

Read the following (2 chapters)and write a short report of no more than a page about each chapter.

Animals and human language (chapter 2 ;P8-p17 .2006,A study of language by G.Yule Third Edition)

One evening in the mid-1980s my wife and I were returning from an evening cruise around Boston Harbor and decided to take a waterfront stroll. We were passing in front of the Boston Aquarium when a gravelly voice yelled out, “Hey! Hey! Get outa there!” Thinking we had mistakenly wandered somewhere we were not allowed, we stopped and looked around for a security guard or some other official, but saw no one, and no warning signs. Again the voice boomed, “Hey! Hey you!” As we tracked the voice we found ourselves approaching a large, glass-fenced pool in front of the aquarium where four harbor seals were lounging on display. Incredulous, I traced the source of the command to a large seal reclining vertically in the water, with his head extended back and up, his mouth slightly open, rotating slowly. A seal was talking, not to me, but to the air, and incidentally to anyone within earshot who cared to listen.

Deacon(1997)

There are a lot of stories about creatures that can talk. We usually assume that they are fantasy or fiction or that they involve birds or animals simply imitating something they have heard humans say (as Deacon discovered was the case with the loud seal in Boston Aquarium). Yet we know that creatures are capable of communicating, certainly with other members of their own species. Is it possible that a creature could learn to communicate with humans using language? Or does human language have properties that make it so unique that it is quite unlike any other communication system and hence unlearnable by any other creature? To answer these questions, we will first consider some special properties of human language, then review a number of experiments in communication involving humans and animals.

Communicative and informative signals

We should first distinguish between specifically communicative signals and those which may be unintentionally informative signals. Someone listening to you may become informed about you through a number of signals that you have

not intentionally sent. She may note that you have a cold (you sneezed), that you aren't at ease (you shifted around in your seat), that you are disorganized (non-matching socks) and that you are from some other part of the country (you have a strange accent). However, when you use language to tell this person, I'd like to apply for the vacant position of senior brain surgeon at the hospital, you are normally considered to be intentionally communicating something. Similarly, the blackbird is not normally taken to be communicating anything by having black feathers, sitting on a branch and looking down at the ground, but is considered to be sending a communicative signal with the loud squawking produced when a cat appears on the scene. So, when we talk about distinctions between human language and animal communication, we are considering both in terms of their potential as a means of intentional communication.

Displacement

When your pet cat comes home and stands at your feet calling meow, you are likely to understand this message as relating to that immediate time and place. If you ask your cat where it has been and what it was up to, you'll probably get the same meow response. Animal communication seems to be designed exclusively for this moment, here and now. It cannot effectively be used to relate events that are far removed in time and place. When your dog says GRRR, it means GRRR, right now, because dogs don't seem to be capable of communicating GRRR, last night, over in the park. In contrast, human language users are normally capable of producing messages equivalent to GRRR, last night, over in the park, and then going on to say In fact, I'll be going back tomorrow for some more. Humans can refer to past and future time. This property of human language is called displacement. It allows language users to talk about things and events not present in the immediate environment. Indeed, displacement allows us to talk about things and places (e.g. angels, fairies, Santa Claus, Superman, heaven, hell) whose existence we cannot even be sure of. Animal communication is generally considered to lack this property.

It has been proposed that bee communication may have the property of displacement. For example, when a worker bee finds a source of nectar and returns to the beehive, it can perform a complex dance routine to communicate to the other bees the location of this nectar. Depending on the type of dance (round dance for nearby and tail-wagging dance, with variable tempo, for further away

and how far), the other bees can work out where this newly discovered feast can be found. Doesn't this ability of the bee to indicate a location some distance away mean that bee communication has at least some degree of displacement as a feature? The crucial consideration involved, of course, is that of degree. Bee communication has displacement in an extremely limited form. Certainly, the bee can direct other bees to a food source. However, it must be the most recent food source. It cannot be that delicious rose bush on the other side of town that we visited last weekend, nor can it be, as far as we know, possible future nectar in bee heaven.

