checked against the available evidence. He assumed two underlying principles that have driven the development of writing: economy of effort and the 'natural' desire to

reduce complexity. As he saw it, the history of writing led inevitably to, and culminated in, the twenty-six letters of the alphabet.

Modern scholarship has not confirmed the unidirectional theory of writing unconditionally. The real picture is more muddled, and certain aspects of Gelb's teleological evolutionism must be rejected. Harris (1986) speaks of 'the evolutionary fallacy', while others have criticized Gelb's theory as an expression of alphabetocentrism, if not Western supremacism. These allegations are not entirely groundless, because Gelb viewed the evolution of writing as paralleling that of culture. Three stages followed one upon another: the Sumerians accomplished the first breakthrough, the linguistic interpretation of visual signs, called 'phonetization' by Gelb; by extensively applying the rebus principle the Northern Semites created syllabographic writing; and the Greeks crowned the development by differentiating consonant and vowel letters, treating both as units of the same kind. That this perspective was informed by cultural Darwinism is clear from Gelb's contention that 'this sequence of the stages of writing reflects the stages of primitive psychology' (1963: 203).

Quite apart from the questionable precepts of cultural Darwinism, there are a number of obvious problems with the unidirectional theory of writing and its underlying principles. As we have seen, the Egyptians had incorporated in their writing system a subsystem of, depending on the time period, twenty-four or twenty-six monoconsonantal signs that came pretty close to being an alphabet. Nevertheless, they stuck to their highly complex mixed system of logograms, phonograms and determinatives until the very end of their literary tradition. If anything, the Egyptian writing system grew more complicated as the centuries went by. Changes can be observed in the history of Egyptian letters, but hardly progress in the sense of economizing effort and reducing complexity. Why? The obvious answer is that the Egyptian writing system was more functional than it seems to the alphabetic mindset of decipherers and readers, none of whom ever *heard* the Egyptian language spoken. The Chinese, too, knew at an early stage of their literary history that characters could be interpreted for their sound values alone and that by using them as syllabic signs their number could be drastically reduced. Yet not only did they continue to interpret characters for both meaning and sound, they also allowed them to proliferate. In stability and continuity Chinese writing is unique. The Japanese reduced Chinese characters to a syllabary, but strangely refused to climb the last step of the evolutionary ladder to reach the alphabetic peak. Not only that, they did not even take advantage of the new system to alleviate the burden of Chinese characters but used it side by side with them. Should we regard the resilience of the Egyptian script and the more than two millennia of Chinese and Japanese literacy, as malformations, as evolutionary blind alleys and remnants of primitive psychology? Something is obviously wrong with this perception.

Looking at the purported evolutionary ascent from the top end, the Greek and Latin alphabet, can only reinforce our doubts about unidirectional development. Notice that ‘the alphabet is neither a revolutionary type of writing system, nor a uniquely efficient one’ (Parkinson 1999: 183), and it surely is not the ultimate destination of development. If Man (2000: 42) says, a bit tongue in cheek, perhaps, that ‘Sumerian writing matches English in complexity’, he implicitly makes an anti-evolutionist statement. Greek and Latin alphabetic writing was relatively simple, English is complex. Citing examples such as the many spellings of /ʃ/, as in *nation*, *shoe*, *sugar*, *mansion*, *suspicion*, *ocean*, among others, which can be pronounced correctly only if recognized as part of a syllable, he argues that ‘English is, in part, a syllabary’ (2000: 97). According to Gelb’s developmental stages of logography, syllabography and alphabetography, this is not supposed to happen, because ‘there is no reverse development’ (Gelb 1963: 201). Part of the problem lies in the sequence of Gelb’s stages, because alphabetography is not of the same order as the other two. The elementary signs of logography are interpreted as words, those of syllabography as syllables, but those of alphabetography are not interpreted as alphabets. The unwieldy name itself suggests that it is not easy at all to say what the elementary signs of the alphabet should be interpreted as. This is so because, as I have noted, the alphabet is not a writing system but a notation that serves a potentially infinite variety of writing systems. To call the often-stated principle that the optimal alphabet represents every sound of a language by a single sign and that each sign has only one sound an idealization hardly does justice to the confusion that inspired it. It is a fundamental fallacy because it sees polyvalence in both directions as an aberration rather than a functional operating principle. It is moreover based on the erroneous premise that the complexity of writing systems can be measured along a single dimension, the number of elementary signs. The binary code has only two elementary signs, 1 and 0. Is it easier to handle than codes with more extensive signaries?

