

The Stuff of Thought

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Language is an expression of thought. The fact that it often serves as a vehicle of the same, does not mean that it is more basic, i.e. meaning that thought itself is just a function of language working itself out so to speak. Our intuitions about the relationship between thought and language are contradictory. On one hand we carry on a continuous interior monologue with ourselves, a monologue that it is tempting to confuse with thought itself, rather than being a running commentary on it. As the American diplomat George Kennan has remarked (and no doubt countless people before him) 'I write in order to find out what I think'. Meaning that thoughts only become clear to us when put in words, which makes it tempting to conclude that language does indeed generate thought. We are often told that it is only in trying to articulate our thoughts, preferably in writing, that they become clear to us; and significantly that this very action shapes them¹. On the other hand when we really grapple with a difficult mathematical problem, not just mindlessly playing around with formulas or systematically trying out different combinations of set ideas, we are acutely aware of a process of thinking that is wordless and as a consequence painful.

Language is many things, but above all it is a vehicle of communication. It is not indispensable for communication per se, but any attempt to convey any complexity or level of abstractness of a thought, presupposes language. One may profitably compare this with the representation of numbers. Our innate sense of numbers supposedly do not differ from that of rats and crows, i.e. not really going beyond three; yet with some systematic way of representing numbers we can codify and hence convey numbers far beyond that. What comes into play here is the propensity of the mind to reiterate levels, we can think of three groups of three making up an entity of which there could be three as well. In fact this procedure lends itself to represent numbers beyond anything we can intuitively grasp, and one may also argue that language in similar ways can seductively represent thoughts beyond any intuitive grasp, nay beyond any meaning whatsoever².

Language is a mystery, and in effect that more than anything else may be a manifestation of Jung's idea of the collective unconsciousness. It is a communally owned thing, which as far as the individual is concerned is objective and can only be flaunted at his or her peril, but surely does not make sense outside the human realm. Now language in plural is on the surface a bewildering variety (a few thousands and diminishing) of mutually incomprehensible tongues, but in the singular an almost Platonic entity revealing striking

¹ The early 19th century poet - Esaiiah Tegner is noted for his saying 'Det dunkelt sagda r det dunkelt tnkta'. (What is obscure in speech is obscure in thought)

² The reader is referred to a wonderful quip by William James in his *magnus opus*, to the effect that any grammatically correct writing invites the assumption of meaningfulness, and that there are certain people who are willing to accept this invitation even when the writings of Hegel are concerned.

similarities. In fact any human child, regardless of ethnic origin can learn to speak the prevalent tongue to perfection, provided an opportunity is given at the right time. This is in a sense the strongest, or at least the most striking, scientifically based, argument against racism I am aware of. It also reflect a evolutionary quirk, it could have been otherwise had it not been for the recent bottleneck, forcing human populations, contrary to appearances, to be unusually genetically alike.

One way of resolving the mystery, or at least to rephrase it, is to assume that language is innate, that its structure is hardwired in the brain, in the same way as the ability to walk. Children do indeed learn to talk as naturally as they learn to walk³. The rationale is that children learn to use language too fast and too accurately for it to simply be a matter of emulation. The basic structure must be there as an unconscious guide. Remember that children are never taught their native tongues, as little as they are taught to walk. In fact, just as with the latter, one would suspect that any attempted instruction would amount to an intrusion and obstruct far more than help. Another indication is that the deeper structures of languages appear so similar, in fact are identical. This should be taken with a grain of salt, as the deeper structures have never, as far as I am aware, been explicitly expressed, just as there has never been identified the neural networks that would identify the innate language facility in the brain. Still the human propensity of thinking in certain categories, to use verbs (denoting actions and changes), nouns (substance stuff, especially metaphorically extended into the realm of abstract entities) and various qualifiers (adjectives and adverbs) has been documented across all cultures. To that can be added a hoist of other verbal categories, referring to time and space, which tend to be similarly treated in all tongues. But of course the surface manifestations can vary widely, not only when it comes to the basically arbitrary forms of words. Take the example of color. The notion of color must be innate to some extent, how would we otherwise be able to single out color words? Yet languages differ dramatically as to the extent they name the shades of the rainbow, remarkably though red is always a color that is picked out. Germanic and Romance languages only recognize blue, but the Russians have two words for it. This does not mean of course that Russians are better at colors, it is just a lingo-historical quirk.

