

Investigation of Brain Lobes Changes and Spatial Re-organisation during Hominin Evolution

Ngalla E. Jillani¹, Charles Bernard Saanane² and Ainory Gesase³

Abstract

Brain size and its increase relative to body size has been closely linked to technological advancement in the course of human evolution. Studies carried out on sensori-motor and temporal lobes of museum quality endocasts including modern human brains show a progressive increase in lateral aspects of these brain areas in early hominins through to later ones. Re-organisation and evolution of these areas charged with memory and cognitive functions of the hominin brain from australopithecines to members of genus Homo were probably very crucial in adjusting and responding to environmental changes.

This paper presents results from a study carried out through quantifying sensori-motor and temporal lobe areas of brain to see how these areas have changed/been re-organised through time. Such parameters were then used to explain the evolution of hominin brains from Pliocene, Pleistocene to the present.

*The main objective of the study was to **investigate brain lobe changes and spatial re-organisation during hominin evolution** by measuring the brain's sensori-motor and temporal lobe areas so as to establish a re-organisation pattern that controls muscle movements' co-ordination as well as memory and cognition in hominins, particularly among members of genus Homo. Specifically, the study sought to establish whether the brain of the envisaged first toolmaker and user (*Homo habilis*) is significantly different from those of later *Homo* and *Paranthropus* and *Australopithecus* genera. That was considered a new approach towards gathering and accumulating information on how such areas have re-organised in the course of hominin evolution in an attempt to explain the evolution of behaviour such as tool-making.*

1 National Museums of Kenya, Nairobi.
Email: ngalla.jillani.com

2 University of Dar es Salaam,
College of Arts and Social Sciences
Department of History and Archaeology
Email: csaanane@yahoo.co.uk

3 College of Health and Allied Sciences, University of Dodoma.