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A case study of a contemporary painting

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NOTE DE L'ÉDITEUR

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Introduction

- 1 When the research on retouching commenced in 2006, it was found to be a complex topic. Most Portuguese conservators, whether they have very little or a lot of experience did not seem comfortable to talk about the subject, not only about the techniques used but also about the materials and procedures. The information available on retouching is descriptive, revealing just the selected retouching technique and some notes about materials. Few professionals justify their choices in retouching procedures, unlike common for other treatment steps such as the cleaning of surfaces. This article aims at describing the methodology of retouching in detail, listing the chosen materials and the reasons that led to the choices made in regards to materials and technique.
- 2 The selection of the technique and choice of colours are related to the formal and chromatic study of the artwork. That is, the analysis of the disturbance caused by paint loss, the hue of the original and the general condition of the painting. Factors such as texture, the interaction of light with matter, the stability of pigments and binders and the refraction indices were considered. All these factors were simultaneously evaluated according to the situations, with the single purpose to increase the durability of the retouching.

Case study of an oil painting on canvas

- 3 The retouching methodology of the artwork entitled *Pli Contre Pli* was organized in four steps: chromatic and formal study, selection of a retouching technique, choice of the retouching material and practice. In the first stage the Gestalt law of contrast was used, considering the phenomena of colour perception and the simultaneous contrast¹. In the second stage the retouching technique was selected. This was done in consultation with the owner, taking the type of artwork and its function into account, and assessing and the losses. The selection of the retouching material was made considering the refractive indices of pigments and binder of the artwork. The final step was the retouching practice. This task involves many factors that were contemplated before and during the process:
- the incidence of light on the analysis of the pictorial surface (texture);
 - the decomposition of the original hue into others sub-colours;
 - interaction of light with matter (opacity, transparency, luminosity, etc.);
 - the stability, consistency and reversibility of materials.
- 4 Regarding the retouching itself, the mimetic technique was selected. To achieve this, the materials used were Modostuc® (for filling losses), cellulose ether Methylcellulose C4000 (a binder) and pigment powder Winsor & Newton®.

The work

- 5 The painting chosen for the case study is from the Portuguese painter Jorge Martins² (Fig. 1). It is an oil painting on canvas, entitled *Pli Contre Pli*. This artwork dates from 1967, it is signed by the author and measures 162 cm x 130 cm without frame. It is a monochrome painting in hues of gray and black, with the representation of folds. The preparation is white and very thin.

Fig. 1 Jorge Martins, *Pli Contre Pli*



Oil painting on canvas entitled *Pli Contre Pli* from the Portuguese painter Jorge Martins.
Photo credits: Ana Bailão.

- 6 Resulting from several years of travelling (packing and transport) to exhibitions in Portugal and abroad, the artwork got damaged along the edges including some paint loss. The painter himself commissioned the restoring of the art work, in order to recover the potential unity of the painting (Fig. 2).

Fig. 2 Jorge Martins, *Pli Contre Pli*



Losses map.

Scheme and photo credits: Ana Bailão.

Formal and chromatic Study

- 7 There were three main losses, which were perceived by observers as foreign bodies, appearing as “figures” relegating the painting to act as a “background” to the lacunae themselves. Since the losses have their own shape and colour, and these features do not relate to the painting, there is a risk that these visual disturbances appear more evident, especially around the signature of the painter (Fig. 3). This is emphasized because of the darker colour of the signature and, according to Gestalt’s law of contrast, the defect is emphasised by the fact that the painting is painted in the grayscale³.

Fig. 3 Jorge Martins, *Pli Contre Pli*



Losses observation around painter's signature.

Photo credits: Ana Bailão.

- 8 From the standpoint of colour, the painter stated that the oil paints used to realise the artwork, were Ivory Black (PBk 9)⁴ and Titanium White (PW 6) brand Rembrandt®.

