Much of the time, of course, we are doing a bit of both, without any very clear boundary between them. And I would like you to approach this book rather in that spirit. It had to be written, because Deakin University wanted it in book form and not on tape; also it contains a lot of figures and diagrams, as well as tables that may need to be consulted over and over again, which is one of the things that writing is particularly good for. But I was saying it to myself all the time as I wrote it; and if there are any passages in it that seem to be difficult, I recommend reading them aloud. Readers read differently, of course, just as writers write differently; but I think that for some people, at least, the meaning will stand out more clearly once the text is 'heard' in spoken form.

I would like to thank Mr Ding Zhaozhang for his kindness in writing the Chinese characters for me; his calligraphic skill is greatly appreciated. I am extremely grateful to Deakin University for the trouble they have taken, and to the Series Editor, Frances Christie for her patient prodding and constructive advice. It is fashionable these days to talk about 'intertextuality'; this text is to be thought of as in dialogue with the other texts in the series, the whole lot together trying to say something about language as the basis of human development.

M. A. K. Halliday

Chapter 1

Development of speech

Halliday (RLD)

Origins

It seems likely that human beings have been around in the world for quite some time: say 2–3 million years, according to the findings of Richard Leakey and others. If we met one of our ancestors of that antiquity, we would recognise him or her as quite like one of ourselves.

The distinctively human characteristics of walking upright, using tools, and talking were already appearing well over a million years ago. These are supposed to mark us off from the rest of creation, including our immediate forebears. It is customary nowadays to emphasise the continuity—that which we share with other species—rather than the discontinuity; and to interpret what distinguishes us against the background of what we have in common—with the apes, and with our more distant but also highly intelligent cousins the dolphins. So let us look at language in this light.

What is it that distinguishes human language from communication in other species? There have been many attempts to demonstrate that apes could acquire human-like language; that although their articulatory organs are not shaped to produce speech sounds, if we free them from the constraints of articulation and allow them to use some other form of output, like pressing particular keys in particular sequences, it can be shown that they would be intellectually capable of learning our kind of language.

The results are impressive, although they turn out on examination to be not as startling as was initially claimed. The idea that 'they could talk if they wanted; they just don't need to' is somewhat naïve, based on an oversimplified account of what human language is really like. (It also seems rather unlikely, one must admit.) So let us speculate about how, on the basis of our present knowledge, human language probably evolved; and see at what point and in what respects our ancestors set out along a new semiotic track.

The developmental analogy

It is often pointed out that in many respects the individual recapitulates the history of the species. The idea is an old one, first formulated as an explicit principle by Ernst Häckel. In the words of a recent BBC television series, 'as an embryo growing in the womb, each one of us takes the form of fish, then amphibian and mammal, and finally prepares for life as a member of much the most varied and flexible species to have evolved on earth'.

The evolutionary process does not stop at birth; but it changes direction, because the born child is a social being and will therefore develop social characteristics alongside the purely biological ones. As he learns to walk, he also learns to talk. (It is quite likely that he has learnt something of his mother tongue even before he is born; the rhythm of speech begins in the diaphragm, and the child must feel the regular variation in pressure that is produced by the muscles controlling the outflow of air as his mother talks. If so, he may already be predisposed at birth to the rhythmic patterns of his 'mother tongue', in the strict sense of the term: the language that is spoken by his mother.)

If the notion that ontogeny recapitulates phylogeny is in general valid as a principle of biological development, we may also find it to be valid for certain aspects of social development—at least for one particular aspect, that of the learning of language. There is a caution to be given here, however. Where biological development is concerned, the evolution of the species is established on other grounds; the evidence is independent of any developmental findings and hence if we find the individual retracing the history of the species we are discovering something new.

In the case of language, however, we cannot reconstruct the early stages of its evolution. Almost the only evidence we have for this is derived from what we know about how children learn language. The independent information is simply the probability that early humans in this period did have language, as is suggested (1) by the size of their brains and (2) by the fact that they used tools. But these tell us nothing about what kind of a language they had or how it evolved. For this we have to guess from studying the development of the child.

Such guesses are just that—guesswork. On the other hand, there are some striking features about language development in early childhood that suggest that here too the parallel may be fairly close: in particular, the fact of the PROTOLANGUAGE—that children typically start by creating language for themselves before moving over to the language they hear around them. Before the mother tongue there is a 'child tongue', and the forms and functions that that takes look very much like evolutionary steps towards what we know as language today.

Symbolic and non-symbolic acts

Children begin to communicate more or less from birth. A newborn child can already 'pay attention': when his mother talks to him, he listens. Within three or four weeks he is contributing his own share of the 'discussion', responding with animated movements of his body—his arms and legs, and also his tongue and his lips.

This bodily activity is not yet language. Colwyn Trevarthen (1978, 1979), who was one of the first to study these processes, calls the tongue and lip movements 'pre-speech', because the baby seems to be rehearsing the muscular activity that will be used to produce speech later on; just as with his arms he performs a sequence of reaching out, grasping, and pulling towards him that is like taking hold of an object—'pre-reaching', in Trevarthen's terms. He is preparing himself, so to speak, for the two basic skills he will first have to master—using tools, and talking. In the first, he will be using his limbs, and extensions of his limbs, to control his environment directly, and to orient and manoeuvre himself within it. With the second, speech, he will be using other muscular movements and postures, those of articulation—also to control his environment; but in this case to control it indirectly, by acting on others so that they will control it for him. For this he has to learn to act symbolically.

Let us make this distinction clear, the distinction between symbolic and non-symbolic acts. If I am hungry, and want to eat an apple, I can act directly on the apple by going and getting it myself—moving to where it is in reach, reaching out, and then grabbing it. But—provided there are other human beings around—I can get hold of it in another way, by acting not directly but symbolically. I can say to a sympathetic member of my family 'Fetch me an apple'.

This is a symbolic act, an ACT OF MEANING. It has to be addressed to someone—not necessarily some particular person, maybe just to the world at large; but unless there is a receiver it will not work. Acts of meaning are by their nature social acts, and all symbolic systems are social systems. Of course, once a system of symbols has come into being, it can be played with, fought with, turned into an art form; it can be used to address oneself, a deity, or even animals or inanimate objects. But these are secondary, derivative uses; the symbols could never have evolved to serve these functions, because they depend on values the symbols have already acquired in use.

Somewhere around the middle of the first year of life, the child lays the foundations for these two modes of action, the direct and the symbolic. He learns to reach out, grasp, and pull things towards him, and he learns the complementary action of hitting things to knock them away: 'I want', 'I don't want'. This, typically, starts around 4–5 months. Not long afterwards, he begins to explore the alternative, symbolic mode—getting others to achieve the effect for him.

The 'child tongue'

But there is a problem with symbolic acts. A symbol has to be understood. If I start speaking Chinese to you, that is a perfectly good act of meaning; but if you do not understand Chinese, the only message you will get is that I am talking—you will have no idea what I am talking about. Even if what I am saying is the Chinese equivalent of 'bring me an apple' (ná píngguǒ lái gěi wǒ), it is unlikely that the apple will arrive.

So how does a human infant go about creating a set of symbols, such that those around him will understand? It used to be assumed that he went straight into the mother tongue, copying the words as well as he could and eventually learning to combine them. Later on, in his second year, that is what he does; but a great deal has already happened before he starts on the mother tongue. Before he takes over the language of others, he starts by creating one for himself—by himself in interaction with the small group of others who learn it along with him.

At 7–8 months, he is ready to act symbolically. But he cannot start straightaway on the mother tongue: not only because he could not yet control its **sounds**, though this is true too, but more importantly because he could not yet control its **forms** and its **meanings**. Adult languages are organised around a grammar (more accurately, a LEXICO-GRAMMAR, a code consisting of words-in-structure), which has the function of translating the meanings into the sounds; but an eight-month-old can have no idea of what a word is, since it is something that involves a particular kind of abstraction. So he has to create a symbolic system of his own, one that does not contain either vocabulary or grammar but consists of a little set of SIGNS. These signs are made by voice, or gesture, or some combination of the two.

There have been very few studies of the first step, the initial symbolic acts of meaning by which an infant starts to 'mean'; so it is impossible to give a general account of how this happens. Instead, I will tell the story as it happened with one particular child—a boy whose name, for present purposes, is Nigel. Here is a brief account of how Nigel created his first language.

How Nigel started to mean

One day at eight months old, Nigel was sitting on his mother's knee. She was writing. As she paused, with the pen held lightly in her fingers, Nigel reached out for it. He closed his fist firmly around it, looked at her face for a moment, and then, after another moment, let go. He had not tried to pull it towards him.

His mother said 'You want the pen, do you? All right—you can hold it, for a little while'.

