The Role of Broca's Area in Syntactic Processing: Insight from Transcranial Magnetic Stimulation

Abstract

Syntactic movement is a theoretical operation that has been central to theories of grammar for the past fifty years. Some recent attempts to identify, a neural basis for syntactic movement have indicated that this operation is computed in the area of the brain commonly known as Broca's area. However, this claim is highly controversial and the matter is far from settled. Here, I report the results of an investigation of the relationship between Broca's area and syntactic movement using transcranial magnetic stimulation (TMS). TMS was administered to Broca's area during self-paced reading of movement derived Japanese sentences. The results of my experiment do not validate the claim that movement is computed in Broca's areal instead, they point to a role for Broca's area in the processing of non-canonical argument structure,