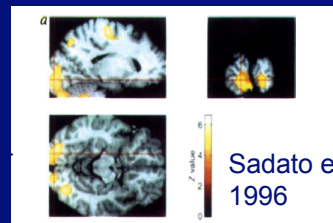


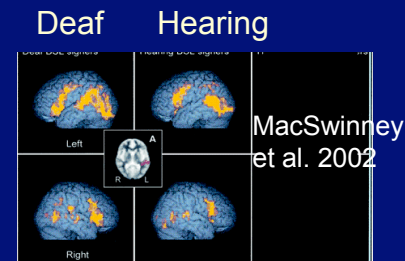
Language Plasticity

- The language system of both children and adults change over time
- Word learning occurs through the lifespan
- Not only children learn languages, but adults do too, although not with the same proficiency
- Visual areas are recruited in Braille reading by the congenitally blind and auditory areas are recruited in sign language by the congenitally deaf

Braille



Sign



- Is there a continuity of the architecture underlying language learning across the lifespan?
- What are its neural substrates?
- Are these properties of learning and plasticity domain specific or domain general?

The Invariance Problem : Object Constancy

The world around us appears stable:

- we perceive the same object or face when seen in different orientations, lighting conditions, views, sizes, etc
- we perceive the same phonetic category across speakers and phonetic contexts
- we classify different exemplars as members of the same category, e.g. *labrador retrievers* and *poodles* are classified as *dogs*

How does our perceptual system extract stable percepts from the many sources of variability in our environment?

What are the neural substrates and neural systems underlying such invariance? Can an invariant neuronal response be identified for an object under conditions of variability?

Is the solution to the invariance problem the same across different domains, e.g. objects, faces, language?