This was an act of meaning; and it had worked. His mother had understood. Nigel was, of course, quite capable of grabbing the pen and pulling it towards him; that was his normal way of getting something. But on this occasion, he had not taken it; he had asked for it. He had created a symbol, by the use of his hand—it was gestural, not vocal; and he had waited for the response. There was a clear distinction between the two kinds of act: the direct, non-symbolic action on the object itself, and the indirect, symbolic action 'on' (i.e. directed towards) the object but 'through' (mediated by) the person addressed.

Nigel had solved the basic problem, that of creating a symbol that could be understood; and he had solved it iconically—that is, by creating a symbol that bore a natural resemblance to its meaning. The gesture of grasping an object firmly and holding on to it for a measurable time before letting go is a very reasonable way of encoding the meaning 'I want that thing', 'let me hold it', 'give it to me'. And his mother's response showed him she had understood. (She had acted entirely spontaneously, not at all becoming conscious of the fact that both Nigel and she had performed something entirely new.)

Nigel was encouraged by his success and created two more symbols within the same week, both of them also iconic. I was entertaining him by throwing his toy cat up in the air, and catching it as it came down. When I stopped, he leant forward and touched it: neither grasping it nor pushing it away, but keeping his fingers pressed against it for a measurable time.

'You want me to throw it up again?' Every time I stopped, he repeated the gesture, until I got tired and refused. But it was clear that I had got the message; and Nigel himself made it clear, by the satisfaction he showed at being understood.

A day or two later, his mother offered him his woolly dog to play with. He touched it with just one finger, very lightly and for the briefest instant, then took his hand away. She offered it to him again; he repeated the gesture. It meant 'No, I don't want it; take it away'. She understood, said 'Don't you want it?', and put it down. Again, it was a symbolic gesture; he could push objects away if he didn't want them, but this was quite distinct. He was 'saying' 'I don't want it', and his mother was responding to the symbol.

These were not, in fact, the very first symbols Nigel had created; these had appeared two weeks earlier, at shortly before the age of eight months. They were vocal, not gestural; and each consisted of a single vowel, the same vowel [œ] (like the French word *œufs*) but with a slight difference in tone. One, on a low, breathy tone, meant 'yes it's me, and here we are together'.

His mother came to him. 'Hello, bootie', she said.

'œ', he replied.

'There's my bootie!'

'œ'.

'That's nice, yes.'

'œ'.

This would go on for as long as she kept the conversation going.

The other was also [œ], but on a higher, falling tone, and without the breathy, sighing quality of the first. It meant 'That's interesting—what's happening?', and was used when Nigel's attention was caught by some commotion, like a flock of birds taking off from the ground or a bus revving up its engine. This was addressed mainly to himself; but often someone responded, saying what the commotion was all about.

'Those are pigeons', his mother said. 'Weren't they noisy?'

One child's protolanguage

So at eight months Nigel had a language. It consisted of five signs, which were frequently repeated when the occasion arose; and those around him, the small group that made up his immediate family, understood them and gave a reply. They replied, of course, in their own language,

not in his; Nigel would no doubt have been insulted to have his own signs served back to him, but it never occurred to anyone to try. What mattered was that he could now converse: he could initiate a conversation and be understood. From that moment, his route into language was open.

For its relevance to linguistic evolution, we need to interpret this little system, and then to follow Nigel through one stage further.

The ability to mean is important to Nigel because it is functional. He is creating a language for a purpose, to do something with it. If we watch him at eight months and notice the environments in which he is using these signs (the CONTEXT OF SITUATION, in linguistic terminology), we will be aware of two kinds of motive that lead him to communicate. One is a pragmatic one: he wants to be given something, or he wants something to be done for him; and for these purposes he used the iconic gestures of grasping and touching. The other is a more thoughtful mode; either he is expressing curiosity about what is going on around him, or he is just 'being together', expressing his awareness that he is one person, his mother is another, and that they are sharing an experience. These he expresses by sound, his first true speech sounds.

Having established his ability to mean, and gained recognition as a conversation partner, at 9½–10 months, he set about creating a rich protolanguage that would serve him until he was ready to start on English. At 10½ months, he had a range of twelve distinct signs; by 12 months, this had increased to 20; by 13½ months, to 27; by 15 months, to 31; and by 16½ months, to 50. By this time, however, he is beginning the transition into the mother tongue and his language is no longer of the strictly 'proto' kind.

If we look at the period of roughly six months that constitutes, with Nigel, the period of the true protolanguage—say 9½–15½ months of age—we find a very clear pattern of functional development, which we can interpret in terms of these same two motifs. Let us exemplify from right in the middle of this six-month period, when Nigel is just over one year of age and just about beginning to walk. On the one hand, he has a range of pragmatic signs including the following:

'give me that'	na . . .	(mid fall)
'yes I want that thing there'	yi . . .	(high level)
'yes I want what you just said'	a:	(high rise-fall)
'do that again'	ɜ̄	(mid fall)
'do that right now!'	m͡n̄ŋ	(high fall; loud)
'yes (let's) do that'	ɜ̄ . . .	(low fall)
'no, don't (let's) do that'	ã.ã	(mid fall + mid fall)
'let's go out for a walk'		(slow glottal creak)

Note: . . . indicates that the sound was repeated, normally three or four times over.

On the other hand, he had a range of signs in the interactional and personal areas, including:

'hallo Anna!'	an:na	(high level + high level)
'yes it's me; I'm here'	ɛ:	(low fall, long drawn out)
'look, a picture; you say what it is'	a::da	(high rise + mid fall)
'nice to see you; let's look at this'	ɛdɛdɛdɛ	(proclitic + high level + high fall)
'I can hear an aeroplane'	œ.œ	(low fall + low fall)
'that's nice'	æyi:	(mid level + mid fall)
'that's funny (where's it gone?)'	m͡n̄ŋ	(high rise-fall)
'a lot of talk!'	bwgabwga	(low fall + low fall)
'I'm sleepy'	g'ʷʁɪ . . .	(low level)

Apart from some instances of the last, which he also used in the special sense of playing a game of pretending to go to sleep, curling up on the floor in a little ball and closing his eyes tight, these all expressed some form of the relationship between himself and his environment: either interaction with another person, or pleasure, curiosity, disgust etc. in the outside world (or, in the last case, withdrawal from it). In one or two critical cases, the two components are combined: a fundamental theme in the protolanguage is that of 'let's look at this together', typically a greeting or calling to attention of the other person with an invitation to share an experience. It turns out that this sharing of experience by attending to some object that both can focus on—Nigel and his mother looking at a picture together, for example—is an important step towards the child's conception of a name, and hence towards the development of language in the adult sense.

What is the primary function of signs such as these? If those of the first group represent language in a 'doing' function—that which we refer to as PRAGMATIC—then the signs of the second group have more of a 'thinking' function: Nigel is using his ability to create meanings as a way of projecting himself on to the environment, expressing his concern with it—what's in it for him, so to speak—and so beginning systematically to explore it. In my own work I have referred to this as the MATHETIC function, meaning 'for learning with'.

Nigel's protolanguage, from its earliest origins, displays these two symbolic modes: to put it in other terms, it is at once both a means of action and a means of reflection. Parallel studies that have been carried out with other children suggest that this twofold functional orientation is a general feature of children's language construction; see, in particular, Clare Painter's book *Learning the Mother Tongue*. We shall not pursue the story further here. But it is important to point out, as we move away from the developmental perspective, that this complementarity of action and reflection persists way beyond the protolinguistic stage. In the first place, it serves as the central strategy by which children move out of their protolanguage and make the transition to the language (or languages) of their cultural environment. And finally, it is also the fundamental organising principle that lies behind the whole of adult language. Every human language is a potential for meaning in these two ways: it is a resource for doing with, and it is a resource for thinking with. This is the most important single fact about human language, and a motif to which we shall return in our study of speech and writing.

Evolutionary interpretations

Returning to Trevarthen for a moment: he made some films, in the early 1970s, showing mothers interacting with small infants, 8–10 weeks old.

The mother and child were facing each other; but Trevarthen had two cameras synchronised, and the picture was spliced so that each could be seen full face at the same time. The impression was striking: a kind of *pas de deux*, in which mother and baby, though performing what were obviously totally different movements, were yet in a curious way involved in a dance together, with remarkable synchrony. Then the film was shown in slow motion; and you could see that the child's movements were slightly ahead of the mother's. So although the child did not become animated until the mother's attention was directed to him—the initial invitation came from the mother—once the music started, so to speak, it was the child who was leading the dance.