Arbitrariness

It is generally the case that there is no 'natural' connection between a linguistic form and its meaning. The connection is quite arbitrary. We can't just look at the Arabic word and, from its shape, for example, determine that it has a natural and obvious meaning any more than we can with its English translation form dog. The linguistic form has no natural or 'iconic' relationship with that hairy four-legged barking object out in the world. This aspect of the relationship between linguistic signs and objects in the world is described as arbitrariness. Of course, you can play a game with words to make them appear to 'fit' the idea or activity they indicate, as shown in the words below from a child's game. However, this type of game only emphasizes the arbitrariness of the connection that normally exists between a word and its meaning.

There are some words in language with sounds that seem to 'echo' the sounds of objects or activities and hence seem to have a less arbitrary connection.

English examples are cuckoo, CRASH, slurp, squelch or whirr. However, these onomatopoeic words are relatively rare in human language.

For the majority of animal signals, there does appear to be a clear connection between the conveyed message and the signal used to convey it. This impression we have of the non-arbitrariness of animal signaling may be closely connected to the fact that, for any animal, the set of signals used in communication is finite. That is, each variety of animal communication consists of a fixed and limited set of vocal or gestural forms. Many of these forms are only used in specific situations (e.g. establishing territory) and at particular times (e.g. during the mating season).

Productivity

Humans are continually creating new expressions and novel utterances by manipulating their linguistic resources to describe new objects and situations. This property is described as productivity (or 'creativity' or 'open-endedness') and it is linked to the fact that the potential number of utterances in any human language is infinite.

The communication systems of other creatures do not appear to have this type of flexibility. Cicadas have four signals to choose from and vervet monkeys have thirty-six vocal calls. Nor does it seem possible for creatures to produce new signals to communicate novel experiences or events. The worker bee, normally able to communicate the location of a nectar source to other bees, will fail to do so if the location is really 'new'. In one experiment, a hive of bees was placed at the foot of a radio tower and a food source placed at the top. Ten bees were taken to the top, shown the food source, and sent off to tell the rest of the hive about their find. The message was conveyed via a bee dance and the whole gang buzzed off to get the free food. They flew around in all directions, but couldn't locate the food. (It's probably one way to make bees really mad.) The problem seems to be that bee communication has a fixed set of signals for communicating location and they all relate to horizontal distance. The bee cannot manipulate its communication system to create a 'new' message indicating vertical distance. According to Karl von Frisch, who conducted the experiment, "the bees have no word for up in their language" and they can't invent one.

This limiting feature of animal communication is described in terms of fixed reference. Each signal in the system is fixed as relating to a particular object or occasion. Among the vervet monkey's repertoire, there is one danger signal CHUTTER, which is used when a snake is around, and another RRAUP, used when an eagle is spotted nearby. These signals are fixed in terms of their reference and cannot be manipulated. What might count as evidence of productivity in the monkey's communication system would be an utterance of something like CHUTT-RRAUP when a flying creature that looked like a snake came by. Despite a lot of experiments involving snakes suddenly appearing in the air above them (among other unusual and terrifying experiences), the vervet monkeys didn't produce a new danger signal. The human, given similar circumstances, is quite capable of creating a 'new' signal, after initial surprise

perhaps, by saying something never said before, as in Hey! Watch out for that flying snake!

Cultural transmission

While we may inherit physical features such as brown eyes and dark hair from our parents, we do not inherit their language. We acquire a language in a culture with other speakers and not from parental genes. An infant born to Korean parents in Korea, but adopted and brought up from birth by English speakers in the United States, will have physical characteristics inherited from his or her natural parents, but will inevitably speak English. A kitten, given comparable early experiences, will produce meow regardless.

This process whereby a language is passed on from one generation to the next is described as cultural transmission. It is clear that humans are born with some kind of predisposition to acquire language in a general sense. However, we are not born with the ability to produce utterances in a specific language such as English. We acquire our first language as children in a culture.

