

Chasing the biology underlying human intelligence

[H]uman intelligence [has increased] over time. Proposed explanations for the phenomenon, now known as the Flynn effect, include increasing education, better nutrition, greater use of technology, and reduced lead exposure, to name but four. Beginning with people born in the 1970s, the trend has reversed in some Western European countries, deepening the mystery of what's behind the generational fluctuations. But no consensus has emerged on the underlying cause of these trends.

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Scientists have proposed biological mechanisms for variations among individuals' [general intelligence] levels ranging from brain size and density to the synchrony of neural activity to overall connectivity within the cortex. But the precise physiological origin of g is far from settled, and a simple explanation for differences in intelligence between individuals continues to elude researchers. A [recent study](#) of 1,475 adolescents across Europe reported that intelligence, as measured by a cognitive test, was associated with a panoply of biological features, including known genetic markers, epigenetic modifications of a gene involved in dopamine signaling, gray matter density in the striatum (a major player in motor control and reward response), and the striatum's activation in response to a surprising reward [cue](#).

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While those in the field generally agree that science has a long way to go to make sense of how we think, most express cautious optimism that the coming decades will yield major insights.

Read full, original post: [The Biological Roots of Intelligence](#)