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Notes
1 One student chose this project for her thesis in the final year of her studies. See: K. Kolff, *Rijksmuseum Amsterdam, Stageverslag SRAL,* [unpublished thesis, SRAL Training Program 'Restoration of historic interiors'] (Maastricht, 2003).
2 A.W. Pugin, *An Apology for the Revival of Christian Architecture in England,* (London, 1843), 22: 'for we do not wish to produce mere servile imitators of former excellence of any kind, but men imbued with the consistent spirit of the ancient architects, who would work on their principles, and carry them out as the old men would have done, had they been placed in similar circumstances to ourselves.'
3 E. E. Viollet-le-Duc, *Dictionnaire raisonné de l'architecture francaise du XIe au XVIe siècle,* 10 vols, (Paris, 1854-1868); caption 'Restauration', Dictionnaire, VIII, 1866, p. 14 'Restauration. Le mot et la chose sont modernes. Restaurer un édifice, ce n'est pas l'entretenir, le réparer ou le refaire, c'est le rétablir dans un état complet qui peut n'avoir jamais existé à un moment donné. Ce n'est qu'à dater du second quart de notre siècle qu'on a prétendu restaurer des édifices d'un autre age, et nous ne sachions pas qu'on ait défini nettement la restauration architectonique.'
4 A. C. J. van Leeuwen, *De maakbaarheid van het verleden, P. J. H. Cuypers als restauratie architect,* (Zwolle/Zeist, 1995).
5 J. Perry, *Ons fatsoen als Natie, Victor de Stuers 1843-1916,* (Amsterdam, 2004).
6 G. van der Ham, *200 jaar Rijksmuseum. Geschiedenis van een nationaal symbool,* (Amsterdam, 2000).
7 Van Hoogevest Architecten, *Voorlopig Ontwerp Restauratieplan,* (Amsterdam, 2002).
8 The training of specialists at various educational levels was seen as a major contribution to the separation of the profession into relevant specialisms, and indeed as an inescapable requirement for the future conservation of nineteenth century ensembles.
9 A. van Grevenstein, *Een kleurverkenning in het interieur van het Rijksmuseum: zoeken naar Cuypers, van fragment tot ensemble,* SRAL report, (Maastricht, 2003).
10 J. Becker, 'Ons Rijksmuseum wordt een tempel': zur Ikonographie des Amsterdamer Rijksmuseum', in: *Nederlands Kunsthistorisch Jaarboek, 35,* (Weesp, 1985), 227-326.
11 V. de Stuers en P. J. H. Cuypers, *Het Rijks-Museum te Amsterdam,* (Amsterdam, 1897).
12 Viollet-le-Duc, vol. VII, 1864, p.8 'La peinture appliquée à l'architecture ne peut procéder que de deux manières: ou elle est soumise aux lignes, aux formes, au dessin de la structure; ou elle n'en tient compte, et s'étend indépendante sur les parois, le voutes, les piles et les profils.'
13 V. de Stuers and P. Cuypers, *Le Musée National d'Amsterdam,* (1897).
14 A. Heijbroek, *'Een literaire wandeling door het Rijksmuseum',* Bulletin van het Rijksmuseum, 38 (1990) 4, 368-370: 'Zijn Wetenschap en Kunst vaak met elkaar in strijd, hier is de Wetenschap der Kunst een zaal gewijd.'
15 For further information about the 'Colours of Cuypers' in the Rijksmuseum, reference can be made to: A. van Grevenstein, '"Anti-Scrape" in the Rijksmuseum Amsterdam, the reconstruction of the colours of Cuypers', in *Pre-prints ICOM-CC triennial meeting (The Hague, 2005).*

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Bookreview

J.H. Townsend, M. Clarke, and A. Stijnman, editors

Art of the Past - Sources and Reconstructions, Proceedings of *Approaching the Art of the Past: Sources & Reconstructions,*Symposium organised by the study group *Art Technological Source Research,* ICN, Gabriël Metsustraat 8, Amsterdam – Thursday 14 and Friday 15 October 2004, (London, 2005). Archetype Publications, ISBN 1904982018. Price: £35.00.