The general pattern in animal communication is that creatures are born with a set of specific signals that are produced instinctively. There is some evidence from studies of birds as they develop their songs that instinct has to combine with learning (or exposure) in order for the right song to be produced. If those birds spend their first seven weeks without hearing other birds, they will instinctively produce songs or calls, but those songs will be abnormal in some way. Human infants, growing up in isolation, produce no 'instinctive' language. Cultural transmission of a specific language is crucial in the human acquisition process.

Duality

Human language is organized at two levels or layers simultaneously. This property is called duality (or 'double articulation'). In speech production, we have a physical level at which we can produce individual sounds, like *pen*, *bandi*. As individual sounds, none of these discrete forms has any intrinsic meaning. In a particular combination such as *bin*, we have another level producing a meaning that is different from the meaning of the combination *innib*. So, at one level, we have distinct sounds, and, at another level, we have distinct meanings. This duality of levels is, in fact, one of the most economical features of human language because, with a limited set of discrete sounds, we are capable of producing a very large number of sound combinations (e.g. words) which are distinct in

meaning.

Among other creatures, each communicative signal appears to be a single fixed form that cannot be broken down into separate parts. Although your dog may be able to produce woof ('I'm happy to see you'), it does not seem to do so on the basis of a distinct level of production combining the separate elements of w+oo+f. If the dog was operating with the double level (i.e. duality), then we might expect to hear different combinations with different meanings, such as oowf ('I'm hungry') and foow ('I'm really bored').

Talking to animals

If these five properties of human language make it such a unique communication system, quite different from the communication systems of other creatures, then it would seem extremely unlikely that other creatures would be able to understand it. Some humans, however, do not behave as if this is the case. There is, after all, a lot of spoken language directed by humans to animals, apparently under the impression that the animal follows what is being said. Riders can say Whoa to horses and they stop (or so it seems), we can say Heel to dogs and they will follow at heel (well, sometimes), and a variety of circus animals go Up, Down and Roll over in response to spoken commands. Should we treat these examples as evidence that non-humans can understand human language? Probably not. The standard explanation is that the animal produces a particular behavior in response to a particular sound-stimulus or 'noise', but does not actually 'understand' what the words in the noise mean.

If it seems difficult to conceive of animals understanding human language, then it appears to be even less likely that an animal would be capable of producing human language. After all, we do not generally observe animals of one species learning to produce the signals of another species. You could keep your horse in a field of cows for years, but it still won't say Moo. And, in some homes, a new baby and a puppy may arrive at the same time. Baby and puppy grow up in the same environment, hearing mostly the same things, but about two years later, the baby is making lots of human speech sounds and the puppy is not. But perhaps a puppy is a poor example. Wouldn't it be better to work with a closer relative such as a chimpanzee?

Chimpanzees and language

The idea of raising a chimp and a child together may seem like a nightmare, but

this is basically what was done in an early attempt to teach a chimpanzee to use human language. In the 1930s, two scientists (Luella and Winthrop Kellogg) reported on their experience of raising an infant chimpanzee together with their baby son. The chimpanzee, called Gua, was reported to be able to understand about a hundred words, but did not 'say' any of them. In the 1940s, a chimpanzee named Viki was reared by another scientist couple (Catherine and Keith Hayes) in their own home, exactly as if she was a human child. These foster parents spent five years attempting to get Viki to 'say' English words by trying to shape her mouth as she produced sounds. Viki eventually managed to produce some words, rather poorly articulated versions of mama, papa and cup. In retrospect, this was a remarkable achievement since it has become clear that non-human primates do not actually have a physically structured vocal tract which is suitable for articulating the sounds used in speech. Apes and gorillas can, like chimpanzees, communicate with a wide range of vocal calls, but they just can't make human speech sounds.

Washoe

Recognizing that a chimpanzee was a poor candidate for spoken language learning, another scientist couple (Beatrix and Allen Gardner) set out to teach a female chimpanzee called Washoe to use a version of American Sign Language. As described later in chapter 16, this sign language has all the essential properties of human language and is learned by many congenitally deaf children as their natural first language.

