

CONSTRUCTING IDENTITY – THE SOURCE OF LANGUAGE?

Martin Edwardes

University of East London

Contents

THE FORMALIST PROBLEM.....	1
WHAT IS LANGUAGE FOR?	2
ASKING A NEW QUESTION	4
SELF-MODELLING – DOING THE IMPOSSIBLE?	5
BIBLIOGRAPHY	7

The Formalist problem

The origin of language is a hot topic currently, and experts from many fields are working at solving this fundamental mystery of being human.

Surprisingly, though, not many are from my academic discipline of linguistics. For linguists there are several problems with this subject area. First, there is the famous 1865 edict from the *Academie Francaise* against speculative pre-historical articles on language origins. Second, there is the claim by the father of modern linguistics, Ferdinand de Saussure, that language cannot be studied simultaneously as a structure and as a process of change through time. Third, there is the view of Noam Chomsky, that language is the result of a macromutation; there is no point trying to find precedents for language in the behaviours of close genetic relatives because there are none.

So, linguists have largely left the field of language origins to others. This has produced a strange anomaly. Chomskyan, or formalist, linguistics is the most visible version of linguistic theory, so it has been adopted by many non-linguists as the basis for their ideas on language origins – minus the macromutation, of course. Derek Bickerton has proposed a two-step process, whereby a “non-syntactic” form of protolanguage preceded full language. He points to pidgins and creoles as examples of how this

occurred; but he does not fully address timescales, what the protolanguage would have looked like, or how it eventually became full language. Steven Pinker suggests a series of small incremental steps, but his approach suffers from the same problems as Bickerton. Michael Corballis has suggested that Bickerton's protolanguage could have been gestural rather than vocal, but this only adds further complication: why did it move from vocal to gestural and back again? If one form works better than the other, why didn't it stay in that form?

In recent years, major cracks have begun to appear in the formalist theoretical edifice. Formalist linguistics has always taken the view that language cannot be discovered by statistical analysis, linguistics can only be done by introspection on form or structure. This was fine when gathering statistical data was a long and complex task; but modern technology has considerably reduced gather and analysis times, and it has provided masses of easily-analysed data through computer databases – including, of course, that modern linguistic wonder, the World Wide Web.

And what happens when we start to analyse all this data? One by one, the “universals” of language proposed by Formalists have fallen.

As more evidence has been gathered over the years, Chomsky has repeatedly changed his model. There's nothing wrong with this: as Edward de Bono says, what is the point of having a mind if you can't change it? But it has become increasingly clear that a structural model of the universals in language cannot go much beyond the action-object distinction and the subject-verb-object propositional form. The discovery by Daniel Everett of a tribe in South America, the Pirahã, who do not even have recursion in their language, has removed the last prop from Chomsky's current model.

The undermining of Formalism has, however, been a very productive process. We now have those two true universals – action-object, and the propositional form – and we can start looking at non-human systems of signalling to find some useful language progenitors.

What is language for?

Let us start by asking what humans *do* with language; and the answer has to be “pretty much everything”. We use it to think – although not all our thoughts are linguistic; we use it to communicate – although not all our utterances are linguistic; and we use it to do things, such as get married –

although only a small subset of our actions are linguistic. I'm not going to address the last process, which I believe is a spandrel of language as communication. Instead I will concentrate on language within and between minds, and the correspondences that can be drawn with nonhuman cognition and signalling.

If we look at our closest living relatives, the chimpanzees and bonobos, then we are looking at animals that are very different to humans. While there is considerable difference between the excitable, aggressive, male-dominated societies of chimpanzees and the relaxed, socialised, female-dominated societies of bonobos, the differences between *Pan* and *Homo* are vastly greater than those between the two species of *Pan*.

To illustrate, let's carry out a thought exercise. Imagine you are inside an adult chimpanzee or bonobo head. What is significant to you? You are a machiavellian thinker, so you understand that the actions of others can be influenced, you understand that others are useful or dangerous to you, and you understand that others have relationships with each other.

To express this as a calculus, you have emotive mental constructs of your relationships with others which range from fear through to affection; and you have emotive mental constructs for every other relationship in your group. You can also use these relationships to predict likely behaviours, which can modify then your own behaviour.

