**Introduction**

- Under the compositional hypothesis stems and inflections are distinctly represented and word production involves stem + suffix assembly.
- While English regular (walked) and irregular forms (ran) both require lexical look-up for stem retrieval, only regular forms demand morphological assembly. Furthermore, suffix addition often results in phonologically complex word endings.
- To make a balanced comparison of regularly and irregularly inflected English verbs, pictures of actions were used to elicit the production of both types of verbs in the Present and Past tense.
- The hypothesis of stem+suffix assembly anticipates Present>Past activation difference, and possibly an interaction with verb type (Regular vs. Irregular).
- Based on prior lesion and imaging findings, L middle-superior temporal cortex is a candidate area for stem+suffix combination. Premotor and primary motor areas were expected to respond to the phonological complexity of regular forms.

**Image Acquisition & Analyses**

4-Tesla Bruker Medspec. No field gradients for 4s post picture onset; 3s single image volume coinciding with estimated peak of BOLD response; no field gradients for an additional 10.7s. SPM8 used for data analyses. Height threshold of p<.001 in conjunction with spatial cluster threshold of 35 voxels; FWE rate at p<.05. ROIs: (1) L post middle and sup temporal cortex; (2) L premotor cortex (BA 6); (3) L primary motor cortex (M; BA 4a and 4p); (4) L IFG (BA 44). Cluster threshold estimated independently for each ROI mask at p<.05. Diffusion weighted image data analysed using DTI and Fiber Tools toolbox. 16 participants.

**Conclusions**

1. The Present>Past activation is consistent with morphological assembly, which appears to involve temporal areas associated with lexical processing.
2. English present forms requires extra activation in areas linked to articulatory processing.
3. Why Regulars=Irregulars? Possibly because some regulars stored/processed as whole words, i.e., similarly to irregulars.
4. Results confirm the role of arcuate fascicle (and dorsal language tract more generally) in phonology/articulation translation.
5. Testing of verbs matched on syntactic features maybe prevented the appearance of specific activation in Broca’s area.