REITH LECTURES 1996: The Language Web

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Lecture 4: A Web of Words

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Dean Farrar, a respected 19th century intellectual, once eavesdropped on some apple pickers. “I once listened for a long time to the conversation of three peasants who were gathering apples among the boughs of an orchard. And as far as I could conjecture, the whole number of words they used did not exceed 100,” he guessed. They managed with this low number, he suggested, because “the same coarse expletives recurred with a horrible frequency in the place of every single part of speech.” Dean Farrar, like numerous others, grossly underestimated the number of words known by native speakers of English, or any language.

Words are the topic of today’s lecture. The Language Web is the title of all these lectures and the human word store, with its multitude of links, is perhaps the most truly web-like of all aspects of language - even though up till recently both the size and the importance of the internal dictionary, or mental lexicon, has been underestimated.

A false but popular view is that the size of a person’s lexicon is about two-thirds of Shakespeare’s vocabulary whose plays contain around 30,000 different words. But far more words exist now than in Shakespeare’s time and many speakers probably know twice as many as he did. An educated native speaker of English knows at least 50,000 words, according to our best guestimates. The word “know” refers to “potentially active vocabulary”, that is, words which could be used spontaneously, even though words such as igloo, gladioli, or trombone, might occur only occasionally. Humans mop up words like sponges. By the age of 5, most English-speaking children can actively use around 500 words; and more are added fast, often quite long and complex ones.

Child: There’s all different kinds. There’s triceratops’, a pachycephalosaurus, a crocodile, an ankylosaurus. That’s a barosaurus, a diplodocus, a brachiosaurus, a triceratops.

The total number of words rises to 20,000 around the age of 13, and to 50,000 or more by the age of about 20. These figures have been arrived at by tests on the proportion of words known in various dictionaries. A typical university student can use the equivalent of two-thirds of the Concise Oxford Dictionary, which claims to contain around 75,000 entries. Though most people also know dozens of quite specialised words, which don’t always find their way into dictionaries - as with chemists who know the chemical elements.
MUSICAL CLIP: THE ELEMENTS SONG

Averaging it out, between the ages of 5 and 20 a native English speaker acquires more than 10 words a day. That’s more than 300 a month and well over 3,000 a year, though the words are unlikely to be acquired at a smooth rate. This far surpasses the achievements of those few chimpanzees who have been taught so-called “words” via signs or pictures. Their total rarely reaches 500 in spite of intensive coaching. As one researcher concluded: “The only way to begin to account for the child’s wizardry as a word-learner, given the sheer weight of how much there is to be learnt, is to grant that the child brings a great deal to the ‘original word game’: word-learning ability is clearly inbuilt in humans.

At one time learning words was thought to be like beachcombing: strolling along the shoreline, picking up different shaped pebbles and shells, which were then stacked up in a mental museum. This is still the view taken by some language learners, as in Hanif Kureishi’s novel The Buddha of Suburbia, which described an immigrant keen to get accepted: “Dad always carried a tiny blue dictionary with him, making sure to learn a new word every day. At the weekends I’d test him on the meaning of ‘analeptic’, ‘frutescent’, ‘polycephalus’ and ‘orgulous’. He’d say, “You never know when you might need a heavyweight word to impress an Englishman.”

But words are not separate pebbles. They are woven into a complex web whose multiple links enable humans to remember and find so many words so quickly. At a first glance words are like coins with two sides: meaning on the one side, and sounds on the other. These two sides can get detached. Sometimes the meaning gets linked to the wrong sounds. Prince Edward, in a television interview about his old school said: “It’s difficult to use capital punishment in any institution. A beating is very valuable. It shows people you’ve come to the end of your tether.” The Prince did not plan to behead his school chums. He had made a speech error, a slip of the tongue, and said capital punishment when he’d meant corporal punishment. At other times people know the meaning of the word they want but can’t think of the sounds, which they’re sure are “on the tip of their tongue”. They’re just out of reach, like a submerged dream that floats under the surface of memory.

Word meaning is the side of the coin people often think about first, though humans can’t usually explain the meanings of the tens of thousands of words they use. Defining words like a dictionary is a technical skill which only lexicographers acquire, as Blackadder discovered when he tried to rewrite the dictionary.

