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Title:

A Window into the Architecture of the Mind: Functional Imaging of the Human Brain

Abstract:

The last 20 years of brain imaging research has revealed the functional organization of the human brain in glorious detail, including a set of cortical regions each of which is specifically engaged in a particular mental task, like recognizing faces, perceiving speech sounds, and understanding the meaning of a sentence. Each of these regions is present, in approximately the same location, in every normal person. This initial rough sketch of the functional organization of the brain counts as real progress, giving us a kind of diagram of the major components of the human mind. But at the same time it is just the barest beginning. Really what our new map of the human brain offers is a vast landscape of new questions: the exact representations that are extracted and computations that are performed in each region, their developmental and evolutionary origins, their structural connectivity to each other, why some mental functions get their own private patch of brain yet others apparently do not, and how all of these components work together to produce cognition and behavior. All of these questions are harder to answer than just finding the regions in the first place, but I will offer a few humble tidbits from our initial forays into this new landscape.