For centuries ideas about language origin have frothed up like soap bubbles, then burst into nothing. Over two thousand years ago, the Egyptian King Psammetichus reportedly gave instructions for two newborn children to be brought up in total isolation. To his disappointment, their earliest world was “bekos”, the Phrygian word for “bread”. The king reluctantly concluded that the Phrygians predated the Egyptians. But according to John Webb, a 17th century writer, Chinese was possibly the original language of humankind. Happily it was spoken by Noah and his family in the Ark he assumed, and so survived the flood. In the mid-19th century, Abbot O’Donnelly, a Frenchman, claimed a new and prodigious discovery of the original universal language, supposedly found on an Egyptian obelisk. His translation, he boasted, was “sufficient to open the eyes of a mole”. But no one listened, he lamented, with his words and results being blown away by the wind. As one weird idea after another bubbled up, language origin was regarded as a playground for cranks and the topic was banned in 1866 by the Linguistic Society of Paris, the most prominent linguistic association of the time. And disapproval continued. “The greater part of what is said and written upon it is mere windy talk,” said the linguist William Dwight Whitney in 1893.

The origin of the language web has become a serious field of study only in the last 10 years or so, and will be the topic of today’s lecture. A fresh look at the role of language has led to new ideas about how it all started. Traditionally, humans are regarded as reliable fact-swappers, and conveying information is often claimed to be the primary purpose of language. This view was put forward by philosophers, such as the 17th century thinker John Locke, who stated that language is “the great conduit whereby men convey their discoveries, reasonings and knowledge from one to another”. But this idea is misleading. Language is good at transferring some types of data, especially negative reports, such as, “No buses will run on Sunday”, or “The milk hasn’t arrived” - provided that the speaker is telling the truth.

But it’s bad at other types, especially spatial information, where instructions such as “Take the third turning on the right, then the fourth on the left” would be much clearer on a map. And as for tying knots, Hilaire Belloc once said, “If you can describe clearly without a diagram the proper way of making this or that knot, then you’re a master of the English tongue”. Perhaps he should have said, “You’ll have considerable difficulty describing a knot however many languages you’ve mastered.” Language is also bad at conveying pain or emotion. This patchwork of efficiency and inefficiency is fairly typical of behaviour that is biologically programmed: it has evolved to deal with some things, but not others, just as rabbits nibble grass but don’t crack nuts.
Early human language was probably not a fact-swapping device. Its original role can be uncovered by looking at behaviour which we share with our ape relatives, according to anthropologists.

Humans, alongside other primates, are often called social animals: they have firm family ties and also interact strongly at the group level. This social background has promoted two types of behaviour: they like grooming one another, and they can make guesses about the mental state of others - intelligent primates can put themselves into one another’s shoes, as it were. These abilities tie in with two things which language is especially good at: interacting with others, and influencing them.

Humans use language to keep in touch with one another, to weave a web of friendship. Speech is a close-quarters type of interaction, and social talking may be a substitute for the friendly grooming found among monkeys, according to one theory. The “Hello, how are you? Isn’t it a nice day?” kind of greeting has even been called “grooming talking”.

Friendly gossip can be thought of as a kind of mutual grooming, in which the participants take it in turns to stroke one another.

MUSIC: GOSSIP CALYPSO

Traditionally gossip is associated with women, but it is not just women yakking. Consider a conversation in P.G. Wodehouse’s novel Carry On Jeeves. “What ho!” I said. “What ho!” said Motty. “What ho, what ho!” I continued. “What ho, what ho, what ho!” Motty replied. Even if they’ve got nothing to say humans take it in turns to mouth empty greetings at one another. Such conversational turn taking starts early in life. Listen to a mother and baby. Mother says, “And how’s my little darling today?” Then typically waits until the baby coos or burps or otherwise takes its turn before she continues:

MOTHER INTERACTING WITH BABY
“Look who I found. (baby makes sound) Yes, where does he belong? (baby chatters)

Such turn taking may have predated language. Mothers and babies have possibly cooed and gurgled at one another for millennia. Turn taking is often a kind of ritual. You can frequently guess what the participants are planning to say. If you apologise, “Oh I’m terribly sorry, I spilt some coffee on your carpet,” you expect the problem to be minimised. “Oh please don’t worry. It really doesn’t matter.” Similar patterns are found all over the world. And solidarity speak - that is vocalising to strengthen social ties - extends to chance before sports matches. Take the New Zealand rugby team Haka. (FX: Rugby team) This can be matched by chimpanzee pant-hoots, which, according to some recent research, are male solidarity calls. (FX: chimpanzee pant-hoots)

