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"I hope we find ways to use language to unite instead of to divide"



Juan Uriagereka, Professor of Linguistics at the University of Maryland, was at the UAB teaching the course “Projecting from the Lexicon”, invited by the Centre for Theoretical Linguistics of the university. In this interview he talks about the difference between language and languages, and the importance of studying their characteristics as well as certain aspects that all share. He also explains biolinguistics to us, a field in which he is an expert, and some genetic curiosities related to our ability to communicate.

Author: Sofia Uriagereka Herburger.

Juan Uriagereka graduated in Anglo-Germanic Philology from the *Universidad de Deusto* and earned a PhD in Linguistics from the University of Connecticut. Currently he is Professor of Linguistics at the University of Maryland, where he was director of the Graduate Program. He is a close associate of Noam Chomsky and has published articles in the most prestigious journals in the field and books with international publishers like MIT Press, Cambridge University Press, Oxford University Press, Blackwell and Routledge.

In 1998 he published the book *Rhyme and Reason* (*Pies y cabeza* in Spanish, ed. Visor 2005), for which he won the American Association of Publishers prize for the best professional book on language. Among his many awards are the National Prize for Social Science Research of the

Basque Government (2001) and the Premio de Novela Corta José María de Pereda (2001), with his co-author Javier Díez for their work *La Comandita*. He is also a member of Jakiunde, Academy of Sciences, Arts and Letters of Eusko Ikaskuntza.

What is the difference between “language” and “a language”?

A language is an external manifestation of language, and language is a human faculty, which ultimately has a strong biological component, and we do not know how to study it if not through languages. It's interesting that a mental faculty should have so many manifestations, we speak at this time of something in the order of 6,000 or 7,000 languages, though unfortunately they are being lost very quickly. But regardless of why there is so much variety, the fact is that languages are a window into that faculty, one of the most important in human beings, almost the definition of what a human being is.

Is it known how and when language appeared?

It is not known. It is a very controversial area because, unfortunately, languages do not leave fossils. It is suspected that it appeared in the hominid line, now there is an interesting debate about whether Neanderthals had it or not. Of course, before the Neanderthals, who are part of *Homo sapiens*, there is unlikely to have been a language in a serious sense. There would certainly be a great intelligence and communication methods, as have many animals, but hardly what we mean by language.

It is still an open question, but if these assumptions are correct, language is very recent, we are talking about at most 400,000 years if it arose in the common ancestor with the Neanderthals. Otherwise, even less time, in the last 100,000 or 200,000 years. Where it arises, how it arises, are fascinating questions, but very difficult ones. I am optimistic, I think they are questions that perhaps we will answer in the next generation.

So in other animal species we can assume there is no language.

Strictly speaking, yes, but everything in biology has components that appear in different species. It is a very complex soup whose ingredients appear in the natural world. For example, there are phonetic aspects of language that most likely exist in such distant species as songbirds, which have syrinx control, rhythmic controls that may not be too different from the ones we use in our larynx. These birds could be said to have a phonetic component, but it is not clear that they have a semantic component. Or conversely, in the apes that are closest to us, chimpanzees, bonobos and others, there are social hierarchies, use of tools and possible conceptual elements (notion of agent and cause), which most likely are not different from those we use. The odd thing in our species is that all of this comes together somehow, we do not know how, and allows us to build all the cultural edifices that have brought us to where we are, for better or for worse. We have not been a species for long and hopefully we will find ways to keep going, to use language to unite instead of to divide.

More than 50 years ago, the linguistic theory proposed by Noam Chomsky meant a major change in the discipline. Why?

All modern science presupposes a writing system that separates consonants and vowels, or

whatever it is that your writing system separates, and that is an achievement of linguists. The modern linguistics is a phenomenon that began to emerge philosophically in the seventeenth century, and then more specifically in the twentieth century.

In this context, Chomsky appears, a man who has two interesting facets. On the one hand, he lives in a world in which Turing's computation has just been proposed, which allows us to understand a phenomenon computationally. This computation has something of the revolution that occurs in the thirties or forties, in times of Von Neuman, Godel, Turing, who are still alive when Chomsky makes his proposal. On the other hand, he had the luck of being a genius and of being able to use those tools and apply them to the fascinating phenomenon that is language. Basically he said that if we apply a computational apparatus to language and make a number of assumptions such as that it is a complex natural phenomenon, and that kids acquire it in a matter of months, we can begin to articulate a possible theory about how it works. From then on, the field began to put it to the test and, when it did not work, to make it better, and so on. And he created a linguistics that is very much alive today, there are great programs worldwide.

A few years later the term “biolinguistics” was coined, a very interdisciplinary field of study. What is it and what are its objectives?

In the sixties, a group of people with connections to the MIT who were interested in the human mind and how language manifests itself began meeting to talk about these things, but only over pizza and beer. Massimo Piattelli Palmarini, a young molecular biologist, organized an interesting conference in 1975, to which he summoned all these figures from Boston and others from France. The central figures were Chomsky and Piaget. That was the first major event in biolinguistics, where great thinkers debated how language can work and what implications it has. From there the term “biolinguistics”, already used in informal meetings, was coined, because it is the component of how language is represented in the brain, how it could have evolved, etc. To approach this problem you need to bring together biologists, neurologists, physicists, mathematicians... From that first event onwards, this began to happen more often. For example, I came here to the UAB to work this week with the Group of Theoretical Linguistics, and in the same room we have a physicist, a mathematician, linguists... trying to see what properties this system that is language has.

Can we speak of a “language gene”?

