

HANGING FROM THE ARBOR VITAE; UNDERSTANDING THE GIBBON BRAIN

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Although the gibbon brain is the same size as a macaque brain, it exhibits hominoid patterning in both its gross anatomy and its volumetric proportions. Like humans and great apes, the gibbon brain possesses a planum temporale, and clearly differentiated angular and supramarginal gyri. Comparative volumes of the lateral to medial cerebellum in the author's sample of 97 primate brains show the same differential expansion of the neocerebellum in gibbons, humans, and great apes over the rest of the anthropoids. The lateral cerebellum is important in cognitive tasks such as the planning of movement, visuo-spatial problem solving, and procedural learning, but one of the most interesting functions of the lateral cerebellum is in the perception of musical and rhythmic patterns. Thus the hominoid organization of the gibbon brain could underlie their outstanding vocal and movement expressions, and other cognitive capacities that require further study. The gibbon brain is in the unique position of showing reorganization without a significant increase in size, and offers us a picture of a functional neuroanatomy shared by all hominoids.

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