What is happening here? We can express it in human terms as the ability to make models. I am able to model the relationship between me, you, and a third party in terms of the separate relationships between you and the third party, you and me, and the third party and me. Two types of knowledge are needed: knowledge of how others react to me, and knowledge of how others react to others.

These are very different types of knowledge. My relationships with the world rely on a constant, me, relating to variables out there. In contrast, relationships between variables out there have no fixed constant in the equation.

We can see in these two model-making abilities the two universals of language. My relationship with others involves a simple cognitive correlation between differentiated objects – other individuals – and my emotive states; this gives us the action-object distinction. The reaction of

one individual to another is a propositional relation between two objects, which gives us the subject-verb-object propositional form.

This, of course, rather puts the final nail in the Formalist coffin. Yes, there are universals in language, but they are universals inherited from cognitive structures likely to have been available to the common ancestor of *Pan* and *Homo*. They are not language-specific universals.

Asking a new question

So perhaps we have been asking the wrong question all these years: what if the key question is not “what are the structural differences between language and nonlanguage?” but “what are the communicative differences between language and nonlanguage?”

There is an advantage for “me” to be able to model the intentions of others to each other: it enables me to co-opt the muscle power of others to support my own Darwinian fitness. There is also a significant cost, too: it requires bigger brains, and brain cells are some of the most costly cells in the body to produce and maintain. However, there is a runaway Darwinian effect happening here: if my conspecifics become able to use second level intentionality when I cannot, they will be co-opting my muscle power, and it is their genes that will get into the future. Second level intentionality, if brains large enough to support it can develop, will have a fitness advantage in a socialised species.

There are two very important features about this model of machiavellian second level intentionality. First, it does not rely on “me” being able to make models of me. My relationships with the world rely on a constant “me”, and to understand the relationships of others I don’t need to understand myself at all.

In fact, if we look at self-modelling as a Darwinian event, it is difficult to see how it could ever have got started. If I make models of me I am treating myself as I treat others: I am being disinterested about me. But where is the advantage of being disinterested about myself when everyone around me is interested mainly in themselves? It’s likely that, in this situation, nice guys finish last and my genes don’t go forward to the next round of the competition.

The second feature of machiavellian second level intentionality is that these models are being built in the individual heads of the apes, and not being communicated between them. What would be the advantage of communicating these models? Information is power, it is a way of harnessing the muscle-power of others. That muscle-power is limited, however, so giving away information gives away some of that muscle-power. What would be the gain in so doing? It is true that information can be used to establish relationships, but this relies on the receiver being able to trust the information. If I tell you something, how do you know I'm giving you real, valuable information? False information is valuable to me if you believe it, and valueless to you whether you believe it or not, so how can you trust any information I give you?

Fast forwarding in evolutionary terms to *Homo sapiens*, we see the ability to make models of ourselves as endemic. It gives us the ability to plan our lives: by making models of ourselves we can make decisions about which options to choose. Model-making is also embedded in our communication: we use it to place models of ourselves and others backwards and forwards in time – we use temporality in language; we also use it to propose our models to others as versions of reality – we use modality in language; and we use it to create versions of reality which are not real – we lie, create metaphor, and tell each other stories. Somehow the major problem in receiving information has not only been overcome, it has become central to the social collusion we call language.

Self-modelling – doing the impossible?

So when did selfhood begin, and why are we able to do this impossible trick of self-modelling? It's time for the *Just So* story that has to accompany every theory of language origins. I'm not proposing this as a definitive explanation, it is presented for your consideration.

First, there has to be a high level of co-operation already in place before language can begin. It has to be greater than the co-operation of chimps and bonobos, else we would expect them to have language. In fact, there has to be a level of co-operation which punishes false signals and rewards true ones: there has to be both altruistic punishment and altruistic reward in the co-operation.

We would expect to see alpha behaviours and self-serving to be suppressed – a model described by Christopher Boehm as a reverse hierarchy.

Dominants are suppressed because the signal of individual fitness – being able to provision through big-game hunting – can only be made through co-operation with others. Failure to co-operate in the hunt and bring home the meat means failure to provide a signal of fitness.

