

Cmop

CMOP
Cleaning Modern Oil Paints

Project Summary

Within the primary context of safeguarding tangible heritage for current and future generations, 20th- and 21st-century oil paintings are presenting a range of challenging problems that are distinctly different from those noted in paintings from previous centuries. Problems are often but not exclusively associated with unvarnished, unprotected surfaces.

Phenomena increasingly observed include the formation of vulnerable surface 'skins' of medium on paint surfaces, efflorescence, unpredictable water and solvent sensitivity, and alarming incidences of dripping paints, several years after the paintings have been completed. The current lack of understanding of the nature of change in modern manufactured artists' oil paints means that established empirical approaches to conservation treatments such as surface cleaning are not applicable to a great number of works. In particular, commonly used systems that rely upon water as a major component cannot be safely applied to clean modern oil paintings.

Thus far, few alternative methods of treatment have proven effective and as a consequence the presentation of modern oil paintings may be compromised. This project aims to make a significant impact on our understanding of the reasons behind these alarming problems by exploring several aspects of paint formulations (oil [lipid] fraction, pigment-medium interactions, additives), and case study works of art.

Those explorations will guide the development of surface cleaning systems that are more appropriate for use on the increasing numbers of unvarnished

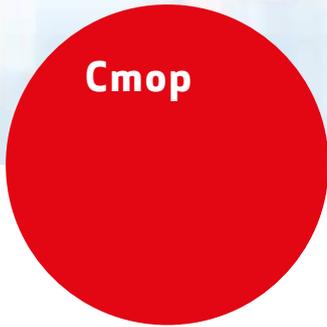
oil paintings in international and private collections. New cleaning systems will be trialed on works of art in several internationally significant public collections. This information will be disseminated via web platforms, seminars, conferences and a documentary for the general public. The cleaning systems will be introduced via existing continuous professional development courses and workshops/seminars aimed at practising conservators and conservation students, thereby offering practical solutions to current and future conservators facing these difficult challenges.

Application and impact

CMOP is timely as 20th century cultural heritage needs particular appreciation, care and research.

An awareness of water- and solvent-sensitivity and other degradation phenomena associated with modern oil paintings has increased considerably over the past 5-10 years as many works of art are requiring surface cleaning for the first time. Sensitivity of oil paints to water has been reported in works of art ranging from the early 20th century to recent years. Works by artists such as Wassily Kandinsky, Kazimir Malevich, Piet Mondrian, Paula Rego, Karel Appel, Jasper Johns, Robyn Denny, Clyfford Still, Patrick Heron, Francis Bacon and Per Kirkeby have all been noted as problematic.

Initial research has suggested that the number of paintings exhibiting water sensitivity peaks around the 1950s - 1960s (Tempest et al 2013; See Part A5),



Documenting degradation phenomena

but the full extent of the problem is not yet known: the number of works recognised as being at risk with respect to surface cleaning treatment will continue to increase as many 20th-century paintings require cleaning for the first time.

Artists' paints and the paintings made from them undergo chemical and physical changes as they dry and age. These material changes have a significant impact on the aesthetic and physical integrity of works of art, and modern manufactured oil paints are different from traditional paints in their chemical composition and manufacture, and the formulation and changes in these materials are not well understood. The consequences for the art made using paints from the 20th Century onwards is that they exhibit changes that are different to those seen in older works, and present new phenomena, such as the formation of vulnerable 'medium skins' on paint surfaces, efflorescence, changes in surface gloss due to degradation and previous conservation treatments. Figure 3 shows an example of vulnerability of skin of medium resulting in

change in gloss after treatment with an aqueous solvent, and Figure 4 shows water sensitivity as a result of formation of water soluble salts from reaction of $MgCO_3$ in the paint with atmospheric SO_2 .

One of the most significant challenges is the care of these paintings which are commonly unvarnished and in modern era are often large in scale, and displayed without protection, where the paint surface is in direct contact with the environment. The impact of the accumulation of dirt and the effect of environment may influence chemical change in painting materials that has direct implication for the preservation and conservation treatment of works of art. It is thus crucial to understand the material composition of the paints and the nature of these material changes in order to design specific and appropriate conservation treatments.

The variety and increasing urgency of the problems associated with modern oil paintings were highlighted in the 'Issues in Contemporary Oil Paint' symposium held 28/29 March 2013 (RCE, Amersfoort, the Netherlands); which attracted 140 conservation professionals, as well as significant artists' paint manufacturers and heritage scientists from over 20 countries.

Coordinator

University of Amsterdam (NETHERLANDS).

Participants

- Cultural Heritage Agency of The Netherlands (NETHERLANDS)
- Tate Gallery (UK),
- Courtauld Institute of Art (UK)
- University of Pisa (ITALY)

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Subject area(s)

Modern, oil, paint, cleaning, challenges

Project website

<http://www.tate.org.uk/about/projects/cleaning-modern-oil-paints>



Paint making