The activity known as 'technical art history' has evolved over the recent years in a spectacular manner. This is to a very large extent due to the availability of sophisticated equipment. Scientists examine increasingly smaller samples in increasingly more detail. High resolution scanning electron microscopes – a few years ago considered a rather exotic beast for this type of study – are now being used on an almost routine basis. Special beamlines for advanced microdiffraction, XAFS, and XANES studies have become available for the study of art and archaeology at synchrotron facilities (ID 21 and ID18F at ESRF in Grenoble). Novel imaging techniques with k-edge absorption, tomography, and teraherz imaging are being explored to complement the more conventional techniques like x-radiography and infrared reflectography. Very advanced inorganic mass spectrometry allows us to distinguish different isotope ratios in extremely small paint samples with a precision of five decades. The identification of binding media in paintings, that used to trouble many museum scientists, can now be accomplished with astonishing accuracy in, again, extremely small samples. Materials from paintings are subjected to radiations of different wavelengths and energies and characterised with impressive and expensive hyphenated instruments. The results of these come out in an almost endless stream of graphs and numbers.
But what does it all mean? This is where good old-fashioned reading comes in. It takes a healthy understand-

ing of original techniques and artistic methods to interpret and understand these scientific data. Without this knowledge the outcome of sophisticated analyses may easily become useless heaps of data and mean nothing at all. The paintings researcher and the scientist are trapped in a blessed state of mutual dependency. The art historian needs the scientist to tell him what this peculiar yellow or blue paint consists of. The scientist needs the historian of art technology to tell him what to look. But where does the historian of art technology get his knowledge? What is it that makes him capable of keeping the scientist on the right track?

In the past a considerable number of technical sources with a staggering variety have been compiled by practicing artists as well as by amateurs. These pieces of documentary evidence may date from Roman or Hellenistic antiquity to nineteenth century English manufacture, and vary from product descriptions of seventeenth-century colourmen to mediaeval apothecary lists, from extensive painting instructions in early printed handbooks to individual pigment recipes in manuscript on loose scraps of parchment. Printed on nice rag paper in a beautiful Roman type, written with complex abbreviations in poor Latin with horrible palaeography in a *bastarda*, or nicely readable in a stylish *cancelleresca* on perfect white vellum.

Some of the most important sources have been deciphered, translated and published in the late nineteenth, and early twentieth century by famous scholars like Mary P. Merrifield[1], Ernst Berger[2] and Daniel V. Thompson.[3] Many more are still hidden in the great and not-so-great libraries and archives, and although we dearly miss the likes of Berger or Merrifield, technical sources are still being discovered, translated and published.

The *Art Technological Sources Research* group (ATSR) devotes itself to the study and dissemination of source material. This is not a trivial pursuit. The publication of technical sources often involves complex, slow, and tedious transcription. This has to be done by an editor who is conversant in the language (which may be, for instance, Old English, mediaeval Latin, or Middle Netherlandish), who is familiar with the subject, and who can read the handwriting of the period.

Reconstructing the Art of the Past presents the post-prints of the first ATSR symposium held October 2004 in Amsterdam. It is an attractive book that includes most of the papers and posters that were presented, and some additional material on the same theme. A good number of the papers deal with the construction of computerised data bases. The papers by Oltrogge, Clarke and Stijnman make clear that there are good reasons for doing so. Systematically composed treatises with well-defined aims by one specific author are highly exceptional. In most cases these technical documents are collections of recipes and instructions, over many years compiled from other sources. Documents are often written by different hands. Scribes did not always faithfully follow their exemplar; quite often they selected a few recipes of interest and compiled them with different fragments from other sources. Sometimes a scribe would, on the basis of his own technical experience, add bits of information to a recipe he transcribed, leave something out, or mix with information from other recipes. Therefore, the same or not-quite-the-same, recipe may occur in different manuscripts. It hardly ever happens that we encounter the same complete corpus of recipes in two different manuscripts. In short: the material is highly complex and the amount of material that may contain art technological information is immense and scattered. Only through a systematic and efficient handling of this material can it be feasible to retrieve it and extract relevant data for scientific research. In *Reconstructing the Art of the Past*, Carlyle, Clarke and Oltrogge present different approaches to solve the problem of accessibility. Because of the complex nature of the material and problems of transcription, data base retrieval is usually done with the use of key words in different thesauri. In this respect, the post-print volume would have benefited from a structural comparison with the data base that ICN (then Centraal Laboratorium) had build up in the 1980s.

