

Macro-XRF scanning of Picasso's *Ménage de pauvres*: a case study

Thierry Ford, Geert van der Snickt and Koen Janssens

Background

In several of Picasso's works dating from the Blue Period (1901–04), underlying compositions and alterations have been detected using X-radiography.¹ New mobile scanning macro-X-ray fluorescence systems (MA-XRF) provide an *in-situ*, non-invasive, investigation approach for pigment composition in paintings.² In contrast to X-radiography, MA-XRF scanning produces a series of images, each corresponding to a chemical element found in the paint surface. Elemental distribution maps can identify various pigments, and in some cases reveal a hidden image not detectable with X-radiography. There has been limited use of MA-XRF scanning as a technique used to study Picasso's paintings from the Blue Period. The aim therefore was to investigate *Ménage de pauvres*/*Poor Couple in a Café* by Picasso, for the possibility of an underlying painting or alterations using MA-XRF (Fig. 1).

Ménage de pauvres

Picasso painted *Ménage de pauvres* in April 1903 whilst in Barcelona and before his fourth trip to Paris. A man and a woman are portrayed hunched over a table in a gloomy café interior. They sit huddled closely together, with an air of resignation. On the table in front of them are a shot glass and a carafe. The overall subject matter is typical of Picasso's pictures from that period, depicting the poor and the destitute on the fringes of society. The canvas is signed and dated both on the front and the reverse.³

Four preliminary sketches relating to the painted composition survive from the same date: three are in pen and ink on paper and the fourth, which closely resembles the final painted composition, was drawn with a coloured crayon on the back of a business card belonging to his two friends, the brothers Sebastià and Carles Junyer Vidal.⁴ The painting's provenance can be traced back to the German art dealer Alfred Flechtheim in 1912. It entered the National Gallery of Norway's collection in 1917 in the form of a gift valued at 18,000 Marks.⁵

Methodology

Since its acquisition the painting had not undergone any significant technical investigations. In May 2016, the painting was re-examined using stereomicroscopy, followed by a series of imaging techniques; raking light, ultraviolet (UV) fluorescence, infrared reflectography (IRR), X-radiography and MA-XRF.⁶

Findings

The painting's support consists of a commercially primed, unlined, linen canvas with a plain tabby weave. There are no structural damages, but prior to its acquisition in 1917 the canvas appears to have been attached onto a newer stretcher.⁷ Two preliminary findings point towards the presence of an underlying composition. Along the lower edge and tacking margins, the painting exhibits brightly coloured areas that



Figure 1 Pablo Picasso, *Ménage de pauvres*, 1903, oil on canvas, 81.5 × 65.5 cm, National Museum of Art, Norway, NG.M.01183. (Image: Nasjonalmuseet/Høstland, Børre. © Succession Pablo Picasso / BONO, Oslo 2017.)

are divergent from the surface painting, a finding that is typical for canvas reuse. Under magnification it is possible to see similar bright yellow and red coloured paint layers through open drying cracks (Fig. 2). The final composition also shows characteristics of an *alla prima* paint technique, rapidly executed with much wet-in-wet working, over a lower paint layer that had not completely dried. Picasso employed relatively thick brushwork giving texture to the carafe, shot glass and two figures. Results from the composite X-radiograph also confirmed the presence of a discarded composition, later overpainted. In the X-radiograph, the density and distribution of the

X-ray-opaque pigments (the white regions) makes it difficult to interpret, as they do not entirely correlate to the final composition. The forms and outlines of the table, glass and bottle are apparent, but those of the two figures remain confused with what appears to be another image, indicating an underlying composition by the artist. The X-radiograph also suggests that the canvas was perhaps rotated before reuse at 90° to the right, from landscape format (Fig. 3).

MA-XRF scanning was carried out on part of the painting with the aim of clarifying the enigmatic painting in landscape format. Almost none of the elemental maps displayed features that could

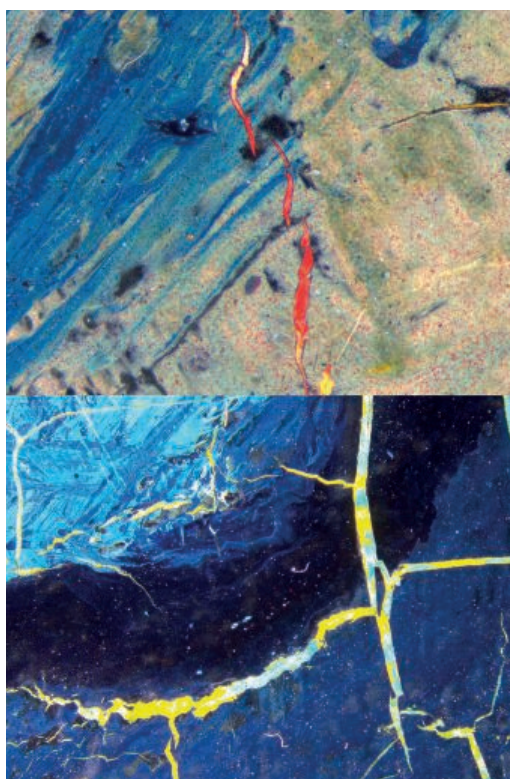


Figure 2 Details taken at $\times 10$ of drying cracks in two areas, showing bright red and yellow paint beneath. (Image: Nasjonalmuseet/Thierry Ford.)

