

Unique mix of brain chemicals separates humans from other primates

A team of researchers has now used a [novel technique](#) to form a hypothesis on the origins of our rich cognitive abilities. They did so by profiling the chemicals buzzing around our brains. These compounds, known as neurotransmitters, are the signaling molecules responsible for key brain functions. Their research reveals that in comparison with other higher primates, our brains have unique neurotransmitter profiles that probably resulted in our enhanced cognition.

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Compared with the other species tested, humans had markedly increased striatal dopamine activity. Among other functions, dopamine helps drive reward activity and social behaviors. In the striatum in particular it contributes to uniquely human abilities and behaviors like complicated social group formation and, in part, speech and language.

Humans, gorillas and chimps also had elevated striatal serotonin, compared with other primates. Increased serotonin levels in the striatum are known to increase cognitive and social control and also reduce aggression whereas low levels are linked with underdeveloped social skills.

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[C.] Lovejoy and his colleagues found that gorillas and chimps have much higher levels of acetylcholine than do humans. "The high striatal serotonin shared by humans and great apes likely contributes to the cognitive flexibility required for complex social interactions," Raghanti says. "The lower acetylcholine in humans corresponds to our decreased aggression, compared to most other apes. It's a concert really."

Read full, original post: [Cocktail of Brain Chemicals May Be a Key to What Makes Us Human](#)