A substantial number of the contributions deal with the reconstructions of products and processes that can be made on the basis of reliable sources, which is reflected in the title of the post-print volume. In some respects the conference seemed to have had a stronger emphasis on reconstructions than on the sources themselves. The contribution by Carlyle and Witlox gives a number of examples. These authors are involved in the so-called HART project. This acronym stands for Historically Accurate Reconstructions Techniques, thereby indicating that the making of reconstructions is really at the heart of their efforts. They made oil paints and ground reconstructions with as much accuracy as feasible in order to explore historical recipes and workshop practices. These reconstructions may serve as reference sets for the interpretation of instrumental analyses and light microscopy based on painting cross-sections. In this context there is a point of concern that the tool for research may eventually become the actual subject of investigation. Carlyle and Witlox are well aware of this

pitfall, but young, ambitious and overenthusiastic researchers may easily fall into this trap. The paper emphasises the need for thorough documentation and long term care and storage for the reconstructions.
A similar approach is shown by Kirby. She demonstrated the application of nineteenth-century historic recipes for the making of a series of red lake pigments. This project was initiated at the analytical laboratory of ICN to get a better understanding of the aging and fading properties of red lakes on paintings by Van Gogh. Some of the various reconstructed red lake paint mixtures are subjected to regimes of artificial ageing to serve as reference in the analysis of samples from real paintings.
In his concluding remarks Wallert demonstrated that important technical sources may be hidden in the guise of ephemeral or casual remarks. A few words, casually hidden between remarks on trivial things may appear to be a surprisingly rich source of information on historical painting techniques.
Reconstructing the Art of the Past is too extensive and wide-ranging to discuss every individual contribution in detail. But I cannot resist the temptation to mention the contribution by Nicolaus and Whiting. They made a reconstruction of Dürer's portrait machine, and thereby demonstrated that making reconstructions is not only instructive in that it helps to understand historic technical processes, but that it can also be great fun.
A significant result of the meeting was the reflection on the historic value of reconstructions. In the interpretation of historical sources, there may be many uncertainties. Recipes are not always sufficiently specific on measurements, quantities or temperatures. Reading and translating a historic source can, to a very large extent, be an act of interpretation. And sometimes the interpretation of a recipe seems to be based on scholarly conjecture rather than the historically accurate reconstruction that it claims to be. Added to this problem are the constraints of consistency needed to obtain reproducible scientific measurements. Consistent and meaningful measurements imply consistent reference materials. It would be a fallacy to assume that a reconstruction would truly represent a historic reality.

Reconstructing the Art of the Past is a very useful book. Several lines of investigation are brought together in a variety of ways. Some of the approaches are meticulous and logical, some are harmonious, and the occasional one is done in an outright elegant way. Although there are differences in the level of sophistication, there is always something useful to be learned in each of the contributions. However, the impression that pervades all contributions is that working on historical sources and making reconstructions can be exacting and tedious at times, but above all it is always good fun.
It is to be hoped that this book will end up at the bookshelves of scientists and scholars alike, and that it will also tempt them to get their hands dirty in a different manner.

Arie Wallert
Rijksmuseum, Amsterdam

1. M.P. Merrifield, *Original Treatises dating from the XIIth to XVIIIth Centuries on the Arts of Painting* ... 2 vols., (London, 1849); reprinted by Dover Pubications with an introduction and glossary by S. M. Alexander, 2 vols., (New York, 1967); was reprinted *Medieval and Renaissance Treatises on the Arts of Painting: Original Texts with English Translations*, (Mineola, NY,1999).
2. E. Berger, *Quellen für Maltechnik während der Renaissance und deren Folgezeit (XVI.-XVIII. Jahrhundert) in Italien, Spanien, den Niederlanden, Deutschland, Frankreich und England, nebst dem De Mayerne Manuskript* (zum ersten Male herausgegeben, mit übersetzung und Noten versehen), in the 6 volume series *Beiträge zur Entwicklungsgeschichte der Maltechnik*, (München,1901).
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D. V. Thompson, *The Materials and Techniques of Medieval Painting*, (London, 1936). Reprinted Dover Publications: New York, 1956.

