

## Broca's and Wernicke's Areas

### Exercise 19

Excerpt from *Human Origins: What Bones and Genomes Tell us about Ourselves* by Rob DeSalle and Ian Tattersall (200,. College Station, TX: Texas A & M Press, p. 174).

“The 19<sup>th</sup> century neurologists Paul Broca and Carl Wernicke observed people with language disorders. Broca studied people with disorders in the ability to speak or comprehend language due to brain injury called aphasias. In particular, the people he studied were unable to sustain articulate speech for more than a few words. They could answer “yes” and “no,” but were completely incapable of speaking in complex sentences. Wernicke, on the other hand, studied people who were incapable of discerning what was spoken *to* them. Another kind of aphasia was specific to *hearing* spoken language, for the patients with this aphasia were able to read and comprehend the written word. Upon their deaths, the brains of both sets of patients were examined for any abnormalities in structure, and both researchers noticed area of the brains of their subjects that consistently showed lesions.

In Broca's case, the lesions were in a part of the brain called the frontal lobe of the neocortex; in Wernicke's case, they were in the temporal lobe. In recent years, researchers have become less confident of the localization of the deficits to exact regions identified by Broca and Wernicke, and the precise boundaries of the brain regions named after these two researchers are still debated. Despite these problems, the general method of localizing brain functions established by Broca and Wernicke is still used by neuroscientists today. The main difference is that modern methods use brain imaging on live subjects, which means that researchers don't need to wait for their subjects to die.”