Let us pursue the idea of linear evolution a bit further. How is evolution carried forward? We can lean on George Kingsley Zipf here, who has worked out a theory of the Principle of Least Effort as it applies to language. Zipf (1949) compares language to the tools on a carpenter’s work-bench. Over time, the carpenter will adapt his tools and arrange them on the work-bench in such a way as to minimize work expenditure. The Principle of Least Effort will make him find the right balance between the number of tools he needs and the number of jobs he can perform with each. There will be a few small multipurpose tools within close reach and many specialized tools used only occasionally, which will end up at the far end of the work-bench. Eventually a functionally ideal arrangement of tools for the carpenter’s work will emerge. In like fashion, Zipf argues and demonstrates with a wealth of statistical data that the Principle of Least Effort governs the

speakers' communicative work expenditure, a process that is reflected through perpetual change in the linguistic system. Length of time is too crude a measure for work expenditure. Instead, every instance of using a tool and, by analogy, a language, counts as a work unit. In a meticulous study of the impact the mechanics and control of the hand had on the development of writing, van Sommers (1989) has shown the reduction of permissible wedge positions in early cuneiform writing to be the result of principles of economy. At the level of graphic design features the idea of an evolution driven by economy of effort seems to work, but this is not the only level of complexity of writing systems. Van Sommers also points out that further simplification of the cuneiform code was probably halted as a concession to readers, that is for the sake of legibility. For an efficient graphic code to be developed the countervailing demands of encoding (minimizing manual work) and decoding (maximizing visual discrimination) must be taken into account. And this is of course only one of several levels of complexity. Another is the system of linguistic interpretation. If we assume that evolution is propelled by work units defined as instances of use, then written English should be the most advanced system, because more written material has been produced in English than in any other language. If by 'advanced' we mean simple and efficient, this is plainly wrong. Not even the most committed alphabetocentrist would deny that systems simpler than English spelling can be conceived of and actually exist. Are we forced, then, to conclude that English is exceptional or that unidirectional development has run afoul when English spelling was codified?

It seems more reasonable instead to discard the unidirectional theory. Present-day English orthography constitutes the latest stage of more than two and a half millennia of alphabetic writing, but it is not alone. French is a close rival when it comes to involved spelling rules. In both cases, as in many others, many intervening factors have thwarted an undisturbed linear development towards simplicity and systematic stringency. Just like the long life of Egyptian writing and the persistence of Chinese characters in the face of allegedly more advanced alphabetic writing, so the complicated application of the alphabet in English spelling shows that the aim to align all writing systems in one evolutionary hierarchy is too ambitious. Evolutionism is based on two tacit assumptions: (1) that writing is nothing but representation of speech, and (2) that there is one optimal way to do this. The history of writing in the real world rather than that of abstract ideas teaches us that both are wrong. It is a mistake to see writing systems as quasi-natural organisms governed in their development by natural laws. Every script is a cultural implement subject to human ingenuity and error, created under certain circumstances for certain purposes and a certain language. To be sure, there are common traits, and economy of effort clearly is one of the guiding principles of human behaviour. Yet there is plenty of room for waste, extravagance and manifestations of the

human mind defying bare utility. Cultural inertia and conservatism (we've always spelt it this way) and normativism (there must be a correct spelling) are strong forces at work in every literate community. They have little to do with writing systems as such or with their efficiency, yet they exercise a strong influence on their formation. Writing is a cultural product *par excellence*, and its development must be understood as such rather than in quasi-naturalistic terms.

Spread

Nowhere is the cultural embeddedness of the world's writing systems more apparent than in their dissemination. Writing spread with trade and religion. Phoenician traders carried their letters westward (Cross 1989), along the North African coast (where they still live on in the form of the Tifinagh script of the Berberphone people in Algeria (van den Boogert 1997)), and to Greece where the Greeks adapted them to their needs and passed them on, through the Etruscans, to the Italian peninsula. There a number of Italic or Tyrrhenian alphabets evolved (table 10.2). One of them, the Latin alphabet, eventually spread further afield as the script of the Roman Empire and the Holy See. The consequences of this expansion are still visible today. The present distribution of scripts³ testifies to the close link between writing system and religion. Boundaries defined by scripts largely coincide with those of faith.