This is the pattern of all subsequent language learning—except that, once he is mobile, the child does not wait to be invited; he can initiate the interaction. But the impetus always comes from the child; he is pushing forward the frontiers of language, with the mother, and others close enough to be in his little speech fellowship, tracking as he goes along. The others 'know' the language too—quite unconsciously; if you ask a mother who is conversing with a child at the protolinguistic stage what the child is saying, she will probably answer the way one such mother did to me, rather scornfully: 'He's not saying anything. He can't talk yet'—this at the end of an animated exchange between the two of them in which the child had been talking a large part of the time. It is a natural human tendency to want to mean.

It seems plausible—though it cannot be proved or disproved—that the child's way in to language is somehow analogous to the way language evolved in the human species. According to such an account, language would have begun in the form of a small number of signs for expressing general meanings relating to the needs of human beings in their relations with others: meanings such as 'give me (some object)', 'do (some service) for me', 'behave (in a certain way) for me', and also 'be together with me', 'come and look (at this) with me', 'I like (that)', 'I'm curious (about that)', 'I don't like (that)', and so on. The essential function of the symbol is that of sharing: shared action, or shared reflection.

Then (following the model of the child), particular (individual) persons and particular (classes of) objects come to be associated in regular, repetitive contexts with general meanings of this kind. So a particular sign evolves as 'I want to be together **with you**' and that becomes a name of a person or a kin relationship; another evolves as 'give me (a particular kind of) food', and so becomes the word for food, or some class of edible things; another as 'I'm curious about (the animal that's making) **that noise**', and so becomes the name of the animal species; and so on. The process by which a sign meaning some such unanalysed semantic complex turns into a name can be directly observed with a small child, so we know that it can happen; and the fact that this seems to be the **typical** developmental pattern suggests that the human experience may not have been very different.

Note that we are not here discussing the origin of the **form** of the expression: the phonetic or gestural shape of the protolinguistic sign. It is possible to say something about that too, from what can be observed of the way small children create the expressions for their protolanguage; the picture is far from clear, in any detail, at this stage, but the principle that the most effective symbol is one that is in some sense 'natural'—related iconically to its meaning—has presumably always held good.

1. We can see, for example, how children take the sounds they have heard themselves make naturally and turn them into protolinguistic signs: Nigel's long-drawn-out and breathy [ɛ̃ː] 'yes it's me, I'm here' (subsequently 'yes that's what I meant', a signal that his meaning had been properly interpreted) originated as a sigh, a release of tension on being called by a voice he recognised; while his [g'ʷɤɪ] was a self-imitation of the sound he had heard himself make when going to sleep, thumb in front of lips and breath going in and out creating suction noises.
2. We can easily recognise 'other-imitations', the noise of ducks and cats and aeroplanes.
3. There is a tendency that is not well understood for small children's pragmatic signs to incorporate nasality; perhaps simply because it takes a positive muscular effort to close off the nasal passage.
4. Some prosodic and paralinguistic features seem naturally related to certain meanings: loudness with intensity of feeling, falling tone with definitiveness (certainty), rising tone with tentativeness (uncertainty), and so on.

All these factors may have played a part in the evolution of language; we cannot say. Languages change very quickly; they have had so many generations to evolve—say 50 000 generations at least—that there is no trace of their origin left in modern speech. (Onomatopoeic words are not relics from the remote past; they are remodelled every few generations.) It is perhaps useful to be reminded here that there is no such thing as a 'primitive' language: all languages in the world today are equally the product of this long process of evolution, and all are equally well adapted to the cultures whose needs they serve.

From protolanguage to language

In other words, all human languages are equally far removed from the 'protolanguage' stage we must have passed through in the early evolution of *homo loquens*. But as to exactly how the protolanguage may have evolved into a language of the type represented by all languages today, we can say very little—because here even the developmental evidence is lacking.

The reason for this is an interesting one. If we are right, then for the first 6–9 months after creating his first symbolic signs, a child is in some sense recapitulating the history of language. But then he takes a leap. There is, after all, no need for him to go through the whole process, step by laborious step; as soon as he is ready to take up the mother tongue, he can do so. He has in fact been listening to it for a long time; when he has reached the point where he can understand how grammar works—typically a few months into the second year—he can start building it up for himself. (Some children like to think about

it for quite a long time before actually plunging in, and worry their parents by remaining quite uncommunicative till they are three years old; but provided they show understanding of what is said to them, the development is still taking place.)

Since there was no more advanced model around when our ancestors were evolving language, presumably they did not take any such leap—although we cannot be sure. There is a critical difference between a protolanguage and a language, a threshold that has to be crossed; there is no intermediate stage. (There can be a **mixture** between the two, and typically there is with children; the first features of 'language', in the adult sense, may appear quite early in the protolinguistic phase, while equally, protolanguage features may continue well on into the development of language. Some are in fact still present in adult speech: so-called 'interjections' like *Ah!* and *Ow!* are in fact relics of protolanguage that have survived in adult speech.) So it may be that there is a leap at this point in evolution as well.

What is significant for our present discussion is not how the transition was made, but the nature of the transition itself. What is the essential difference between language and protolanguage?

Essentially, the difference is this. A language is a three-level ('tristratal') system. It consists of meanings, which are coded in wordings, which are then recoded in sounds. In technical linguistic terms, it consists of three levels, or 'strata': a SEMANTIC level, a GRAMMATICAL (strictly, 'lexico-grammatical') level, and a PHONOLOGICAL level. It does not code meaning directly into sound.

A protolanguage, on the other hand, is a two-level ('bistratal') system. It consists of meanings that are coded directly into sounds. Or rather, we should say into 'expressions', since as we have seen, the protolinguistic sign may be expressed either in sound or in gesture. (When language evolved, sound took over as the primary medium of expression—it has the obvious advantage that the receiver does not need to watch what the sender is doing, or even to be able to see the sender at all.) So let us say protolanguage consists simply of meanings and expressions.

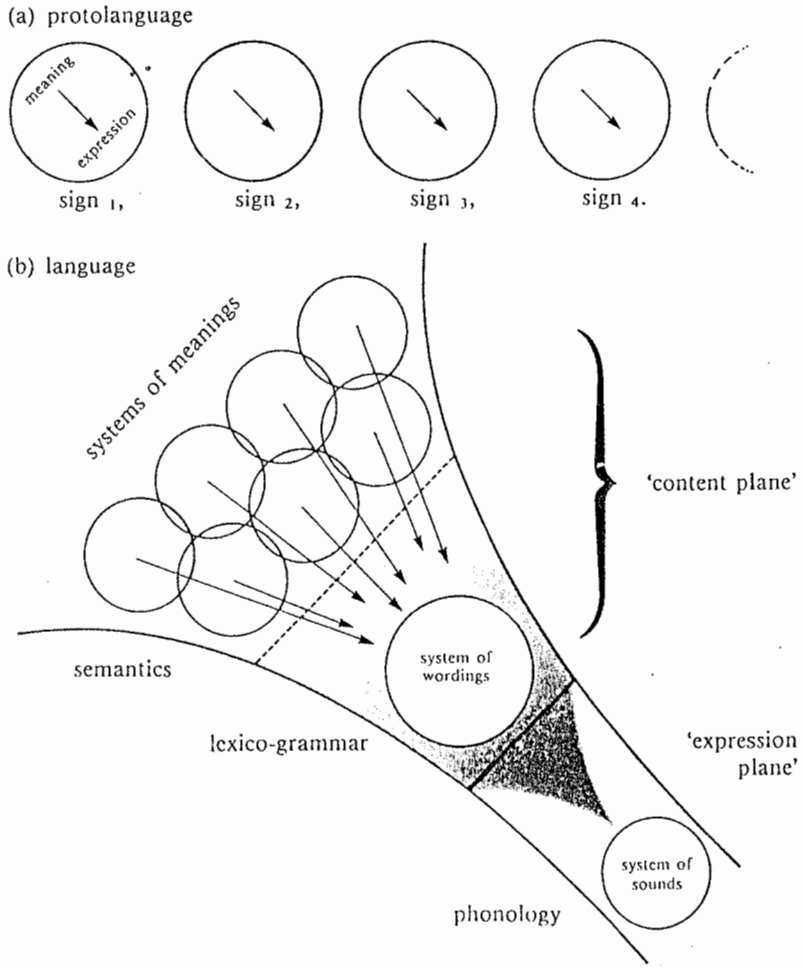
As far as we know, all communication systems in species other than man are protolanguages. It may be that, as claimed in some of the studies referred to earlier, chimpanzees or gorillas are capable of operating with language; but this is doubtful—none of the examples given is conclusive in this respect, and it seems strange that if their brain is capable of doing so, they have not in fact begun to evolve any such system among themselves. Nearer home, we find protolanguage in our pets: cats and dogs communicate in this way, at least to us (apparently rather less among themselves). In all these species, the basic unit of communication is a protolinguistic sign: some unanalysed semantic bundle (for example, 'I'm hungry—feed me!') coded into some fixed expression (for example, a particular miaow, or a rubbing of the head against some object).