Description of the retouching practice

- 9 For the selection of the retouching technique, the owner was consulted, the type of artwork and its function, and the losses were considered.
- 10 The painting is considered an object of great value by the painter. It often requested for temporary exhibitions in national and international institutions. It has also been used as a front cover for exhibition catalogues. The lacunae were extensive and mostly located along the edges. As mentioned above, mimetic retouching was chosen as an adequate technique. To close small losses, the retouching was carried out by applying small points close to each other. In medium and large losses, overlapping glazes were applied. Most paint losses were located in areas where the paint layer was extremely thin. Therefore it was not necessary to apply any filling material prior to retouching. However, it was deemed necessary to create a thicker and textured layer using filling material around three lacunae⁵. The macroscopic texture plays an important role in determining the visibility of reintegration of the losses. In all three areas mentioned above, under raking light, the chromatic layer produced shadows. Therefore, the application of filler was considered necessary in order to restore the continuity of the surface texture. But, to complete the task, one question remained: should the fill be textured? Once again, the macroscopic texture of the painting had an influence on the intervention. In case of a flat fill, the colour reintegration would appear brighter than the surrounding original colour when viewed from a distance. On the contrary, an adequately textured infilling, would be

closer to original, due to the similarity of the light scattering between the original and the retouching. Since the aim was mimetic reintegration, imitating the artist's brushstroke as a manner of creating surface texture was chosen (Fig. 4).

Fig. 4 Jorge Martins, *Pli Contre Pli*



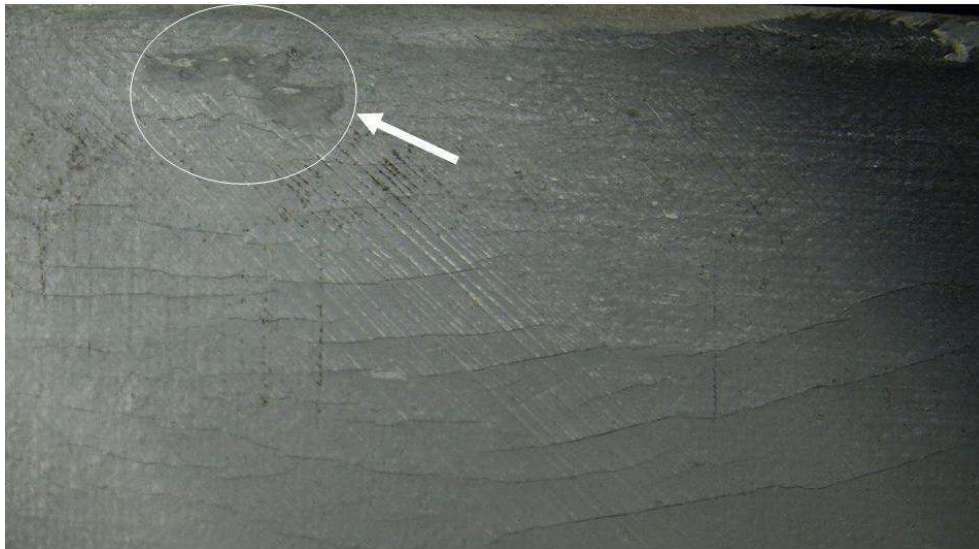
Images before and after gap filler application. Suggestion to imitate the artist's brushstroke.

Photo credits: Ana Bailão.

- 11 The remaining paint losses were retouched directly on the original preparation with Winsor & Newton® gouache paints. These paints were used for three reasons: reversibility, permanence of colour and opacity. During retouching two of the most common problems in contemporary painting emerged: the refractive index and metamerism.
- 12 The refractive index or index of refraction is the ratio of the speed of light in vacuum relative to speed of light in a given medium. The refractive index of binding media is likely to change on ageing, whereas for the pigments, it remains stable.⁶
- 13 Metamerism is a phenomenon that can pose problems to all those who must match colours. Ruth Johnston-Feller alleged that “two colors are said to be metameric if they appear to be the same color to an observer under one set of illumination and viewing conditions, but appear to be different if any one of these conditions is changed⁷. The conditions include the spectral character of the light source under which the pair of colours is observed; the spectral reflectance or transmittance of the objects; the particular response of the observers looking at the colour pair; and the directional or geometric conditions of viewing⁸.
- 14 In the case study metamerism occurred when the painting was observed from different angles, due to the distinctive refractive index between original and retouching materials. Linseed oil (the binding medium in the original oil paint) and arabic gum (a