That the Latin alphabet has been adapted to write so many languages is a direct result of the Christianization of Europe. Using the Latin script to provide many hitherto unwritten languages with an alphabet, the Summer Institute of Linguistics, an aggressive Protestant missionary organization, continues to prove the validity of David Diringer's (1968) much-quoted dictum that 'alphabet follows religion'. The distribution of the Greek alphabet and its Cyrillic extension corresponds to the realm of the Orthodox Church, Cyril (827–69 CE) having been a Greek missionary who converted the Slavs. To this day, the division between catholic Rome and orthodox Constantinople runs right through the erstwhile Serbo-Croatian language area, the catholic Croatians using the Latin alphabet, the orthodox Serbs the Cyrillic. Many other branches of Christianity had earlier developed their own alphabets, Coptic in Egypt, Serto in Syria, Nestorian in Iran, among them. The establishment of the Armenian and Georgian churches resulted in the creation of the Armenian and Georgian alphabets. The Arabic alphabet, an offshoot of the Aramaic-derived Nabataean script, issued from the Arabian peninsula in the wake of the Islamic conquest and now serves as many as one hundred languages in largely Islamic

³ For a good map of the contemporary distribution of major scripts, see Murawiec 2001: 95.

Table 10.2. *The Etruscan and Latin alphabets*

Tyrrhenian	Etruscan	Archaic Latin	Classical Latin
A	AA	AA	A
B		BB	B
<<	>>	Ɔ	C
D		Ɔ	D
E	Ǝ	Ǝ	E
F		Ɔ	F
I	IK±	I	(G)
⊕ ⊙	⊕ Ǝ	⊕	H
I	I	I	I
K	Ǝ	Ǝ	K
l	∨	∨	L
Ɔ	Ɔ Ɔ	Ɔ	M
N	Ɔ Ɔ	Ɔ	N
⊕			
⊙ ⊙		⊙	O
P	1	1 Ɔ	P
ƆM	Ǝ		
ƆQ	Q Q	Q Q	Q
R	Ɔ Ɔ	Ɔ	R
Ɔ	Ɔ Ɔ	Ɔ Ɔ	S
T	†	T †	T
ƆV	ƆV Ɔ	V	V
+		X	X
⊕	⊕		
Ɔ	Ɔ Ɔ		
	8881		

countries on three continents, Africa, Asia and Europe. Each one of the original letters of the Arabic alphabet is revered as a creation of God himself. For many languages texts in Arabic script are the only source of information on the diachronic development. Other branches of Aramaic are linked with other religions, such as the Manichean script, which is said to have been invented by Mani, the Iranian founder of the Manichean religion. The Chinese script spread to regions beyond

the Chinese empire, such as Vietnam, Korea and Japan together with Buddhism and Confucianism. Travelling along another route, from India through Sri Lanka to South-east Asia in the period 100 CE to 800 CE, Buddhism also helped to spread the Brāhmī-derived Pali script. And in the north another Brāhmī-branch, the Tibetan script, developed as the vehicle for the Lamaist variety of Buddhism. The Hebrew square script, too, is a holy script serving Jewish communities both for Biblical and modern Hebrew and their respective local languages, for example Yiddish, Ladino and Judeo-Arabic.

Of course, religion was not the only force behind the dissemination of writing systems. Trade and empire also played major roles, as exemplified, for instance, by the spread of cuneiform from Assyrian/Babylonian to other languages in the region, the wide dissemination of the Aramaic script as the clerical medium of Imperial Aramaic, or, in modern times, the promotion of the Russian alphabet in the Soviet Union. Many languages, such as, for example, Korean, Mongolian, Persian, Romanian, Turkish and Vietnamese have been written in different scripts, reflecting changing political alignments. However, in the early history of writing, when secular and spiritual authority was not sharply differentiated, cult was the paramount catalyst of collective identity. The powers to be were by the grace of God and truth was found in The Book, which, of course, came along in a particular script one had to master in order to gain access to sacred and liturgical texts. Conversion, in the usual sense of the word, therefore, depends on holy scriptures: Buddhist sutras, the Torah, the Bible, the Qur'ān. Writing systems not associated with a proselytizing faith, like oral religions, usually remained local.

As scripts spread, they change, both in outer form and linguistic interpretation. Structural adaptations are necessary whenever a script is transferred to another language, sometimes resulting in a change of type (e.g. syllabomorphographic Chinese characters > syllabographic Japanese kana). But even where no change of type is brought about, the transformations associated with the diachronic development of languages and the diffusion of scripts across linguistic boundaries pose an intriguing theoretical problem. Consider first the outer form. In handwriting every instance of a letter differs slightly from every other. In the early days of writing this vicissitude was even more pronounced with letter orientation, size and junction often lacking uniformity. Rotation, mirror image, compression, stretching, skewing and truncation are only some of the graphic transformations of letters, for which descriptive terms are readily available. Such transformations exhibit collective tendencies, much like dialects, which coalesce to form 'national hands', as school-induced standardization takes effect. These aspects of writing, that is, interpersonal and collective differences in the form of written symbols, are often disregarded as not belonging to the study of writing *systems*. But this is wrong, as Watt (1994) has most cogently argued.