A system of this kind is subject to various limitations, the principal one being that it is impossible to mean more than one thing at once. To do that, it is necessary to be able to take the elements of a message apart and recombine them in all sorts of different ways; but the constituents of a two-level system are fixed and immutable, like a system of traffic signals—they have to be, otherwise the system would not work. They cannot be taken apart and recombined. (They can be strung out in a sequence, which gives an appearance of flexibility; but falsely, since the meaning of the sequence is simply the sum of its parts.) To be able to signal 'My friend here is hungry', or 'Are you hungry?', or even 'I'm not hungry', you have to have a three-level system, in which the various components of meaning can be teased apart, coded separately by different devices (selection, modification, ordering, prosodic modulation, etc.—all the paraphernalia of grammar and vocabulary, in fact), and then recoded into a single integrated output.

There comes a point, therefore, in the life of the individual, when the protolanguage can no longer serve his needs; and the same thing must have happened in the history of the race. It may be possible to **use** tools, with only a protolanguage; but it is certainly not possible to **make** them. To become toolmakers, we had to have language.

For a diagrammatic representation of the difference between language and protolanguage, see Figure 1.1.

Figure 1.1 Language and protolanguage



Chapter 2

Writing systems

Pictures and written symbols

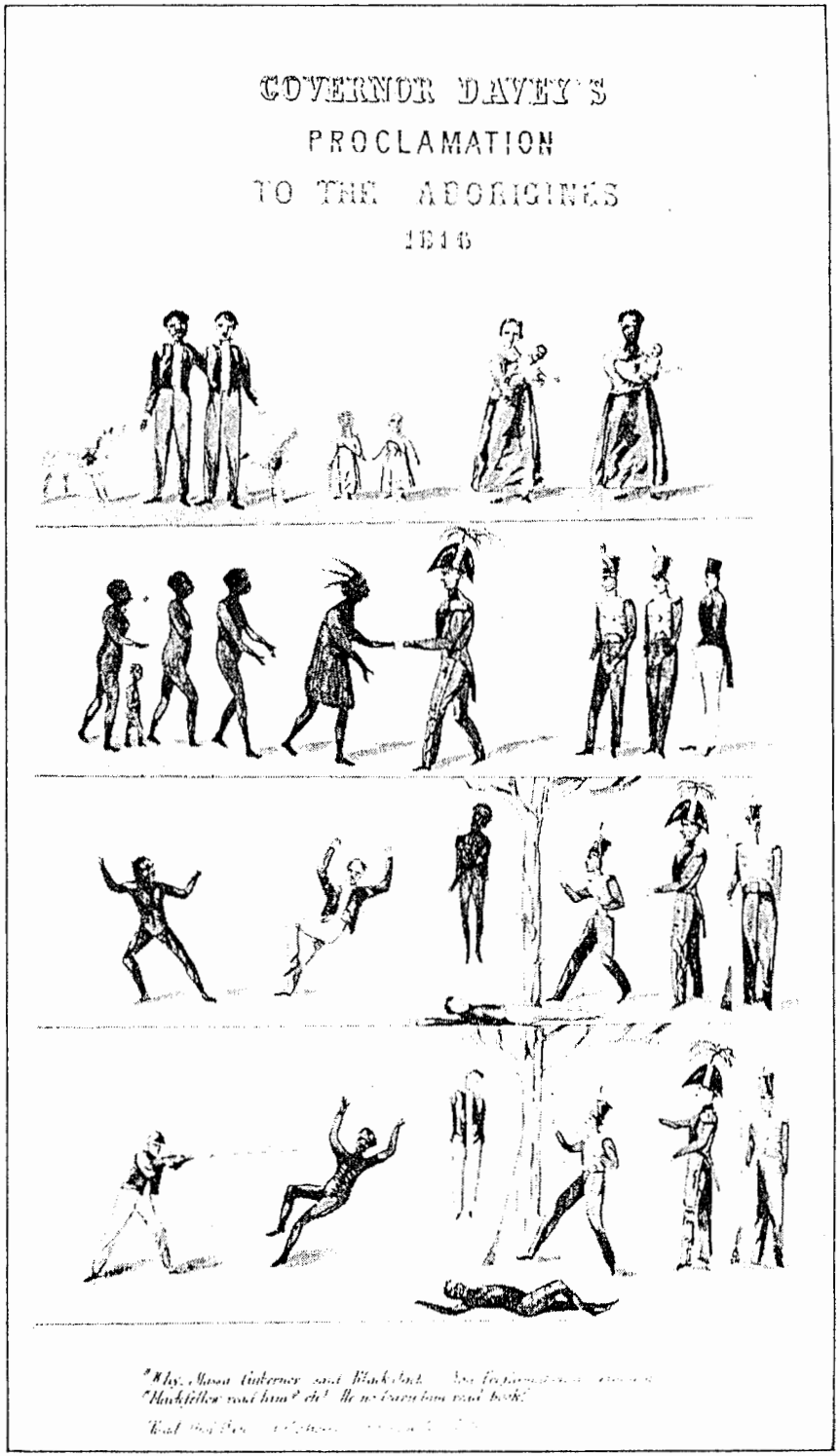
The key to language, then, is grammar, the level of 'words-in-structure'; since that is where the meanings are organised, processed, and packaged in a form that can be turned into an expression of some kind. (That is looking at it from the point of view of the speaker, the one who is doing the encoding. It is equally valid, of course, to look at it from the other end, from the point of view of the listener, the one who is doing the decoding. In his case, the grammar takes in the expressions, unpacks them, and sorts them out into the different semantic components.)

For about 99.5 per cent of the history of the human race, the only medium of expression for language has been sound, the sound produced by the organs of speech (from the larynx to the lips and nostrils) in modifying the stream of air that comes from the diaphragm. The 'sender' of the message has been a speaker, and the 'receiver' has been a listener.

Not that this was the only form of human **communication**. From at least a thousand generations back, our ancestors have been able to draw, and have made pictures on rock faces and the walls of caves (as well as, no doubt, on much less durable material that has not survived). Whatever the specific significance and social value of such artefacts at any particular place and time—whether adornment, or boasting of one's exploits, or marking a sacred site—they are bearers of meaning. Our ancestors long ago learnt to recognise and exploit the semiotic potential of the visual medium also.

But this is not language; and the distinction is an important one. Painting a picture may be—perhaps always is—a form of communication, a symbolic act directed at other people. It may have a specific communicative purpose, such as recording past events or giving instructions on where and what to hunt. But this does not mean it is a form of language. If we use the word 'language' to refer to such activity, we are using it metaphorically, just as when we talk of music or mathematics as a kind of language. (There is no harm in this, obviously, provided we recognise the fact, and provided that we then have a clear way of indicating when we are talking about language in the primary sense of the term.)

Figure 2.1 Pictorial communication that is not writing



Let us use the term 'writing' in its exact sense, to mean a system of visual representation that is language. Such pictures, then, like those in Figure 2.1, may be a form of communication, but they are not a form of writing.

Children also learn to draw, usually some time after they have learnt to speak; and they then have to learn the distinction between drawing and writing. Here again there is a discontinuity: they have to 'leap' from one to the other, and the two are kept strictly apart. In the history of the human race, on the other hand, the line was not so clear. Drawing evolved gradually until it became writing.

From picture to character

Why do we say that a picture, even if it 'contains a message' or 'communicates something', is not writing?

First of all let us point out that the qualification 'even if it contains a message, or communicates something' really adds nothing at all, since any pictorial representation can be said to communicate something. Indeed, we are brought up to expect that it should do, as is shown by the common complaints of the picture-gazer: 'It doesn't mean anything to me'; compare also the language of art criticism, which makes frequent reference to what a picture 'conveys', its 'theme', 'symbolic significance', and so on.

But the question of whether something is writing or not can be answered in quite explicit terms. Writing is a part of language. More specifically, it is one kind of **expression** in language—an alternative to sound. We have said that a language consists of three strata: meaning, wording, and sound. We can now modify this, and say that a language consists of meaning, wording, and expression; and the expression may take the form **either** of sound **or** of writing.

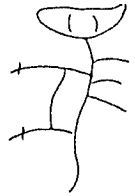
One thing that follows from this is that writing can always be read aloud. If we look at a painting, or any other visual art form, we can describe it, make a commentary on it, 'say what it means'; but we cannot **read** it. We cannot decode it into wordings—because it is not an encoding of wordings in the first place. We could not list the elements of which it is made up, put them in a dictionary, and indicate how to pronounce them. They are not elements of a language.

