

Unit 4 ~ Language & Thought: Origins & Evolution

Objectives

After completing this unit, you will be able to

1. **Draw a contrast between Language and Thought**
 - a. Outline the development and *process* of verbal thought
2. **Explain structural differences between Speech and Thought**
3. **Outline the Origins of Language (Verbal Thought), contrasting**
 - a. The Divine Creation perspective, and
 - b. The Theory of Evolution
4. **Discuss the cardinal role of Generalisation in Language origins & evolution**

4.0 Introduction

In Units 2 and 3, we outlined the complexity of language, and how its fluid, dynamic nature enables us to think and communicate our thoughts.

We identified **word-meaning** as the smallest unit of Language, because it has all the properties of the complex whole:

1. it combines speech and thought: '*every word is a generalisation*'
2. it is constantly changing, both in sound and in meaning
3. it lives *in use* /communication (social nature of language).

We then looked at the nature of this unit of language, **word-meaning**, and discovered that **meanings develop**:

1. in individual minds, during our cognitive development, and
2. in the collective mind of the community, acquiring more abstract, grammatical meanings (grammaticalization processes).

Finally, we zoomed in on how word-meanings **live**, how they acquire **meaning in use**, combining with the meanings of all other word-meanings in the sentence.

In Unit 4, we will try to understand *why* and *how* this happens in the context of use, looking for answers in the structural differences between speech and thought.

We will conclude Part One of this course, *Language – a Complex Whole*, with a short account of Language Origins and Evolution.

4.1 Language & Thought

Vygotsky defined verbal thought as '**meaningful speech** – a **union of word and thought**' (Vygotsky: 1934). A word, we remember, is the name of a class /category of things, not to any *concrete* object; each word is, therefore, already a **generalisation**. Words are *acts of thought*; unlike all the other sounds we make which merely express our emotions,¹ **words carry/ embody meaning**.

¹ i.e., joy (hooting, laughter), pain or fear (crying, wailing, screaming), et cetera

Thought and language, which reflect reality in a way different from that of perception, are the key to the nature of human consciousness. Words play a central part not only in the development of thought but in the historical growth of consciousness as a whole. A word is a microcosm of human consciousness (Ibid.).

In Unit 3, we discovered that word meanings *develop*. Since word meaning is always a generalization, the *development of meaning* = the *development of generalization*:

It is not merely the content of a word that changes, but the way in which reality is generalised and reflected in a word (Ibid.).

Word meanings are *fluid* – they change as the child develops; they change also *in use*, depending on the ways in which thought functions in individual minds:

If word meanings change in their inner nature, then the relation of thought to word also changes (Ibid.).

Now this is a very important point: what Vygotsky is actually saying here is that word *meaning is not* the same thing as *thought!* The fit between thought and word is not one-to-one; in fact, our thoughts, as you know, often do not even fit into words – how often have you struggled for words or said, ‘No, that’s NOT what I meant!’?

Meaning is not word, either – it’s only *part* of it. We have already seen how the context (metaphorical meaning, ironic meaning, etc.) can change word meanings.

Meaning is what lies between word and thought; it is not equal to the word, but neither is it equal to the thought:

The relation of thought to word is not a thing but a *process*, a continual *movement back and forth* from thought to word and from word to thought. In that process the relation of thought to word undergoes changes which themselves may be regarded as development in the functional sense (Vygotsky: 1934).

Analogy: Language is social means of thought. It is a system of arbitrary symbols, much like the monetary system we have for exchanging goods and services; a 10 Kina note is *not* the flex card or that fish it can buy – we use it to get what we need. Just like Kina notes of different denominations (K2, K5, K10, K50, etc.), the words we use have socially assigned value. When using words to communicate, we try to get a ‘good fit’ between them and our thoughts; the better we know language, the better we can do it (just as the better you are at using money, the more value you can get for your bucks!).

We can develop our analogy further: communication is exchange. In order to trade or communicate, we must learn the *units and rules* of the exchange system, be it foreign currency (how many yuans is a flex or a fish in China?) or a foreign language (how *do* you ask for a flex, or a fish in China?).

How do we learn those units and rules, how do we *begin* to use a social exchange system? Babies do not know the value of a K10 note; it is only gradually that they begin to grasp its symbolic value. Visiting a foreign country, we sometimes re-live those ‘helpless baby’ experiences; the way out is, of course, to try and relate the new

symbols (monetary or linguistic) to the ones we already know (Kina, toeia / words of English/ Tok Pisin, for example).

Activity 4.1

1. Have you ever found it difficult to put your thoughts and feelings into words? Why, do you think, this happens?
2. Explain the following statement:

‘A word acquires its sense from the context in which it appears; in different contexts, it changes its sense. *Meaning remains stable throughout the changes of sense*’
(Vygotsky: 1934).

Let us now examine this *movement back and forth* from thought to word and from word to thought. What is this fluid ‘fitting’ process that, once started, goes on in our conscious minds for as long as we live? What triggers it off in a child’s mind?

