Dyslexia depends on culture, scientists say

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LONDON - Dyslexia, the reading disorder, may be influenced by culture, scientists say.

Most dyslexia research has focused on letter-based languages such as English or Italian. These studies suggest the condition is tied to the left temporoparietal region of the brain.

Now researchers have studied the brain activity of Chinese children with impaired reading as they performed tasks using Chinese characters. The results were compared to children who could read Chinese normally.

Alphabetic writing systems like English map visual letters onto units of speech. In Chinese, on the other hand, the characters represent entire thoughts and physical objects.

In the study, Li Hai-tan of the U.S. National Institute of Mental Health and his colleagues used functional magnetic resonance imaging to take 3-D pictures of brain activity.

Various kinds of characters were used in the experiments:

- Real characters with a single meaning.
- Homophones – characters that are pronounced the same but have different meanings.
- Fake ones that appear to be Chinese characters but are actually meaningless.

The researchers found a different part of the brain, the left middle front gyrus, was impaired in the Chinese speakers with reading difficulties compared to those who read an alphabetic language.

"This finding provides an insight ... by suggesting that rather than having a universal origin, the biological abnormality of impaired reading is dependent on culture," the researchers wrote in Thursday's issue of the journal Nature.

The scientists hope their finding will help people to develop exercises to stimulate Chinese speakers who
have difficulty learning to read.

Written by CBC News Online staff

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