The fact that we can make a clear distinction between what is writing and what is not does not mean there are no 'borderline cases'. There can always be instances that are mixed or indeterminate, however clearly defined the categories are in theory; and in the history of writing there must have been many, although none seems to have survived—which suggests that the transition from 'pre-writing' to writing may also have been fairly sudden.

But although we cannot document the process whereby writing first evolved, it is reasonably clear how it happened. Writing did not begin by somebody deciding to write language down instead of saying it aloud. It evolved from the coming together of two independent semiotic systems: language, on the one hand, and visual imagery on the other. Writing begins when pictures are **interpreted** as language.

Consider the shape shown in Figure 2.2. This is a picture incised on a bone, for purposes of divination, in China some time in the second millenium BC. It is a picture of a horse.

Figure 2.2 Earliest known form of Chinese character *horse*

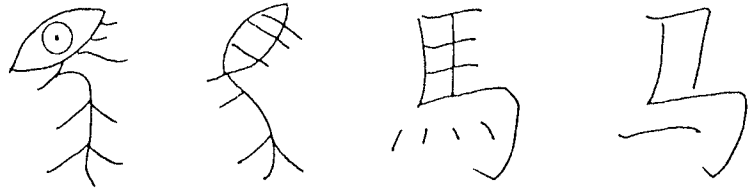


No doubt the Chinese had been making pictorial representations of horses for a long time before that; none of them has survived. But at some time in this process, an important change took place in the way such a representation was interpreted. At first, it represented a 'horse': that is, the animal itself—or, more accurately, a member of that class of animals recognised as a distinct category in the culture.

By the time this bone was cut, however, it no longer represented a 'horse'; it represented *horse*, a word of the language. (That is to say, it represented the Chinese word pronounced [mɒ], which means 'horse' in English). It could now be read aloud.

Let us express this change of function in linguistic terms. **Functionally**, the shape (Figure 2.2) is no longer a picture; it has become a CHARACTER. Since that time, the shape of this particular character has varied considerably, as shown in Figure 2.3. But its function has remained the same. Figure 2.3(d) is the modern Chinese character for the word *ma* (now pronounced [mǎ]).

Figure 2.3 Evolution of the *horse* character



(a) 1000–800 BC (b) c.500 BC (c) 200 BC–1950 AD (d) modern 'simplified'

The same process took place with hundreds of other pictorial representations. From being pictures, representing classes of objects, they became characters, representing words. The shapes themselves did not have to change; what changed was the way they were understood.

In time, of course, the visual shape does also tend to change. Once the visual symbol has become a character, and especially when this has happened in enough instances so that not just a few words here and there, but most of the words of the language, can be represented—in other words, once a writing **system** has evolved—then the shapes tend to become regularised and simplified, in ways that are strongly influenced by the materials that are used for writing on and with: incising on bone, casting in bronze, chiselling in clay, painting on silk, and so on. But the change of form is not a **necessary** consequence of the change of function. What creates writing is not the particular shapes that are

used; it is the way the shapes are interpreted.

This process, of reinterpreting representations of **things** as representations of **words**, took place—we presume independently—in three different parts of the world: (1) in south-west Asia and north-east Africa (Sumeria and Egypt), (2) in China, and (3) in central America (with the Mayans). We have no clear traces of the process itself; but then it would be difficult to recognise them if we had, since as already pointed out it does not necessarily involve changes in the forms themselves. All we can say for sure is that writing had effectively evolved by 4000 BC in Mesopotamia and the Nile delta, by 2000 BC in northern China, and by the turn of the era in what is now Mexico.

The Chinese system of writing

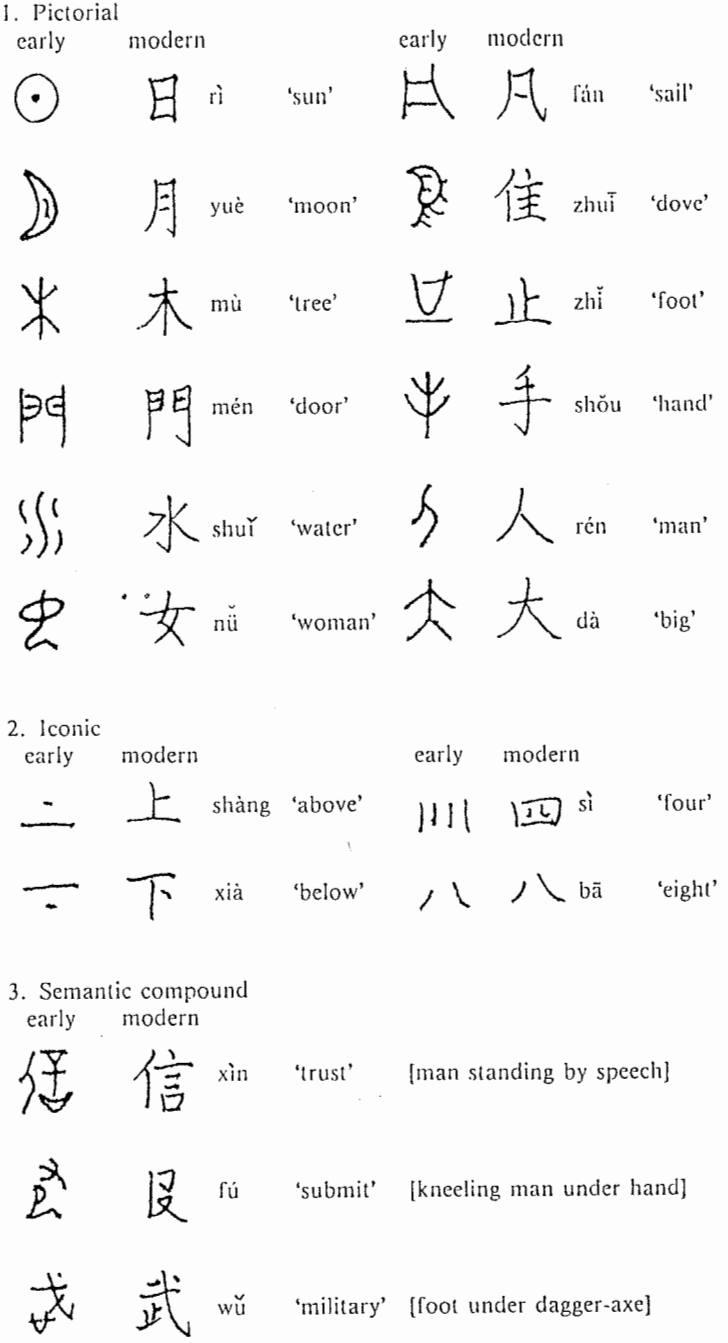
It is a little misleading to say, therefore, that writing evolved as 'language written down', since there were pictures long before there was writing, and one element in the origin of writing lies in the reinterpretation of pictures as characters. It is equally misleading, at the other extreme, to say that writing evolved 'independently of language', since it only becomes writing when the symbols are understood as linguistic symbols. A more accurate account would be to say that writing evolves when what are originally non-linguistic symbols get mapped on to the forms of the language.

However, not everything in language can be drawn a picture of. There are always forms ready at hand to serve as characters for *horse* and *mountain* and *tree*; but, if we were to start creating characters for English, we should find it difficult to produce a picture representing an *error*, or *to know*, or *dull*; to say nothing of words like *and*, *of*, *not*, and *the*. To be able to write some words but not others is already well worth doing; and it is likely that this was in fact the situation for quite some time, when writing was restricted to certain esoteric functions like divining. But as writing comes to be extended across a broader range of functions in the culture—recording achievements, marking property, keeping the calendar, making inventories, collecting taxes, conveying instructions, and so on—it inevitably evolves into a full WRITING SYSTEM: that is, a system in which all possible wordings in the language are able to be (more or less unambiguously) represented.

Let us see how this process took place in Chinese, as described with remarkable accuracy by a Chinese linguist of the first century AD named Xǔ Shèn. I have slightly modified his account, for clarity of exposition; but his theory was essentially correct. (See Figure 2.4 for the forms of the characters described.)

1. A picture is taken to serve as an indirect representation: for example, a picture of a tower for the word *high*; a man with arms and legs outstretched for the word *big*; a carpenter's square for the word *work*; a hand for the word *five*.
2. A new picture is created to give an iconic representation: for example, a dot above a line for the word *above*; one, two, three, and four parallel lines for (respectively) the words *one*, *two*, *three*, *four*; a cross (symbolising 'first unit' and 'first decade') for the word *ten*. There are not many of this type.

Figure 2.4 Development of Chinese characters



millennium BC, and semantic indicators were added to form phonetic-semantic compounds (see Figure 2.5(b)).