constituent of gouache) have approximately the same refractive indices, around $\eta = 1.47$. However, with aging, the refractive index of the oil increases up to $\eta = 1.51$; the gouache, in turn, is a combination loose pigments, fillers⁹, arabic gum, water and other additives, and its refractive index is modified after evaporation of water, to $\eta = 1.33$. In visual terms, this means that the perfect perception one has at time of application, will be altered as soon as the gouache has dried. The end result is opaque and matte in comparison to the original oil paint (Ill. 5). As the original paint layer proved sensitive to non-polar and polar solvents, the use of natural and synthetic varnishes was ruled out, as application as well as probable future varnish removal would affect the original.

Fig. 5 Jorge Martins, *Pli Contre Pli*



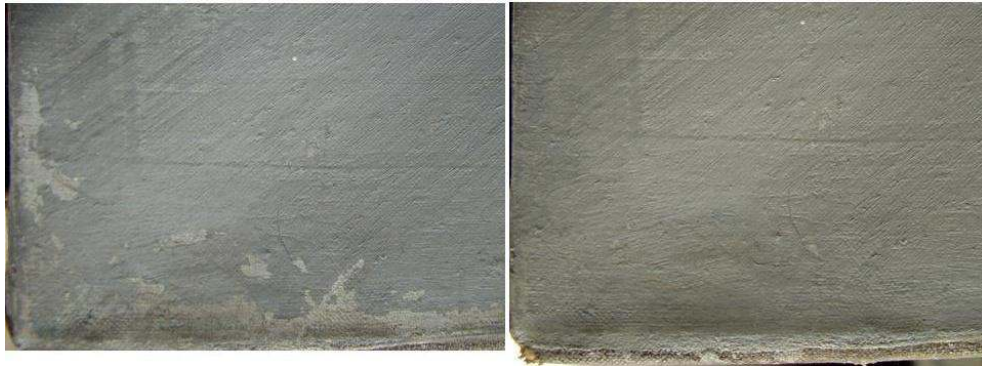
Spot with gouaches colour tests.

Photo credits: Ana Bailão.

- 15 In addition to gouache, a test was done using watercolour paint from the same brand because of the colours being brighter¹⁰, however they proved to have poor covering capacities.

Among the aqueous products available with a refractive index close to the polymerized oil, cellulose ether Methylcellulose C4000¹¹, of $\eta = 1.49$, in combination with pigments in powder form was tested. This retouching material proved to have a refractive index equivalent to that of the original paint. With this binding medium further colour tests were made, and the results were positive. Dilution was gradual in cold water. The amount of methylcellulose used was minimal, in order to avoid the formation of granules and to maintain the adhesion required for pigments aggregation. There are two ways of mixing gray: mixing one part yellow, one part red and one part blue paint or with one to one black and white. The last option was preferred, mainly due to the brightness of the paint layer. Using the same pigment the artist used, titanium white (PW 6) and ivory black (PBk 9)¹² of the Winsor & Newton® brand, agglutinated in methylcellulose, it was possible to approximate the refractive index and reduce metamerism (Fig. 6).

Fig. 6 Jorge Martins, *Pli Contre Pli*



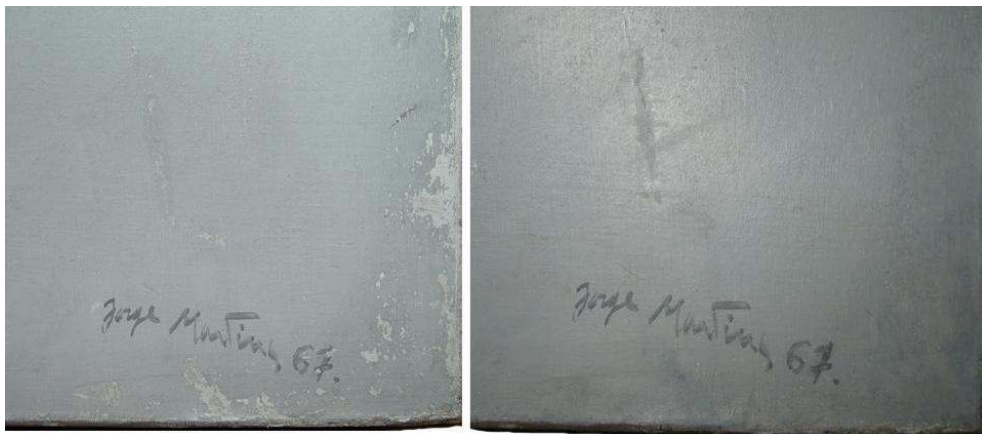
Images before and after retouching with Methylcellulose C4000 and powder pigments.