Upon closer inspection, the distinction between writing system and script and, since Gutenberg, that between script and font, are less clear than the different terms suggest. We say that both French and English are written with the same script, roman. However, there is no <ç> in English, to mention but one obvious example. Hence, there is no complete congruence of the English and French scripts, a fact that can be analysed at the graphic level alone, although it obviously relates to differences between the two writing systems, that is, linguistic correspondence rules. Clearly, French <ç> is there for a reason. The reason is that a roman *c* in French is interpreted as [s] before <e> and <i>, as in *cent* [sã] and *civil* [sivil], but usually as [k] before <a>, <o> and <u>, as in *café* [kafé], *code* [kød] and *culte* [kylt]. A cedilla is added where *c* is to be interpreted [s] even though it precedes <a>, <o> or <u>, hence *face* [fas], but *façade* [fasad]. This would not be absolutely necessary, because no native speaker of French would pronounce *facade* [fakad]. Dutch, for example, also has a *c*-spelling with similar [s, k] phonetic interpretations and no cedilla to mark the difference. But this is how the French system works. The point at issue here is that formal and systematic differences evolve together, gradually differentiating one system from another. From a systematic point of view, a French <c> is not quite the same as an English <c>, or a Dutch, German or Spanish one, for that matter, let alone a Chinese Pinyin <c>, because its phonetic interpretations are different and because it contrasts with <ç> which it does not in English.

This raises the non-trivial question of the *c*-ness of <c>. Is it possible to identify the essence of <c>, both in terms of graphic form and linguistic interpretation? Does it help to go back to the roots? Roman <c> derives from Greek Γ, gamma, which in turn goes back to Semitic ג, gimel. G and C were not differentiated in Greek and archaic Latin, which means that a Latin C/G was a far cry from an English *c* or any other contemporary *c*. There is no prototype *c*.⁴ This argument applies, *mutatis mutandis*, to other letters of the alphabet and to the alphabet as a whole. Conceptually, this is very remarkable because what we are left with is not a small set of definite letter forms and equally definite phonetic interpretations. Rather, what the alphabet does is to match two jerry-built fuzzy sets in such a way that we get the impression of definiteness and exactitude. This has important implications for the more general question of how to differentiate one system from another. The theoretical problem, much like that of a dialect chain and diachronic periodization, is how to subdivide a continuum into non-arbitrary phases and units. It is the problem of where local variation and temporal shift turn into distinction.

There are, of course, clear cases. For example, the Old Hebrew alphabet and the Mongolian alphabet are two distinct systems (table 10.3). Whatever similarities

⁴ Hofstadter (1982) presents convincing arguments that no set of parameters can capture the essence of an abstract category such as a letter form.

Table 10.3. *The Old Hebrew and Mongolian alphabets*

Transliteration	Old Hebrew	Transliteration	Mongolian	
			Initial	Final
'	פ	a	ᠠ	ᠡ
b	ב	e,ö,ü	ᠢ	ᠣ
g	ג	i	ᠨ	ᠣ
d	ד	o,u	ᠮ	ᠣ
h	ה	ö,ü	ᠮ	ᠣ
w	ו	n	ᠨ	ᠨ
z	ז	ŋ	ᠨ	ᠨ
ḥ	ח	x	ᠨ	ᠨ
ṭ	ט	g	ᠨ	ᠨ
y	י	b	ᠨ	ᠨ
k	כ	s	ᠨ	ᠨ
l	ל	š	ᠨ	ᠨ
m	מ	t,d	ᠨ	ᠨ
n	נ	l	ᠨ	ᠨ
s	ס	m	ᠨ	ᠨ
'	ע	ts,dz	ᠨ	ᠨ
p	פ	dž,j	ᠨ	ᠨ
š	ש	x,g	ᠨ	ᠨ
q	ק	r	ᠨ	ᠨ
r	ר	w	ᠨ	ᠨ
š	ש	p	ᠨ	ᠨ
t	ת	dz	ᠨ	ᠨ
		h	ᠨ	ᠨ

between letter forms one may detect do not seem to go beyond chance, and phonetic interpretations are radically different. Old Hebrew has twenty-two letters, while Mongolian has twenty-three, which, moreover, come in initial and final forms. Old Hebrew is written horizontally from right to left, while Mongolian texts run

