

# The Smoke and Mirrors of Linguistics: Challenging the hidden metaphors

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In 1957, Noam Chomsky introduced a new concept to linguistics. Not the idea that a single engine lays behind all the different human languages – von Humboldt had discussed this in 1836. Chomsky's idea was that we needed to understand only the mechanism of that single engine to study languages.

Chomsky's Generative Linguistics programme directed linguistic study away from individual languages, and toward a universal system of language which generates all languages. Instead of descriptive accounts of grammar, phonology, lexis and semantics, linguistics became an essentialist study of grammar and syntax; and instead of studying language users, generative linguists concentrated on inward analysis of their own systems of language. Linguistics descended into a fog of grammatical forms, investigated largely by self-regard: smoke and mirrors.

This paper looks at three conventionalised metaphors in academic linguistics, representing unproven assumptions which we seldom question: **LANGUAGING IS BEING HUMAN**; **LANGUAGING IS BEING CLEVER**; and **LANGUAGING IS A GOOD THING**. These metaphors have emerged directly from the Generativist enterprise, and they are often assumed in the work of linguists who otherwise abhor the Generativist tradition. They are key metaphors because they have allowed us to pretend that all languages are representations of a still-unspecified acme we call language, that this unspecified substance is what sets us apart from other animals, and that the substance is a significant feature in all our species specialisms. The paper discusses why we now need to abandon these metaphors, and the assumptions behind them, and reconfigure our subject area in terms of the wider topics of communication, socialisation, and human evolution.

Linguistics, as the study of languages, is an ancient topic. It can be traced back at least to the Greek philosophers, and probably even earlier to the Vedic scholars of Sanskrit. However, before the European Renaissance it was not assumed that this was an exclusively human activity: languaging seemed to be what every animal did when they were communicating. All we needed to do to understand the inner worlds, or minds, of other animals was to interpret the language they were signalling in. Mythology, fable and children's tales are replete with nonhuman animals communicating with humans, or with each other, in ways that can only be described as linguistic.

Indeed, in the mythologies of early civilisations (and in modern pre-literate hunter-gatherer groups) the difference between humans and other animals is a matter of degree rather than an unbridgeable distance. Animals advise (e.g. Athena's Owl; Odin's ravens, Huginn and Muninn; and the Celtic salmon of Llyn Llyw); they deceive

(e.g. the Serpent in the Garden of Eden; Red Riding Hood's Big Bad Wolf; and Anansi the trickster spider); and they are key figures in our cultures (e.g. the Pelasgian snake-god Ophion; the Egyptian cat-goddess Bastet; and Hanuman, the Hindu monkey god). There was a belief in a constant exchange between human and animal form, with the assumption that the individual's physical form was a surface effect rather than an intrinsic quality.

Then came René Descartes (1649 [1998]), and his "humans are special" viewpoint. According to Descartes, only humans have souls, so only humans have minds, so only humans are capable of making choices; other animals are just automata, meat machines for our use. Suddenly, human languages were cut free from any relationship with the rest of natural signalling; and, with no comparators to constrain our definitions, we began to think of language as a discrete thing with its own qualities, and not as a means to a communicative end.

This reification of language culminated in the rise of Noam Chomsky and Generativism. Generativism is a set of theories which emerged from the Cartesian enterprise (Chomsky, 2009) via three assumptions: first, that all languages are products of a single, innate and exclusively human capacity to produce languages; second, that languages represent something special and complex about human cognition; and third, that language is the primary mechanism in the rise to dominance of *Homo sapiens*. While the concept of all languages being based on a single set of rules was not strictly original when Chomsky published the first agenda for generativist linguistics in 1957, the idea that this base set of rules was the only explanation that languaging needed *was* new. Wilhelm von Humboldt had proposed in 1836 that all languages shared a common source, form and rule base, an argument that accorded with the Tower of Babel story in the Bible; but he did not envisage any cognitive function exclusive to humans beyond the capacity to communicate in a complex way. The driving engine of language was the desire to communicate, not an innate structure of thought which existed even without communication.