Human grooming talking is satirised by the science fiction writer Douglas Adams. Ford, a being from another planet, was puzzled by the peculiar human habit of continually stating, restating the very obvious as in “It’s a nice day” or “You’re very tall”, or “So this is it, we’re going to die.” His first theory was that if humans didn’t keep exercising their lips, their mouths probably seized up. After a few months of
observation, he’d come up with a second theory: if human beings don’t keep exercising their lips, their brains start working.

But humans don’t just verbally scratch each other’s backs. They use language to influence and persuade one another. An effective persuader must be able to imagine events from another person’s point of view. In fashionable jargon, he or she must have a “theory of mind”. Without it, persuasion is a hit-and-miss affair.

Animals who possess a theory of mind are good at social manipulation: they can intentionally deceive one another, a skill found among most primate species, though some are better at it than others. Monkeys are fairly poor at it. Baboons and great apes are good at it. Among the great apes, chimpanzees, our close relatives, are extremely skilled deceivers. An infant chimp may scream as if it’s being attacked in order to persuade its mother to comfort and feed it. An older chimp may lead others away from hidden food, then double back and scoff the lot by itself. This ability to deceive has been labelled Machiavellian intelligence. Our ape relatives use deception almost always for selfish reasons. Humans differ, in that deception can be used for good purposes, as well as bad: for reasons of tact, as well as for dishonesty. Humans are not only good deceivers, but also good persuaders and good sympathisers: they can calculate how to influence others, and how to please them. An ability to deceive is therefore an advantage - as long as it is used wisely.

All this deceit may at first sight seem a long way from language. But a crucial connection exists. The ultimate goal of learning to speak may be lying, or more accurately a spin-off from lying - the ability to talk convincingly about things which are absent or even non-existent. This property of language, known as displacement, is one of its great strengths. Talking about the past and future is important in any human society and imaginary events loom large in songs and literature. Once upon a time, there were three little pigs … and so on.

A web of deceit, an ability to fib is therefore crucial to language. This may seem bizarre since most of us disapprove of lying. “Matilda told such dreadful lies, it made one gasp and stretch one’s eyes,” said Hilaire Belloc in his cautionary tales for children, in which lying Matilda is burnt to death. Yet even in England where we pride ourselves on being straightforward social lying is approved of. Politicians, sales persons, parents, maybe all of us are economical with the truth when it suits us, and little white lies are an essential component of politeness. Mrs Skewton, a character in Charles Dickens’ novel Dombey and Son couldn’t stop yawning as she was shown around Warwick Castle, but she assured her guide that for her yawning was a demonstration of delight. A truly tactful lady.

Friendship and deceit are therefore essential prerequisites of language. But they alone were not enough to trigger it. Human language developed only when these pre-language webs were combined with a unique human feature - a complex sound structure.

All primates can hear and discriminate a wide range of sounds, but the phonetic skills of non-human primates are minimal for two reasons. First, they can’t easily suppress their own spontaneous calls. Withholding them is not impossible, as shown by Papoose, a female gorilla who wanted to mate with Titus, a youngish animal, rather
than the older dominant male in the group. She and Titus managed to retain secrecy by suppressing normal copulatory calls. In another case, Figan, a chimp who was given some bananas, eventually learned not to make excited calls bringing other chimps to the scene. Second, vocal fine tuning is impossible for other apes. The sounds they make are variable and unclear, partly because they can’t close off the passage to the nose. (FX: ape sounds) But in humans the tongue forms roughly a right angle with the windpipe, like an upside down letter “l” and a larynx (or voice box) is lower than in chimps. This enables humans to shut off the nasal cavity when they speak and to make a range of precise and recognisable non-nasal sounds. Human vocal precision is quite odd, by primate standards, and the human sound system has more in common with birdsong than the grunts of our ape cousins.