However, this doesn't achieve modelling of selfhood, although it does allow co-operative signalling. Co-operative signalling may even be a requirement in co-ordinating a successful hunt; but all that is needed is a repertoire of holistic calls and responses. Co-operative hunting only requires structures for telling, not for telling-about.

We still need a mechanism whereby propositional telling-about can begin. To do this, we need not just a reason for co-operation but a reason for gossip – or the exchange of models of relationships. This requires not just a hunting camaraderie but a coalition where sharing knowledge enhances the coalition, and failure to share brings down altruistic punishment on the freeloader. Membership of the coalition must be so valuable that failure to join results in breeding failure. The coalition must be long-lasting and recognised by its members as an entity in its own right. This is not a temporary male hunting camaraderie, this is a coalition to raise, provision and protect offspring.

When propositional information, such as “Alf likes Beth”, is shared honestly in this environment it allows individuals to supplement their own knowledge of the relationships in the group. But what happens when the proposition “Alf likes Beth” is offered to Beth? Suddenly she is aware that others are making models of her in the same way that she makes models of them. The circle is complete, Beth's model-making knowledge becomes available to make models of herself: she becomes able to self-model.

The importance of the group means that suppression of self-interest gives greater fitness than allowing it free rein – which, paradoxically, creates the environment for disinterested self-modelling. So the rule of the group, and individual submission to its rules, creates the social structure we call culture.

This is a very rough description of the origins of self-modelling – and, possibly, self-awareness, but it shows that “my” ability to talk about me, and to discuss what I did in the past, is an important difference between language and nonlanguage signalling. It is a difference that needs to be explained – rather than explained away with a macromutation.

Bibliography

- Aiello, Leslie & Robin IM Dunbar. Neocortex size, group size and the evolution of language. In *Current Anthropology*, vol 34 no 2 April 1993, pp184-193.
- Bickerton, Derek. 1990. *Language and Species*. Chicago, USA: University of Chicago Press.
- Bickerton, Derek. 2000. How Protolanguage Became Language. In Chris Knight, Michael Studdert-Kennedy & James R Hurford (eds), *The Evolutionary Emergence of Language: social function and the origins of linguistic form*. Cambridge, UK: Cambridge University Press.
- Boehm, Christopher. 1999. *Hierarchy in the Forest: the evolution of egalitarian behaviour*. Cambridge, USA: Harvard University Press.
- Bromhall, Clive. 2003. *The Eternal Child: an explosive new theory of human origins and behaviour*. London, UK: Ebury Press.
- Byrne, Richard. 1995. *The Thinking Ape: evolutionary origins of intelligence*. Oxford, UK: Oxford University Press.
- Cheney, Dorothy L & Robert M Seyfarth. 1990. *How Monkeys see the World: inside the mind of another species*. Chicago, USA: University of Chicago Press.
- Chomsky, Noam. 1980. On the Physics of Brains. In M Piatelli Palmarini (ed), *Language and Learning: the debate between Jean Piaget and Noam Chomsky*. Cambridge, Mass: Harvard University Press.
- Chomsky, Noam. 1986. *Knowledge of Language: its nature, origin and use*. Westport, USA: Praeger Publishers.
- Chomsky, Noam. 1988. *Language and Problems of Knowledge: the Managua lectures*. Cambridge, Mass: The MIT Press.
- Corballis, Michael. 2002. *From Hand to Mouth: the origins of language*. Oxford, USA: Princeton University Press.
- Dawkins, Richard. 1989. *The Selfish Gene (2nd edition)*. Oxford, UK: Oxford University Press.
- Deacon, Terrence. 1997. *The Symbolic Species*. London, UK: Penguin.
- Dessalles, Jean-Louis. 1998. Altruism, Status, and the Origin of Relevance. In James R Hurford, Michael Studdert-Kennedy & Chris Knight (eds), *Approaches to the Evolution of Language*. Cambridge, UK: Cambridge University Press.
- Donald, Merlin. 2001. *A Mind So Rare: the evolution of human consciousness*. London, UK: WW Norton & co.
- Dunbar, Robin. 1996. *Grooming, Gossip and the Evolution of Language*. Faber & Faber Ltd, London, UK.
- Dunbar, Robin. 2004. *The Human Story: a new history of mankind's evolution*. London, UK: Faber & Faber.
- Erdal, David & Andrew Whiten. 1994. On Human egalitarianism: an evolutionary product of Machiavellian status escalation? In *Current Anthropology*, vol 35 no 2 (Apr 1994) 175-183.
- Everett, Daniel. 2005. Cultural Constraints on Grammar and Cognition in Pirahã: another look at the design features of human language. *Current Anthropology* vol 46 no 4, August-October 2005, pp621-646.