From the beginning, the Gardners and their research assistants raised Washoe like a human child in a comfortable domestic environment. Sign language was always used when Washoe was around and she was encouraged to use signs, even her own incomplete 'baby-versions' of the signs used by adults. In a period of three and a half years, Washoe came to use signs for more than a hundred words, ranging from airplane, baby and banana through to window, woman and you. Even more impressive was Washoe's ability to take these forms and combine them to produce 'sentences' of the type gimme tickle, more fruit and open food drink (to get someone to open the refrigerator). Some of the forms appear to have been inventions by Washoe, as in her novel sign for bib and in the combination water bird (referring to a swan), which would seem to indicate that her communication system had the potential for productivity. Washoe also

demonstrated understanding of a much larger number of signs than she produced and was capable of holding rudimentary conversations, mainly in the form of question–answer sequences. A similar conversational ability with sign language was reported (by Francine Patterson) for a gorilla named Koko not long after.

Sarah and Lana

At the same time as Washoe was learning sign language, another chimpanzee named Sarah was being taught (by Ann and David Premack) to use a set of plastic shapes for the purpose of communicating with humans. These plastic shapes represented ‘words’ that could be arranged in sequence to build ‘sentences’ (Sarah preferred a vertical order). The basic approach was quite different from that of the Gardners. Sarah was systematically trained to associate these shapes with objects or actions. She remained an animal in a cage, being trained with food rewards to manipulate a set of symbols. Once she had learned to use a large number of these plastic shapes, Sarah was capable of getting an apple by selecting the correct plastic shape (a blue triangle) from a large array. Notice that this symbol is arbitrary since it would be hard to argue for any ‘natural’ connection between an apple and a blue plastic triangle. Sarah was also capable of producing ‘sentences’ such as Mary give chocolate Sarah and had the impressive capacity to understand complex structures such as If Sarah put red on green, Mary give Sarah chocolate. Sarah got the chocolate.

A similar training technique with another artificial language was used (by Duane Rumbaugh) to train a chimpanzee called Lana. The language she learned was called Yerkish and consisted of a set of symbols on a large keyboard linked to a computer. When Lana wanted some water, she had to press four symbols, in the correct sequence, to produce the message please machine give water.

Both Sarah and Lana demonstrated an ability to use what look like word symbols and basic structures in ways that superficially resemble the use of language.

There is, however, a lot of skepticism regarding these apparent linguistic skills.

It has been pointed out that when Lana used the symbol for ‘please’, she did not have to understand the meaning of the English word please. The symbol for ‘please’ on the computer keyboard might simply be the equivalent of a button on a vending machine and, so the argument goes, we could learn to operate vending machines without necessarily knowing language. This is only one of the many arguments that have been presented against the idea that the use of

signs and symbols by these chimpanzees is similar to the use of language.

The controversy

On the basis of his work with another chimpanzee called Nim, the psychologist Herbert Terrace has argued that chimpanzees simply produce signs in response to the demands of people and tend to repeat signs those people use, yet they are treated (by naive researchers) as if they are taking part in a 'conversation'. As in many critical studies of animal learning, the chimpanzees' behavior is viewed as a type of conditioned response to cues provided (often unwittingly) by human trainers. Herbert's conclusion was that chimpanzees are clever creatures who learn to produce a certain type of behavior (signing or symbol selection) in order to get rewards and are essentially performing sophisticated 'tricks'.

In response, the Gardners argued that they were not animal trainers, nor were they inculcating and then eliciting conditioned responses from Washoe.

