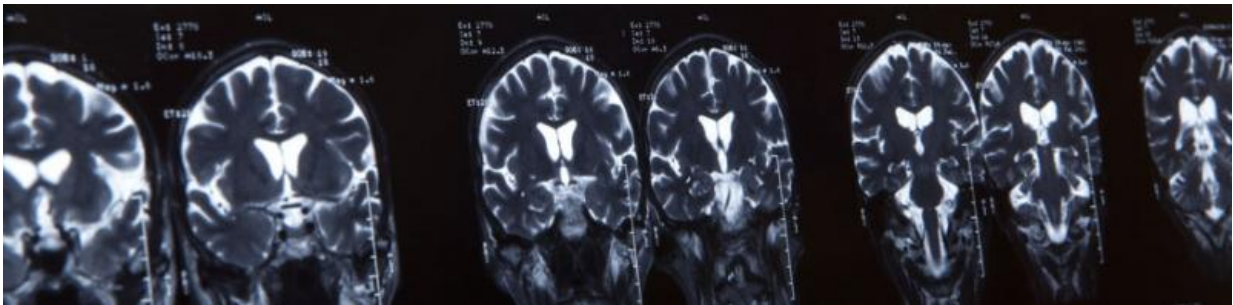


Foreign accent syndrome due to impaired connection in the brain, says study

May 4 2016, by George Wigmore



A new study from City University London has found that foreign accent syndrome, a condition which results in patients to be perceived as non-native speakers of their mother tongue, may be caused by the impaired connections between the language centres in the front part of the brain and the cerebellum.

Describing a native 17-year-old Belgian Dutch speaker who spoke with a French accent, the research suggests that the accent change may have occurred due to a disruption of the pathway between the motor [speech](#) areas in the left hemisphere of the brain and the right cerebellum.

Published in the journal *Frontiers of Neuroscience*, academics from the University of Antwerp, Free University of Brussels and the University of

Groningen were also involved in the research.

Foreign accent syndrome is quite rare and is estimated to affect fewer than 100 people worldwide. Normally resulting from a stroke, the condition can also be caused by head trauma, migraines or developmental problems. Of these, the developmental type of the condition which is described in this new paper is the rarest.

To investigate why the boy's accent appeared to be French despite his Belgian Dutch upbringing, the team used a number of different tests to understand its origin. Carrying out both an MRI and a SPECT brain scan to see whether they could explain the changes they also analysed the patient's speech phonetically to explain why his accent was perceived as French.

Brain scans showed significant deficits in parts of the front of the brain responsible for executive functioning which covers a set of important mental skills such as working memory and problem solving. In particular, they found that the Belgian boy had deficits in parts of the front part of the brain associated with execution and planning. This resulted in problems with speech planning, specific spatial planning, visual structuring and copying (i.e. drawing). In addition, the scans also revealed deficits in the contralateral hemisphere of the cerebellum.

When looking at the speech characteristics, the team noticed a lack of distinctiveness when it came to some vowels and this may have been a significant contributor to the perception of a foreign accent. The team also investigated speech rhythm which was found to be more French-like (syllable-timed) than Dutch (stress-timed) and this may have contributed to the impression of a French accent.

Speaking about the study, Dr Jo Verhoeven from City University London said:

"Our study has investigated the case of a boy who appeared to have a French accent despite his Belgian Dutch heritage. Scans of the brain suggested a disruption of the pathways between the language centres of the [brain](#) and the cerebellum. The potential involvement of the cerebellum in the development of [foreign accent syndrome](#) has only been attested previously for acquired speech disorders. We now have evidence that cerebellar problems may also cause FAS in developmental speech disorders."

"To the best of our knowledge only two case studies have been published between 1907 and 2014 describing this rare subtype of [foreign accent syndrome](#) which is developmental in nature. Our study is important in helping us better understand what causes this syndrome and how we can better support people with the condition."

Provided by City University London

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