4.1.1 Development of Thought in Infants

When we come into this world, we are unable to think – that is one reason why we cannot remember the first few years of our existence (‘*childhood amnesia*’). At this stage, our ‘*natural speech*’ (cries, screams, laughter, gurgles, etc.) is non-intellectual, and our intelligence – non-verbal:

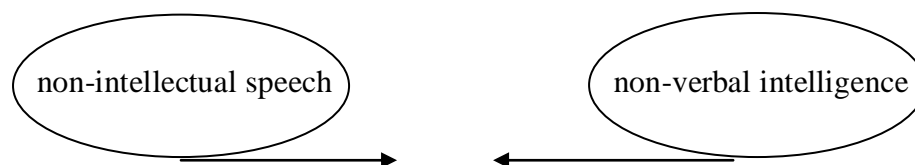


Fig. 4.1 Speech and Thought spring from different roots – they do not overlap at birth

In babies’ brains, these two functions of the brain do not overlap; like all mammals, human babies are governed by instincts/ feelings. During the first stage of our cognitive development, we use our senses of hearing and sight to ‘soak up’ the sounds and words of language from the people around us. Gradually, we begin to ‘connect’ the sounds of certain words we hear to concrete objects in the world around us; when that connection ‘clicks,’ we begin to *use* those sounds to *refer* to concrete objects around us. Our first words, as we noted in Unit 3, do not yet carry abstract thought; they express wishes and *feelings*. It is the *whole behaviour* of the child that communicates meaning (just like a dog’s barking, squealing, etc. can communicate aggression, fear, pain or joy, etc.):

In mastering external speech, the child starts from one word, then connects two or three words; a little later, he advances from simple sentences to more complicated ones, and finally to coherent speech made up of series of such sentences; in other words, he proceeds **from a part to the whole**. In regard to meaning, on the other hand, the **first word of the child is a whole sentence**. Semantically, **the child starts from the whole**, from a meaningful complex, and only later begins to master the separate semantic units, the meanings of words, and to divide his formerly

undifferentiated thought into those units. The external and the semantic aspects of speech develop in opposite directions – one from the particular to the whole, from word to sentence, and the other from the whole to the particular, from sentence to word.

A child's thought, precisely because it is born as a dim, amorphous whole, must find expression in a single word. As his thought becomes more differentiated, the child is less apt to express it in single words but constructs a composite whole. Conversely, progress in speech to the differentiated whole of a sentence helps the child's thoughts to progress from a homogeneous whole to well-defined parts (Ibid.).

The dynamics of thought development /conceptualization follows the *dialectics of analysis and synthesis* (Re: Unit 2.6.1). Abstract **thought (i.e., human understanding/conceptualization) is **both**:**

... the advanced **concept** presupposes more than unification. To form such a concept, it is also necessary to abstract, to single out elements, and to view the abstracted elements apart from the totality of the concrete experience in which they are embedded. In genuine concept formation, it is equally important to unite and to separate: synthesis and analysis presuppose each other, as inhalation presupposes exhalation (Vygotsky: 1934, pp. 135-136).

Grammar, as we have seen, precedes logic in the child's mind. We know that the child has spoken his/her first words when the child 'connects' a particular sound sequence to a concrete object and begins to use those sounds to **refer** to that object. For the child, words are *names* of concrete objects:

... signification independent of naming, and meaning independent of reference, appear later ... Only when this development is completed does the child become fully able to formulate his own thought and to understand the speech of others. Until then, his usage of words coincides with that of adults in its objective reference but not in its meaning (Ibid.).

Come to think of it, many adults (even if they talk non-stop) never complete the process – that is why, in every language, we have words like *fool*, *long-long*, and worse! ☺

You must be convinced by now that it is through language that we learn to think logically [i.e., *synthesize* (connect) and *analyze* (contrast) **ideas**], just as we all have to learn the meaning of money, before we can use it in the market! Our fellow men and women gave all of us this common currency, Language, to use in Thought Exchange. But where did Language come from, in the first place? How did the society of our ancient ancestors manage to leapfrog into this virtual world of symbolic meanings?

I am just whetting your appetite there – look for answers to those questions in the closing section of this unit! First, we must finish examining that ***movement back and forth*** from thought to word and from word to thought. Why is thinking such a complex and difficult job? Why is it so difficult for us, at times, to find the right words to phrase our thoughts?

We, *Homo sapiens*, are only a PART of all Life on Earth; we share **sensation** with everything that lives (viruses, bugs and algae also sense and react to stimuli); we

share *feelings* and *emotions* (i.e., pain, fear, pleasure, jealousy, anger, happiness, sadness, etc.) with all other highly developed creatures.

Only *consciousness* separates us from animals: we are *aware* of our own separateness from the world we live in, and can to *think* and *talk about* our sensations, perceptions and feelings – not just *experience* them. Language enables us to communicate both our thoughts and feelings. The ‘currency’ of word-meanings available for thought exchange is not nearly enough to express our unique experiences; → finding the words that *fit* them is no easy matter. The main difficulty, though, in getting the ‘right fit’ between speech and thought lies in their *structural differences*.

