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## Was a Rare Eye Condition the Secret to Leonardo da Vinci's Artistic Genius? A New Study Advances the Theory

He's not the first artist to be diagnosed with the incredibly unusual disorder. But one researcher is sure it's the secret to his genius.

**Kate Brown**, October 19, 2018



An anonymous portrait (once claimed to be a self-portrait) of Leonardo da Vinci, c. 1600, in the Uffizi, Florence. Courtesy of Wikimedia Commons.

There is something enigmatic about Leonardo da Vinci's paintings. So enigmatic, in fact, that a work can sell for upwards of \$450 million. But could that signature style, the curious combination of flatness and depth that is undeniably present in much of his work, actually have been the result of an unusual eye condition?

Christopher W. Tyler, a research professor at City University of London and at the Smith-Kettlewell Eye Research Institute in San Francisco, thinks so. His study on the topic, which was published on October 18 in *JAMA Ophthalmology*, examines likely portraits and self-portraits of the Italian Renaissance Master in an effort to determine whether a condition called exotropia—a form of strabismus (aka wall-eye) that makes one eye wander off alignment—in fact facilitated his oeuvre.

It's not the first time a scientific study has attempted to prove a visual condition was the underlying cause of a celebrated artist's unique perspective. According to a 2004 study, Rembrandt might have had exotropia too. Another journal from 2009 hypothesized that both German Renaissance painter Albert Dürer and the impressionist Edgar Degas suffered from the rare condition as well, which affects only 1 percent of the population.

After measurements of eye position were taken, Tyler found that several portraits display misalignments suggestive of the condition, including a sculpture of *David* by Andrea de Verrochio that is believed to have been modeled on a young Leonardo, a sculpture of *Young John the Baptist* by Benedetto da Maiano also supposedly based on the artist, and even the Leonardo's *Vitruvian Man*. The eyes of the famed *Salvator Mundi*, which some speculate contains a self-portrait of the artist, also show the divergent pupils, he found. The researcher emerged out of the study with a nuanced conviction: that Leonardo's left eye was affected when he relaxed his gaze, but that the artist could also realign it when he focused.

Or, to put it in Tyler's own words: "The weight of converging evidence leads to the suggestion that da Vinci had intermittent exotropia with the resulting ability to switch to monocular vision, which would perhaps explain his great facility for depicting the 3-dimensional solidity of faces and objects in the world and the distant depth-recession of mountainous scenes."

But are these the portraits examined in the study really inspired by the artist's own image? The extent to which Leonardo represented his own likeness in his work is the subject of ongoing debate—even if the Renaissance great himself did write that all artists reflect their own appearance in their work. On the other hand, curiously, Leonardo's most famous and certain self-portrait, the red-chalk *Self-Portrait*, was not considered.