Scientists urged to stop excluding left-handed people from scientific studies

February 14 2014

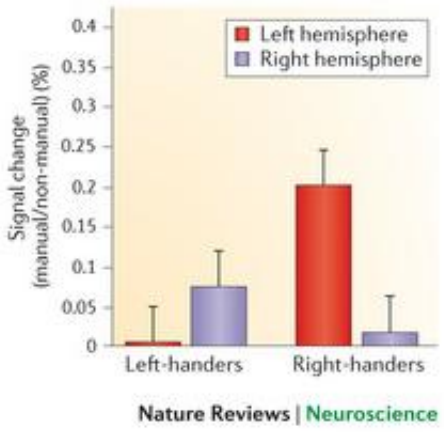

Figure 1. Verbs that express actions ('to write', 'to throw') have opposite effects in the motor cortex of left-handed and right-handed people. Credit: *Nature Reviews Neuroscience* on 12 February 2014.

Left-handed people really do have different brains and genes from right-handed people. Yet left-handed people are almost never included as study subjects in scientific research. Therefore in an article in *Nature Reviews Neuroscience*, Roel Willems and his colleagues from the Donders Institute and Max Planck Institute in Nijmegen call for more research into left-handed people. The article was published online on 12 February 2014.

Left-handed people are rarely included as study subjects for brain or

genetic research because the differences with right-handed people cause noise in the final results. However, left-handed people form about ten percent of the entire population and their brains and genes contain interesting information about the functioning of both halves of the brain as well as about several psychiatric disorders. 'Research into left-handed people is therefore interesting because of the noise they cause', thinks neuroscientist Roel Willems from the Donders Institute for Brain, Cognition and Behaviour at Radboud University Nijmegen. With the opinion article he calls upon his fellow researchers to stop excluding left-handed people from studies.

Missed chance for the neurosciences

'One of our studies from 2009 clearly shows why research into left-handed people is so vital', says Willems. 'According to the textbooks, facial recognition takes place in the right half of the brain. Our research revealed that the same process takes place in both halves of the brain in the case of left-handed people, but with the same final outcome. That is a fundamental difference. And left-handed people might process other important information differently as well. The minimal amount of research into this is, in my view, a missed chance for the neurosciences.'

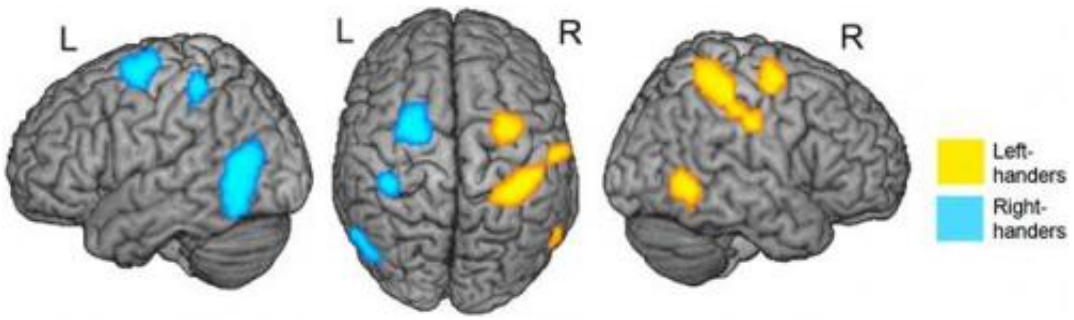

Figure 2. Left-handed and right-handed people perceive actions in different ways. Left-handed people do that with the right half of the brain and right-handed people do that with the left half of the brain. Credit: *Frontiers in Human*

Neuroscience.

Data from left to right

According to Willems, the same applies to genetic research. Schizophrenic and psychotic patients are more likely to be left-handed. Up until now little has been done with that information to clarify the genetic links with the disorders concerned. 'Databases without left-handed people are not representative for the population and in view of the large number of genetic databases currently being set up, ignoring left-handed people is not wise', says Willems. In addition to the opinion article in *Nature Reviews Neuroscience*, Willems and his colleagues at the Max Planck Institute in Nijmegen are setting up the website www.mpi.nl/handedness, where left-handed people are encouraged to participate in research.

More information: "On the other hand: including left-handers in cognitive neuroscience and neurogenetics." Roel M. Willems, Lise Van der Haegen, Simon E. Fisher, Clyde Francks. *Nature Reviews Neuroscience* (2014) DOI: 10.1038/nrn3679. Published online 12 February 2014

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