4.2 Speech & Thought are different *structurally*

Verbal thought is only *part* of our intelligence: our *feelings* and *senses*, which feed our verbal thought, are *non-verbal* in nature. The ‘units’ of Language and Thought are just not readily ‘exchangeable,’ and trying to fit them together is much like trying to force square pegs into round holes:

1. **Thought** (perception), **unlike speech, is not made up of separate units**. To test out this proposition, please look at this photo:



Overload

Now, try and describe what you see here to your friends who have not seen this photo. How long will it take you to communicate the most important details of what you see, for them to ‘see’ it through your eyes? When you try to communicate the thought that this is a picture of a street scene in some small Asian town, where a donkey cart was overloaded so badly that it ‘outweighed’ the poor donkey pulling it, and that because

of that, the donkey ended up suspended in the air, hanging from its harness ... And you have not even described the details yet! However, you *saw* it all **in a flash**: the cart, the donkey, its hooves hanging helplessly in mid-air, the caftan-clad men walking, the trading stalls, the dust, the cart, and the heavy boxes; our senses (sight, hearing, smell, touch, taste) bring things to our consciousness ‘in one go,’ in one bunch! Yet, to *describe* your experience, you have to put it into separate words – *fit* it into word-meanings, and string them together, for others to get the *idea*. That is why it takes us so long to describe any single event – something that our minds ‘swallow’ in one gulp! Vygotsky put it this way:

... because thought does not have its automatic counterpart in words, the transition from thought to word leads through meaning. In our speech, there is always the hidden thought, the *subtext*. Because a direct transition from thought to word is impossible, there have always been laments about the inexpressibility of thought... Direct communication between minds is impossible, not only physically, but psychologically. Communication can be achieved only in a roundabout way. **Thought must pass first through meanings and then through words** (Ibid.).

If you think about it, this is exactly how it happens: we first try to determine the nature/ meaning of our feelings and perceptions, and then we fine-tune the words to ‘fit’ them.

2. Thoughts are ‘blobs’ of saturated meaning:

We already know that when we speak, word-meanings change their *sense* (meaning *as use*); conversely, **ideas often change their names**. Just as the sense of a word is connected with the whole word, and not with its single sounds, the sense of a sentence is connected with the whole sentence, and not with its individual words. That is why we can often replace one word with another without any change in sense of the sentence; come to think of it, we can replace *all* the words in the sentence, and still say essentially the same thing!

Word and sense of a word-meaning are relatively independent of each other.

Activity 4.2

1. How many meanings can you put into one word – ‘Hello’?

2. Paraphrase the following quotes, but keep their *meanings* the same:

Mankind are so much the same in all times and places that history informs us of nothing new or strange. [David Hume: Treatise of Human Nature]

There is nothing that is either good or bad, but thinking makes it so.

[Shakespeare: Hamlet]

3. Give 5 (five) examples of how the same word(s) can express different ideas, depending on how you use it (Re: Unit 3.4 for suggestions).

In inner speech, the senses of different words literally *flow* into one another (that's what's called *influence*). In the sentence, word-meanings *blend* together. That is why an often-repeated word captures a variety of different meanings and comes to embody the *larger* composite meaning (i.e., *Romeo*, *Don Quixot*, the 'shoe-thrower,' etc.).

In inner speech, a single word is so saturated with sense that you will need many words to explain it in external speech (Ibid.).

4.2.1 Inner Speech Is an *Autonomous Function* of Language

We use language in many different ways: for formal or informal conversation and debate [exchanges in which 2 or more people take part; dialogue²], for making speeches, proclamations, and laws, for writing scientific papers, textbooks, novels, stories, poetry, etc. [when we express our thoughts uninterrupted; monologue³]. In each case, the 'kind' of language we use will be different (you will speak differently to different people in different circumstances – you won't say, 'Catch!' or 'See ya!' to the Vice-Chancellor, the Prime-Minister, or the Judge! ☺).

Inner speech⁴ is a separate function of Language.

Verbal Thought is not just the 'in' side of external speech – it is a distinct function of speech, when we 'talk' to our own self. Its 'syntax' is different from external speech – but so is the language of poetry different from that of prose, or formal speech from a chat with a buddy! 'It still remains speech, i.e., thought connected with words. But while in external speech thought is embodied in words, in inner speech words die as they bring forth thought' (Vygotsky: 1934). **Inner speech is a flow of almost 'pure' meanings:**

It is a dynamic, shifting, unstable thing, fluttering between word and thought ... Its true nature and place can be understood only after examining the next plane of verbal thought the one still more inward than inner speech. That plane is thought itself. ... Every thought creates a connection, fulfils a function, solves a problem. The flow of thought is not accompanied by a simultaneous unfolding of speech. The two processes are not identical, and there is no rigid correspondence between the units of thought and speech. This is especially obvious when a thought process miscarries – when ... a thought "will not *enter* words" (Ibid.).

Thought has its own structure – we cannot simply *add voice* to our thoughts to turn them into speech. To say *what we think* is not like translating from one language into another – the 'units' of thought and external speech are not the same. In inner speech, *sense* overrides *meaning*, *sentence* overrides *word*, and *context* overrides *sentence*.

We all use 'special codes' to communicate with people in close psychological contact with us; words then acquire special meanings understood only by the 'initiated.' In inner speech, we know exactly what we mean (no need to explain anything, is there?), so thoughts tend to jump, take shortcuts, and abbreviate external speech structures:

Thought has a tendency toward an altogether specific form of abbreviation: namely, omitting the subject of a sentence and all words connected with it, while preserving the predicate⁵. This tendency toward predication appears in all our experiments with

² exchange / conversation between two or more people

³ monologue: a long speech by *one* person

⁴ 'talking' to yourself in our own head

⁵ Predicate, you remember, is 'what you say *about* something or somebody'

such regularity that we must assume it to be the basic syntactic form of inner speech (Ibid.).

