Scientists dissect Van Gogh

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Art History research company better with physicists, chemists and computer scientists than just with art historians. Evidence that the scientists and art experts who together examined the works of Van Gogh and other masters of the past eight years.

The art experts and scientists presented their results recently at the symposium *Van Gogh's Studio Practice in Context* at the Stedelijk Museum in Amsterdam. The adjacent Van Gogh museum presents a selection of their work on display in the new exhibition *Van Gogh at work* .

Researchers from different corners of the exact sciences were discussed at the symposium. Physicists had paintings placed under the electron microscope, the composition of paint chemists and computer scientists investigated the smallest bumps in the paintings digitally recorded. With their help could museum curators past better piecing together of artists and paintings safe for future generations. Such collaborations have led the past eight years to groundbreaking insights into materials, painting techniques and even the lives of the painters.

Bedroom



Van Gogh's bedroom, as the painting there today looks. Source: Wikimedia Commons

Chemists have already made indispensable in finding out faded colors in paintings. The colors in the 'Bedroom', a famous work of Van Gogh, were particularly poor resistance to light. In Van Gogh's easel the walls of the bedroom were violet, art historians know from letters of the painter. For a contemporary observer, however, they are light blue. "That is partly due to the unstable dyes that were popular in Impressionism," says curator Ella Hendriks of the Van Gogh museum.

Hendriks enlisted the help of chemists that the composition of the pigments overtook in the painting. Along with color scientist Roy Berns of the Rochester Institute of Technology in the U.S. they then charged back how the colors dropped out as the pigments were not faded. So they could reconstruct how Van Gogh had the painting probably intended. The researchers kept their progress on a blog .

Well-meant

Light is not the only cause of faded colors. Restaurant with good intentions are sometimes just as guilty, according to research by Geert van der Snickt chemist at the University of Antwerp. His work explains why in Van Gogh's "Flowers in a Blue Vase" are now brown originating yellow flowers. "Under the influence of light yellow cadmium sulfide reacted with oxygen, making the color changed. When restaurateurs have a coat of varnish applied to counter. Further discoloration The varnish was however lead. Cadmium and sulfur compounds from the yellow pigment moved into the varnish and reacted to form lead sulfate and cadmiumoxalaat, both opaque substances. " According to Van der Snickt these reactions led eventually to brown discoloration.

Wires count

For more history behind a famous painting you sometimes literally beyond the paint look. Which states Rick Johnson, computer engineering professor at Cornell University in the U.S.. He examined the wire pattern in the cloths used masters like Van Gogh. "Small variations in the pattern of a wire cloth works as a fingerprint. Computer software can recognize fingerprint and identify which paintings are cut from the same cloth role. " With its software Johnson could confirm the authenticity of various works. Experts doubted example years or below really painting by Johannes Vermeer. Johnson showed that the cloth came from the same role as other paintings by Vermeer and took so that any doubts. "Some felt awful," says Johnson. "They found the painting too ugly for a Vermeer."



The Seated Harpsichord Player of Vermeer. An analysis of the threads in the fabric structure showed that this is indeed a genuine Vermeer. Source: Wikimedia Commons

For more scientific insights into the works of Van Gogh you until January 12, 2014 visit the exhibition *Van Gogh at work* .

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