- Gentner, Timothy Q, Kimberley M Fenn, Daniel Margoliash & Howard C Nusbaum, 2006. Recursive Syntactic Pattern Learning by Songbirds. *Nature* vol 440, 27 April 2006, doi: 10.1038, Nature 04675, pp1204-1207.
- Goodall, Jane. 1988. *In the Shadow of Man* (revised). London, UK: Phoenix.
- Gould, Stephen Jay & Richard C Lewontin. 1979. The Spandrels of San Marco and the Panglossian Paradigm: a critique of the Adaptationist program. In Mark Ridley (ed), *Evolution*. 1997. Oxford UK: Oxford University Press.
- Hauser, Marc, Noam Chomsky & William Tecumseh Fitch. 2002. The faculty of language: what is it, who has it, and how did it evolve? In *Science* vol 298 22 Nov 2002, pp1569-1579.
- Knight, Chris, Camilla Power and Ian Watts. 1995. The Human Symbolic Revolution: a Darwinian account. *Cambridge Archaeological Journal* 5: 75-114.
- Knight, Chris. 1991. *Blood Relations: menstruation and the origins of culture*. New Haven, Mass, USA: Yale University Press.
- Leakey, Richard. 1994. *The Origin of Humankind*. London, UK: Phoenix.
- Lieberman, Philip. 1991. *Uniquely Human: the evolution of speech, thought, and selfless behavior*. London, UK: Picador.
- Pinker, Steven & Paul Bloom. 1990. Natural language and natural selection. In *Behavioral and Brain Sciences* 13 (4): pp707-784.
- Pinker, Steven & Ray Jackendoff. 2004. The Faculty of Language: what's special about it? In *Cognition* 95 (2005) 201–236
- Pinker, Steven. 1994. *The Language Instinct*. London, UK: Penguin Books.
- Pinker, Steven. 1997. *How the Mind Works*. London, UK: Penguin.
- Power, Camilla and Ian Watts. 1996. Female strategies and collective behaviour: the archaeology of earliest Homo sapiens sapiens. In J Steele and S Shennan (eds), *The Archaeology of Human Ancestry*. London and New York: Routledge.
- Power, Camilla and Leslie C. Aiello. 1997. Female proto-symbolic strategies. In LD Hager (ed), *Women in Human Evolution*. New York and London: Routledge.
- Power, Camilla. 2000. Secret Language Use at Female Initiation: bounding gossip communities. In Chris Knight, Michael Studdert-Kennedy & James R Hurford (eds), *The Evolutionary Emergence of Language: social function and the origins of linguistic form*. Cambridge, UK: Cambridge University Press.
- Savage-Rumbaugh, Sue & Roger Lewin. 1994. *Kanzi: the ape at the brink of the human mind*. New York, USA: John Wiley & Sons Inc.
- Tomasello, Michael. 1999. *The Cultural Origins of Human Cognition*. Harvard University Press, Cambridge, Mass, USA.
- Tomasello, Michael. 2003. *Constructing a Language: a usage-based theory of language acquisition*. Harvard University Press, Cambridge, Mass, USA.
- Whiten, Andrew, J. Goodall, W. C. McGrew, T. Nishida, V. Reynolds, Y. Sugiyama, C. E. G. Tutin, R. W. Wrangham & C. Boesch. 1999. Cultures in Chimpanzees. *Nature* Vol 399 17 Jun 1999, pp682-685.
- Zahavi, Amotz & Avishag Zahavi. 1997. *The Handicap Principle: a missing piece of Darwin's puzzle*. Oxford, UK: Oxford University Press.
- Zuberbühler, Klaus. 2002. *A syntactic rule in forest monkey communication*. *Animal Behaviour* 63: pp293-299 2002.