How do we acquire language? How do we know what words means? On the most basic level this is solved by the non-verbal act of pointing. This seems simple enough, on the other hand how do we know what we are pointing at? What exactly are we pointing at? What makes up an entity? And what entities do we think of as unique individuals, and what entities do we think of as more abstract, represented by unique individuals but not identified with them? And if so on what level of abstractness⁴? Clearly for this to work there has to be some shared pre-verbal understanding. More abstract and obtuse words cannot be pointed at, their meaning and designation inferred through a shared understanding. In fact this is how human communication functions in general. We usually understand most of what the speaker is going to say before he says it. Thus

³ This incidentally also provides a way of making scientific sense of Jung's wooly idea of a collective unconsciousness.

⁴ There is a story, probably apocryphal, of the first Australians encountering a kangaroo and asking the aborigines what they called those. They were told 'kangaroos' which turned out to be the local word for animal in general.

verbal communication is embedded in a large non-verbal tacit understanding without which communication would be impossible. In particular we do not infer meaning by parsing words and explicating the structure of a sentence, as we do with a foreign language we need to decipher. One may even argue that the notion of words itself is a categorizing structure we impose on language. In spoken language words are not delineated by pauses, as the author has pointed out in a previous book⁵, but they follow each other in a continuous stream. Would an illiterate speaker even realize that spoken language is made up of words? Traditionally in Old Greek and Roman manuscripts there were no spaces between words, which make them hard to read, unless you read them out aloud!

One striking thing about language is the rigidity of its syntax. Words cannot be put in any order, and words are actually affected by the contexts, in particular being inflected and what not. Much of this is codified in grammar, but far from all of it. A Native speaker is often able to tell that a text maybe 'funny', not 'quite right' without being able to point a finger at it. A foreign language you learn by rules, after a while you realize that you can dispense with the rules altogether and trust your 'ear'. The 'ear' is a far more efficient and subtle organ than the rules of your acquired grammar, and totally unconscious to boot, which is an added bonus. The obvious and immediate mystery is why there should be such consensus among a community of speakers. Are there any deeper reasons for the idiosyncrasies in the way a language evolves, or is it just a matter of conventions? Philosophers of language think that there are deeper explanations, and the author provides some very reasonable examples, illustrating his man thesis, that language offers a window on our thought processes. We can think schematically about verbal expressions as structures with slots, into which different words of the same formal type can be interchangeably inserted. A typical such scheme would be the archetypical 'X does something to Y' where X and Y are nouns, does refers to some action, described by a transitive verb, and something can either be a qualifier or embedded in the verb. Is it possible to let X,Y be any noun and the verb be anything transitive? The interesting phenomenon that occurs is that a sentence may be formally correct without being meaningful; while in other circumstances, it is not formally acceptable, because of the intrinsic meaning of the words included. As examples of the latter compare the sentence pair 'Joe hosed water into the garage'. The garage was hosed with water by Joe' with the following 'Joe poured water into the glass' and 'The glass was poured with water by Joe'. The second component of the pair does not seem quite right, at least not to a native speaker. Why is that, and why should a native speaker trust his or her ear? The explanation by the author is that the verb 'hose' has a subtly different meaning from 'pour'. In the same way we can 'sprinkle water on the lawn' and have the 'lawn sprinkled' as a result, but although we can 'pour water on the lawn' we cannot say that 'the lawn was poured'. The verb 'pour' relates to the way the water is being transmitted, and with no relevance at all to the end result, while 'sprinkle' and 'hose' may also relate to the way water is transmitted, but there is also a purpose to it that has relevance to the target. Now, are such explanations clever explanations *post factum* or do they really shed some light on the way we think? The methodological problem is, as we have already noted, that the means of discrimination seem so subjective (but the author assures us that the same verdict has been duplicated by others, and

⁵ 'The Language Instinct'?

