Language—the Creator's gift

2. How do we acquire language?

Graham Jackman

This second article about the remarkable ability of speech which humans have explores the way children develop the ability to express themselves in language without instruction from their parents.

AS WE SAW in the previous article, there is little doubt that human speech is without parallel in the animal world; it is, as Chomsky puts it, a "species property", just as the Genesis account would lead us to expect. But how does each of us acquire this amazing capacity for potentially unlimited expression through language? The process by which young children learn to speak serves to underline how extraordinary is the gift of human speech. To repeat a point made in the first article, we are not born with a ready-made ability to speak; it has to be learned. The study of child language acquisition has helped us to understand something of what is essentially a mysterious process.

It is in fact a process that begins, in a sense, even before birth; the human foetus already possesses a seemingly built-in, 'hard-wired' desire for and sensitivity to communication with other humans through speech, and particularly with the mother:

> "Babies possess an astonishing prenatal sensitivity to the voice. Remarkably, although the foetus can't speak or understand speech, it is already able to recognise voices—especially its mother's voice".[1]

Once born, the baby immediately reveals its seemingly innate capacity for linguistic communication, both receptive (by listening) and active (by expressing itself):

> "It is now clear that newborns come not only with a set of innate abilities that allows them to communicate from the very beginning, but also with a ferocious desire to connect vocally with other human beings . . . A baby's cry is tuned to the 3,000 hertz band where its mother's ear is at its most sensitive . . . Infants less than two hours old react and orient more to their mother's voice than to those of other women . . . [the] capacity to discriminate between the vocal sounds of different emotions and respond differently to them is evident within hours of birth".[2]

Not for nothing do we speak of a 'mother tongue'! We are, as it were, 'programmed' to acquire a mastery of the language of whatever linguistic culture we are born into.

A timetable of learning

The process of language acquisition that then begins is as amazing as it is mysterious. It follows well-defined steps which occur in broadly the same sequence at roughly the same time for every normal child within any given language group. In the early stages the sequence is similar, regardless of the language of the parents. It has been outlined as follows:

Week 0	crying
Week 6	cooing (goo-goo); babbling (ma-ma)
Week 8	intonation patterns.

Whilst adults may find such baby-noises amusing and endearing, they have a serious purpose: they are, as Anne Karpf says, "a kind of rehearsal for speech".

After about eight months, different languages begin to diverge. For speakers of English it continues as follows:

Month 12	single words
Month 18	two-word utterances
Year 2	word endings
Year 2½	negatives and questions
Year 5	complex constructions
Year 10	mature speech patterns.[3]

What is most remarkable about this process is that it is directed not by adults but by the child itself

1. Anne Karpf, *The Human Voice*, London/New York, 2006.
2. *Ibid.*
3. Based on Jean Aitchison, *The Language Web*, Cambridge, 1997, p. 43.

(most parents would be incapable of planning and directing such a process anyway):

> "Some learning is required, but the learning cannot be significantly speeded up by coaching. No external event or conscious decision causes it, and a regular sequence of milestones can be charted . . . A biological time-clock ordains the sequence in which the language web is woven, though not the exact dates".[4]

Vocabulary

The learning of new words is not the most complex part of language acquisition, but even this reveals the gulf between man and animals. Attempts have been made to teach apes to use sign language, normal speech being impossible because of the physiological limitations already noted. In one experiment a chimpanzee is alleged to have taken four years to master the 132 signs of American sign language, though there is some doubt as to the degree of mastery actually attained. Compare this with the performance of a human child: on average, a child has acquired an active vocabulary of about fifty words by the age of eighteen months (and a passive vocabulary of about 250 words), having learned at a rate of about ten words per month after mastering its first ten words at about thirteen months (these are *average* figures, so please do not be alarmed if your child diverges markedly from them!). Thereafter the process accelerates:

> "Word learning is extremely efficient once a child reaches the age of about 18 months: about 10 words a day for all the days of the year that go by, from 18 months to about 30 years old. That is about 70 words a week, 300 words a month, 3,500 words a year. It is an extremely efficient process".[5]

Syntax

The learning of syntax—the rules that govern the creation of meaningful sentences out of individual vocabulary units—is a far more complex process, and it is here above all that the uniqueness and seemingly miraculous nature of the process taking place in the young child can be seen. The most striking fact is that the child is not *taught* these rules—most parents would in any case be unable to formulate them—rather, the child itself constructs its own grammar out of the utterances which it hears from others. This is a remarkable phenomenon; the young child, still unable to tie its own shoelaces or to feed itself properly, and completely defenceless in many respects, is nevertheless able to analyse the linguistic material to which it is exposed and from it induce the rules for the making of comprehensible and, ultimately, correct utterances:

> "Babies are smart. They can listen to a language and break it down into words and phrases, they can start putting meanings to those words and can compile rules of grammar almost before they can talk".[6]

Compare this extraordinary achievement that takes place apparently spontaneously in every normal human child with the performance of the ape Nim Chimpsky, which was taught American sign language. Its longest utterance (in signs, of course) was: "Give orange me give eat orange me eat orange give me eat orange give me you". This may be intelligible—the ape wanted an orange to eat—but syntactically ordered language it certainly is not!