Language has a genetic component, but it is practically impossible for it to be a single gene. In fact, there are very few biological systems that depend on a single gene. Genes regulate other genes, and these networks somehow end up managing these systems, in this case language. The first gene involved in language was discovered a dozen years ago because it appeared in families with a problem of Specific Language Impairment. At first they called the gene “Speech 1”, because it was the first, but they soon realized that this gene belonged to a known family, the FOX family, that performs regulatory functions that go far beyond even cognition. These genes even appear in yeast, and cognitively it seems obvious that they play very different roles in other species. It is known that in songbirds they regulate the acquisition of singing and also the modification of singing by season, for example in the case of canaries. Moreover, in his thesis, Antonio Benitez Burraco talked about something in the order of 150 genes involved in language. Now, Antonio and I have just published an article together on this, and it has not got any less complex seven years after his thesis.

There have long been attempts to identify universal principles of the language faculty. Can you give some examples of these common principles and of other elements that vary by language?

I'll give an example that has to do with the course I am teaching here at the Centre for Theoretical Linguistics. All human languages have verbs and nouns. One could envisage a language that has only nouns or only verbs, but it is not the case, and also in all languages nouns project noun phrases and verbs project verb phrases. Both are amazing things and we have to understand why. For that we have a principle of projection which basically says that each X type phrase has an X type core. That is a universal.

At the same time, you do not have to leave the Iberian Peninsula to see that if in Spanish or Catalan you say something like "the tree of Guernica", you go to the north, where I come from, and you say "*Gernikako arbola*". What has happened? Has the noun phrase structure changed? No. When you say *Gernikako*, you still have "Guernica". The "ko" is what is called a postposition, while in Catalan or Spanish you have a preposition. In other words the order of the core has changed, but in both cases it is the same core. This is what linguists call adposition, which can be pre- or post-. And in nominal projection, i.e. "tree", again, the article goes at the back in Basque, while in Romance languages it goes at the front.

It is a universal that there are prepositional phrases, noun phrases, etc., and the principle of projection is maintained. What changes is the parameter of the position of the complement. There is this tension between what is universal, which is maintained, and what is particular, which is made apparent, in this case, in different orders.

Such in Latin, where the verb always went to the end of the sentence.

Exactly. And in Latin you have the verb at the back, but in the Romance languages that parameter is readjusted. The language changes, and by the way, that change from having the verb at the back to having it in front is a very common one. There you see the fluidity of this kind of thing, and it poses some very interesting mysteries. Why on earth was there a change from Latin to the Romance languages? And it's quite a systematic change, because it happens in all the Romance languages.

A few years ago you published a book of introduction to minimalist syntax. What are its main features?

Here it was titled *Pies y cabeza*, in English, *Rhyme and Reason*, because language has these two elements: the phonetic element, rhyme, and semantic element, reason. This intuition must be added to another, which is that languages are optimal. This intuition is what I explored in this book, written in the nineties, when the minimalist program was being concocted. It was an attempt to have a dialogue between a linguist, who in a way is my "intellectual grandfather", Chomsky, the endearing person that created all of this, and a kind of scientist interlocutor asking the tough questions that need to be asked. It tries to explore in what way language is an optimal system and what other sciences it is related to. I think today we would make a book that was more fun to read and more of a collective effort, because today we work more in groups.

Finally, do you think that language is only a reflection of how we perceive the world or does it have a more important role in perception itself?

This is a very old issue that remains open. In a way, yes and no. Among these fundamental principles of which I have given some examples, there are others that have to do with how things are quantified, and after seeing many languages, my suspicion is that there are no differences. However, it is also clear that there are differences. A classic example, the number of colours: if in your culture there are no more colours than dark and light, or there is also "red" (which would be "painted"), or if you start having other assumptions, you have green, or blue-green... Are these cultures different? Certainly they are, in the sense that some of them have more than others.

I grew up in a rural environment, in Galicia, and have words to say countryside things that my daughters do not even know what I'm talking about. Or something that sometimes my grandmother used to say: "When you slice potatoes to make tortilla, you don't slice them, you *"triscar"* them. What was *"triscar"*? Well, you begin to slice it and then you break it so that when it is fried in the pan it will be crispier. The word *"triscar"* refers to a very specific concept that in the world in which I lived was very important, but today probably no one will worry about *"triscar"* potatoes because there is not enough time. There are differences, but when I explain it you understand, and hey, look, another word we have learned. And if you go hunting one day, and the partridge escapes and runs away, it is called *"peonar"*. But if you've never gone hunting and it is not your concern, that word does not arise. That is, I think both ideas hold true.

If you want to add something else...

The only thing, in closing, I want to say is that I'm having a great time. When I encounter problems in my life I think about these things, because it relaxes me a lot. And I have the luck to work with people who contribute a lot, I would not be able to do anything I do without all the teams that add to this kind of Sudoku we are doing. The world has improved a lot since I started studying these things: in the last thirty years there are people much better prepared than me. I see it when students come to my class, the type of questions they ask, their training and the breadth of vision they have, which is much greater. It's a fascinating world we live in and my only concern as I get old and I think about my children and grandchildren, is that we should be able to manage all this wealth we are acquiring, because it is also a world where you can see horrible things I had not thought possible in the 21st century, indescribable levels of violence. We are a species with an incredible potential, but we really need to reflect and use that potential to move forward and not backwards. I hope we can find that answer.

Judit Gil Farrero

Centre d'Història de la Ciència (CEHIC)

Area of Communication and Marketing of the UAB

premsa.ciencia@uab.cat

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