## What counts as language?

The generativist assumptions have one big advantage over other views of language, in that they turn the study of language into a measurable and natural phenomenon which can be studied mathematically (Chomsky, 2013, p35). However, this advantage is bought at a high price: the list of features which differentiate language from other communication systems has become increasingly restricted over the nearly 60 years of generativist linguistics, and is now composed of a single recursive cognitive mechanism known as MERGE. Yet MERGE (which is often characterised by von Humboldt's definition as "the infinite use of finite means") is not how most

people would define their everyday use of language. For the majority, languaging is a background communicative process they use for specific, delimited messaging; it is infinite neither in terms of use or need. And there is good reason to accept this mundane definition of language: non-linguists produce the vast majority of language in the world, and they do it both competently and consciously. It seems likely, therefore, that they have some useful personal definitional knowledge about it. If Chomsky's (1965, pp18-27) view is true, that the route to linguistics is through the intuitions of the "native speaker" (whatever one of those might be), then the unfussy introspection of the vast majority of language users is as valid as the convoluted introspection of the linguistics professor.

Indeed, many linguists nowadays question the wisdom of such a narrow definition of language as MERGE provides (e.g. Crystal, 2005, pp232-233); although they often still attempt to retain the structural precision brought by seeing language as a separately definable, natural thing (e.g. *ibid*, chs1-3). This, however, leads to all kinds of definitional issues (Crystal calls them "edges"); because language, if it is actually a separate thing, is deeply embedded in the human communicative system. This system encompasses limbic signals, autonomic signals, automatic signals, conventional signals, conventionalised signals and socio-cultural signals, which between them use a range of communicative modes – vocal, other aural, gestural, other visual, tactile, and possibly even pheromonal. The human communicative system is, like other communicative systems in nature, multimodal and highly redundant: we signal the same thing simultaneously in different ways. Is it really sensible to try to tease out one part of that system and elevate its role above the other parts?

This last question is something that both integrationist linguists (e.g. Toolan, 1996, ch3) and distributionist linguists (e.g. Cowley, 2011) would agree needs to be asked. It is the counter to the generativist view that language is a measurable, natural, and above all, discrete entity. Instead, it views language as a fuzzily-defined function which may, or may not, represent a differentiable cognitive system; but which, either way, cannot be properly studied except as part of a whole-body, integrated communication system.

## Being Human?

The first assumption of generative linguistics, that all languages are products of a single, innate and exclusively human capacity to produce languages, generates the first hidden metaphor of linguistics, that **LANGUAGING IS BEING HUMAN**. Humans have language because language is encoded in our genes; if other animals had the same genetic coding then they would have language; but no other animal has language; so the language genes are specific to humans; and only humans can use

language. The conclusion of this long and somewhat circular chain of reasoning is the unvoiced assumption that **LANGUAGE IS BEING HUMAN**.

This hidden assumption has become a truism of linguistics – and, indeed, of the wider scientific world. The British Science Museum website says:

“Human beings are the great communicators of the animal world. They are the only living creatures that use language – words or symbols that represent objects, actions, qualities, feelings and ideas. Other animals communicate in much less complex ways.”<sup>1</sup>

Yet when we test the claims in this short extract, we find that they are all questionable. The great communicators? True, in the modern world we are surrounded by instances of language; but is that the natural human state, or is it a product of our modern culture? Do ants, for instance, which are constantly surrounded by the pheromonal communication of their nest, seek relief from the hubbub in meditation or solitude? If not, the award for being the great communicator should belong to one of the many eusocial species.