there may after all be a notable stability among so called Native speakers. Of course if a strange sentence is repeated over and over again you may get used to it, in the same way a repeated lie is eventually accepted as truth, according to Goebbels. There are sayings of that nature in most languages, but of course sayings are like indivisible wholes, we do not take them apart, they are in a sense 'words' by themselves, and grammar does no longer apply to them. More interestingly a sentence like 'the lawn was poured' may eventually meet with universal acceptance by being used sufficiently often, but in this case maybe the meaning of 'pour' will have changed into a verb more in the nature of 'sprinkle' and 'hose' (or other 'fill-words'). The major mystery remains though, why should this only apply to certain words? Why is there no prohibition of using color words on inappropriate nouns, such as abstract nouns? Can we speak in a meaningful way about a 'green speed' or a 'red confusion'? Or can something, pace Chomsky, sleep furiously? Even if we find the combination non-sensical, we are not upset by the music, we accept the grammar unhesitatingly. Grammar is essentially formal⁶ and that leads us to the next important feature of language, namely the phenomenon of metaphors. Without this flexibility of language, metaphors would indeed be grammatical impossibilities, and as such more or less not only prohibited but almost impossible to 'think'. Even if language is a consequence of thought, thought can use language to direct and extend itself. Language is much more than interchanging information, it is also a means of solving problems, and without metaphors, this would not be possible. Metaphors should thus never be taken literally, then they reduce to silliness. Examples of such are 'The brain is a computer' and 'Mathematics is a language'⁷ Metaphors are abstract, and what is likened is consequently not spelled out. As the author notes we are concerned not only with comparing relationships but also relationships between relationships. Metaphors are used not as arguments but as evocations, intended to stimulate the imagination, not to kill it. Thus its use in poetry and literature is legion, but also, perhaps more surprisingly in science, where it can point to arguments. Understanding something is not just a matter of logic, it is also a matter of the right perspective, of deciding what is foreground and what is background. Languages also develop through metaphors, which is illustrated by the fossilized remains of old metaphors, which are now dead and serve as ordinary words. The expansion into the realm of the abstract would not be possible without the liberties metaphors demand⁸. A formal language cannot refer to

⁶ I am reminded by a question posed by my classmates when we were studying German. Certain German prepositions come with the dative, when they concern no directed movement, i.e. no movement at all, or movement within a bounded area, such as a room or a garden. But what about earth moving in space, they asked, claiming that space is after all unbounded. My intuitive reaction was that their objection was irrelevant, grammar does not look into the actual meaning. Space is as limited as a room or a garden.

⁷ This does not mean that they are not taken literally. I have a colleague who has been pushing the idea that mathematics is literally a language and should be taught as such, with translations into the Native tongue, and a grammar that needs to be explicated!

⁸ To take a trivial example. Father and mother are initially proper names as far as the child is concerned. I was about two when I realized that even my parents had fathers and mothers. This means generalizing the proper name 'father' to a relation even a function. Each human being has a father and

itself, technically it is distinct from its meta-language⁹. Also it has no metaphors. Formal languages are like machines, they are dead. This has of course its advantages, such as precision. While human languages being vague and their own meta-languages are alive as far as their speakers are.¹⁰

Words are loaded. They are more than words. That applies in particular to taboo words. Words that themselves are taboos, although what they refer to need not be taboos. It seems to be a common experience that the words of your own Native language are more loaded than that of an acquired one. I can testify to this. One of the (few?) ways I can appreciate that English is not my Native tongue (apart from accent, which I think does not really count in any significant way) is the ease with which I can use obscene words¹¹. I also find myself swearing in English, especially using the word so called f-word. Swearing and cursing is not properly a verbal activity. As I have been told, and the author confirms this (maybe because I learnt it from one of his books previously?), people affected with

mother. This can be used inductively, and it is particularly transparent in Swedish where we have two names for grandfathers, farfar and morfar (fathers father and mothers father) similarly for grandmothers. This binary system allows you to pinpoint an ancestor exactly such as mormorsmorfarsfarmor. Of course one person can have many designations, as the number of ancestors increases by powers of two, while the human population decreases as we go back in time. Similarly we distinguish between uncles and aunts, nephews and nieces, depending on what side of the family there are. However there is no generic name for grandfathers, grandmothers and grandparents in general, unlike the almost identical language of Norway. This systematic way of naming ancestors appeals in particular to children of a mathematical bent. As a final twist to this theory of mine that words for family relations start as proper names, I relay the story of my son, asking another child, whether he had a 'Svea', the latter being the first name of my mothers unmarried sister who played a big role in the lives of my children.

⁹ The distinction can be fine indeed as Gdels proof illustrates (or proves?).

¹⁰ In the delightful story by Borges, called the 'Library of Babel' the author gives a precise definition of a book as a sequence of characters up to a certain length. He notes that the number of possible books although huge is finite. This is a sobering thought, especially to a book-worm such as Borges. Incidentally this gives the lie to the oft repeated assertion that human language gives rise to an infinite number of combinations. This is of course literally true, if we observe that if 'X' is a sentence, so is 'X is a sentence'. On the other hand a human being has a limited life-span (say two hundred years) and cannot pronounce more than twenty-five words (or better syllables) per second, the number of syllables being finite (a few millions at the very most). But this is not the point of this footnote. The point is whether the question if we can speak meaningfully of all possible books? Do books that have not yet been written exist? If Borges library would consist exclusively of books written in formal languages, the answer would be yes. It would exist in the same way a vector space of a given finite dimension over a give finite field exists in mathematics. Or more directly, each book *qua* string of letters can easily be codified as numbers (in fact their rankings in a lexiographical order) and all numbers surely exist, even if no humans have literally thought of them. As formal entities we can reason about them, even prove theorems. But as books written in human languages, they are more than their codifications. They mean something, and those meanings have not yet in the great majority of cases occurred in any human mind (and more depressingly or rather more fortunately perhaps, they never will).

