

**'The past tense debate: Is phonological complexity the key to the puzzle?' by
Tomasina MSS Oh et al, NeuroImage**

Tomasina Oh (English Language and Literature) examines how the brain processes language to weigh in on the debate over our language faculty as a single system or a dual one. This has implications for how we understand the human brain and the way we acquire and use language.

In this article, the researchers examine whether language faculty is a single system or a dual one. Those who support the latter position believe that regular verbs and irregular past tense verbs reflect the human language system. That is, one part of language (like regular past tense “walked”) is rule based and processed by a rule mechanism, while the other (like irregular “ran”) has to be learnt piece-meal, memorized and stored. However, others argue that all past tense verbs are processed by the same system and that differences seen in brain activation are the result of differences in the phonological (sound) complexity of these words (e.g. “walked” is more complex than “ran”) rather than two different processes or systems.

Using an experimental design, the researchers conducted an event-related fMRI study, which measures the blood flow to functioning areas of the brain, on 19 English-speaking monolingual participants. The experiment confirms that phonological complexity is important when considering the difference between regular and irregular verbs, lending some support for the single system position. However, brain activation differences remained even when phonological complexity differences between the two types of verbs were removed, showing that it is premature to rule out a dual system account.

Tomasina M. Oh, Keith Liming Tan, Philina Ng, Yeh Ing Berne, Steven Graham (2011). The past tense debate: Is phonological complexity the key to the puzzle? *NeuroImage* 57, 271–280

doi:10.1016/j.neuroimage.2011.04.008