CLIP: BLACKADDER
Blackadder: Right. Next “A” - “A-B”.
Baldrick: “A-B”. Well it’s a buzzing thing, ain’t it? “A buzzing thing.”
Blackadder: Baldrick, what have you done?
Baldrick: I’ve done “C” and “D”.
Blackadder: Right. Let’s have it then.
Baldrick: Right. Big blue wobbly thing that mermaids live in. Sea.
Blackadder: Yes, tiny misunderstanding. Still my hopes weren’t high. What about “D”?
Baldrick: I’m quite pleased with “dog.”
Blackadder: Yes and your definition of “dog” is?
Baldrick: Not a cat.
A view that words have fixed, precise meanings is an old one which goes back at least to Aristotle. It’s still found today. According to the novelist Evelyn Waugh, words have basic inalienable meanings, departure from which is either conscious metaphor or inexcusable vulgarity. Traditionally, a word is viewed as a cake, with a set recipe, whose ingredients can be ticked off on a list - sometimes called a checklist view of meaning. But the checklist idea works only occasionally, mainly for technical terms such as square, which is “a closed flat figure, with four sides of equal length, and all interior angles equal”. It works also for some consciously invented meanings, as in a bureaucratic definition of a cow. “A cow is a female bovine animal which has borne a calf, or has, in the opinion of the minister, been brought into a herd to replace one which has borne a calf.”

But in most cases, woolly boundaries and fuzzy edges are the norm. Word meanings are like stretchy pullovers whose outline contour is visible, but whose detailed shape varies with use. In the words of R.G. Collingwood, “the proper meaning of a word is never something upon which the word sits like a gull on a stone. It is something over which the word hovers, like a gull over a ship’s stern”. This has been known for quite a long time. Nearly 40 years ago, the philosopher Wittgenstein pointed out the “family resemblance” phenomenon, using the word game as an example. Like members of a family, every game has similarities with some other game: ring-a-roses and tennis involve physical activity, tennis and chess require a winner, chess and patience are normally played indoors, and so on - but no one factor links them all. More than 20 years ago, the sociolinguist William Labov drew attention to the “fuzzy edges” problem, by asking people to name various containers. They not only disagreed with one another over bowls, cups and vases; but were inconsistent from day to day. Certain shapes were clear instances of particular containers, but others varied: something might be a bowl when full of potatoes, but a vase when it held flowers.

A possible solution to all this fuzziness was proposed in the mid-1970s by a psychologist, Eleanor Rosch: humans do not rank all members of a category equally, she pointed out. They judge some to be very good examples, and others less so. So robins and blackbirds are very good birds, which she labelled prototypes. Canaries and doves are less good birds; toucans and ducks are bad birds; and a penguin is a very bad bird indeed. People analyse the characteristics of the best bird, the prototype, and allow anything which sufficiently resembles it to belong to the category “bird”. This explains how humans deal with oddities, why ostriches, emus and one-legged, albino blackbirds can be accepted as birds.

But children take time to discover adult prototypes. One small girl latched onto a crescent moon as a prototypical moon. She then labelled anything which was crescent shaped and shiny as “moon” including curved cow horns, a slice of lemon, and a shiny green leaf. For another child, a “ra-ra” began as something dead and bloody which the cat brought in, maybe from the noise made by the animal as it chewed its catch. She then applied the word to her own blood-smeared cuts and bruises and, later, to red cherries in ice-cream. Adult style ranking may take a long time to emerge. Eleven year olds were inconsistent when asked to select the best examples of a category. Older children tended to give top ranking to items which were important to them. They gave high priority to parrots among birds because they found them eye-catching, and to potatoes among vegetables because they like potato chips.
In different cultures some unexpected differences sometimes surface. English speakers expect vehicles to have wheels and regard cars and buses as the best examples. French speakers are less fussy about the wheels, and some even accept skis and lifts as examples of “un véhicule”, a vehicle. Several Italian teachers of English judged that a goose was not a bird on the grounds that it was a fowl; and that a walnut was a fruit, a dried fruit. And some Swedish teachers of English denied that berries could be fruits. They had all been influenced by their own language even though they were unaware of this.

But the human word-web involves much more than a set of prototypes. It’s multidimensional. Each word is an intersection point at which numerous strands meet. Some of these linking threads can be identified by “slips of the tongue”, when people accidentally substitute one word for another. “Do you have a refrigerator in your car?” someone asked me. They meant air-conditioner, showing that names for different cooling mechanisms were linked in their mind. Strong ties exist between words within the same domain of meaning, so “brother” may get substituted for “sister”, “aunt” for “niece”, “tomorrow” for “yesterday”, and so on. Sigmund Freud, incidentally, suggested that word substitutions had some deeper significance as when the Austrian President declared a meeting of parliament closed when he meant opened. Freud comments: ‘No doubt the President secretly wished he was in a position to close the sitting, but this seems over imaginative. Perhaps the words ‘close’ and ‘open’ are just tightly linked in the mind and some distraction caused the President to pronounce the wrong one.”