¹¹ The other is that when I try to speak German I find myself translating English expressions, when translating Swedish ones would be more to the point and often result in correct ones.

afasia do not lose their ability to swear. I guess this is something that can actually be confirmed on a neurological level, meaning that different parts of the brain are involved in swearing as opposed to speaking. The use of the f-word has completely taken over the Swedish expression I must have used, but which I now have no recollection of. Why do I do it? Why does that word give relief when you encounter frustration? It seems to me that the very vulgarity of the expression is essential, and that I know of no equally vulgar word in Swedish. This is one way of using the word, and as noted it is not really used as a word, it is the equivalence of a yell. Then swear words are routinely used to pepper speech with. As a child I was warned of that practice as a sign of vulgarity and a limited vocabulary. This struck me as a bit confusing. I could well understand the profanity issue, and that you should not abuse the words of God¹². But the added admonishment seemed to me to be rather lame in comparison, and hence somewhat redundant. It is clear that the way swearwords such as 'fucking' appear in speech that they are not part of verbal speech. Simple tests seem to bear it out. 'This fucking computer screws me.' Does not mean that the computer is fucking, so 'fucking' does not act as a verb (or qualify as an adjective). On the other hand one may possibly conclude that I am being screwed by the computer, if not necessarily in a literal sense. Thus to sprinkle the words into the speech should be likened to gestures that normally accompany speech acts to give them more emphasis. The placement of the word is of less concern than the concomitant expression of furious frustration. Should obscene words be forbidden? Of course not, we live in a Society that values free speech. But it is important that the words are used sparingly lest their offensiveness is worn down. Nowadays nothing religious is really sacred. You can no longer invoke the wrath of the gods by insulting them (for obvious reasons). But sometimes you need to do exactly that. What do you do? Nowadays almost the only option is the ethnic slur. To use the n-word or being openly anti-semitic seems to be the only ways you nowadays can verbally cause a scandal. This might not be exactly true. The back-lash of the so called sexual revolution of the 60's might make any off-color remark at the wrong time and place a pretext for persecution on charges of sexual harassment¹³.

Language is social. And when we speak we seldom speak directly. Human intercourse is not just about the exchange of information, it also entails appeals, requests and orders; as well as involving persuasions, bargaining, lying and diplomacy. A crucial component in all of this is the amount of knowledge shared by parties, whether it is private or official¹⁴. This concerns the notion of face, which ultimately through personal dignity boils down to

¹² In Swedish swearwords refer to God and his mischievous rival - Satan, never to human sexuality. This might be changing.

¹³ Lucky I was that this had not yet descended on American Campuses at the end of the 70's when I was an instructor at Columbia. In a math final I had referred to a modern (phallic?) sculpture in the form of a paraboloid for which the students were asked to compute its center of gravity. I was taken to task by a senior female professor, who claimed that this had upset many female students. But the matter did not go beyond that censure. Today it might have had more unpleasant and tangible ramifications.

¹⁴ Or whether I know that you know that I know etc. Chains which in practice never go beyond three or four levels, just as humans have only an innate sense for very low numbers, but which in principle is thought to be indefinitely extended, i.e. onto an infinite level, through the finite trick of the self-referential formula, explicitly provided by the author.

the acknowledgment of social position. In relatively egalitarian Western Societies this is complicated enough, in societies which are more stratified (such as the traditional Indian) the complexities must be compounded several times over. Much of the charade of indirect communication, in which both parties pretend to pretend, is designed to leave exits and loop-holes, and make possible the fiction of the off-the-record exchange that really did not take place. Diplomacy is the art of subterfuge where clear speaking is avoided in order to allow a multitude of interpretations and give a wide latitude for future excuses. By treating language as a game one acknowledges how serious it is. The outspoken word can never be taken back, it is almost like an act, the consequences of which can no longer be curtailed. This makes the issue of free speech a legally thorny one, because it is not always so easy to make a demarcation between speech and an act¹⁵.

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¹⁵ The classical case being of crying 'fire' in a crowded theatre, or for an officer to say the same next to (preferably not in front of) an execution squad.