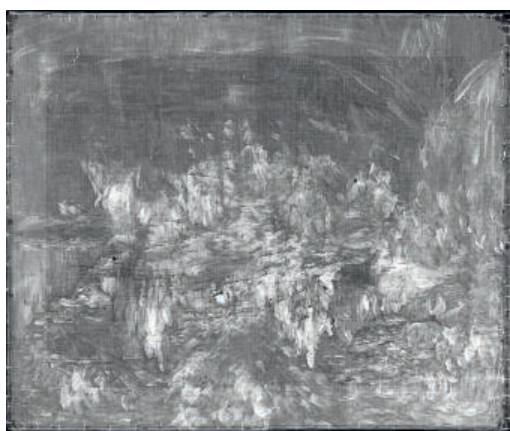


Figure 3 Composite X-radiograph image rotated 90° , in landscape format. (Image: Nasjonalmuseet/Thierry Ford.)

be related to this hidden composition, at the same time suggesting that this landscape is situated relatively deep in the stratigraphy and/or hidden behind an intermediate preparation. However,



Figure 4 MA-XRF elemental map for mercury (Hg) showing a hidden face. (Image: University of Antwerp/Geert van der Snickt.)

the mercury (Hg) map revealed outlines and features of the centrally positioned portrait of a man (Fig. 4). The use of a red pigment and the angular structure of the jaw and eyebrows points to a third portrait by the artist rather than an alteration of the woman's face seen today. It does not appear to have any similarities with the four surviving preparatory sketches so it may allude to Picasso's early self-portraits on paper such as *Self-portrait 1899/00-234*, in charcoal and *Self-portrait at Age 18 or 19, 1899/00-268*, in pen and ink (Barcelona, Museu Picasso). A third *Self-portrait 1901/02-001*, executed in chalk and watercolour (Washington, DC, National Gallery of Art) also bears some similarities. Nevertheless, it remains difficult to ascertain the identity of the sitter in the underlying portrait given the quantity of portraits and portrait sketches that Picasso produced of friends and, 'of anyone who might buy a drawing of himself', during 1899-1903.⁸

Conclusions

The findings from the MA-XRF scans proved successful in detecting Picasso's underlying work in *Ménage de pauvres*, which could not otherwise be captured or deciphered from the X-radiograph and IRR images. Further research is necessary to establish whether this hidden face sketched with a red (vermilion) paint is part of Picasso's pictorial process for the composition or an earlier overpainted self-portrait. The high proportion of lead and iron detected in the MA-XRF scans confirmed the presence of lead white and Prussian blue as the two major pigments used in the top composition. An in-depth hyperspectral imaging of the painting is planned later in 2017, with the aim of revealing the first lower image in landscape format.

Notes

1. Belloli, L. 2005. 'Lost paintings beneath Picasso's *La Coiffure*', *Metropolitan Journal* 40: 151-161.
2. Alfeld, M., Janssens, K., Dik, J., *et al.* 2011. 'Optimization of mobile scanning macro-XRF systems for the *in situ* investigation of historical paintings', *Journal of Analytical Atomic Spectrometry* 26(5): 899-909.
3. Signed on the front at the top right on the edge 'Picasso 1903', and signed 'Picasso 1903 Avril [April]' on the reverse.
4. 2011, The Blue Period 1902-04 Barcelona & Paris, *The Picasso Project: Picasso's Paintings*,

Watercolours, Drawings and Sculpture. A Comprehensive Illustrated Catalogue 1885-1973. San Francisco: Alan Wofsy Fine Arts, pp. 121-122.

5. Østby, L. 1973. *Katalog over utenlandsk malerkunst.* Oslo: Nasjonalgalleriet, p. 248. See also Messel, N. 2016. *Franske Forbindelser, Kunst kapital og konjunkturer i Norge rundt 1. verdenskrig.* Oslo: Messel Forlag AS, p. 130.
6. Stereomicroscopy using a Leica Wild M8, normal light, ×50 magnification; X-radiographs taken using 5 mA, 45 kV, exposure 2 minutes; IRR carried out with an ARTIST camera, spectral range 365-1100 nm; all at the National Museum of Art, Oslo. MA-XRF: AXES Research Group, Department of Chemistry, University of Antwerp.
7. Given the location of the older tack holes and the visible fold-over lines present along the top and bottom, the canvas appears to have been transferred to a slightly larger stretcher. See condition report for NG.M.01183, May 2016, Conservation Department, National Museum of Art, Oslo.
8. Richardson, J. 1991. *A Life of Picasso. Vol. 1: 1881-1901.* London: Jonathan Cape, p. 143.

Authors' addresses

- Thierry Ford, The National Museum of Art, Architecture and Design, Oslo, Norway. (thierry.ford@nasjonalmuseet.no)
- Geert van der Snickt, University of Antwerp, AXES group, Department of Chemistry. (geert.vandersnickt@uantwerpen.be)
- Koen Janssens, University of Antwerp, AXES group, Department of Chemistry. (koen.janssens@uantwerpen.be)