So are we the only living creatures that use language, when it is defined as “words or symbols that represent objects, actions, qualities, feelings and ideas”? Clearly not, as nonhumans who have been introduced to human language keep on demonstrating. Whether we define the communicative capacities of those nonhumans as language or not, we have to accept that Kanzi the bonobo understands the symbol-object-meaning relationship that composes a nounlike word, and the symbol-action-meaning relationship that composes a verblike word (Segerdahl *et al*, 2005); Alex the grey parrot understood the symbol-attribute-meaning that composes an adjectivelike word (Pepperberg, 1999); and Rico the collie dog understood the symbol-object-identifier nature of naming – even when faced with novel symbols and novel objects which have to be paired (Kaminski *et al*, 2004). The capacities of animals as guests in the human communicative universe is impressively languagelike in many respects.

The final claim, that the communication of other animals is less complex than human communication, could well be true; but, equally, it could well be false. We do not currently have good evidence of what, or even how, most animals communicate. It was only recently that elephant signalling was found to include a large component of subsonic calls transmitted through the earth, not the atmosphere (Günther *et al*, 2004). Even more recently, Clay *et al* (2015) have shown that bonobos have a multifunctional peep call, which seems to be a general attention-getter. It is used in a range of circumstances, and has a functional

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<sup>1</sup> <http://www.sciencemuseum.org.uk/WhoAmI/FindOutMore/Yourbrain/Whatisspecialabouthumanlanguage.aspx>

flexibility that was formerly thought possible only in human communication. To make claims about the complexity of nonhuman communication would seem to be premature at this stage, but it is a predictable consequence of the unspoken assumption that **LANGUAGE IS BEING HUMAN**.

So what about the last bastion of difference espoused by generativism, the recursive nature of **MERGE**? Is this truly the Rubicon between language and nonhuman communication? Pinker and Jackendoff (2005) are among many who see problems with this approach. While they are definitely of the view that language is peculiarly human, they see it as the product of a series of evolutionary developments which are driven by communicative need, not cognitive serendipity. They take the view that there are many contributing factors to human communicative specialisation; and, after showing the genetic improbability of **MERGE** as an evolutionary outcome, they say:

“The alternative in which language is an adaptation for the communication of knowledge and intentions ... is consistent with behavioural and genetic evidence that language shows multiple signs of partial specialization for this task rather than grafting one component (recursion) onto a completely unchanged primate base.” (p231).

For Pinker and Jackendoff, language cannot be the product of a single, discrete evolutionary event; and **MERGE** has no plausible evolutionary story to stand on. The current consensus in language evolution studies is that Pinker and Jackendoff are likely to be right.

## Being Clever?

The second assumption of generative linguistics, that languages represent something special and complex about human cognition, generates the second hidden metaphor of linguistics, that **LANGUAGE IS BEING CLEVER**. This is detectable in the Science Museum’s final statement, that nonhuman communication is “much less complex”: there seems to be the implication (the use of “less complex” rather than “simpler”) that the complexity of language requires a more advanced form of cognition than other communication systems. Language is complex because we have the cognitive capacity to allow it to be so; which means that the cleverness we need to produce language is intimately tied to our general human cleverness, as many of our species-specific accomplishments clearly attest.

So what do we base our understanding of human cleverness on? Usually we point at our nervous system, and particularly our brain; but it is not the neurophysiological attributes of *Homo sapiens* that seem to be behind the “smarts”. The human brain does not have the greatest cortical complexity in the animal kingdom (the cetaceans are better); it is not the largest (elephants are

better); it does not even have the greatest ratio against body size (Neanderthals narrowly beat *Homo sapiens* in that contest, and modern *Homo sapiens* has a brain about 5% smaller than our ancestors of only 30,000 years ago with no diminution of body size). Only the complex formulation of the Encephalisation Quotient (EQ), developed to explain rather than measure the relative cognitive complexity of humans (Jerison, 1973), shows us as consistently better than all other animals – although the suspiciously large difference between us and our nearest competitor (66%) emphasises that the EQ is an explanation after the facts, not of them. Suzana Herculano-Houzel (2012) has recently shown that, on many of the measures we use to differentiate human brains, there is no real difference from other animals; and in some cases there is no real justification to consider them as valid measures in the first place. Humans may use language because of the type of brain we have, but that does not mean that our type of brain has to be cognitively exceptional.

