

Being told painting is fake changes brain's response to art

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A self portrait by Rembrandt (1630)

(Medical Xpress) -- Being told that a work of art is authentic or fake alters the brain's response to the visual content of artwork, Oxford University academics have found.

Fourteen participants were placed in a brain scanner and shown images of works by 'Rembrandt' – some were genuine, others were convincing imitations painted by different artists. Neither the participants nor their brain signals could distinguish between genuine and fake paintings. However, advice about whether or not an artwork is authentic alters the brain's response; this advice is equally effective, regardless of whether

the artwork is genuine or not.

The study, published in *Frontiers in Human Neuroscience*, was carried out by Professor Andrew Parker and Mengfei Huang of the Department of Physiology, Anatomy and Genetics, in collaboration with Dr Holly Bridge at the Oxford Centre for Functional Magnetic Resonance Imaging of the Brain (FMRIB) and Professor Martin Kemp of Oxford University's History Faculty.

Professor Martin Kemp, Emeritus Professor of the History of Art at Oxford University, said: 'Our findings support what art historians, critics and the general public have long believed – that it is always better to think we are seeing the genuine article. Our study shows that the way we view [art](#) is not rational, that even when we cannot distinguish between two works, the knowledge that one was painted by a renowned artist makes us respond to it very differently. The fact that people travel to galleries around the world to see an original painting suggests that this conclusion is reasonable.'

When a participant was told that a work was genuine, it raised activity in the part of the brain that deals with rewarding events, such as tasting pleasant food or winning a gamble. Being told a work is not by the master triggered a complex set of responses in areas of the brain involved in planning new strategies. Participants reported that when viewing a supposed fake, they tried to work out why the experts regarded it not to be genuine.

Andrew Parker, Professor of Physiology at Oxford University and the study's senior author, said: 'Our findings support the idea that when we make aesthetic judgements, we are subject to a variety of influences. Not all of these are immediately articulated. Indeed, some may be inaccessible to direct introspection but their presence might be revealed by brain imaging. It suggests that different regions of the brain interact

together when a complex judgment is formed, rather than there being a single area of the brain that deals with aesthetic judgements.’

Participants were shown a variety of portraits, some genuinely painted by Rembrandt and others not. This was chosen as a good test case, because recent scholarship has determined that many fakes and copies of his works exist. There was no evidence that the brain signals of the participants could reliably pick apart the true Rembrandts from the copies or fakes, so this research will not help to resolve the arguments that sometimes rage among connoisseurs and experts.

FMRIB is a multi-disciplinary neuroimaging research facility, which focuses on the use of Magnetic Resonance Imaging (MRI) for neuroscience research. [Functional magnetic resonance imaging](#) (fMRI) measures brain activity by detecting the changes in blood oxygenation and flow that occur in response to neural activity – when a brain area is more active it consumes more oxygen and to meet this increased demand blood flow increases to the active area. fMRI can be used to produce activation maps showing which parts of the [brain](#) are involved in a particular mental process.

Provided by Oxford University

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