Birds are capable of precise vocal control. So much so that Lord Monboddo, an English eccentric, claimed in 1773 that we humans learned how to sing and speak from birds, especially cuckoos, ravens and parrots - just as he assumed we discovered how to spin and weave from spiders. But birds and humans are not copying one another. Independently, they have each evolved a sound system which shares a number of features. Humans have a number of instinctive cries: a baby’s scream of pain or yell of hunger is recognisable worldwide. (FX: baby crying) These cries are not real language, which exists alongside as a separate system. Similarly many birds have a few preset calls such as a call to congregate or a danger cry. (FX: birds) They also have more complex songs whose outline is fixed, but whose finer details often have to be learned.

Language proper is itself double-layered. Single noises are only occasionally meaningful: mostly, the various speech sounds convey coherent messages only when combined into an overlapping chain, like different colours of ice-cream melting into one another. In birdsong also, individual notes are often of little value, the sequence is what matters. (FX: birdsong) In both humans and birds, control of this specialised sound-system is exercised by one half of the brain, usually the left half, and the system is learnt relatively early in life. And just as many human languages have dialects, so do some bird species. In California the white-crowned sparrow has songs so different from area to area that Californians can supposedly tell where in the state they are by listening to these sparrows. (FX: sparrows) Like humans also, some birds, such as hornbills, take it in turns to vocalise. (FX: hornbills)

So we humans are a zoological curiosity. Just as the hoatzin, a weird type of bird, has a stomach somewhat like that of a cow, and a Newfoundland, a weird type of dog, has webbed feet a bit like a duck’s - so humans, a weird type of ape, have evolved a communication system more like that of birds than that of their ape cousins. Yet the parallels between humans and birds must not be over-emphasised because there are also wide differences. Mostly only male birds sing and female birds burst into song only if injected with the male hormone testosterone; and differences between the songs of different birds are far greater than the differences between human languages, which are remarkably similar in their overall structure. In addition human language is an intimate style of communication compared with birdsong, which un-amplified carries over greater distances, sometimes several kilometres. The record is probably held by the kakapo, a New Zealand flightless parrot whose sonic booms attract mates from several kilometres away. (FX: kakapo)
Humans can sometimes adapt the tones and rhythm of their language to produce long distance communication, as in the talking drums of Africa. (FX: drums) Such adaptations reveal one further unique feature of human language: it can be transferred to other media - drum beats, sign language or writing. But the parallels between human language and birdsong are striking. Complex sound systems tend to acquire similar characteristics. This indicates that both human language and birdsong are the end product of a long period of evolution with basic mechanisms innately built into their owners.

Arguments continue about how humans acquired their birdlike skill. Apart from the sounds, the ground-plan, the basic web structure, is similar in all human languages, indicating that they developed from a common inherited root. Modern humans and human language probably came from one area of the globe, from Africa. Archaeological traces and clues from DNA and blood groups support this conclusion. One scenario is known as the East Side story. Several hundred thousand years ago, we and our chimp cousins spread across Africa. Then a major earthquake, or “tectonic event”, as it is sometimes called, created the Great Rift Valley, splitting Africa into lush forest to the west and relatively dry savannah to the east. The chimps were left in the tree-filled west. Future humans were stranded in the arid east. Their dry savannah became even drier, and they were forced to adapt, or die. One adaptation was meat-eating, as humans learnt to supplement their vegetarian diet by scavenging. This promoted brain growth, which may have aided the development of language.

Nature is over generous in providing pathways along which animals may evolve; multiple routes are available for exploitation. Evolution is as much a case of suppressing some options as it is of selecting others. Language may have been a lucky choice out of a range of alternatives. Comments by the poet Robert Frost on his life could well apply to the human race as a whole: “Two roads diverged in a wood and I - I took the one less travelled by, and that has made all the difference.” Once a particular path has been chosen, this constrains future choices - just as leaves which fall off trees cannot leap back on again. Language was a lucky choice which paid off and has been paying off ever since.

But just how it all got started is still partly a puzzle. Early words could have arrived via several routes. In the last century, three ideas predominated. According to a so-called “pooh-pooh” theory, language began as cries of emotion: “ooh! aah! ai! ha!”.

But a “dingdong” proposal, that language started by imitating natural sounds, was supported by Charles Darwin. He speculated that an “unusually wise ape-like animal” may have imitated the growl of a beast of prey, and so informed his fellows of the danger. A “yo-he-ho” hypothesis, that heaving and hauling gave rise to words, is the most plausible of these early ideas: the vocal cords were in origin membranes deep in the throat which closed off the lungs, making the rib-cage rigid when some effort is required. The grunt as the air is expelled can be heard in some old sea shanties.

