Alphabet similarities come in threes

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ARABIC, Bengali and Cherokee scripts look utterly different, but in fact have much in common. And the shared characteristics of these and other scripts may tell us something about the limits of our visual system.

Because writing systems have to be easy to write, and even easier to read, Mark Changizi and Shinsuke Shimojo of the California Institute of Technology in Pasadena decided to investigate how this influenced the number of strokes required to draw characters within different scripts.

The pair studied 115 different alphabets, from the ancient and evolved to the modern and invented. They found that most languages average three strokes per character. "We seem to like three," says Changizi.

This is no coincidence, they say, as three happens to be the biggest number our brains can recognise without having to count. Scripts with more than three strokes per character, therefore, become increasingly difficult to read or write.

Conversely, they also found that most characters across all writing systems are recognisable even when half the strokes are missing. But while the second or third stroke may not be essential, this redundancy makes it more likely that the character will not be misread (*Proceedings of the Royal Society*, DOI: 10.1098/rspb.2004.2942).