Scientific study of the 'Rubens group', in the Royal Museums of Fine Arts of Belgium, Brussels, with catalogue raisonné

Hélène Dubois, Dr Natasja Peeters, Dr Tine Meganck

In January 2004, the Royal Museums of Fine Arts of Belgium began a four-year research project funded by the Federal Public Service for Scientific Policy to re-evaluate fifty two works attributed to Rubens, his studio and followers. The project is overseen by Dr. Joost vander Auwera and Sabine van Sprang, both museum curators at the Old Masters department (Dr Véronique Bücken, acting department head).

These paintings have never been systematically studied using a multidisciplinary approach, involving the reinterpretation of literature review, archival research and technical evidence.
Research is carried out by Hélène Dubois (technical study, aiming to record information on the painting techniques, materials and the condition of the paintings), Dr. Natasja Peeters (art historical and provenance study, workshop collaboration and dating) and Dr. Tine Meganck (art theory, relating the genesis of Rubens's works to the theoretical concepts of the master).

The project aims to both prepare a *catalogue raisonné* and form the scientific basis for the upcoming Rubens exhibition in 2007-2008. Some paintings will be restored for this occasion.
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The Hart Project (Historically Accurate Reconstructions Techniques), 2002-2005)
The Hart project carried out practical experiments with historically accurate oil paint materials based on European artists' and colourman recipes (1600 through to 1900). Projects were designed to recreate artists' experiences with their materials while producing samples for future analyses based on tightly controlled parameters (e.g. the useof linseed and poppy oil pressed on site from single seed stocks; traditionally prepared stack process lead white, etc). A central part of the De Mayerne Program, which concentrates on furthering art technological research in the Netherlands, the Hart project was hosted by the Netherlands Institute for Cultural Heritage (ICN), supported by The Netherlands Institute for Atomic and Molecular Physics (AMOLF), and funded by The Netherlands Institute of Scientific Research (NWO). Dr Jaap Boon, a key figure in Netherlands-based research on the chemistry of aged paint layers in cross section, was instrumental in arranging for Dr Leslie Carlyle to be lent by the Canadian Conservation Institute to lead this innovative endeavour. Drs Maartje Witlox, research associate for the project, played an important role in collecting and interpreting artists recipes (see ICOM-CC preprints, The Hague 2005) as well as producing reconstructions. Scientific support was provided by both Amolf, and Shell Research and Technology (SRTCA). Many others joined the project at various points (Tatiana Ausema and Brian Baade, Winterthur Training Program, Mireille Engel and Anna van Milligen, SRAL Training programme, Kathrin Pilz, Cologne Training Programme, Meta Chavannes, private conservator, and Nanda Harinck, student, Groningen University).
Completed sets of paint samples will be stored at ICN, Van Gogh Museum or Tate Conservation Department, London. Each set of samples will be fully documented.
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Working group Art Technological Source Research
The working group Art Technological Source Research (ATSR), established 20 March 2002, organised their first symposium *Approaching the Art of thePast: Sources & Reconstructions* at the ICN in Amsterdam in 2004. It was the first ever symposium to discuss the creation of reconstructions related to art technological source research. More than a hundred participants met at the Netherlands Institute for Cultural Heritage (ICN), 14-15 October 2004, for ten lectures with lively discussions, posters and demonstrations, and an excursion each day. The postprints of this symposium with revised versions of most lectures and posters plus some additional papers will be published by Archetype Publications Ltd (London), in September, 2005 with the title: *Art ofthe past : Sources and Reconstructions*. A review of this publication can be found on p. 172 of this volume.
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