In complex experiments, designed to eliminate any possible provision of cues by humans, they showed that in the absence of any human, Washoe could produce correct signs to identify objects in pictures. They also emphasize a major difference between the experiences of Washoe and Nim. While Nim was kept in a bare windowless cell as a research animal and had to deal with a series of research assistants who were often not fluent in American Sign Language, Washoe lived in a domestic environment with a lot of opportunity for imaginative play and interaction with fluent signers who were also using sign language with each other. They also report that a group of younger chimpanzees not only

□□ The Study of Language

learned sign language, but used it with each other and with Washoe, even when there were no humans present.

Kanzi

In a more recent study by Sue Savage-Rumbaugh, an interesting development relevant to this controversy came about almost by accident. While SavageRumbaugh was attempting to train a bonobo (a pygmy chimpanzee) called Matata how to use the symbols of Yerkish, Matata's adopted baby, Kanzi, was always with her. Although Matata did not do very well, her son Kanzi spontaneously started using the symbol system with great ease. He had learned not by being taught, but by being exposed to, and observing, a kind of language

in use at a very early age. Kanzi eventually developed a large symbol vocabulary (over 250 forms). By the age of eight, he was reported to be able, through the association of symbols with spoken words, to demonstrate understanding of spoken English at a level comparable to a two-and-a-half-year-old human child. There was also evidence that he was using a consistently distinct set of 'gentle noises' as words to refer to things such as bananas, grapes and juice. He had also become capable of using his symbol system to ask to watch his favorite movies, *Quest for Fire* (about primitive humans) and *Greystoke* (about the Tarzan legend).

The barest rudiments of language

Important lessons have been learned from attempts to teach chimpanzees how to use forms of language. We have answered some questions. Were Washoe and Kanzi capable of taking part in interaction by using a symbol system chosen by humans and not chimpanzees? The answer is clearly "Yes". Did Washoe and Kanzi perform linguistically on a level comparable to a human child of the same age? The answer is just as clearly "No". In addition, one of the most important lessons for those who study the nature of language is the realization that, although we can describe some key properties of language, we clearly do not have a totally objective and non-controversial definition of what counts as 'using language'. We assume that when young human children make language-like noises we are witnessing language development, but when young chimpanzees produce language-like signs in interaction with humans, many scientists are very unwilling to classify this as language-use. Yet, the criteria we use in each case do not seem to be the same.

This problem remains, as does the controversy among different psychologists and linguists over the reported abilities of chimpanzees to use language.

However, given the mass of evidence from these studies, we might suggest that the linguist Noam Chomsky (1972) should revise his claim that "acquisition Animals and human language □ □

of even the barest rudiments of language is quite beyond the capacities of an otherwise intelligent ape". We may not have had reports on the chimpanzee view of linguistic theory, but on their obvious capacity to cope with "the barest rudiments of language" we certainly have.

The development of writing (P20-25,2006,A study of language by G.Yule Third Edition)

Every once in a while my eight-year-old daughter comes up to me when I'm working and puts her arm around me in a transparently insincere display of affection, then walks away giggling. As soon as she's gone, I pat my hand around on my back to find a Post-it that says something like "I'm a knucklehead." You'd think that pronoun *I* wouldn't mean anything if I didn't put it there myself, but somehow I'm implicit in the utterance. She has visited a small indignity on me, and we both know it.

This is about the most powerful magic you can work with writing, putting a first-person pronoun into somebody else's mouth. It was probably no more than a couple of weeks after the invention of cuneiform in Sumer five millennia ago that some scribe had the idea of pressing the characters for "Kick me" into a clay tablet and fastening it to the back of the robes of a passing priest.

Nunberg (2001)

It is important, when we consider the development of writing, to keep in mind that a large number of the languages in the world today are used only in the spoken form. They do not have a written form. For those languages that have writing systems, the development of writing, as we know it, is a relatively recent phenomenon. We may be able to trace human attempts to represent information visually back to cave drawings made at least 20,000 years ago, or to clay tokens from about 10,000 years ago, which appear to have been an early attempt at bookkeeping, but these artifacts are best described as ancient precursors of writing. The earliest writing for which we have clear evidence is the kind that Geoffrey Nunberg is referring to as 'cuneiform' marked on clay tablets about 5,000 years ago. An ancient script that has a more obvious connection to writing systems in use today can be identified in inscriptions dated around 3,000 years ago.