Photo credits: Ana Bailão.

- 16 Although the black pigment (PBk 9) is thought to have no disadvantages in its use in a water system, its dispersion in methylcellulose was proved to be slower in comparison to titanium white. It was necessary to add ox gall to lower the surface tension and improve the dispersion of the black pigment.

The paint was applied moving from the lighter colour to the darker, in order to achieve, by using glazes, various hues of grey paint. The white was mixed with a second blend obtained with two colours: titanium white (PW6) and yellow ochre (PY43). The purpose of mixing these two tones was to obtain a similar hue to that of yellow Naples¹³. Using this mixture, the saturation, brightness and the hue of a natural aged grey tone oil colour could be achieved (Fig. 7).

Fig. 7 Jorge Martins, *Pli Contre Pli*



Images before and after retouching.

Photo credits: Ana Bailão.

- 17 A week after the completion of the colour reintegration, a thin layer of methylcellulose was applied with a brush, on the matt retouched areas. This did not cause any dissolution of the retouching.

Conclusion

- 18 From a methodological point of view it is important that all conservators take note of all decisions, approaches and materials used in the retouching practice, since these are essential for the history of the intervention as well as for future conservation and restoration treatments in general.
- 19 As in other conservation and restoration tasks, the retouching might be performed according to a methodology and can also be explained. It is essential to develop a chromatic and formal study, including the choice of materials and retouching techniques before the commencing the treatment. This procedure is necessary to understand the painted surface, and for resolving the esthetical issue. It is of great significance for conservators to take the incidence of light on a pictorial surface into consideration, before, during and after any retouching treatments.
- 20 This work is an ongoing project which aims to study methodologies for quality enhancement of retouching paintings.

21

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- SCICOLONE, G.C., *Il restauro dei dipinti contemporanei. Dalle tecniche di intervento tradizionali alle metodologie innovative*, Firenze, Nardini Editore, 1993.

