

Functional community similarity and an integrative approach to neuromarketing

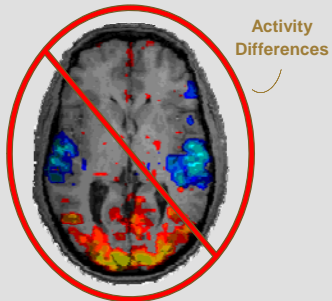


OVERARCHING POINTS

- ⌘ The brain is organized into several functional communities.
- ⌘ There is commercial potential in thinking the brain is an integrated system.

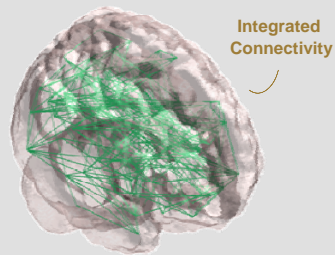
THE BRAIN AS A COMPLEX SYSTEM

Functional Activation



Activity Differences

Functional Networks

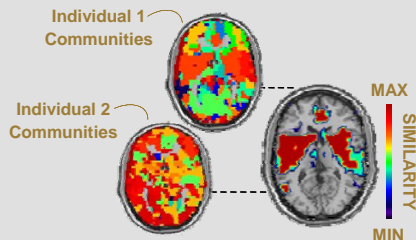


Integrated Connectivity

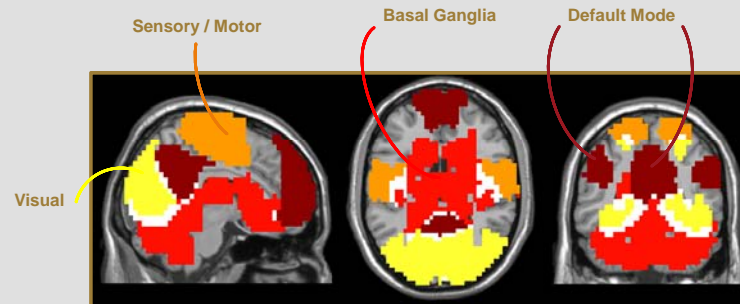
In functional connectivity networks, voxels of an image represent small portions of brain tissue and define the **nodes**. Functional activity among them represent connections and define **links**.

FUNCTIONAL COMMUNITY SIMILARITY

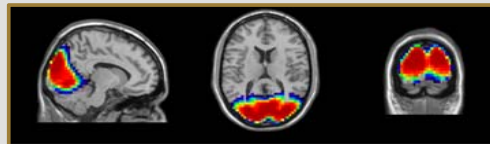
- ⌘ Areas of the brain with the same color belong to the same community.
- ⌘ These areas have greater interconnectivity within their community than with the rest of the brain.
- ⌘ Communities are organized with a degree of similarity across individuals.



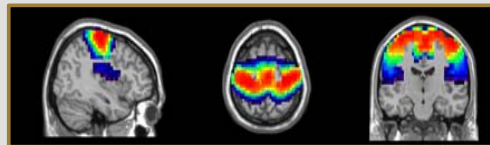
SIMILAR FUNCTIONAL COMMUNITIES



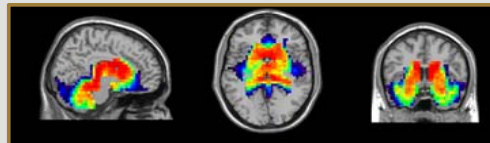
Visual Cortex



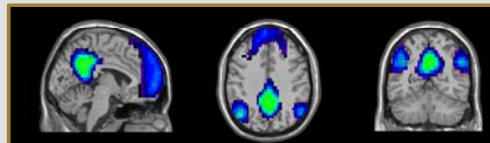
Sensorimotor



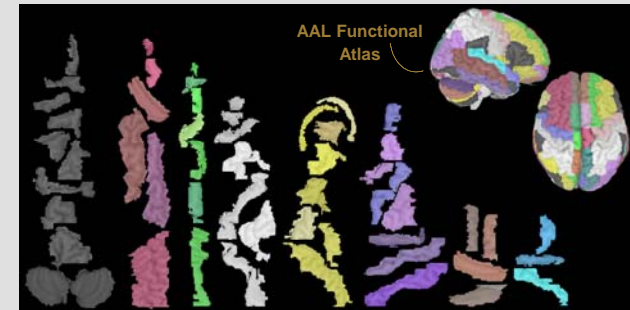
Basal Ganglia



Default Mode



BRAIN FUNCTION IS NOT EASILY ORGANIZED



Functional integration in the brain is just as important as segregation.

BEHAVIORS ARE COMPLEX IS OUR SCIENCE?

- ⌘ Each year \$400 billion dollars are invested into advertisement.
- ⌘ Since 2002, neuromarketing firms have been on the rise, and include NC based companies like NeuroSpire.
- ⌘ Complex behaviors are at the heart of consumer spending and brand preference.
- ⌘ The application of network science to these behaviors has real commercial value.