Indeed: when we ‘talk’ to ourselves, we know who or what we are talking about (the Subject of our thought), so there is no need for any mention of it. This gives thought a different ‘texture’ and makes our thoughts difficult and sometimes impossible to translate into the language of external speech:

Thought and word are not cut from one pattern. In a sense, there are more differences than likenesses between them. **The structure of speech does not simply mirror the structure of thought;** that is why words cannot be put on by thought like a ready-made garment. Thought undergoes many changes as it turns into speech. **It does not merely find expression in speech; it finds its reality and form.** The semantic and the phonetic developmental processes are essentially one, precisely because of their reverse directions (Ibid.).

Thought ‘does not merely find expression in speech; it finds its reality and form’ – now this is a truly profound thought! Until we put what we *feel* into words, it remains a diffuse, vague feeling, not yet a conscious thought.

Activity 4.2.1

We have tried to understand *why* and *how* word-meanings come *alive* only *in use*, in the context of other word-meanings in the sentence; until they are used in speech, they are ‘frozen’ in dictionaries.

Having examined the process of verbal thought, can you now explain the reason why word-meanings *live* (acquire *real* meaning) only when we *use* them?

Look at this ancient mosaic of the Pelican bird, created out of tiny tiles:



To find some answers to the question above, let us draw a parallel between a mosaic and Language: both are complex wholes; each little tile in the mosaic is an integral part of it the whole image, just like each word-meaning in the sentence contributes to the meaning of the whole, depending on how we use it.

Indeed – what makes some identical tiles represent (mean) the eye of the pelican, and others – its foot, wing, or beak? It's all those tiles around them! Now, if you think about it, the tiles are just like word-meanings: they, too, acquire their individual meaning *in use*, when we *use* them in a pattern with other tiles (word-meanings). *Together*, they create an image /meaning.⁶

Now that we have a better idea of the relationship between Thought and Language, and the role of society in teaching individuals both to speak and to 'think human,' we are left with one fundamental question: How did Language develop in the first place, if human society at the time did not have it to give to its members?

4.3 Language Origins

Indeed, since the role of the society is so crucial in our cognitive development, the question of the origins of language gets 'curiouser and curiouser'⁷: how did we develop language in the first place, when our society had no language? *How*, and *when*, did we start to speak? These questions have fascinated people since the beginning of time, causing lively and sometimes bitter debate. A multitude of theories have been put forward, although most of them support one of two major opposing views: the Divine Creation Theory and the Evolutionary Theory.

4.3.1 The Divine Creation Perspective

Proponents of this view believe in Genesis and argue that it was 'God who, as the eternal Word Himself, created the marvellous gift of human language along with the mouth and tongue and all the intricately complex vocal and mental apparatus with which to use it.' (Morris: *The Mystery of Human Language*).

In this web publication, Dr. Morris claims that 'The origin of human language—the ability of men and women to communicate with one another in intelligent, symbolic, often abstract speech and writing is a complete mystery to evolutionists. ... Human language appears to be a unique phenomenon, without significant analogue in the animal world. ... Not only is there no animal that is capable of achieving anything like human speech, but also there is, at the other end of the scale, no human tribe that does not have a true language. No languageless community has ever been found. ... There are no normal humans that cannot speak and no animals that ever can. This is the great unbridgeable gap between all mankind and every component of the animal kingdom.'

After a rather lengthy attack on evolutionists, Dr. Morris proceeds to recount the Biblical story: 'God in Christ created Adam and Eve at "*the beginning of the creation*" (Mark 10:6, Genesis 1:27) and immediately communicated with them in

⁶ This, however, does not mean to say that people cannot *perceive/ understand / process* the same image/ meaning differently! ☺

⁷ in the words of Alice from Wonderland ☺

language which their created brains and minds could understand (Genesis 2:16, 2:17; 3:9, 3:19). They and their descendants continued to use this created language, even speaking to God in prayer in that language (Genesis 4:26) until the great rebellion at Babel, when "*the Lord did there confound the language of all the earth: and from thence did the Lord scatter them abroad upon the face of all the earth*" (Genesis 11:9). The people scattering from Babel probably represented about 70 basic languages, judging from the seventy ancestral tribes listed in the Table of Nations (Genesis 10). These have, in time, proliferated into many others' (Ibid.).

Activity 4.3.1

Read and summarize *The Mystery of Human Language* in your Resource Book. What are Dr. Morris' main arguments for divine creation of language?

The cornerstone of the *Divine Creation* Theory is the 'unbridgeable' gap that exists between humans and all other animals. What is the evolutionary perspective on this?

4.3.2 The Evolutionary Perspective

First of all, let us be clear on what we mean by *evolution*:

Evolution is a slow process of change from one form to another

(as opposed to *revolution* – a *sudden* and *radical* change).