Much of the evidence used in the reconstruction of ancient writing systems comes from inscriptions on stone or tablets. If those ancients were using other elaborate scripts on wood, leather or other perishable materials, we have lost them. But working from the inscriptions we do have, we can trace the development of one writing tradition, lasting a few thousand years, with which humans

have sought to create a more permanent record of what was going on.

Pictograms and ideograms

Cave drawings may serve to record some event (e.g. Humans 3, Buffaloes 1), but they are not usually thought of as any type of specifically linguistic message. They are usually treated as part of a tradition of pictorial art. When some of the ‘pictures’ came to represent particular images in a consistent way, we can begin to describe the product as a form of picture-writing, or **pictograms**. In this way, a form such as might come to be used for the sun. An essential part of this use of a representative symbol is that everyone should use a similar form to convey a roughly similar meaning. That is, a conventional relationship must exist between the symbol and its interpretation.

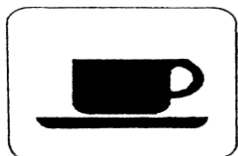
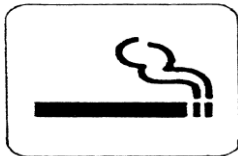
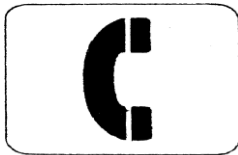
In time, this picture might develop into a more fixed symbolic form, such as , and come to be used for ‘heat’ and ‘daytime’, as well as for ‘sun’. Note that as the symbol extends from ‘sun’ to ‘heat’, it is moving from something visible to something conceptual (and no longer a picture). This type of symbol is then considered to be part of a system of idea-writing, or **ideograms**. The distinction between pictograms and ideograms is essentially a difference in the relationship between the symbol and the entity it represents. The more ‘picture-like’ forms are pictograms and the more abstract derived forms are ideograms.

A key property of both pictograms and ideograms is that they do not represent words or sounds in a particular language. Modern pictograms, such as those represented in the accompanying illustration, are language-independent and can be understood with much the same basic conventional meaning in a lot of different places where a number of different languages are spoken.

It is generally thought that there were pictographic or ideographic origins for a large number of symbols that turn up in later writing systems. For example, in Egyptian hieroglyphics, the symbol was used to refer to a house and derived from the diagrammatic representation of the floor-plan of a house. In Chinese writing, the character was used for a river, and had its origins in the pictorial representation of a stream flowing between two banks. However, it is important to note that neither the Egyptian nor the Chinese written symbols

are actually ‘pictures’ of a house or a river. They are more abstract. When we create symbols in a writing system, there is always an abstraction away from the physical world.

When the relationship between the symbol and the entity or idea becomes sufficiently abstract, we can be more confident that the symbol is probably being used to represent words in a language. In early Egyptian writing, the ideogram for water was . Much later, the derived symbol came to be used for the actual word meaning ‘water’. When symbols are used to represent words in a language, they are described as examples of word-writing, or ‘logograms’.



Logograms


A good example of logographic writing is the system used by the Sumerians, in the southern part of modern Iraq, around 5,000 years ago. Because of the particular shapes used in their symbols, these inscriptions are more generally described as **cuneiform** writing. The term cuneiform means ‘wedge-shaped’ and the inscriptions used by the Sumerians were produced by pressing a wedgeshaped implement into soft clay tablets, resulting in forms such as .

The form of this symbol really gives no clue to what type of entity is being referred to. The relationship between the written form and the object it represents has become arbitrary and we have a clear example of word-writing or a **logogram**. The cuneiform symbol above can be compared to a typical pictographic

representation of the same fishy entity: . We can also compare the ideogram for the sun, presented earlier as , with the logogram used to refer to the same entity found in cuneiform writing: .

