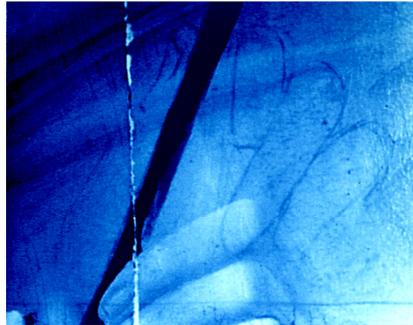


Conservation tools: Infrared Reflectography

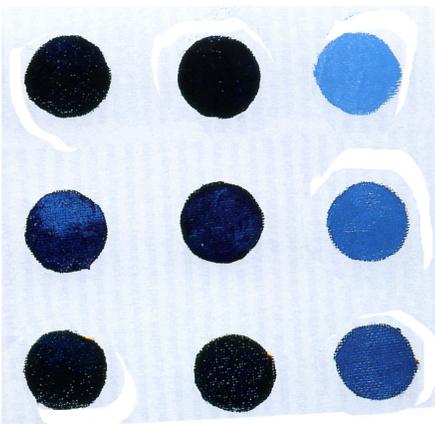


In the 1960s a technique called infrared reflectography was introduced as a tool for the non-destructive examination of paintings. It is used to show otherwise invisible under drawing in paintings. The analysis of under drawing can assist conservators and curators to understand the processes used by artists to create their works and even determine the artist.

The under drawing clearly visible in the infrared reflectogram on the right shows how the artist changed his mind about the position of the hand

Infrared light can penetrate through the upper layers of a painting allowing us to see otherwise invisible drawing underneath. Infrared light is similar to visible light but it has a longer wavelength and lies just outside the visible spectrum. Many of the pigments used in paint are more transparent to infrared radiation than to visible light, whilst the materials used for under drawing for example, graphite pencil, charcoal and other carbon-based drawing media absorb infrared light. Specially adapted cameras make it possible to translate the information received by the camera into a two tone image, with the drawing made visible as darker lines. The materials used for the under drawing, the pigments and the thickness of the paint and drawing layers will effect the success of this method of examination. Once the image is captured it can be stored in a computer and then be used to make direct comparisons between the work of art and the infrared reflectogram.

Pigment Profile: Prussian blue



Prussian blue: a beautiful intense blue, introduced as an artists pigment in 1724. Referred to as the first modern, artificially manufactured colour, it is formed from a mixture of iron-salt and cyanide. It was thought to have been produced accidentally by the German colour maker Diesbach as he experimented with the oxidation of iron when attempting to produce a red. It is hard to imagine but until it's discovery, artists did not have a stable and affordable blue. Ultramarine was some ten times more expensive and alternatives were often unstable, difficult to work with or simply not lightfast. Unsurprisingly it quickly became popular with artists and was widely used across Europe. By 1870 Winsor and Newton were selling Prussian blue. Famous artists who have used it include Gainsborough, Constable, Monet, Van Gough and Picasso most memorably in his 'Blue Period'.

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