Yet there is something about humans that does seem to be clever. We have become the dominant species on the planet, established complex cultures, conquered space, invented computers ... The list is long. All of these achievements can be defined as clever because they indicate a species-specific capacity for complex organisation. Indeed, we humans do seem to be exceptional in our organisational cleverness: our willingness to cooperate, our trust, and our capacity to rely on others. Does this mean, however, that language drove the organisational cleverness, or that language was a necessary component of it? Could language have been an outcome – or even a side-effect – of the communicative methods we used to support our organisational cleverness?

We can say, in terms of intraspecies organisation, that humans are certainly clever; but we cannot say with any certainty that language, out of all of our cooperative strategies, is a key product of that cleverness; and we certainly cannot designate language as the cause, or even an index, of that cleverness.

## A Good Thing?

The third assumption of generative linguistics, that language is the primary mechanism in the rise to dominance of *Homo sapiens*, generates the third hidden metaphor of linguistics, that **LANGUAGE IS A GOOD THING**. Like the cleverness metaphor, this relies heavily on the assumption that being human involves some kind of distancing from the rest of nature: there are things (usually complicated things) that only humans can do. Typing the phrase “only humans can” into Google produces a fascinating list of some of those things, such as: “have morality”; “think about thinking”; “have insight”; “dance”; “make ice-cream soda”; “make a tree into art”; and “understand the creation of the new” (although I personally have difficulty fathoming what this last one involves).

However, this list of what only humans can do is more controversial than it sounds. In a series of experiments, Carel van Schaik's team in Zurich has demonstrated that chimpanzees show behaviours we would class as moral (e.g. von Rohr *et al*, 2015); Beran *et al* (2013) have shown that language-trained chimpanzees do seem to understand what they know; and, in a review of several experiments in the area, Sara Shettleworth (2012) shows that chimpanzees do seem to have their "eureka!" moments. As for dancing, one can only assume the writer has never seen a bird of paradise. This leaves making ice cream sodas, making trees into art, and understanding the creation of the new, none of which this particular human can do. Any list of exclusively human characteristics is likely to produce similar results: either capacities which turn out not to be exclusively human, or capacities which are exclusive to only a subset of humanity.

The third hidden metaphor is perhaps the most pernicious of the three: if *LANGUAGE IS A GOOD THING* in and of itself, then having a greater capacity to language would seem to make you better at being human. Chatty innovators and elaborators of language should be more popular than the taciturn essentialist, and therefore more successful at getting their genes into the future. Yet it is simplicity and adherence to convention which are the prized language skills; and even they take second place to clarity of meaning. As Plato expressed it, "Wise men speak because they have something to say; fools because they have to say something".

Being linguistically conventional is particularly important. Individuals who adhere to the majority intuitions about language are seen as more central to a social group, while less conformist individuals are marginalised. This is an anthropological phenomenon we see at work throughout our modern societies, and it may well indicate that one of the evolutionary fitness functions of language is to differentiate "us" from "them" – which is not really a Good Thing if language is there to help us cooperate with each other. Socially, we use language differences as a Hogwarts-like "sorting hat": you speak this way, so your choices in our group are limited to these, and your role is this. However, as individuals like Baron Sugar of Clapton show, a human can have as much – or as little – grammar, lexis and phonology as they damn well please and still be successful.