Some Christians (as well as Muslims) decry the theory of evolution as conflicting with divine creation. This explains why *dialectics* (the philosophy of *continuous change* and *interconnectedness* of things) had not gained wide acceptance until the middle of the 19th century. **Charles Darwin** (1809–1882) published his *Origins of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*, in 1859. He explained the evolutionary process through the principles of natural and sexual selection, which was bitterly opposed by the church. *Descent of Man* (1871) only added fuel to the fire, for it claimed that humans, just like all other living organisms, have evolved from 'lower' forms of life (do you see now why Mr Morris was so anti-evolution?☺). But let us look at the Morris argument again:

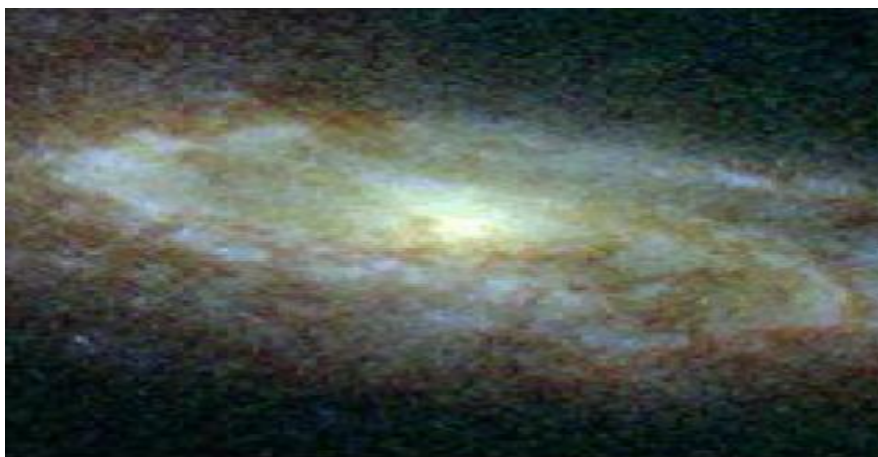
Indeed - *if* effective communication is of value for the survival of many species, then why has only *one* species developed language? The theory of evolution offers an explanation, despite two major difficulties:

1. First, Spoken language leaves no lasting trace: Brains, unlike skulls, do not fossilize, so we have no 'hard' evidence to support our conjectures about when, where, and how exactly language originated; and
2. Second, research into how human brains generate and process language has, until very recently, been bound by *ethical* constraints – few of us would like our skulls to be opened and brains stuck with electrodes or sliced in the name

of science! ☺ Scientists have been relying on careful observation of what goes wrong in brains that are physically damaged (by accident or disease). It appears that certain areas of the brain have special ‘language’ functions, and this has been confirmed by the use of new technologies – PET (positron emission tomography) scans and MRI (magnetic resonance imaging), which have made it possible for us to see brains *at work*.

Before we tackle the question of Language origins, let us look at the current scientific explanation of how Life evolved on Earth, to begin with.

4.3.2.1 Origins of Life on Earth



Galaxy NGC 7537. A galaxy is a collection of billions of stars, held together by gravity

- ⇒ **At 13.7 billion years ago**, the Universe suddenly appears, growing from the size of an atom to the size of a galaxy in a fraction of a second.
- ⇒ **At 10 billion years ago**, hydrogen atoms and helium atoms fuse at the centre of a supernova to create the building blocks of the physical world.
- ⇒ **At 4.6 billion years ago**, a cloud of matter collapses to produce a star—our Sun. Earth and the other planets in our solar system form out of the remaining bits of matter swirling around the new star.
- ⇒ **At 67 million years ago**, an asteroid collides with the Earth, wiping out the dinosaurs, and leaves territory open for the rise of a minor order of organisms, the early mammals.
- ⇒ **At 100,000–60,000 years ago**, a species of two-legged ape-like creatures begins to move out of its home territory in Africa and into the Asian continent.
- ⇒ **Today**, the descendants of those first ape-like creatures—Homo sapiens—live in nearly every ecological niche. We fly through the air in planes, communicate instantaneously over immense distances, and develop theories about the creation of the Universe. <http://www.teach12.com/ttcx/CourseDescLong2.aspx?cid=8050>

Let us now look at the current evolutionary perspective on *when*, *why*, and *how* language developed.

4.3.2.2 Evolutionary Perspective on When, Why, & How Language Developed

When? The *span of time* over which Language has been around is a subject of debate. One popular view, based on the sudden appearance in the archaeological record of evidence for a jump in sophistication of primitive technologies and of representational art, sees language with syntax (rather than just individual words) as very recent in the evolutionary scheme: perhaps it has been with us for as little as one or two hundred thousand years, a very short period in the evolution of our species. From our present knowledge of brain structure, and of the rates of evolutionary change, we can conclude that language has been evolving slowly in fits and starts over a period of two million years or more. Our ape-like ancestors prior to that had the kinds of communication capabilities that can be observed today in apes and monkeys. They made sounds or signs of aggression and appeasement, sounds or signs to warn and perhaps to comfort. Those instinctive cries are still a part of all human languages (for example, the tongue clicking, whistling, laughing, crying, moaning, etc.).

Why? The evolutionary move forward to language, made only by humans, was triggered, scientists now believe, by the change that humans made from a largely vegetarian diet to one that regularly included meat (this is clear from the fossil record of tools for hacking meat). That change of behaviour was preceded and *accompanied* by changes in our skeletal structure and physiology, i.e., transition to walking upright on two legs, more grip-efficient hand structure, increase in brain size, descent of the larynx deeper into the throat, etc.

