

A lesson in maths

□ Have a read of this: "Scientists find brain function most important to maths ability". And I thought the most important body parts for counting were fingers. Who knew?

OK, lots of news organizations have been guilty of writing the odd ambiguous headline (including news@nature.com). Happily, even one of the researchers of the study, neuroscientist Brian Butterworth from University College London, UK, sees the funny side of this one. When I ask him about it he writes back, "I want to make this absolutely clear: the brain is important in doing maths. Research shows that even monkeys doing maths use their brains to do it."

What Butterworth has actually done is show that different bits of the intraparietal sulcus, a brain area known to be used for processing numbers, light up depending on whether the subject is asked to count things, or to estimate quantities.

When a subject is shown three green blocks and two blue ones, and asked which there are more of, one bit of the sulcus lights up in functional magnetic resonance imaging (fMRI) scans. When he or she is shown a block that is partly green and partly blue and asked which colour there is more of, a different bit of the brain region is activated.

Some people have extreme difficulties with maths because they suffer from a condition known as dyscalculia, which Butterworth tells me is defined as: 'a specific impairment in arithmetical skills that is not solely explicable on the basis of general mental retardation or of inadequate schooling'. He and his colleagues think (though they haven't yet tested it) that the bit of the sulcus they have found to be involved with counting, rather than measuring, is responsible.

Fantastic stuff, I think, and oddly counterintuitive. After all, many people (including me) have a tendency to get their fewer thans (reserved for countable things) mixed up with their less thans (which should be used for quantities). How amazing that, given there's a whole bit of the brain reserved for making this distinction, the grammatical mistake is so common.

And while we're pondering the link between neural structures and grammar, maybe we could pinpoint the bit of the brain that helps to distinguish 'scientists find a brain function important to maths ability' from the more universal, and amusing, version.

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University College London, in a lighter moment.

References

1. Castelli F., Glaser D. E. & Butterworth B. *PNAS*, doi: 10.1073_pnas.0600444103 (2006).