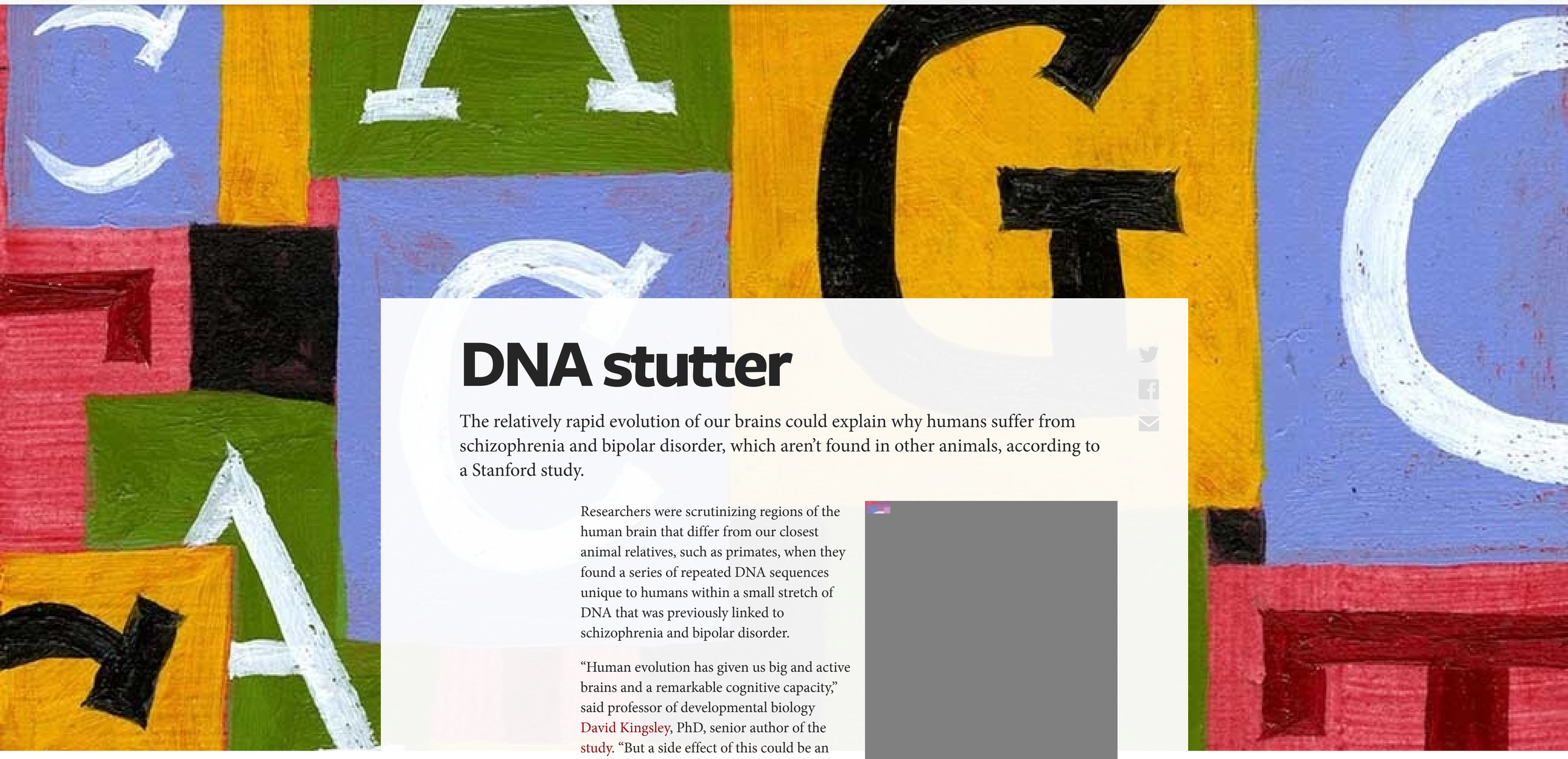

DNA stutter

The relatively rapid evolution of our brains could explain why humans suffer from schizophrenia and bipolar disorder, which aren't found in other animals, according to a Stanford study.

Researchers were scrutinizing regions of the human brain that differ from our closest animal relatives, such as primates, when they found a series of repeated DNA sequences unique to humans within a small stretch of DNA that was previously linked to schizophrenia and bipolar disorder.

Jeffrey Fisher image

"Human evolution has given us big and active brains and a remarkable cognitive capacity," said professor of developmental biology David Kingsley, PhD, senior author of the study. "But a side effect of this could be an increased risk for other, less desirable outcomes."

The repeated sequences represent a kind of genomic stutter that is difficult to detect and, as a result, stayed hidden from researchers looking for genetic causes for mutations that contribute to risk for the diseases, according to the study published Aug. 9 in the *American Journal of Human Genetics.*

Previous research implicated genes involved in calcium transfers to and from brain cells in response to external signals. The stutter occurs in a non-coding region of one such gene.

These calcium channel genes are responsible for many critical biological processes. Researchers hope that existing drugs that effectively regulate the channels, used to treat high blood pressure and cancer, can be used to treat the psychiatric illnesses.

The finding could help identify people at risk for the disorders and identify clinical interventions that work long term for the about 3 percent of people who are bipolar or schizophrenic.

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