Learning stages

The stages by which children learn their mother tongue are well defined: first come single-word (holophrastic) utterances, then two-word utterances (for example, 'want milk'), then telegraphic speech made up of several words but with some of the connectors missing. Naturally, the process varies according to the language community into which it is born. The following examples are all taken from English, but comparable processes take place in every language.

Plurals. In English, plurals are formed in three ways (leaving aside plurals of foreign words) according to the final phoneme of the word: by the addition of 's' (for example, 'books'); of 's' pronounced as 'z' (for example, 'doors'); or of an additional syllable (for example, 'axe'- 'axes'). Since adult speakers generally apply these rules without any awareness of them, they cannot teach them to their children. Yet by the age of six virtually all children respond correctly to the so-called 'wugs test'; that is, they are asked to give the plural of the invented word 'wug', and most answer correctly by the age of four.

Questions. The formation of questions in English involves particular difficulties because the word order of the sentence has to be changed. For example:

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4. *Ibid.,* pp. 47,49.
5. Lila Gleitman, University of Pennsylvania, quoted in Tim Radford, "Babies are good at grammar, scientists decide", *The Guardian*, 17 Feb. 1998.
6. Tim Radford, *ibid*.

The people *are* leaving tomorrow./*Are* the people leaving tomorrow?

The people *will* say goodbye tonight./*Will* the people say goodbye tonight?

The difficulty is increased in a complex sentence composed of more than one clause; which verb must be brought to the beginning of the sentence? For example:

The people who *are* leaving tomorrow *will* say goodbye tonight./*Will* the people who *are* leaving tomorrow say goodbye tonight?

The correct placement of the auxiliary verb does not depend merely on linear sequence but on meaning and grammatical structure. One might expect the child to say:

Are the people who leaving tomorrow *will* say goodbye tonight?

But, as Andrew Carstairs-McCarthy comments, "It does not resemble any sort of mistake typically made either by young children or by adults learning English".[7]

Negatives. The formation of negative statements is equally complex, not least because of the use—or non-use—of the auxiliary verb 'do not'. The child's progression to correct utterances usually takes the following course:

Stage 1 No I want juice
Stage 2 I no want juice
Stage 3 I don't want juice.

As the following example illustrates, the child achieves mastery of these complexities in its own time *and cannot be made to proceed to the next stage until it is ready:*

Child: Nobody don't like me.
Mother: No; say, 'Nobody likes me'.
(this exchange is repeated eight times)
Mother: No, now listen carefully; say, 'Nobody likes me'.
Child: Oh! Nobody don't likes me.

Verb forms. A similar refusal to be pushed beyond the stage of understanding that it has already achieved is seen in the following example cited by Jean Aitchison, relating to the correct use of verb forms:

Child: My teacher *holded* the baby rabbits, and we patted them.
Parent: Would you say she *held* them tightly?
Child: Oh no, she *holded* them loosely.

Aitchison comments:

"If they [parents] do pick on language formation, it's often verb endings: this may be useful, *if the child is tuned in at that time to learning these.* If not, the correction is likely to be ignored".[8]

A 'common human possession'

A consideration of such examples suggests powerfully that the child is born, not with language ready-made, as seems to be the case with most communication systems in the animal kingdom, but with an innate capacity, unique to human beings, to acquire language:

"A careful look at the interpretation of expressions reveals very quickly that from the earliest stages, *the child knows vastly more than experience has provided*. That is true even of simple words. At peak periods of language growth, a child is acquiring words at a rate of about one an hour, with extremely limited exposure under highly ambiguous conditions. The words are understood in delicate and intricate ways that are far beyond the reach of any dictionary, and are only now beginning to be investigated. When we move beyond single words, the conclusion becomes even more dramatic. Language acquisition seems much like the growth of organs generally; it is something that happens to a child, not that the child does. And while *the environment plainly matters*, the general course of development and the basic features of what emerges are *predetermined by the initial state. But the initial state is a common human possession*" (my italics).[9]