Adding a hunting mode to a gathering mode of subsistence reduced people's dependence on nature and allowed for greater mobility, but it also brought about new pressures to be dealt with by natural selection. Terrence W. Deacon claims that the strong (naturally selected) instinct of males to support and promote their own genes through their progeny catalysed the development of language – how is the hunter, who is away from the community for long periods, be sure otherwise that the young that he provides for are his own? The current view is that this need was the main trigger for the development of language which allows us *to make promises* ☺

How? The current view is that language and the brain *co-evolved*, influencing each other's development over time. "*Children's minds need not innately involve language structures, if languages embody the predispositions of children's minds!*" (Deacon: 1998). Language, in other words, has been shaped by the human brain. The complex picture of language processing obtained with the help of new technologies that allow us to look into brains *at work* shows that various areas of the brain are much more *interconnected* than was previously believed (i.e., processes needed for motor control appear to be used for thinking!). The brain was not *designed* to be of value to humans; rather, over millennia, random genetic modifications of the brain occurred and those, that happened to be of survival value, have persisted. That is the process of natural selection. The result is a mess, granted; but it is a mess that *works* by survival.

Activity 4.3.2.2

Read the text 'Evolution of Human Intelligence' in your Resource Book. Explain the last statement: "Whether our species has yet acquired sufficient intelligence to manage this responsibility is a matter for debate."

What is most interesting about human Language is that all natural languages have so much in common – not in words, but in terms of their *symbolic structure*. Is it because, as David Hume claimed, the mechanism of human thought is the same ‘in all times and places’? Has the *way we think* (associating ideas by resemblance, contiguity, and cause/effect) *shaped* the diverse structures of all languages?

4.4 Generalisation – the Beating Heart of Language:

We already know that the words of all human languages are acts of human thought (generalisation): they reflect reality in an *abstract* way, different from the *concrete* way sensation / perception reflect it. There is a *qualitative* difference between total absence of consciousness (in inanimate matter) and sensation, as there is between sensation and thought (Re: Table 1).

Table 1: Evolution of Life on Earth		
Inanimate matter (non-living things)	Rocks, mountains, seas and rivers, the sun and the stars, metals and plastic, etc.	complete absence of consciousness (no sensation, no intelligence)
Animate matter (all living things)	Bugs and other micro-organisms, plants & insects, fish & reptiles, birds & animals, etc.	sensation & , in the more highly developed animals, non-verbal intelligence
	Humans	sensation & abstract thought

4.4.1 How and why did our ancient ancestors begin to generalise?

Understanding (and consciousness generally) is possible only through generalization⁸ (thought) which simplifies the concrete world of experience into abstract categories/*ideas* (based on Resemblance, Contiguity, and Cause/Effect) so that these concrete experiences can be translated into symbols:

To become communicable, it [i.e., concrete experience – OT] must be included in a certain category which, by tacit convention, human society regards as a unit (Vygotsky: 1934).

Ideas cannot be formed without a system of *signs* to name them, either. Human need to communicate in order to survive gave rise to such a system of signs – language. In order to survive in this harsh world, our ancestors had to cooperate, and in order to cooperate, they had to communicate. Thus, the role of society in primary language acquisition was just as crucial at the birth of human consciousness, as it is now. The ‘dialectic leap into consciousness’ became possible, then, because of two major biological factors:

1. **The human brain had evolved the biological capacity for faster and more effective networking** – a prerequisite for generalization.

The capacity for language is an essential part of the human mind; otherwise language could not have originated just environmentally; and by the nature of this capacity languages can be changed and adapted as circumstances require, and only so can the

⁸ synthesis and analysis!

central fact (and mystery!) of language be explained: that speakers can make infinite use of the finite linguistic resources available to them at any time (R.H.Robins: 1995)

2. Species SURVIVAL needs: to survive, we had to cooperate, and to cooperate effectively, we had to communicate even more effectively.

A combination of physiological, genetic, and social factors had enabled our ancestors to 'climb' to a higher level in the spiral of evolution: *verbal intelligence*. Our ancestors' brains had developed the ability to *generalize* (i.e., to categorize things, based on Resemblance/ Contiguity), and physical *survival needs* had pushed them to use that ability to create a system of signs to communicate their needs to others.

Thus, it is the human '*generalizing attitude*'⁹ that gave rise to Language:

The conception of word-meaning as a unit of both generalising thought and social interchange is of incalculable value for the study of thought and language. ... The qualitative distinction between sensation and thought is the presence in the latter of a *generalised* reflection of reality, which is also the essence of word meaning: and consequently that meaning is an act of thought in the full sense of the term.

(Vygotsky: 1934)

Activity 4.4.1

In your own words, state the factors that triggered the development and evolution of Language (i.e., Generalisation).

4.4.2 What was Human Language like in its infancy?

In *Philosophical Investigations*, Ludwig Wittgenstein (Re: Unit 3.4) described the countless 'language games' people play, creating 'meaning *as use*'; primeval languages spoken must have been much like the 'game' he described in §2 (a very *practical* language, with simple, *concrete* word-meanings):

2. That philosophical *concept of meaning* has its place in a primitive idea of *the way language functions*. But one can also say that it is the idea of a language more primitive than ours.

Let us imagine a language ...The language is meant to serve for communication between a builder A and an assistant B. A is building with building-stones; there are blocks, pillars, slabs and beams. B has to pass the stones, and that in the order in which A needs them. For this purpose they use a language consisting of the words 'block', 'pillar', 'slab', 'beam'. A calls them out; --B brings the stone which he has learnt to bring at such-and-such a call. -- Conceive this as a complete primitive language.