Patients with brain damage sometimes provide further evidence of word links. A stroke victim may look at a lemon and name it apple or orange. The word-name has not necessarily disappeared from memory. Instead, closely connected words may have become confused, just as normal speakers cannot always remember which is which among different breeds of dog or makes of car.

How these word-clusters form in people’s minds has long been a puzzle. But the answer may be quite simple. Words which can replace one another in a sentence structure often occur together, as orange and lemon: “Oranges and lemons say the bells of St Clement’s.” “Roses are red, violets are blue.” “Girls and boys come out to play.” “Parsley, sage, rosemary and thyme.” Even antonyms, opposites, are probably learned because they tend to occur near one another: “Don’t mix clean clothes with dirty ones”, “You’ll have to take the rough with the smooth”, “She doesn’t know if she loves him or hates him”, and so on.

And people often use a couple of words from the same domain to avoid using a more general, technical term which covers them both. They talk about “brothers and sisters”, not siblings; “rain and snow”, rather than precipitation. “Please put the knives and forks on the table” is more usual than cutlery, which is a fairly formal term. “You’ll find the cutlery on the fourth floor, Madam.” In some cases, a superordinate term doesn’t even exist. What are baths and basins? Are they bathroom fixtures? Or sanitary fitments? What are coughs and sneezes? Are these noises indicating respiratory distress? And what about tin-openers and corkscrews, which are sometimes confused in slips of the tongue? No single English term covers “kitchen gadgets for opening things”.

Noticing which words occur together is a natural human talent. It’s the key to sounding like a native speaker. People who grow up speaking British English don’t talk about rank butter or rancid eggs or rotten weeds. They reliably refer to rancid butter, rotten eggs and rank weeds, even though rancid, rank and rotten tend to have overlapping definitions in dictionaries.

Similarly with chase and pursue. English speakers use them with different objects, even though they might not consciously realise it. We chase runaway horses, burglars, balls and other physical things, as in “More friggin’ football. Bunch o’ tarts going round a field chasing a ball!” That example, by the way, was from the British National Corpus, a databank of spoken as well as written English. But we pursue abstract ideas, aims, targets and policies as in, “We need to take the initiative in pursuing a strategy for employment and growth”. So footballs are not normally pursued, nor are targets chased - even though the meaning follow after is given for both chase and pursue in some dictionaries.

And humans learn how to handle new words by paying attention to the other words around, as with “wimp”. This word is widely used, but it’s crept into dictionaries only recently, so must have been learned some other way. In a survey of “wimp” words in newspapers over 80 per cent were accompanied by clues to its meaning, that of a feeble male. “He hates wimps and needs strong people”. You were a hunk if you drove a Mustang; a wimp if you drove anything else. He was a go-getter, a doer, not some depressed wimp and so on.

Humans than are super sensitive to words which occur together. Sensitivity to surrounding words is now thought to be the key to learning grammatical rules. Verbs especially are the maypole around which a sentence revolves and they determine its structure. For example, you have to put something somewhere as in “Herbert put the jellyfish in the bath”. You can’t just say “Herbert put the jellyfish”. The sentence structure must have been picked up by listening to the words around.

But words don’t just have meaning links. They also have a sound structure. Information about how humans retrieve word sounds comes from malapropisms - similar sounding words which get confused, as in “he told a funny antidote” for “he told a funny anecdote”. Mrs Malaprop, the character in Sheridan’s play The Rivals, said things such as, “As angry as an allegory on the Banks of the Nile” when she meant “alligator”. With real adults a bathtub effect is found: the word is like a person submerged in a bath, their head and feet out of the water with the head further out than the feet. People get the beginnings of words right, after that the ends, and the middle not very well, as in “transcendental medication” for transcendental meditation. It’s a policy I regard as indispensable,” said a government spokesman. He actually meant “indefensible”. And “You keep newborn chicks warm in an incinerator,” proclaimed a lecturer. She had meant to say “incubator”.

People also remember the word-rhythm and stressed vowel most of the time, though not as well as the beginnings and ends. Numerous similar words are distinguished fast, mostly by their different beginnings, as with ability and debility or virility and sterility.
Children, on the other hand, are better than adults at word rhythm, and not so good at word beginnings, as in: “Daddy, please will you buy me an ice-cream toilet” for “ice-cream cornet”, and “the lion and the leprechaun” for “the lion and the unicorn”, “gandigoose” for “bandicoot” and “marmadillo” for “armadillo”. They eventually shift over to an adult-like system, partly because they learn to read and partly because they discover that word beginnings provide a faster way to find words.