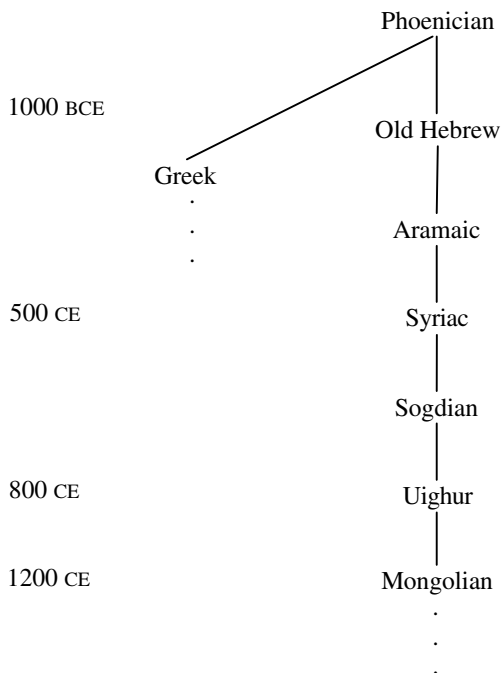


Figure 10.3 *Schematic derivation of the Mongolian alphabet*

from top to bottom in vertical columns shifting from left to right. Except that both systems consist of visible symbols with more or less canonical phonetic interpretations, they do not seem to have much in common, and I have to stress the ‘more or less’. Yet we know that the Mongolian alphabet of the thirteenth century CE derives from the Old Hebrew, which antedates it by more than two thousand years.

Thanks to the great spatial and temporal distance separating Old Hebrew from Mongolian it is not difficult to decide that these are two different scripts and two different writing systems. The story of transmission from Palestine to the Far East is long and involved. Old Hebrew was transformed into the Aramaic script, which spread to Persia first where it was taken over by the Sogdians, an Iranian people, who in turn bequeathed it to the Turkic Uigurs from whom eventually the Mongols obtained it. This is roughly how it went, in hindsight a straightforward development, a distinct number of steps, as summarized in figure 10.3. However, if we could reconstruct in minute detail the line that connects the two ends it would not be so easy to cut it up into discrete portions each of which constitutes a separate system. Certain changes are sudden, making it easy to draw a line. The rotation of the script by 90° was effected abruptly in the eighth century CE by

Table 10.4. *Phoenician and Greek sibilant letters*

Phoenician			Greek		
name	sign	phonetic value	name	sign	phonetic value
zain	𐤆	[z]	zeta	Ζ	[ds], [sd]
samek	𐤊	[s]	xi	Ξ	[ks]
sade	𐤌	[ts]	san	Μ	[z]
shin	𐤍	[ʃ]	sigma	Σ	[s]

the Ugurs rather than gradually, and so was the addition to the alphabet of five Tibetan-derived letters by Lama Tsorji Osir. But many other changes were gradual, especially those bearing on letter forms. The early history of the Semitic consonant alphabet is fragmentary, attested in occasional and scattered inscriptions. What is often called the Canaanite alphabet was used by various peoples, such as the Ammonites, Arameans, Edomites, Israelites, Moabites and Phoenicians, whose writings can be described with equal justification as different historical phases and regional variants of the same script or as different scripts. Giving them different names suggests different systems, even though there really is an unbroken chain.

The great continuity of the alphabetic tradition is attested by a feature often disregarded as trivial, the order of letters. Actually, it is a most remarkable fact that the letters of the Semitic alphabet have been handed down to us through roughly 140 generations in the form of the same canonical list, give or take a few additions and omissions along the way.⁵ However, fragmentary epigraphic records often do not allow us to perceive continuity. It is difficult, therefore, clearly to distinguish the spread of a writing system from its evolution, derivation and transmutation into a new system.

