

CONSERVATION OF A CONTEMPORARY PAINTING

SCIENTIFIC ANALYSIS AND INTERVENTION ON A NEOREALIST PAINTING BY JÚLIO POMAR

Ana CUDELL^{1,2}, Jorgelina CARBALLO^{1,2}, António João CRUZ^{2,4}, Ana MARTINS³, Ana CALVO^{1,2}, Sandra SARAIVA³ (P)

Júlio Pomar (born 1926) is a Portuguese painter who, for more than 50 years, developed an outstanding style. Among its paintings, "O Cabouqueiro" (1949), painted at the beginning of his career, is a good example of the Portuguese neorealist art, movement where Pomar had a vanguard position. This painting was made after the Second World War, in a context of difficulties and dictatorship in Portugal. In spite of being a social intervention painting, "O Cabouqueiro", shows how the thematic and the political content are submitted to a formal work, where the materiality of the colour is explored and the testimonies of the real are revealed through an simplification and organization of the forms. In an interview with the artist, Júlio Pomar recognizes a non-deliberated use of the colour in this painting, which was a rapid executed work whose expressiveness was reinforced by the textures, successive paint layers, and intense and chromatically pure colours. He mentions a French influence (The Paris School).

This unvarnished painting made on canvas and on a wood stretcher, suffered an accident in the past and was in direct contact with water. In spite of ancient interventions, the paint layers were fragile and brittle, especially on the borders edges that were in contact with the humidity released by the wet wood of the stretcher. These parts showed lack of adhesion between the paint layers, losses and detachings. There was also insufficient tension and deformations on the canvas, probably due to a physical impact.

The painting was therefore analysed as part of a scientific study of Portuguese contemporary paintings,



Fig. 1. Julio Pomar (Portuguese, b.1926), *O Cabouqueiro*, 1949. Oil on canvas, 72 x 42 cm. Private collection. Published with permission.

which is taking place at the moment. One of the goals was to identify and to characterize the paints and materials. This information is useful for the better understanding of the degradation processes, overpaintings, detection of ancient conservation treatments and definition of appropriate treatment strategies.

A radiograph and a fluorescence ultraviolet photograph were obtained. The pigments were identified by energy dispersive X-ray fluorescence spectrometry (EDXRF) and Fourier transform infrared spectroscopy (FTIR), and the binder was identified by FTIR. The structure of the painting was also examined by cross-section with optical microscopy and scanning electron microscopy elemental mapping (SEM-EDS).

The results were confronted and completed with the information obtained on an interview with the artist.

The ground layer, extremely thin and heterogeneous, was prepared by the artist with zinc white and animal glue and it was applied directly on the linen canvas. Pomar used the following oil colours of *Lefranc & Bourgeois* : zinc white; titanium white; ultramarine blue; viridian; yellow; brown and red ochre or possibly Mars red; cadmium yellow; cadmium red; minium and bone black. Some of them have barium white as a filler or extender. Cobalt green and zinc white were identified in an overpaint.

¹Centro de Conservação e Restauro da Escola das Artes, Universidade Católica Portuguesa, PORTO (P).

²CITAR - Centro de Investigação em Ciências e Tecnologias das Artes, PORTO,(P).

³Departamento de Química da Faculdade de Ciências da Universidade do Porto, PORTO,(P)

⁴Departamento de Arte, Conservação e Restauro, Escola Superior de Tecnologia TOMAR, (P).

Fig. 2. EDXRF spectrum of the brown colour in different areas of the painting. Identification of ochre pigments and minium.

Point 2, brown
Point 3, brown
Point 4, Brown
Point 13, brown

The treatment aimed essentially for the stabilization and consolidation of the paint layers:

- Localized consolidation of the paint layers with an adhesive based on a thermoplastic, elastomeric polymer mixture - *Beva 371 OF* diluted in white spirit (50:50); application with a brush and heat-sealing with a hot spatula.
- Elimination of the canvas deformations by stretching and subsequent relaxing of the fibres with a cold ultrasound nebuliser; flattened with weights.
- Mechanical and chemical cleaning; after solubility tests the surface dirt was removed with a cotton swab and distilled water.
- Replenishment of losses with a paste based on calcium carbonate and barium sulfate with an acetate copolymer binder - *Modostuc*
- Inpaint and retouching with pigments binded in gum arabic;
- Final pulverization (spraying) with a cellulose ether based adhesive - *Methyl cellulose* in low concentrations, previously diluted in water. Besides being a reversible material it has the advantage of being mate, so it doesn't interferes with the original perception of the image. This application was mainly on the edges with the purpose of protecting the most fragile and brittle parts of the painting.

E(keV)

Fig. 3. Detail of a margin showing the fragility of the top paint layer.

Acknowledgements

AC. thanks FCT for the grant (SFRH/BD/37616/2007).

We also would like to thank the artist, the owner of the painting and MoMA for the analysis of SEM

Analytical references

- EDXRF: Portable EDXRF equipment integrated by a laser excited X-ray tube (voltage from 0 to 35kV and intensity 0 to 100uA) with silver anode. The fluorescence lines were registered with a thermoelectrically cooled Si-PIN (AMPTTEK, Inc.) detector, with 7mm² of effective area, resolution 180eV (FWHM) and 7µm Be window.
- FTIR: Samples were prepared as KBr pellets and spectra were obtained in the 400-4000 cm⁻¹ region and resolution 4cm⁻¹ using a Bruker Tensor-27 FTIR spectrometer.
- Imaging and elemental X-Ray mapping was performed with an Evex Mini-SEM with X-Ray Nano Analysis.