## Smoke and mirrors?

The three hidden metaphors of language affect the study of linguistics in several ways, most notably in how we define language itself. They selectively point our attention at particular landmarks in the landscape of human communication, allowing us to ignore other equally significant features. For instance, conventionally signed communication is as effective as conventionally spoken communication, and

they should be seen as working at the same level. To recognise this, we label them both as language; but is this a valid synthesis? If you are interested in the destination, then travel by air and sea are comparable; but if you are studying the journey then they are quite different. Charles Hockett, when preparing his list of the design features of language (1960), identified the vocal/auditory channel as the first feature because it was “perhaps the most obvious”, having “the advantage – at least for primates – that it leaves much of the body free for other activities” (p6). So what changed the validity of this definition (and, in later years, Hockett’s mind)? It was not a diminution of the vocal/auditory channel advantage, but our definition of language: from communication while doing to communication as doing.

Another strange feature of language is that it lumps spoken and written language together, despite the fact that the engagement of the receiver is very different in the two communicative modes. Yet we still exclude pictures from language because ... well, why? Both pictures and writing are composed of segmented, differentiated and hierarchical components, they are both communicative and they both involve a deferred receiver. In fact, the communicative similarities between a picture and a piece of writing would seem to be greater than between a piece of writing and a speech act. So why do we partition the field of human communication in the way we do?

If we separate out a part of our communication system and declare it to be specifically human, reliant on complexity, and a Good Thing, then we do not need to address what it actually is. We can define our object fluidly, without reference to the object itself. If something new appears that is clearly part of what we want to call language, but which has features we have excluded from our definition, we can expand our definition. Equally, if we insist that real language is exclusive to humans, as Hauser, Chomsky and Fitch have done (2002), then we can reduce our definition until it includes a single feature, the recursive power of MERGE. This has led to 50 years of sometimes quite acrimonious debate over what constitutes language – a debate that Lewis Carroll actually settled long ago: “When I use a word,” Humpty Dumpty said, in rather a scornful tone, “it means just what I choose it to mean – neither more nor less.”(ch6).

### Another way?

In 1957, Chomsky attempted to reduce the scope of linguistics to just grammar, when he stated that “linguists must be concerned with the problem of determining the fundamental underlying properties of successful grammars” (p11). Willard Quine (1960, p11) took the very different view, that language is nothing but “a fabric of sentences variously associated to one another and to nonverbal stimuli by the mechanism of conditioned response”. Quine’s view may be unpopularly

behaviourist, but it nonetheless presents a stark contrast to Chomsky's approach. Yet both of these extremes rely on the unspoken assumption that there is a real thing called language; and they both, in different ways, incorporate the three hidden metaphors. What happens if we take away the thingness of language, and talk about communicative mechanisms instead?

The first thing that disappears is the language-shaped hole in our head. Instead, we have an instinct to communicate which relies on any appropriate cognitive resources to get the job done. Over our lifetimes, we learn new mechanisms which enhance our communicative experience. In this model, language is an arbitrary set of those mechanisms, a contextually useful definition that can change as context changes – but that means we have to define its meaning for each usage. Talking about language as a thing requires careful definition of what that thing is in each case. Effectively, the word “language” is demoted from a concrete noun to an adjectival descriptor.

Another thing that disappears are the concepts of first and second languages, and the contrast between them. Every brain has its own idiolect, which can be composed of mechanisms for communicating with a single group or for communicating with several groups at different levels of proficiency. An individual does not “speak a language”, they communicate in their own way, which can be comprehended more or less effectively by their audience. Second-language learning becomes just another way to increment the individual's communicative mechanisms, not an esoteric process that requires a completely new way of thinking and learning.

Where does this leave the three metaphors, **LANGUAGING IS BEING HUMAN**; **LANGUAGING IS BEING CLEVER**; and **LANGUAGING IS A GOOD THING**? First we should not be surprised if other animals can use communicative mechanisms that we have coopted into language; and we should not be smug if they cannot. Human communication is for humans, by definition, but it uses mechanisms that are for communication; and some of those mechanisms will be available to some nonhumans – no big deal. Second, human communication is important in the job of being human, so we should not be surprised if things that humans think are clever turn up in our communication systems; but that does not mean that the communication systems are clever, it means that they are adaptive – they support the job of being human. So, once again, no big deal. Finally, if human communication is important in the job of being human, then it is definitely a Good Thing; but this does not mean that it is a better thing than other communication systems, which are important in the jobs of being other animals. As a natural

phenomenon, human communication is just a thing, neither good nor bad – once again, no big deal.