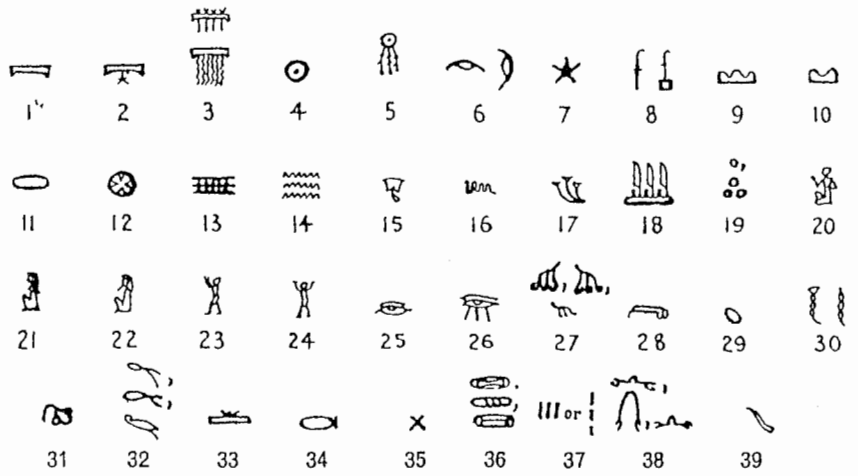
Figure 2.5(a) Egyptian hieroglyphics, showing also development as syllabic symbols

2.5*a*. Hieroglyphic word signs. 1, symbols representing things shown 2, ideographs representing actions associated with things shown; 3, symbols representing abstract ideas; 4, hieroglyphic bi-consonantal signs.

At this point, however, the route taken was different from that in Chinese. In Old Chinese, all words were monosyllables; so there was never a case where one word was made up of the sounds of two or more others. In Old Egyptian, however, words could vary in the number of their syllables; so it frequently happened that one long word could be broken down into a number of syllables each of which was also a word, although quite unrelated to it; for example, the word *khesteb* 'turquoise' sounded like *khes* 'to stop' plus *teb* 'a pig'. This is the principle on which the game of charades is based, where we act out, for example, *can*, *knee*, *ball*, and then *cannibal*.

To write a polysyllabic word of this kind, it would be a natural step to break it down into its component parts. But notice that these 'parts' are not morphemes; they are syllables. The word *snowball* consists of the **morphemes** *snow* + *ball*; if we write it with the character

Figure 2.5(b) Determinatives in hieroglyphic writing



1. Heaven, Sky, Ceiling, what is above. 2. Night sky with a star hanging like a lamp from it, darkness, night. 3. (above) Sky slipping down over its four supports, storm, hurricane; (below) rain or dew falling from the sky. 4. Sun, the sun-god Ra, day period, time in general. 5. Shine, rise (of a luminary), being of light. 6. Moon, month. 7. Star, morning star, hour, time for prayer, pray. 8. Flourish, blooming, year, time in general, last year of a King's reign. 9. Foreign country, desert. 10. Mountain. 11. Island. 12. City, town. 13. Nome, District. 14. Water, watery mass of the sky. 15. Skin, hide. 16. Worm. 17. Plant, vegetable, herb, dried up. 18. Field, garden. 19. Grain, corn. 20. Man, first person sing. 21. Woman, first and second person sing. 22. God or divine person. 23. Pray, worship, adore, entreat, praise. 24. High, lofty, exalt, make merry. 25. To see. 26. To weep, tear, grief. 27. Hair (of men and animals), bald, lack, want, lacuna (in manuscripts), colour, complexion. 28. Phallus, front, male, masculine, procreate. 29. Women, godesses, cities. 30. Sweet, pleasant. 31. Incense. 32. Roll of papyrus, tie up, bind together, come to an end. 33. Roll of papyrus (tied round the middle), book, deed, document, register, group together, abstract ideas. 34. Oval round a royal name, known as *cartouche*. 35. Pair of tallies, count, tally, reckon, pass by, depart. 36. Bread, cake. 37. Sign of the plural 38. Negation, no, not, nothing, lack, want, need. 39. Horn.

for *snow* plus the character for *ball*, we have not changed the **function** of the symbols. But *cannibal* does not consist of the **morphemes** *can* + *knee* + *ball*; these are quite different morphemes, which happen to be represented by its component syllables.

If we choose to write *cannibal* with the symbols for *can*, *knee*, and *ball*, we hardly need the semantic indicators. Taken by itself, the character for the word *can* 'container', if transferred to stand for the word *can* 'am able', might conceivably cause problems of understanding. But a string of characters for the words *can* 'container', *knee*, and *ball* would make no sense at all, unless each was reinterpreted as standing for the **syllables** /kæn/, /ni/, /bɔl/ which taken together would make up the word *cannibal*.

But once this step has been taken, the whole nature of the writing system becomes transformed. As long as there is, in principle, a separate

character for each **word**, as was the case in Chinese (where phonetic transfers **without** semantic elements were confined to instances where the original word was no longer in use—or else the semantic indicator was added instead to the **original**, as when the character for *cloth* was added to the original picture of a sail), the writing remains logographic—the symbols represent the language at the level of wording. As soon as the picture of a can comes to be used for something that is **not** itself a word (or morpheme), but simply an element in the **sound** of another word, it is no longer functioning as a character—it has become a syllabic symbol. It will then occur equally naturally in the representation of all words containing the syllable /kæn/, like *cannabis*, *pelican*, *incandescent*, and so on. The charactery has been replaced by a SYLLABARY.

Notice that, once again, there is no need for the **form** of the symbol to change; it can still be a picture of a billycan. Only its function has changed. It started as the representation of a **class of objects** recognised in the culture as belonging to a single category: a 'can'. It was then reinterpreted, to represent the **word** *can*, the name of this category in the lexicon of the English language. It has now been reinterpreted over again, so that it represents the **syllable** /kæn/, which is an element of English phonology. When this change has flowed through the whole writing system, the symbols no longer stand for words but for sounds. The script has become a phonological one.

Charactery, syllabary, alphabet

As a matter of fact, this change never did take place fully in the Egyptian writing system, which always retained some of the features of a charactery. But it did take place in languages whose speakers borrowed their writing system from the Egyptian, of which the one that is significant for our purposes is Phoenician.

Phoenician was a Semitic language, like modern Arabic and Hebrew. The Phoenicians took over a small number of Egyptian symbols and used them as syllabic signs. Thus the Phoenician word for 'water' was *mem* (cf. Hebrew *mayim*); the Phoenicians took the Egyptian character for *water* and used it to represent the syllable /ma/—keeping the word *mem* as the **name** of the symbol (as we have **names** for the letters of our alphabet: /ei/, /bi/, /si/, /di/, etc).

Similarly, the Phoenician word for 'snake' was *nun*; so they borrowed the Egyptian *snake* character and used it to represent the syllable /na/—calling the symbol itself *nun*. They borrowed about thirty symbols in all, and listed them a fixed order: first came the Egyptian 'ox' character, Phoenician word *ʔaleph* (from which we get our word *elephant*), beginning with a glottal stop, and hence used for the syllable /ʔa/; and second the Egyptian character for 'house', Phoenician *beth* (cf. Hebrew *beyth*), used for the syllable /ba/.

This kind of script was well suited to the Phoenician language, in which, as in modern Arabic, the root of a word is a sequence of (usually three) consonants; the vowels in between will vary (along with affixes before and after) to signal grammatical categories of person, tense, number, and so on. So, for example, the consonant sequence /k-t-b/ means 'write, book', and yields a large number of words such as *katab* 'he wrote', *niktib* 'we write', *kitab* 'book', *kateb* 'clerk', *maktub* 'written', and so on. In a similar way the words *Islam*, *Muslim*, and *salaam* all come from the same root /s-l-m/ meaning 'peace'. In a language of this type, it is natural to have a writing system in which the symbol stands for a consonant plus **any** following vowel. The reader can be left to supply the appropriate vowel from the context; or alternatively, the vowel can be indicated by some additional diacritic, with perhaps the convention that if it is not marked then it is to be read as /-a/. There have been various forms of Semitic script, but all have been based on this kind of syllabic principle.

Next in line were the Greeks, who took over the Phoenician symbols and used them to write Greek. Greek, however, is a very different kind of language, in which vowels are just as much a fixed part of the word root as consonants are; moreover, there can be whole clusters of consonants in a single syllable, as in the word /straŋks/ meaning 'throat'. A syllabary, therefore, would be quite inappropriate. So the Greeks used each symbol to stand just for the consonant, without any following vowels; and they then added separate symbols for the vowels, either using Phoenician symbols for which they had no other use (like aleph—there was no glottal stop in Greek, so they adopted this symbol for the vowel /a/) or making up new ones for themselves. The result was an ALPHABET (so called because the Greeks also borrowed the Phoenician names for the symbols they took over, and these were the first two in order).

