

Working memory networks and the origin of language areas in the human brain

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Temporoparietal-prefrontal working memory networks are proposed as fundamental in the evolutionary origin of the language regions. Having a primordial capacity to name objects or situations, primitive hominids may have strongly benefited from the possibility to recall past events from memory, in order to refer to them through vocal communication. Working memory cortical networks are related to these types of tasks, and are arranged quite similarly to the language networks in the brain. It is possible that the language areas and their connections arose as a local specialization of these large-scale cortical networks, that developed as neural strategies to recall past events to be shared in community. The origin of syntax may have taken place after these networks were sufficiently stabilized, and (at least originally) may have been related to aspects of vocal motor control, involving the progressive differentiation of the anterior language areas and their connections. © 1995.