

'The beauty of iconicity'



Gerardo Ortega tells **Zoe Cacanans** that signs that resemble the concept they represent were probably core to early communication and play a vital role in sign language acquisition today

What is your linguistic background?

I came into contact with the deaf community really late. My family were hearing; I am hearing. I never had exposure to sign languages while growing up in Mexico. I mainly did my degree and Master's in Applied Linguistics and was going to become a translator of novels.

While I was doing my courses, I took a class on first language acquisition and there we covered how infants learn their native language from their parents or caregivers. The professor who taught it, Amanda Holzrichter, was an expert on sign languages. We worked on how deaf children learn sign language from their deaf parents, and from that moment I was mesmerised about how humans have capacity to learn language, no matter what modality. I decided to jump into sign languages and have worked on them since 2003.

There's more work on Mexican Sign Language now but then there was nothing. I used to hang out in deaf clubs and try to meet deaf people and go to churches so that I could see sign language

.....
'I was mesmerised about how humans have capacity to learn language no matter what modality'

interpreters and they could connect me to deaf people in Mexico. My Master's degree was a very good way of introducing me to sign languages but I had to do all the research in my free time.

What is your first sign language?

After my Master's, I got a scholarship and did my PhD in London and that's where I learned my first sign language, at DCAL (the Deafness, Cognition and Research Centre) at UCL. The language of interaction there was BSL so I was immersed. I took classes and hung out with the deaf community in London. I recently got my Level 2 and then went to the Netherlands so know a bit of Sign Language of the Netherlands, too. BSL is my first sign language.

What is your central area of study?

My line of research is sign language acquisition. I'm very interested in how we as humans can learn a visual language and I'm interested in anything that has to do with the mind. We design experiments to work out how people learn sign languages; it's an indirect way of looking at the mind. In one study, we looked at Turkish Sign Language and explored iconicity – a linguistic feature where signs resemble the concept they represent, like the BSL sign for BUTTERFLY which represents the wings of a butterfly. Then



.....
**'Your body is
equipped to convey
meaning'**

Gerardo Ortega

.....

'Back in the day, iconicity may have been used as the default strategy for communicating with other people'

we have things like the sign for UNCLE and the resemblance is not there, so that sign is arbitrary. We've been working out the impact of learning iconic signs.

How does iconicity affect language learning?

Iconicity is really important because it gives direct access to the meaning of words (to some degree). It has been argued that it must have been a very important tool in the origin of languages. Today we have complex linguistic systems, but then iconicity may have been used as the default strategy for communicating with other people. If you know what a tiger looks like and how it roars then I can imitate it and warn you about it, so that's why it's really important. We think that something very similar can happen in language acquisition. If you don't know any sign language and I use signs that look like the reference, it might be easier for you to break into that sign language.

We have some evidence now. We are asking what iconicity looks like in sign languages. We are comparing BSL and German sign language and looking at iconicity, why we have iconic signs and what concepts they represent. Iconicity is prevalent in very concrete but also across very abstract concepts. For example, DRINK is a very iconic sign and so is COURT, represented by a wig. When concepts are concrete, both BSL and German Sign Language tend to use the same form of iconicity – in BSL and German Sign Language the sign for DRINK and the sign to WRITE, for example. In more abstract terms, they can be iconic but tend to be more different.

What did your studies on the brain at the time of language acquisition reveal?

We have used electroencephalography (EEG) to study how the brain of hearing non-signers understands and learns sign languages. In this technique, sensors on a cap measure the magnetic field coming from the scalp. We studied hearing adults in the Netherlands who didn't know any sign language and showed them different types of signs and tried to record the brain responses.

Some people might argue that when you learn a sign language you're a blank slate – you don't have any language to fall back on and are learning from scratch. We suspected that we could rely on our gestures and that those gestures would be useful for people to use to recognise signs. We thought that we could use EEG to determine whether hearing non-signers could recognise signs that looked like gestures.

When we see something familiar or well known, the brain produces a specific brain signal, but the signal is quite different when we see something unusual or unexpected.

We found that when those signs resemble the gestures that people produce, the brain would react as if to say 'I know that one – of course – that means KEY or of course that means DRINK'. The brain thinks 'I get it' and would produce a specific response signal. When other signs did not look like gestures, the brain would react as if to say 'OK I wouldn't do it that way but I can accept it. It makes sense'. The brain is capable of recognising these differences and produces a different brain signal.

Another interesting element is that when we taught the hearing non-signers intensively all the signs, those differences disappear.

Has your research led you to think about how better to support adults in sign language acquisition?

I think so. Our field is still very, very young. Spoken

languages have been studied for centuries, but sign languages have only been studied for the last 70 years, which is substantial but is not enough. Sign languages are still being described, and we don't know their grammatical structures entirely. We still need to figure out all the factors that really support sign language learning.

I would personally argue that iconicity is really important. I would immediately start teaching children and adults iconic signs because I think they are very manageable, provide easy access to meaning and don't require a lot of effort because we as humans naturally exploit them anyway. This is particularly important for deaf children when hearing parents are debating what kind of intervention they will have.

Iconicity already gives a very useful and powerful tool for people to communicate. It's a really important strategy.

And then I would explicitly teach people how to use their bodies for communication. My experience here in the UK is that we freeze the minute we're asked to use our bodies to communicate. It's seen as embarrassing, rude, incredibly annoying or absurd, but we have to remember that that's the way language emerged in the first place. We started using our bodies to communicate and that allowed us to really develop language properly. Your body is equipped to convey meaning and it's a really important skill in learning sign languages.

Do iconic signs help us imitate as well as understand sign language?

.....
'In the UK, using our bodies to communicate is seen as embarrassing, rude, incredibly annoying or absurd'

In our study, we taught people to imitate signs as accurately as possible, showing them iconic and non-iconic signs. We saw a lot more errors in articulation with iconic signs.

Our explanation for this is that iconic signs are so rich in meaning anyway that you don't need to pay attention to the specific handshapes or location. We argue that iconicity is a very good way of learning the meaning, but when you are trying to understand the specifics of hand configuration, that's when it hurts and is not effective.

An alternative possibility is that we're using our gestures. We look at the sign and then use our own gestures, changing the hand configuration. The sign is fine – I can understand it – it's like having a lisp or an accent. And that's the beauty of iconicity: you can produce an iconic sign without its specific movements and hand configurations, but you may still be able to understand it because of its resemblance to the thing it refers to.

What do you want to see in terms of language acquisition?

I want to see more funding for hearing parents to learn a sign language so that they can communicate with their children, or anyone for that matter. Sign languages are really critical. I would love to see children raised bilingually – in English and BSL – because bilingualism is the norm around the world. Monolingualism is very rare. Only a small proportion of the people in the world only know and use one language. Most people use and know more than one language. This can be spoken or signed.

More importantly, we need more funding for people to learn and so that we can continue studying in order to prepare sign language interpreters in the best possible way; they are the bridge between deaf and hearing communities.