What happens to the smoke and mirrors? Once we realise that grammar is an outcome of languagelike communication, not a cause, we can concentrate on how grammar assists communication, instead of trying to link it to general cognition. It may well be that grammar turns out to be a significant component in the way humans think; but we should start with its role in communication (where brains do need to negotiate to similar mechanisms) rather than in cognition (where they don't). When we can see languagelike grammar as just a part of human communication, then the smoke will begin to clear.

And the mirrors of intuitive self-study will be changed to plain glass simply by changing the focus of attention. If human communication is about communication then it is not the sender's mind that the sender has to model, it is the receiver's mind. Studying the area of human communication we call linguistics cannot be effectively achieved just by looking at how signals are produced, we also have to look at how they are received. There is still reflection, in all senses of the word, but it is reflection of – and off – an external surface: the receiver.

Currently our understanding of language is a variant of the *Blind Men and the Elephant* story: we all cling to our own definitions, and act as if our understanding of one aspect explains the whole elephant; but, even if we add all our definitions together, we still will not describe the animal. Language is a list of symptoms of a subset of human communication which we have, somewhat arbitrarily, reified as a Thing; but “thingness” is not a property of the list of symptoms, or even of the aspects that generated the symptoms, it is a property of the object that has those aspects. We need to address the whole of the elephant in the room.

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## POSTSCRIPT: Humpty Chomsky

*(with apologies and thanks to Lewis Carroll)*

Humpty Chomsky took the book, and looked at it carefully. 'That seems to be done right –' he began.

'You're holding it upside down!' Alice interrupted.

'To be sure I was!' Humpty Chomsky said gaily, as she turned it round for him. 'I thought it looked a little queer. As I was saying, that SEEMS to be done right – though I haven't time to look it over thoroughly just now—and that shows that there are three hundred and sixty-four days when you might get un-birthday presents –'

'Certainly,' said Alice.

'And only ONE for birthday presents, you know. There's linguistics for you!'

'I don't know what you mean by "linguistics,"' Alice said.

Humpty Chomsky smiled contemptuously. 'Of course you don't – till I tell you. I meant "there's a nice knock-down argument for you!"'

'But "linguistics" doesn't mean "a nice knock-down argument,"' Alice objected.

'When I use a word,' Humpty Chomsky said in rather a scornful tone, 'it means just what I choose it to mean – neither more nor less.'

'The question is,' said Alice, 'whether you CAN make words mean so many different things.'

'The question is,' said Humpty Chomsky, 'which is to be master – that's all.'

Alice was too much puzzled to say anything, so after a minute Humpty Chomsky began again. 'They've a temper, some of them – particularly verbs, they're the proudest – adjectives you can do anything with, but not verbs – however, I can manage the whole lot of them! MERGE! That's what I say!'

'Would you tell me, please,' said Alice 'what that means?'

'Now you talk like a reasonable child,' said Humpty Chomsky, looking very much pleased. 'I meant by "MERGE" that we've had enough of that subject, and it would be just as well if you'd mention what you mean to do next, as I suppose you don't mean to stop here all the rest of your life.'

'That's a great deal to make one word mean,' Alice said in a thoughtful tone.

'When I make a word do a lot of work like that,' said Humpty Chomsky, 'I always pay it extra.'

'Oh!' said Alice. She was too much puzzled to make any other remark.

'Ah, you should see 'em come round me of a Saturday night,' Humpty Chomsky went on, wagging his head gravely from side to side: 'for to get their wages, you know.'

(Alice didn't venture to ask what he paid them with; and so you see I can't tell YOU.)