A modern writing system that is based, to a certain extent, on the use of logograms can be found in China. Many Chinese written symbols, or **characters**, are used as representations of the meaning of words, or parts of words, and not of the sounds of spoken language. One of the advantages of such a system is that two speakers of very different dialects of Chinese, who might have great difficulty understanding each other's spoken forms, can both read the same written text. Chinese writing, with the longest continuous history of use as a writing system (i.e. 3,000 years), clearly has many other advantages for its users. One major disadvantage is that quite a large number of different written symbols are required within this type of writing system, although the official list of modern Chinese characters for everyday use is limited to 2,500 characters. (Other lists contain up to 50,000 characters.) Remembering large numbers of different composite word symbols, however, does seem to present a substantial memory load, and the history of most other writing systems illustrates a development away from logographic writing. To accomplish this, some principled method is needed to go from symbols representing words (i.e. a logographic system) to a set of symbols that represent sounds (i.e. a phonographic system).

Rebus writing

 One way of using existing symbols to represent the sounds of language is through a process known as **rebus writing**. In this process, the symbol for one entity is taken over as the symbol for the sound of the spoken word used to refer to the entity. That symbol then comes to be used whenever that sound occurs in any words.

We can create an example, working with the sound of the English word *eye*. We can imagine how the pictogram could have developed into the logogram . This logogram is pronounced as *eye* and, with the rebus principle at work, you could then refer to yourself as (“I”), to one of your friends as (“Crosseye”), combine the form with the logogram for ‘deaf’ to produce “defy”, with the logogram for ‘boat’ to produce “bow-tie”, and so on.

Let's take another, non-English, example, in which the ideogram becomes

the logogram , for the word pronounced *ba* (meaning ‘boat’). We can then produce a symbol for the word pronounced *baba* (meaning ‘father’) which would be . One symbol can thus be used in many different ways, with a range of meanings. What this process accomplishes is a sizeable reduction in the number of symbols needed in a writing system.

Syllabic writing

In the last example, the symbol that is used for the pronunciation of parts of a word represents a combination (*ba*) of a consonant sound (*b*) and a vowel sound (*a*). This combination is one type of syllable. When a writing system employs a set of symbols each one representing the pronunciation of a syllable, it is described as **syllabic writing**.

There are no purely syllabic writing systems in use today, but modern Japanese can be written with a set of single symbols representing spoken syllables and is consequently often described as having a (partially) syllabic writing system, or a **syllabary**. In the early nineteenth century, a Cherokee named Sequoyah, living in North Carolina, invented a syllabic writing system that was widely used within the Cherokee community to create written messages from the spoken language. In these Cherokee examples, (*ho*), (*sa*) and (*ge*), we can see that the written symbol in each case does not correspond to a single consonant (C) or a vowel (V), but to a syllable (CV).

Both the ancient Egyptian and the Sumerian writing systems evolved to the point where some of the earlier logographic symbols were used to represent spoken syllables. However, it is not until the time of the Phoenicians, inhabiting what is modern Lebanon between 3,000 and 4,000 years ago, that we find the full use of a syllabic writing system. Many of the symbols that the Phoenicians used were taken from earlier Egyptian writing. The Egyptian form (meaning ‘house’) was adopted in a slightly reoriented form as . After being used logographically for the word pronounced *beth* (still meaning ‘house’), the symbol came to represent other syllables beginning with a *b* sound. Similarly, the Egyptian form (meaning ‘water’) turns up as and is used for syllables beginning with an *m* sound. So, a word that might be pronounced as *muba* could be written as , and the pronunciation *bima* could be written as . Note that the direction of writing is from right to left. By about 3,000 years ago, the Phoenicians had stopped using logograms and had a fully developed syllabic writing system.