(Wittgenstein: *Philosophical Investigations*. Retrieved November 18, 2008 from <http://www.galilean-library.org/pi10.html>).

⁹ i.e., ability to see *Resemblances*, and to *categorize* things, based on resemblance (**Cause/Effect**): all men (that have lived or will ever live), captured in one category/idea: MAN.

Tracing the history of words (etymology) confirms this hypothesis, revealing concrete concepts in the most abstract of word-meanings; *ambi-* in *ambiguous*, for example, is rooted in two very concrete ideas:

ambi- : combining form meaning "both, on both sides," from L. *ambi-* "around, round about," from **PIE *ambhi-** "around" (cf. **Gk. amphi** "round about," **Skt. abhitah** "on both sides," Avestan *aibi*, **O.E. ymbe**, **Ger. um**, **Gaul. ambi-**, **O.Ir. imb-** "round about, about," **O.C.S. oba**, **Lith. abu** "both"). The PIE root is probably an ablative plural of ***ant-bhi** "from both sides," from ***ant-** "front, forehead"

<http://www.etymonline.com/index.php?l=a&p=11>

Many scholars¹⁰ currently agree that human language arose spontaneously out of our existential need for cooperation, and that it was originally a simple code of voice signals to represent *concrete* objects or actions. A parallel may be drawn between the development of speech /thought in our collective mind and that in the mind of a child.

By this analogy, our collective consciousness co-evolved with Language over millennia, from holophrastic chunks of complex meanings, represented by simple structures, to more differentiated, precise, abstract meanings, represented by more complex linguistic structures. The 'grammaticalization' processes (Re: Unit 3.3) in the course of socio-historical evolution of language 'provide a possible origin of grammatical structure from a proto-language initially involving perhaps unordered and uninflected strings of content words' (Christiansen/Chater: 2007).

Reconstruction of Proto-Indo-European (PIE), which was far from being the first language spoken, also seems to support this hypothesis:

Five or six thousand years ago, PIE was probably a simple, pragmatic language with words intended to denote objects or actions. Over the course of time, as people encountered new experiences, some words added more abstract meanings and some became more metaphorical. New words were added if old ones could not accommodate new needs.

Cameron, Alex J.: Cognates. Retrieved November 19, 2008, from <http://www.spellingbee.com/cc09/Week04/cognates.shtml>

Speculations regarding the structure of PIE all seem to point in the direction of simple, pragmatic, concrete forms:

For a long time, it has been suspected that PIE may have been structurally simple, relative to present-day languages, in ways that go deeper than lack of particular vocabulary items. More than a hundred years ago, Eduard Hermann¹¹ argued that PIE may have had no complex sentences: all utterances would have been strings of simple clauses, with no clause subordination. Instead of saying things like 'When he saw the stone he wanted, he shouted out', PIE speakers might have said things more like 'He saw a stone. He wanted that stone. Then he shouted out.'

Sampson, Geoffrey: *Was PIE 'primitive'?* Retrieved November 19, 2008, from http://www.grsampson.net/Q_PIE.html

¹⁰ Terence W. Deacon, Morten H. Christiansen, Nick Chater, etc.

¹¹ Eduard Hermann (1869-1950): German linguist who specialized in comparative studies of Indo-European languages (Source: Encyclopaedia Britannica Deluxe edition 2004 CD-ROM)

Activity 4.4.2

Why do scholars believe that the primordial Language was simple & pragmatic?

It is ultimately through the co-evolution of human Language and the Brain that human Reason /Logic eventually rose to the level of abstraction which distinguishes modern humans from the primitive man that lived millennia ago.

4.4.3 Biological Evolution vs. Language Change

The idea that both human cognition and language have evolved over time seems to contradict David Hume's idea that 'mankind are so much the same in all times and places'; how could they be? Some societies have developed faster than others; does this mean that the brains of some ethnic groups 'operate' differently? That was the basic reasoning behind the racist ideology that caused so much conflict and suffering in the past, and still survives in lingering biases /prejudices.

The theory of associationism, on the other hand, 'assumed that the basic law of psychology is the law of association, ... the connection established between the elements of our experience on the basis of their close relationship or their similarity,' and that 'the laws of the human spirit ... have always been the same, at all times and in all places' (Vygotsky: 1930).

Descriptive linguistics has traditionally viewed all human languages as equal, each springing from the universal principles of human cognition; therefore, descriptive linguistics is critical of the idea of any historical *development* of the human psyche:

In the closing decades of the 20th century, this and similar ideas¹² were widely rejected, not so much because of factual evidence but for ideological reasons. Many linguists wanted to think of all human languages as equal. They disliked the suggestion that languages could be ranked as more or less evolved.

However, a careful, scholarly book by Guy Deutscher (*Syntactic Change in Akkadian*, Oxford University Press, 2000) has now shown that this principle of linguistic equality is not really tenable. The most ancient languages which were recorded in writing had very limited systems of grammatical subordination; some languages spoken by simpler, tribal societies today demonstrably are less evolved than modern European languages in this respect. So it does seem quite possible that Hermann's suggestion about PIE may have been correct (Sampson, Geoffrey: *Ibid.*).