NOTES

1. BRANDI, C., "Il Trattamento delle lacune della gestalt psychologie", *XX International Congress of History of Art*, New York, [s.ed.], 1961, pp. 149-151; ARNHEIM, R., *Arte e Percepção Visual: Uma psicologia da visão criadora*, São Paulo, Thompson Learning, 2004, p. 59; BRANDI, C., *Teoria do Restauro*, Amadora, Edições Orion, 2006; ALBERS, J., *La interacción del color*, 16.^a ed., Madrid, Alianza Editorial, 2007, pp. 84-86.
2. Jorge Martinez was born in Lisbon on February 4, 1940. Between 1957 and 1961, he attended courses in Architecture and Painting in Escola Superior de Belas-Artes de Lisboa (ESBAL). In 1958 he sets up a studio and begins his career as an artist. He visits and settles in New York (1975) where he works. In 1985 he participates in the Portuguese representation in the 18th São Paulo Biennial and in 1994 the Calouste Gulbenkian Foundation does a retrospective of his work. In 1995, it is opened in the metro station Archives / Navy Memorial in Washington, the high-relief Ocean Piece of his authorship. In 2001 there is another major exhibition of the painter on Culturgest, Lisbon, with more than four dozen paintings. In 2003 he won the consecration prize CELPA / Vieira da Silva and in 2006, at the Centro Cultural de Belem, an anthology of Jorge Martins is presented. BARROSO, E.P., *Jorge Martins*, Lisboa, Editorial Caminho, 2006.
3. SCICOLONE, G.C., *Il restauro dei dipinti contemporanei. Dalle tecniche di intervento tradizionali alle metodologie innovative*, Firenzi, Nardini Editore, 1993, pp. 108, 109.
4. It is the black most frequently used by artists. Most of the ivory-black is made by charring ivory, horn or bone in a crucible. It is a very light and thin pigment. Has slowdrying oil, so any coat of paint put on it will tend to crack. It has a crimson hue slightly. True black bone was done by burning the remains of ivory. HARLEY, R.D. *Artists' Pigments c. 1600-1835*, Second Edition, England, Butterworths, 1982, pp. 158, 159; MAYER, R., *Manual do Artista de Técnicas e Materiais*, São Paulo, Livraria Martins Fontes Editora, 2006, p. 114.
5. The material used was Modostuc® stucco.
6. MATTEINI, M.; MOLES, A., *Ciencia y restauración*, Andalucía, Nerea, 2001, p. 50, 51.
7. JOHNSTON-FELLER, R., *Color Science in the Examination of Museum Objects. Nondestructive Procedures*, Los Angeles, The Getty Conservation Institute, 2001, pp. 40.
8. JOHNSTON-FELLER, R., *Color Science in the Examination of Museum Objects. Nondestructive Procedures*, Los Angeles, The Getty Conservation Institute, 2001, pp. 40, 41.
9. The characteristic covering power of gouaches as well as its opacity is related with the addition of precipitated chalk to the vehicle. This filler varies by manufacturer. Some high-quality brands use little or no chalk, just pigment. The Winsor & Newton® uses plaster and other products not mentioned. See GOTTSEGEN, M. D., *The Painter's Handbook*, New York, Watson-Guption Publications, 2006, p. 221; WINSOR&NEWTON – Designers Gouache [Online]. Harrow, England : ColArt Fine Art & Graphics Ltd, 2003 - 2008. [Consult. 29 Set. 2009]. Available in WWW:<URL:http://www.winsor newton.com/products/gouache/designers-gouache/>.
10. The watercolors are brighter than the gouaches for not having fillers added. However, for the same reason, are more transparent.
11. This is cellulose ether soluble in cold water and high viscosity at 25 ° C. According to Feller, with the exception of ethyl cellulose and other ethers, including methylcellulose, are not sensitive to photochemical degradation, i.e., exposure to visible light and ultraviolet radiation emitted by fluorescent lights during the day. FELLER, R. L.; WILT, M. H., *Evaluation of Cellulose Ethers for Conservation*, Los Angeles, Getty Conservation Institute, 1990, p. 38.
12. Refractive index is $\eta = 1,65-1,70$.

13. Yellow Naples available on the Portuguese market is the mixture of titanium white (WP 6) with the yellow isoindolinone (PY 109) or PBr 24 pigment, the first by Royal Talens® and the second by Winsor & Newton®, respectively.

RÉSUMÉS

Entre Novembre 2006 et Janvier 2010, nous avons fait une recherche dans le cadre du programme de Maîtrise sur la méthodologie et les techniques de retouche. Le but de cet article est la description, en quatre étapes, de la méthodologie de retouche d'une peinture contemporaine. Les quatre étapes sont: étude chromatique et formelle, avec l'utilisation de la théorie de la *Gestalt* et des phénomènes de contraste et assimilation, la sélection de la technique, le choix des matériaux et la pratique de retouche.

Between November 2006 and January 2010, an investigation into retouching methodologies was carried out. The aim of this paper is to describe, in four steps, the retouching methodology of a contemporary painting. The four steps are: chromatic and formal study, considering the use of Gestalt theory and the phenomena of contrast and assimilation; selection of the technique; choice of the materials and retouching practice.

INDEX

Mots-clés : Gestalt, méthodologie, peinture, retouche

Keywords : Gestalt, methodology, painting, retouching

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Ana Bailão is a graduate of the Polytechnic Institute of Tomar, in Conservation and Restoration (2005) and has a master's degree in Painting Conservation by the Portuguese Catholic University (2010), where she is currently a PhD candidate in Conservation of Paintings. Her aim is to study methodologies which might help to enhance the quality of painting retouching. Since 2004 she practices conservation and restoration in her own studio in Lisbon. Contact: ana.bailao@gmail.com.