Moreover, this skill develops separately and apparently independently, not only from motor skills—such as tying shoelaces—but also from a grasp of other forms of symbolic representation:

"Language is a complex, specialised skill, which develops in the child spontaneously, without conscious effort or formal instruction . . . a three-year-old . . . is a grammatical genius, but is quite incompetent at the visual arts, religious iconography, traffic signs, and the other staples of the semiotics curriculum".[10]

As one evolutionary linguist has confirmed, its acquisition by the individual child and by the human race as a whole is "a process which cries

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7. Andrew Carstairs-McCarthy, *The Origins of Complex Language*, Oxford, 1999, ch. 5 (pp. 125-175).
8. *Op. cit.*, p. 53.
9. Noam Chomsky, *New Horizons in the Study of Language and Mind*, Cambridge, 2000, pp. 6-7.
10. Steven Pinker, *The Language Instinct*, London, 1994, pp. 18-19.

out for a Creationist explanation".[11] Whether there is a credible alternative explanation will be the subject of the final article in this series.

(To be concluded)

11. E. Bates, D. Thal & V. Marchman, "'Symbols and syntax': A Darwinian approach to language development", in N. A. Krasnegor *et al.*, *Biological and Behavioural Determinants of Language Development*, Hillsdale (N. J.), 1991, p. 31, quoted by Steven Pinker, *op. cit.*, p. 366.

Paul's epic journey to Rome

5. Changing ships at Myra

Tom Barling

Paul and his companions have reached the important port of Myra, where they join a grain ship going to Rome. We pause to consider what these magnificent ships were like.

THE CALL AT MYRA of the coaster on which Paul and Luke were travelling from Caesarea to Rome has much interest. First, there is the remarkable fact that the next stage of their voyage was to be on a grain carrier bound from the great Egyptian port of Alexandria for Puteoli. We have observed in the previous article that this appears to be a strange place for a ship travelling west to be tied up (Apr. p. 134), yet there was nothing untoward about this as the progress of a sailing vessel was determined in large degree by the wind. These grain carriers were by far the largest vessels then afloat, and it is a subject to which we shall progressively return.

The city of Myra

For the moment we focus on the port of Myra. The town itself was located a short distance from the coast, and this appears to be no accident. If a town possessed an acropolis, as Myra did, any invasion from the sea could be observed, and appropriate action taken, thus obviating any advantage an invader might have. This fact, together with other useful information, emerges clearly in an article on the city by E. M. Yamauchi: "The city of Myra was located on the plateau about 3.5 miles from the coast . . . but its name also included its port of Andriace (now Andraki). The Myrus or Andracus River flowed past the city to the coast in a narrow valley. Its estuary is now submerged in sand dunes. The ruins of the city of Myra are now located 1 mile north of the village of Demre".[1] Thus, as we can see, it was this situation on a plateau that gave it a commanding view over the coast.

Freya Stark, in the account of her visit to Myra in *The Lycian Shore*, mentions how, with the passage of time and the neglect of the estuary, it became silted up. This is a familiar feature of Mediterranean harbours. The mighty Nile has the most famous delta of all; Ephesus, so famous in its day, is now some miles from the place where the Cayster river empties its waters into the Aegean. The silt deposited can prove very fertile; in the case of Myra, Freya Stark reports that the river, with "eighteen feet of soil . . . has left little of the more inland Roman town standing except ends of columns among *agnus castus* and roots of asphodel".[2] However, in its heyday, to quote Stark once more, "Its importance grew under the Empire; it became, with Patara, the chief port of Lycia; and the theatre, which held about eleven thousand spectators, still expresses, alone in the harvested stubble, a crowded but provincial prosperity".[3] Information kindly provided by the Turkish Tourist Agency, besides dwelling on the importance of Myra in the past, furnishes this information: "Demre [the modern name of Myra], quite apart from being a tourism centre, is also an agricultural region. Greenhouses are widely used and many varieties of vegetables are grown", the latter detail being in itself evidence of the fertility of the soil.[4]

1. See *"The Anchor Bible Dictionary"*, Doubleday, 1992, vol. 4, pp. 939-40.
2. Freya Stark, *The Lycian Shore*, John Murray, London, 1956, p. 152.
3. *Ibid.*, p. 153.
4. Associated with Myra is Nicholas, a saint of the church of the fourth century. In the handbook supplied by the Turkish Tourist Agency we are told he is the traditional Father Christmas, Santa Claus; he helped poor and orphaned children and died on 6 December, A.D. 343.