How can we resolve the apparent contradiction between the 'sameness' of human nature vs. language change? Vygotsky provided a logical explanation by putting human evolution into long-term perspective: while viewing *meaning* as fluid, relative and dialectical, and *thinking* as 'not a constant, but a variable, which develops throughout history.'¹³ However, this does not mean to say that some ethnic groups

¹² that languages, as well as human brains, *evolve* over time – OT

¹³ Vygotsky: *Three Theories of Psycho-Cultural Development*
<http://www.marxists.org/archive/vygotsky/works/1930/man/ch02.htm>

living today are inferior to others in their cognitive abilities; Vygotsky insisted that 'Primitive man, in the true sense of the term, does not exist anywhere at the present time' (Vygotsky: 1930).

There is really no contradiction: the *modus operandi* of the ever-evolving human psyche still rests on the same 'principles of understanding':

... Basic psychological mechanism of behavior, the law of the association of ideas, and the basic principle of logical thought, the causative principle, are thus the common patrimony of both primitive and civilized man. The only difference is that in civilized man both of these instruments of psychological associations and logical thought can draw on a vast body of experience and material, whereas the experience of primitive man is limited and his material small. Hence, the difference between the psyche of one and the other (Vygotsky:1930)

Currently, researchers believe that the emergence of something like Wittgenstein's 'complete primitive language' had triggered off the millennia of *Co-Evolution of Language and the Brain*, described by Terence W. Deacon in his book by that name. In it, he argued that biological evolution of the brain cannot be a factor in linguistic change:

Biological change is vastly more slow and inflexible than language change. Brain evolution takes place on a geological time scale. Even slight changes probably take hundreds of thousands of years to become widely represented in a species, and the basic architecture of brains has been remarkably conserved since the origins of vertebrates. Languages, on the other hand, can become unrecognizably different within a few thousand years. Language evolution is probably thousands of times more rapid than brain evolution. Such a vast difference in evolutionary mobility suggests that we may have assumed that the wrong half of the evolutionary equation contained the critical variables (Deacon: 1997).

Some scholars¹⁴ view language as 'an *organism*, adapted through natural selection to fit a particular ecological niche: the human brain'; this idea is rather far fetched, however. Language does not need to *adapt* to the brain in the course of evolution – it is the *product* of the brain, and so naturally follows the laws of human cognition.

What *are* the cognitive and processing constraints of the human brain that shape Language? David Hume identified them as the principles of human understanding (associations on the basis of Resemblance, Contiguity, and Cause/Effect)! They *are* the 'generalizing attitude' of the human mind, which gave rise to human language and consciousness in the first place.

Activity 4.4.3

Read the text 'Neanderthal Man' in your Resource Book. Compare the speed of biological evolution of the brain and that of language change and explain why the Primitive Man no longer exists.

¹⁴ i.e., Christiansen & Chater view language as a "complex and interdependent 'organism,' which evolves under selectional pressures from human learning and processing mechanisms" (Christiansen & Chater : 2007)

Since human way of thinking is not a ‘natural’ form of behaviour (we *learn* to ‘think *human*’ as we learn our first language), then WHY do we all learn to connect / *associate* ideas based on Resemblance, Contiguity, and Cause/Effect, when our languages are all so different?

The answer, of course, is the ‘*common denominator*’ between the words / structures of all human languages – **generalisation**. In Part II of this course, we will explore the physical forms of Language, and try to figure out how our ‘generalizing attitude’ [Re: notes on synthesis and analysis in generalisation in Unit 2.6.1] generates the symbolic forms of all languages.

In the next three Units (5-7), we will examine larger chunks of meaning, and the various ways in which languages create them through connecting word-meanings together into grammatical patterns, such as the **Sentence**, the **Clause** and the **Phrase** (thinking back to our ‘mosaic’ analogy, we will try to see **how** those tiles create that pelican ☺).

Summary

1. Thought and speech have different roots.
2. In the speech development of the child, there is a pre-intellectual stage, and in his thought development, a pre-linguistic stage.
3. Up to a certain point in time, the two follow different lines, independently of each other.
4. By the end of the sensorimotor stage of cognitive development, these lines meet: thought becomes verbal, and speech – rational.
5. Main differences between these two perspectives on the origins of language:

The Divine Creation View:

- ⇒ Language is a culturally-modulated *species characteristic* (like hair).
- ⇒ Humans, like other species, were created as such; therefore, the question of language origins amounts to discovering how humans spoke at creation (before the Tower of Babel – this was a common view in the ancient world and in mediaeval Europe).

The Evolutionary View:

- ⇒ Language and the human brain have co-evolved for about 2 million years: the Human Brain has *shaped* Language – that is why it is so receptive to language acquisition.
- ⇒ Language arose out of social need: its development was stimulated by the need to make promises (to satisfy the naturally selected male instinct to promote their own genes) in view of the new behaviour patterns (the hunters’ long absences from the community).
- ⇒ The co-evolution of language and the brain was accelerated by a change in diet and the addition of hunting to the gathering mode of subsistence, which resulted in behavioural, physiological and anatomical changes.
- ⇒ Natural languages share many features of their basic structure, because they all reflect the human *symbolic* way of thinking.

6. **Generalisation, which involves Synthesis and Analysis, is the *heart of Language/Thought***; every word/ sentence of Language is a generalisation; → Language as a whole is also Generalisation (act of Thought)
7. **Meaning /Concept/ Idea/ Generalisation** (i.e., the creation / association of ideas by Resemblance, Contiguity, and Cause/Effect) is only possible through the human ability to *analyse* and *synthesise* our experiences

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