

What sign language teaches us about the brain

25 July 2014, by Sana Suri



The power is yours. Credit: wycliffesa, CC BY-ND

The world's leading humanoid robot, ASIMO, has recently [learnt sign language](#). The news of this breakthrough came just as I completed Level 1 of British Sign Language (I dare say it took me longer to master signing than it did the robot!). As a neuroscientist, the experience of learning to sign made me think about how the brain perceives this means of communicating.

For instance, during my training, I found that mnemonics greatly simplified my learning process. To sign the colour blue you use the fingers of your right hand to rub the back of your left hand, my simple mnemonic for this sign being that the veins on the back of our hand appear blue. I was therefore forming an association between the word blue (English), the sign for blue (BSL), and the visual aid that links the two. However, the two languages differ markedly in that one relies on sounds and the other on visual signs.

Do our brains process these languages differently? It seems that for the most part, they don't. And it turns out that [brain](#) studies of sign language users have helped bust a few myths.

As neuroscience took off, it became fashionable to identify specific regions of the brain that were thought to be responsible for certain skills. However, we now know that this oversimplification paints only half a picture. Nowhere else is this clearer than in the case of how human brains perceive language, whether spoken or sign language.

The evidence for this comes from two kinds of studies: lesion analyses, which examine the functional consequences of damage to [brain regions](#) involved in language, and neuroimaging, which explores how these regions are engaged in processing language.

Lesions teach new lessons

Early theories of language processing pointed to two regions in the left hemisphere of the brain that were thought to be chiefly responsible for producing and understanding spoken language –

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