Nevertheless, certain discontinuities do justify the postulation of distinct systems. Whenever a writing system is transmitted to a typologically different language we can expect it to undergo drastic adaptations. The syllabic component of cuneiform quickly increased when the script was transferred to Akkadian from Sumerian in the second half of the third millennium BCE. The adaptation of the alphabet to Greek from its Semitic source around 800 BCE, at the latest, likewise was a far-reaching break, evidenced, for example, by the peculiar mismatch of the phonetic interpretations of the Semitic sibilant letters zain, samek, sade and shin and their Greek derivatives zeta, xi, san and sigma (table 10.4, cf. Woodard 1997, ch. 6). In conjunction with the innovation of letters for vowels, this clearly

⁵ Notice that Watt (1989) has argued that the alphabetic letter order is not arbitrary but originates in an organized matrix reflecting phonological knowledge.

makes for a different system. The adaptation of the roman alphabet to Vietnamese necessitated the introduction of a whole layer of diacritics to mark tonal and so-called suprasegmental features unknown in Semitic and Indo-European languages. It would be premature, however, to conclude that the boundaries of language families and scripts coincide. The Brāhmī-derived Indian scripts have spread from Indo-European to Dravidian languages without a change of type, and Chinese characters have been used for Korean and Japanese, which are genetically unrelated to Chinese and structurally very different. Since writing systems are artifacts, they are subject to deliberate manipulation. Tolerance for complexity and the desire to have a writing system that looks like, or, on the contrary, differs from, another are variable factors not easily captured by general laws. The history of writing, therefore, cannot rely much on universal tendencies, but has to investigate the spread and transmutation of every script in its own right.

Notice that this holds true, in particular, for the relationship between writing and language. Although historical linguists have been slow to incorporate influences of writing on language into their theories, it can hardly be denied that such influences exist. To a considerable extent historical linguistics consists in determining the phonetic interpretations of ancient written records and in explaining changes in the relationship between spelling and sound. The historical study of the Indo-European, Semitic and Sino-Tibetan language families has profited greatly from the availability of such records, but it has generally been taken for granted that writing is a representation of speech, however imperfect. Little attention has been paid to writing as an agent of linguistic change. Writing as a channel of language contact, especially loanwords (e.g. Sumerograms in Akkadian and other cuneiform languages such as Hittite and Elamite; Chinese character words in Korean, Vietnamese and Japanese; a Greek stratum of lexemes and morphemes in Latin and modern European languages), spelling pronunciation, and language standardization are three areas calling for more systematic and comparative study in this regard. Virtually nothing is known about the differential potential of specific writing systems to influence linguistic development, and much remains to be explored about how writing has shaped linguistic activities, attitudes and concepts, that is, how language in our highly literate societies differs from what it was in oral societies. Changes in the way we perceive language and theorize about it must also be understood as an aspect of the history of writing.

Conclusion

The history of writing is incomplete, in many respects. It continues to unfold as we write, nowadays on computer screens rather than clay tablets, and so

do our insights into the development of human communication and information storage by means of visual signs from the beginnings of history itself to the present. Since the great decipherments of the nineteenth century, especially of Egyptian hieroglyphics and Assyrian cuneiform, and their twentieth-century successors, Proto-Sinaitic, Linear B, Hittite hieroglyphic and Maya, the known universe of writing has expanded. Of several sign systems that were not formerly recognized as such we now know that they are writing, notably those of Mesoamerica. Our view of the history of writing has been affected by these insights. Monogeneticism is dead, and so is unidirectional evolutionism, assuming we do not allow history to end with the appearance of the Greek alphabet. As we have seen in this chapter, writing was invented more than once: to the best of our knowledge, at least four times, in Mesopotamia, Egypt, China and Mesoamerica. Caution is in order, though, because the Indus script, Linear A, the new finds of Turkmenistan and some other systems still hold many unresolved questions.

In this brief overview we have also seen that the development of writing systems must be explained in terms of how visual signs are interpreted, as much as in terms of what they are meant to encode. And this holds true of the dispersion of scripts from one language to another as well. The reinterpretation of signs plays a crucial role in the adaptation of scripts. (For example, Phoenician *'*, *h* and *j* were reinterpreted as Greek *a*, *e* and *i*, respectively.) All this points to the shortcomings of the representational approach, which views writing as a representation of speech and tries to explain its history as an approximation towards this ideal. But writing is an artifact. Writing systems are highly complex instruments shaped by the interaction of material and systematic factors, which relate to, but are not the same as, those of speech. Both speech and writing are subject to diachronic change, but there is no simple dependency here. It is the task of the history of writing to explain the interaction between the two.

Questions for discussion

- (1) Is evolution theory a suitable model for the history of writing?
- (2) Why is the transmission of scripts across linguistic boundaries of special significance in the history of writing?
- (3) What is the historical significance of the order of the letters of the ABC?
- (4) Why is English spelling a problem for the theory of unidirectional development of writing?
- (5) How and why does the history of writing differ from the history of language?