MUSICAL CLIP: SEA SHANTY

Yet the problem is not so much how sounds arose as how particular sounds came to be used as symbols, with firm meanings. A vervet, an agile African monkey with a black face and a long tail, may represent an intermediate phase. Vervets have warning calls which distinguish different types of danger: at a chutter they stand on their hind legs.
legs and look around for a snake, at a rraup they dive into the undergrowth as if hiding from an eagle, and at a chirp they climb a tree and look around for a lion or leopard. Squirrel monkeys in South America also distinguish between different perils. But these monkey danger calls are not pure naming. They are a cry of fear, a warning to others, and only partially a symbol. Naming for the sake of naming is a major hurdle for animals. The naming insight, the realisation that things have names is hard for them to grasp, though it comes naturally to humans.

A stack of single words was probably in common use long before any “grammar” emerged. Rules, in the sense of recurring patterns, could have started in more than one way. Individual words might have been placed together, much as many children start off with single words such as “hi”, “bye-bye”, “mummy”, “daddy”, which they later combine in a predictable way as in “bye-bye daddy”, “hi mummy” and so on.

CLIP OF MOTHER AND CHILD
Child: Car do’y (dolly) Car do’y.
Mother: Car dolly.
Child: Car do’y (dolly)
Mother: Car with dolly in it.

Of course those who set language going in the first place were unlikely to be babies. But neatening up was a more likely way for rules to emerge. Numerous words were probably placed together randomly and repetitively. “Meat I want.” “Meat meat want I,” for example - perhaps not unlike the sign sequences of the chimp Nim Chimpsky who was taught a language with signs for words. Nim tended to repeat items. Like most chimps, he was fairly greedy, and his food anxiety gave rise to many repeated signs as in “Eat me eat,” “Nut Nim nut,” “Drink eat, drink eat.”. His longest recorded sound-sequence was: “Give orange me. Give eat orange me. Eat orange. Give me eat orange. Give me eat orange. Give me you.” The message was clear: Nim wanted an orange.

But for more complex messages, those which go beyond obvious requests, more structure is needed. In language change today optional patterns become habits. Then the habits become obligatory. Our best guess is that something similar happened at the origin of language. Even Nim Chimpsky showed some signs of this process. When requesting food, he almost always put the food word first as in “Grape eat,” “Banana Nim eat,” “Apple me eat.” Human beings also have inbuilt preferences, some of which may have predated language. When humans talk about two items, they prefer to locate the small than the large. They say “The cat sat on the mat,” “the bird perched on the tree” rather than “The mat lay under the cat,” “The tree stood under the bird.” It is part of the human mindset to envisage the world in this way. As another preference, all over the world humans are more likely to say the equivalent of “Harriet was hit by a cabbage” rather than “A cabbage hit Harriet.” Animate beings tend to get placed before inanimate things. Again humans prefer to put verbs near the objects affected. A sequence - “Henry ate an apple” or “Henry an apple ate” - is statistically more likely in the languages of the world than “Ate Henry an apple.” Even though this last order is not impossible; it is found in Welsh, for example (we towelled Henry aval (ph)). Many more preferences can be found and they sometimes clash, which is why all languages are not more similar.
But in general preferences become tendencies, tendencies become habits, and habits become rules. This provides some clues as to why languages do not fly apart in crazy ways. The human mindset pushes our thoughts in certain directions. Language possibly language neatened itself up with rules only gradually: “If it all gets too much of a muddle, try a bit of organisation” might have been a subconscious maxim - perhaps somewhat like the man who supposedly lost an open umbrella on his untidy desk: this made him decide to tidy it up. Language was probably at first messy and only partially structured, but acquired more and firmer rules as it became more complex. This all led to a more precise type of web, a web of rules, and in the next lecture I will talk about how children born today acquire this rule web whose overall structure is preordained.

So after at least 50,000 years of evolution, the language web is the same the world over in its broad outline. Some 19th century travellers were surprised by this: “The grammar is precise and somewhat complicated . . .” said a Mr Bell in 1899 about the language of the Miskitu Indians, who live on the north-east coast of South America. He continued: “It seems strange to find among an uncultivated and uncivilised race rules of grammar as precise and well known as are used by the most cultivated nations of Europe . . . How is this to be explained?”