

BECOMING FLUENT

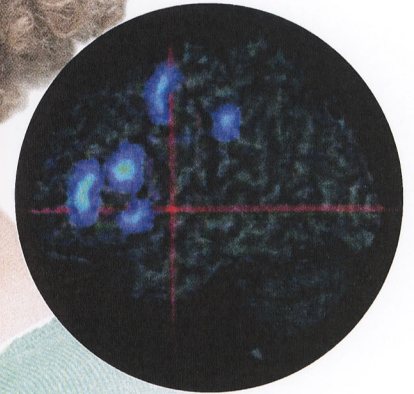
As we become fluent in a second language, the brain becomes less active, as shown on these brain scans of someone new to a second language (intense red areas, top) versus someone with years of second language experience (lighter red areas, bottom). So better performance means less brain activity.



SWITCHING FROM ONE LANGUAGE TO THE OTHER

Once you've learned a second language, switching from your first language to the second one involves the prefrontal cortex, as shown here in this fMRI image (yellow areas). Switching from your second language back to your native tongue doesn't require the use of these brain areas, probably because it takes less effort.

Prefrontal cortex
Broca's area
Wernicke's area
Hippocampus



BEING BILINGUAL

But even when we reach the same level of proficiency at a second language as with a first language, the second language requires more brain activation, shown here (blue areas) in this fMRI image.