An alphabet resembles a syllabary in that its symbols stand for sounds, not words; but they stand for smaller units of sound—not syllables, but PHONEMES. In principle, one letter represents one phoneme; and that was more or less the case with the ancient Greek alphabet. This was then adapted to various dialects of Greek; and one of the dialect scripts was in turn borrowed by the Romans, who again adapted it slightly, left out some letters they did not need, and used it to write Latin. This Latin alphabet is essentially what we use for English today.

Table 2.1 summarises the various kinds of writing system.

Table 2.1 Kinds of writing system

Level of language represented:	lexico-grammatical (wording)	phonological (sound)	
Linguistic unit represented:	word/morpheme	syllable	phoneme
Type of symbol:	character ('logogram')	syllabic sign	letter
Type of script:	charactery	syllabary	alphabet

As usual, the categories themselves are clearly defined; but any given instance may be mixed or intermediate. Thus the Semitic scripts are not, in fact, pure syllabaries; they are in a sense intermediate between a syllabary and an alphabet. A stricter case of a syllabary would be the Japanese *kana* script, adapted from Chinese characters. And our

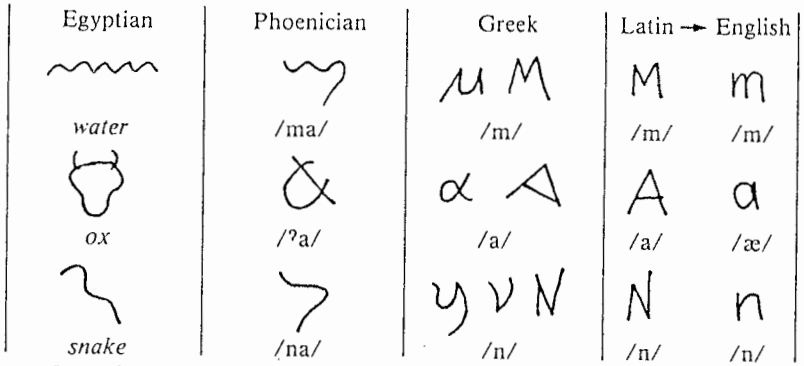
English writing system is certainly not purely phonemic.

There is a great deal of variation among different languages; but one thing is common to all: all languages are highly complex. When they are written down, the writing system has to be open-ended and flexible to accommodate the richness and complexity. When people try to design scripts, they usually make the mistake of making them too pure, and hence too rigid. When scripts evolve (which nearly always starts with borrowing—as we have seen, writing was developed independently in, at most, four contexts in human history, and even among these there may have been some transmission), they gradually adapt themselves to the needs of the particular language—which means they become somewhat messy and indeterminate. A writing system needs to be reformed now and again, because languages are always changing, whereas scripts, once codified, tend to stay as they are until someone takes positive action. But attempts to create ideal writing systems are bound to fail, because it is impossible to define what an ideal script should achieve—and if one could define such an ideal, it would certainly be impossible to attain.

A note on 'ideograms'

The symbols of all natural writing systems began as pictures. This is as true of the letters of our alphabet as it is of the characters of Chinese. Every time you write the word *man*, you are drawing three pictures—water, an ox head, and a snake (see Figure 2.6).

Figure 2.6 Evolution of letters m, a, n



Functionally, on the other hand, no written symbol is ever a pictogram; in that sense, a 'pictographic script' is a contradiction in terms. If a symbol is part of a writing system, it must represent some element of a language; in that case it is not **functioning** as a picture.

What about the term 'ideogram'? I have avoided using that term because it is not at all clear what it means; it is used rather inconsistently in most discussions of language. But it is possible to make sense of it. If we refer back to the diagram in Figure 1.1, we can see that the level of representation of the writing systems so far described has been either lexico-grammatical or phonological. Nothing has been said of writing representing the semantic elements of a language.

As a general phenomenon, a semantic writing system would be an impossibility. The semantic systems of natural languages are so complex, with so many intersecting dimensions of meaning involved, that they could not be reduced to writing—for exactly the same reason, in fact, that they cannot be expressed in a protolanguage. The only possible writing systems are those whose symbols represent, as a general principle, either wording or sound.

In the seventeenth century there were various attempts, in England, Holland, and France, to create semantically based writing systems, attempts that were encouraged by a misunderstanding of the nature of Chinese characters. Scholars hoped in this way to produce a writing system that would be the same for all languages, and would serve to express the new scientific knowledge and new ways of reasoning. These schemes did not work; but a great deal was learnt about language in the process. One of the by-products, 150 years later, was *Roget's Thesaurus*.

But it is possible for a script to embody some use of semantic representations, as a minor theme; and perhaps the clearest example of this is Japanese. Until the fifth century AD, Japanese was not written down; then there were two large-scale invasions from China, as a result of which Japanese borrowed from Chinese both the writing system and a large amount of vocabulary. Japanese, however, is a very different kind of language from Chinese (to which it is also quite unrelated—Japanese is recognised to be an Altaic language, probably with an earlier substratum of Austronesian), and a charactery is entirely unsuited to it. What does suit it is a syllabary, and after a century or two the Japanese modified and simplified two sets of Chinese characters to create a syllabic writing system of their own.

By this time, however, there were many Chinese words in the language, which although they **could** be written in the syllabary (their phonology having become adapted to Japanese) were also entirely at home in charactery; so the Japanese retained the characters and used them side by side with their own syllabic signs. Various patterns grew up, the predominant one being Chinese characters ('kanji') for the lexical roots and Japanese syllabic signs ('kana') for the affixes and for grammatical words.

In this process, however, the characters were not confined to words borrowed from Chinese; they were also used to represent the roots of native Japanese words that were similar in meaning—the same character often being used for more than one Japanese word. Thus, for example, the character for the Chinese word *měi* 'beautiful' (Middle Chinese pronunciation [mjwi]) stands in Japanese for the following: (1) the word *mjwi* borrowed—twice, from different dialects—into Japanese, now pronounced either [bi] or [mi]; (2) the native Japanese word *utsukushii*, meaning 'beautiful'; and (3) the native Japanese word *yoi* meaning 'good'.

From the Chinese point of view, a character is tied absolutely to a particular word. From the Japanese point of view, however, that same character may stand for three or four different words, unrelated to each other in sound or form but related to each other in meaning. In other words, it tends to have for them a semantic as well as a lexico-

grammatical significance: part logogram, part what we might call 'semogram'. It is in this sense that the Japanese themselves often refer to their writing as 'ideographic'. The term is inaccurate, since it is not 'ideas' but meanings that are being represented; but at least it makes an intelligible use of the term, so there is no reason why we should particularly reject it.

Some Japanese claim that it is because of their mixed script, partly phonological (the syllabary) and partly lexico-grammatical with a dash of semantic (the charactery), that they have little or no dyslexia in the population. It is impossible to prove this one way or the other; but it is an interesting idea—the virtues of a script that has something in it for everyone.

The English writing system

There is a tendency for mixed languages to get mixed scripts. Japanese is one example; English is another.

Like Japanese, English has been through a great deal of outside influence. After the English overran Britain, their language was strongly influenced by the native Celtic languages—hardly at all in vocabulary, but quite considerably in some aspects of its grammar. Next it was successively invaded by Norwegian, Danish, and Norman French; then in the Renaissance, it took over massive doses of Latin and Greek, not only lexical roots but also large numbers of affixes and the morphological processes that went with them.

Like every other European language, English inherited an alphabetic writing system; and after a few letters had been added (Latin had a very simple phonological system, so its alphabet is rather impoverished from the point of view of most other languages), it was excellently suited to the writing of Old English (Anglo-Saxon). The Norman French scribes destroyed some of its good qualities, by refusing to write the symbols they did not recognise; but what really perturbed it were two phenomena that took place in the language itself. One was the great internal upheaval that took place in Middle English (1100–1500), when the language changed extremely quickly and a dialectally mixed standard variety evolved; the other was the inflow of Graeco-Romance elements from 1450 onwards, already referred to above.

The effect on the writing system was likewise twofold. Just when the spelling was becoming standardised, it had suddenly grown rather archaic; the language had changed, and the spelling continued to reflect its earlier phonological patterns. Secondly, the Latin and Greek borrowings brought with them new phonological patterns from outside that had somehow to be reconciled with the native ones—while at the same time the Latin (and Latinised Greek) spelling was retained largely unaltered. There were thus two partially distinct phonological systems, compatible but not homogenised, each represented by different spelling conventions neither of which was particularly appropriate.