Alphabetic writing

If you have a set of symbols being used to represent syllables beginning with, for example, a *b* sound or an *m* sound, then you are actually very close to a situation in which the symbols can be used to represent single sound types in a language. This is, in effect, the basis of alphabetic writing. An **alphabet** is essentially a set of written symbols, each one representing a single type of sound. The situation just described is generally what seems to have occurred in the development of the writing systems of Semitic languages such as Arabic and Hebrew. Words written in these languages, in everyday use, largely consist of symbols for the consonant sounds in the word, with the appropriate vowel sounds being supplied by the reader (or reader). This type of writing system is sometimes called a **consonantal alphabet**. The early version of Semitic alphabetic script, originating in the writing system of the Phoenicians, is the basic source of most other alphabets to be found in the world. Modified versions can be traced to the East into Iranian, Indian and South-East Asian writing systems and to the West through Greek.

The early Greeks took the alphabetizing process a stage further by also using separate symbols to represent the vowel sounds as distinct entities, and so created a remodeled system that included vowels. This change produced a distinct symbol for a vowel sound such as *a* (called 'alpha') to go with existing symbols for consonant sounds such as *b* (called 'beta'), giving us single-sound writing or an 'alphabet'. In fact, for some writers on the origins of the modern alphabet, it is the Greeks who should be given credit for taking the inherently syllabic system from the Phoenicians and creating a writing system in which the single-symbol to single-sound correspondence was fully realized.

From the Greeks, this revised alphabet passed to the rest of Western Europe through the Romans and, along the way, underwent several modifications to fit the requirements of the spoken languages encountered. As a result, we talk about the Roman alphabet as the writing system used for English. Another line of development took the same basic Greek writing system into Eastern Europe where Slavic languages were spoken. The modified version, called the Cyrillic alphabet (after St. Cyril, a ninth-century Christian missionary), is the basis of the writing system used in Russia today.

The actual form of a number of letters in modern European alphabets can be traced, as in the illustration, from their origins in Egyptian hieroglyphics.

Egyptian	Phoenician	Early Greek	Roman
			B
			M
			S
			K

Written English

If indeed the origins of the alphabetic writing system were based on a correspondence between a single symbol and a single sound type, then one might reasonably ask why there is such a frequent mismatch between the forms of written English (*you know*) and the sounds of spoken English (*yu no*).

The answer to that question must be sought in a number of historical influences on the form of written English. The spelling of written English was largely fixed in the form that was used when printing was introduced into fifteenth-century England. At that time, there were a number of conventions regarding the written representation of words that had been derived from forms used in writing other languages, notably Latin and French. Moreover, many of the early printers were native Dutch speakers and could not make consistently accurate decisions about English pronunciations.

Perhaps more important is the fact that, since the fifteenth century, the pronunciation of spoken English has undergone substantial changes. For example, although we no longer pronounce the initial *k* sound or the internal *ch* sound, we still include letters indicating the older pronunciation in our contemporary spelling of the word *knight*. So, even if there had been a good written-letter to speech-sound correspondence at that time, and the printers had got it right, there would still be major discrepancies for the present-day speakers of English.

If we then add in the fact that a large number of older written English words were actually ‘recreated’ by sixteenth-century spelling reformers to bring their written forms more into line with what were supposed, sometimes erroneously, to be their Latin origins (e.g. *dette* became *debt*, *iland* became *island*), then the sources of the mismatch between written and spoken forms begin to become clear. Even when the revolutionary American spelling reformer Noah Webster was successful (in the USA) in revising a form such as British English *honour*, he only managed to go as far as *honor* (and not *onor*). His proposed revisions of *giv* (for *give*) and *laf* (for *laugh*) were in line with the alphabetic principle, but have obviously not been generally accepted. How we go about describing the sounds of English words in a consistent way, when the written forms provide such unreliable clues, is a problem we try to solve in chapter 4.

Study questions

- 1 What is the basic difference between pictograms and ideograms?
- 2 What is the basic difference between a logographic writing system and a phonographic writing system?
- 3 What happens in the process known as rebus writing?
- 4 Which modern language has a (partially) syllabic writing system?
- 5 What is the name given to the writing system used for Russian?
- 6 Where will you find the writing system with the longest history of continuous use?