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HOMO SAPIENS AND PAN TROGLODYTES: WHAT MAKES US DIFFERENT?

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Since the publication of the chimpanzee genome 4 years ago, there has been much emphasis on the similarity of chimpanzees and humans, in terms of behavior, genetics, morphology, and physiology. Equally interesting, however, are the differences between the two species that have evolved since the two lineages separated some 6 million years ago. Participants in this symposium will provide data from studies in which the Homo and Pan are directly compared, sometimes with reference to other primates as well. Todd Preuss will summarize human-specific microstructural and molecular changes in the brain and discuss how these differences may have arisen and how they may influence human uniqueness. Brian Hare will discuss chimpanzee-human differences in patterns of social cognition and in the capacity to understand the intentions of others. James Rilling will discuss human-specific asymmetries of white matter pathways involved in language and in emotion and describe the differing organization of these pathways in chimpanzees. James Herndon will present an evolutionary context for development of human specific adaptations in reproductive capacity and patterns of cognitive aging. Lary Walker will describe important differences in age-related brain pathology, including amyloid structure and other Alzheimer's related pathologies and discuss the implications for potential development of treatments for human-specific pathologies. Finally, Elaine Videan will discuss patterns of antioxidants in the two species and how these may explain differences in rate of aging.

Keywords: *Evolution Alzheimer disease Cognition Human uniqueness*