The French, who had similar problems, tackled them by setting up an Academy, which would legislate about the language and its orthography; the result was a writing system that is consistent but massively archaic. The English, equally characteristically, let things take their course, and ended up with a writing system that looks incredibly muddled, but in which the superficial messiness hides a rather effective compromise between the old and the new, the native and the foreign. It is far from perfect; but it has many virtues—not the least of which is that it is quietly neutral among all the various native and non-native forms of English that are now spoken around the world. When it was confined to England, and other English-speaking areas of the British Isles, it had already proved its ability to represent the various local accents of standard English. (These are not the original dialects, which have now largely disappeared except in some rural areas; they are vastly different and have their own orthographies.) Now, it serves not only the 'first language' English of Australia, New Zealand, South Africa, the Caribbean, Canada, and the United States but also the 'second language' English of many other parts of the world—South Asia, many countries of Africa, Singapore, and the South Pacific.

the evol
English
system

Like the Japanese script, English writing ought to be impossible to learn; but—again like Japanese—it is not. Its mixed character is also what makes it accessible. In the first place, to the extent that it is a phonological script, it is not phonemic. It allows various other principles to override the phonemic one. For example, it writes *photograph* in *photograph*, *photography*, and *photographic* all alike, even though their phonemic structure is very different; and similarly with many hundreds of other related sets. It allows Anglo-Saxon and Graeco-Romance words to have different spelling conventions rather than forcing one to adapt—incongruously, as it would be—to the other. It embodies strange, minor, but very useful conventions of its own, like the two-, three-, and four-letter rule (grammatical words can have two letters, lexical words must have at least three, and proper names, at least four; cf. the well-known example *Mr Inne is in the inn*). But at the same time, it works by tendencies and not by rules—which is exactly how language works as well.

In the second place, it is not entirely phonological, but also partly logographic. There are many sets of words in English that are pronounced in an identical fashion, but are kept apart in the spelling. There is no necessity for this, of course; but it is useful for two reasons. One is the dialectal neutrality referred to above. For example, in my own dialect *paw*, *poor*, *pour*, and *pore* are all identical, whereas for many speakers of English there are two or even three different syllables among them; on the other hand, we distinguish *higher* and *hire*, which many English speakers pronounce alike. The spelling allows for all sorts of different groupings.

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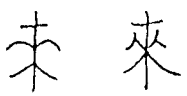
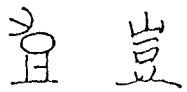
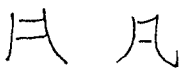
The other reason is that, although such homonymy causes no trouble in speech, written language is not spoken language written down. It has a life of its own, in which it is useful to be able to use words without the same environmental cushioning that is characteristic of speech. When we talk, there is always a context; it poses no great problem that many words are pronounced alike. In writing, however, where the whole object is to get away from dependence on the immediate environment while still remaining unambiguous, it is useful to be able to put up a notice saying *wait for pause after whole lessons* without

4. Phonetic transfer

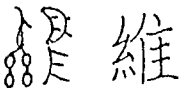
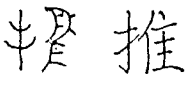
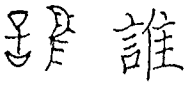
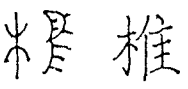
early modern


lái 'wheat' ⇒ lái 'come'

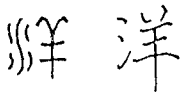
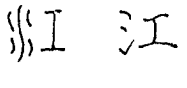
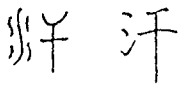

kǎi 'drum' ⇒ qǐ 'how?'


fán 'sail' ⇒ fán 'all'

5. Phonetic/semantic compound (same phonetic element)

early	modern			semantic element ('radical')		phonetic element
	維	wéi	'tie, rope' =	糸 'silk thread'	+ 隹	zhuī
	推	tuī	'push' =	扌 'hand'	+ 隹	zhuī
	誰	shuí	'who?' =	言 'speech'	+ 隹	zhuī
	椎	chuí	'hammer' =	木 'wood'	+ 隹	zhuī

(same semantic element)

	洋	yáng	'ocean' =	氵 'water'	+ 羊	yáng
	江	jiāng	'river' =	氵 'water'	+ 工	gōng
	汗	hàn	'sweat' =	氵 'water'	+ 干	gān

3. Two pictures are combined to form a semantic compound: for example, kneeling man under hand for the word *yield*; standing man by the side of speech for the word *trust*; sun in the middle of tree for the word *east* (where the sun rises); foot under dagger-axe for the word *warfare* (marching under arms).

In those listed up to this point there has been no connection made with the **sound** of the word. Two further strategies were adopted that involved taking account of sound, either (4) instead of or (5) as well as meaning.

what ha
Chinese
evolved

4. A picture is 'borrowed' for a word of similar sound, by a process of phonetic transfer: for example, the character for wheat, Old Chinese [ləg], for the word *come* (same pronunciation); the character for *war drum*, Old Chinese [k′ər] for the word *how*? [k′jər]; the character for *sail*, Old Chinese [biwăm], for the word *all* (same pronunciation); the character for *flute*, Old Chinese [ŋjăn], for the word *speech* (same pronunciation).
5. Two pictures are combined, one indicating the sound, the other indicating the meaning, to give a semantic-phonetic compound (a combination of the principles of 1 and 4 above): for example, the character for *dove*, Old Chinese [tjwər], used as phonetic element and combined with (a) the character for *silk thread* to represent the word *tie, rope* [djwər], (b) with the character for *hand* to represent the word *push* [t′wər], (c) with the character for *speech* to represent the word *who*? [djwər], (d) with the character for *tree, wood*, to represent the word *hammer* [d′jwər]. More than three quarters of all the characters used in the modern language are of this type.

The Chinese writing system, therefore, is a CHARACTERY; its symbols are characters. This means that they represent the wording of the language: the entities they stand for are words (or, more accurately, MORPHEMES, the smallest units of wording—to give an analogy from English, if the word *kindness* was written with a charactery there would be one character for the morpheme *kind* and another for the morpheme *ness*).

The technical term for a character, indicating its function in the language, is LOGOGRAM. Despite popular belief, characters are **not** ideograms, and Chinese writing is **not** ideographic. Characters stand for words, not for meanings. They are unambiguous when read aloud, and synonyms are not written alike; whereas if they were ideographic, synonyms would have to be written alike and there would be no unambiguous readings.

Chines
'ideogr
'logogr

This kind of writing system is appropriate for the Chinese language. It is neither more nor less advanced than other writing systems, such as that of English; but the English writing system is different in a fundamental respect. In English, the written symbols represent the language not at the level of wording but at the level of sound. The next section describes how this system came about.

From ancient Egyptian to English

The first writing system developed in ancient Egypt was a charactery. Its characters are known as 'hieroglyphs', meaning 'sacred carving'.

Starting many centuries earlier, hieroglyphic writing had developed along the path that we have described above for Chinese (see Figure 2.5(a)). The principle of phonetic transfer was established by the third

at the same time saying *weight four paws after hole lessens*. With a purely phonological script, the written text makes the same demand on the context as the spoken one.

Up to this point, we have been exploring the origin of speech and the development and nature of writing. It is now time to turn to the exploration of written language.

Chapter 3

Written language

Codified and codable expressions

Up to this point we have been assuming that whatever is spoken can also be written—that writing is simply an alternative form of expression to speech. We now need to examine this assumption a little more closely.

In the broadest sense, the assumption can be allowed to stand. That is to say, a writing system is capable of **representing** all possible wordings in the language: (1) by providing ready-made ('codified') expressions, for the majority of elements, and (2) by providing the means of creating ('coding') expressions for elements that are not already codified—new borrowings and coinings, an individual writer's neologisms, mistakes (for example, children and foreigners), and the like. So English, for example, contains (1) recognised **spellings** for the great majority of its words, and (2) recognised **principles** of spelling that can be applied where the spellings do not yet exist.

English
provide
dardise
for old
(2) prin
spelling

At an earlier stage in the language, the early Modern English period when standard English was emerging and printing had just begun, there was much less codification; writers used a variety of different spellings. But if principle (1) had not yet been generally applied, principle (2) held good: the variation was within the limits of tacitly agreed practice, and there was no problem of intelligibility—texts could be read without difficulty (and the literacy rate among adults was for that time extremely high; it has been estimated that in the fifteenth century over half the population could read). We tend to take it for granted that spelling should be totally uniform; but there is no compelling reason why it should be, provided the principles are clear. We understand each other's spoken language throughout the English-speaking world, unhampered by the wide variation in dialect—because all dialects are underlain by what is, by and large, a single phonological system. The same principle will work for writing.

As a rule, however, writing systems tend to engender conformity once they come into general use; partly for convenience, and partly because the development of writing tends to be associated with norma-