Of course humans don’t just remember old words. They also coin new ones. “A dead cat bounce” is a temporary and deceptive share recovery before a final crash. “Greenism” is commitment to preserving the environment. “Middlescence” comes between adolescence and senescence. A “magaholic” is an insatiable magazine reader and a “golden parachute” is a large sum of redundancy money which allows the person dismissed from employment to float gently down to the problem of being unemployed. Most new words simply disappear, like raindrops falling and soaking into the ground. Only a few get caught in the bucket of public attention and make their way into dictionaries. As an 18th century writer James Bramston expressed it: “Like South Sea stock expressions rise and fall. King Edward’s words are now no words at all.” Coining words begins early. Young children easily make up new words, but many of them are odd by adult standards. “I’m souping,” said a 3-year old as it ate soup. Even 11 and 12 year olds make a lot of odd guesses. For example, a group was asked: “Suppose there was an insect called a wug, what would be a good word for a very small wug?’’ Woggle, wuggable, and wugtugbug were among the suggestions made. But adult-type responses, usually wuglet or wugling, became much commoner among teenagers, though several suggested miniwug or microwug. This ties in with an explosion of mini and micro-prefixes in the language as a whole. The mini micro rocket took off in the 1960s with words such as minicar, minibar, miniskirt and microwave becoming commonplace. From then on “mini” cropped up everywhere. “I must have been out of my mini mind,” commented one writer.

Confidence in handling word formation may be one reason behind a leap in vocabulary which occurs around the age of 13. It’s a skill non-native speakers find hard to master. Sometimes word they think should exist simply don’t. “A principle of idealisation is applied manywhere,” said a Japanese scientist in the preface to his book.

But every time we speak, we have to pick from this huge number of words, old and new. At one time searching for a word was assumed to be like hunting for a book in a library. A person went to the shelf in the mental lexicon where it was stored, as it were, then pulled it out. If this selection took place in too much of a hurry, a neighbour might be accidentally picked such as left instead of right or geranium instead of hydrangea. But this neat library model is unlikely. It’s more as if humans pull out a number of words from the bookshelves all at once and then replace those they don’t want. The mind subconsciously over-prepares itself, by activating more words than can be used. The most direct evidence comes from blends, when two or more words are combined into one, as in “she chuttl ed”, from chuckled and chortled, “It’s cold in Greeceland” - a blend of Greenland and Iceland, but said in a Greek restaurant. “He was given a standing applause,” said a politician, blending a standing ovation with loud applause. Another time the government were accused of “shrugging
their feet” over an important issue. The speaker presumably meant either shrugging their shoulders or dragging their feet.

Both meaning and sound are interwoven in the selection process. A musician commented about the conductor Toscanini: “He had very little symphony with modern music,” meaning sympathy. The words sound similar, and Toscanini often conducted symphonies. Both were probably aroused in the mind, then the wrong one selected. Such errors indicate that it is normal to arouse more words than are needed, and to suppress those which are unwanted. Sometimes the wrong word is suppressed.

An initial idea progressively fans out, it seems, and spreads to associated words. Eventually numerous different words may be ready to go, all of them resembling the word required in some way or other. Words that fit both the sound and the meaning get progressively more aroused and others fade away. Finally a winner will pop up, like toast out of a toaster; occasionally the wrong one if there are two or more similar candidates. All of this happens in less time than an eye blink.

So many words are aroused because so many words are linked. The human word-web is not two-dimensional or even three-dimensional; it’s multi-dimensional. In a Michael Frayn play, Alphabetical Order, a character tries to find where a secretary filed an important piece of information. Most probably she’ll have it filed under whoever said it, which we don’t know, or the occasions he said it upon, which we don’t know either, but conceivably she may also have it filed under corporal punishment or punishment corporal or labour party or parties labour. The human mind would probably have filed it in all these places.

But manipulating the vast, intertwined web of words inevitably leads to short cuts. Narrowing down the options can involve unseen snares. These will be discussed in the next lecture. Yet how lucky most of us are that we can so quickly locate the words we need out of the 50,000 or so we have stored. Our skill in doing this perhaps only becomes apparent when compared to someone who has lost this ability, as sometimes happens to stroke victims. This frustrating condition is described in Nabakov’s Pale Fire: She still could speak. She paused and groped and found what seemed at first a serviceable sound, but from adjacent cells imposters took the place of words she needed and her look spelt imploration as she sought in vain to reason with the monsters in her brain.

Words are often felt to hold magical power. A survivor from the Titanic reportedly said, “My maiden name was Trout. How could I possibly drown?” But the most magical aspect of language is probably the huge number of words we know, and the speed with which we find the ones we want.