

Sharing Heritage – Sharing with Whom?

Interdisciplinarity in Heritage Research

ANNELI RANDLA AND HIKKA HIIOP

SUMMARY

When talking about sharing heritage with diverse communities, usually various local, social, national and ethnic groups are meant. In this paper, a somewhat different view is offered: heritage can also be shared with different research communities (people and institutions): monuments are sources not only for art historical and heritage studies, but for many other disciplines. Three recent research projects of the Department of Cultural Heritage and Conservation of the Estonian Academy of Arts are used to illustrate this point: *Rode Altarpiece in Close-up*, *Colourful Middle Ages: Murals in Estonian Churches* and *Christian Ackermann: Tallinn's Phidias – Arrogant and Talented*.

Technical art history

Technical art history¹ is a field of study combining methods from the arts and sciences. It uses contemporary information and communication technology (ICT) to acquire, process, contextualise and visualise data. In this field the work of art as a physical object is the primary source of information. This type of research unites scientific investigation of the material, physical and technical sides of objects with traditional art historical methods: work with historical sources, and stylistic and iconographical interpretation.

It is an interdisciplinary field of investigation, combining specialists from the natural sciences (e.g. chemists and physicists) with those from the humanities (art historians, historians etc.) and creative fields (e.g. artists and designers). It is also a collective science, functioning in close collaboration with different fields and different specialists in order to allow for the attribution and dating of art works, as well as the determination of the artistic practices of a given period.

The projects

Before getting to the research communities, it is necessary to briefly introduce the three major collaboration projects focused on technical art history which will be used as references in this paper.

Rode Altarpiece in Close-Up

Rode Altarpiece in Close-Up was a three-year investigation and conservation project (2013–2016) in St Nicholas' church in Tallinn, and it focused on one of the greatest masterpieces in the collection of the Art Museum of Estonia: the late medieval high altar retable of the church made by the Lübeck master Hermen Rode between 1478 and 1481.

Conservation of the magnificent piece of art took place in the Soviet era, but the work was interrupted by the political change in 1991. The goal of the project starting in 2013 was to continue the

conservation work and to carry out technical and art historical investigation. Along with the scientific work, the objective was to bring the masterpiece into public focus.

In addition to Hermen Rode's Tallinn altarpiece, his Saint Luke's retable in Lübeck was comparatively analysed (Fig.1).

The project was awarded the Creative Europe and Europa Nostra award in 2017 and the IIC Keck Award in 2018.²

Colourful Middle Ages

Colourful Middle Ages: Murals in Estonian Churches is the common title of a part of our ongoing daily research since 2004 into historical interior designs. The aim is to study the murals and other finishing layers in medieval churches from art historical, technical and conservation points of view. So far 15 churches have been investigated. As a result, a considerable amount of previously unknown data on medieval and later wall paintings have been discovered and studied.

In this paper recently discovered murals in St Mary's church in Põide on the island of Saaremaa will be used as an example of sharing heritage.³

Christian Ackermann: Tallinn's Phidias – Arrogant and Talented

Christian Ackermann: Tallinn's Phidias – Arrogant and Talented is a four-year research project which began in co-operation among the Estonian Academy of Arts, The Art Museum of Estonia and the Estonian Lutheran Church in October 2016 (Fig. 2).

The aim of the four-year interdisciplinary co-operation project is to focus on the oeuvre of Christian Ackermann, an artist of German origin who became Estonia's most scandalous and talented woodcarver of the baroque era. Most of Estonia's noteworthy ecclesiastical furnishing elements were made in Ackermann's workshop between the 1680s and 1710.

Since 2016 technical investigations have been carried out in churches all over Estonia where the works by Ackermann can be found: all together on around 20 artworks.⁴

Sharing with whom? Partners and public

In all these projects, experts from different fields have made contributions: from chemists and dendrochronologists to customs officers and imaging specialists. The synergy springing from such

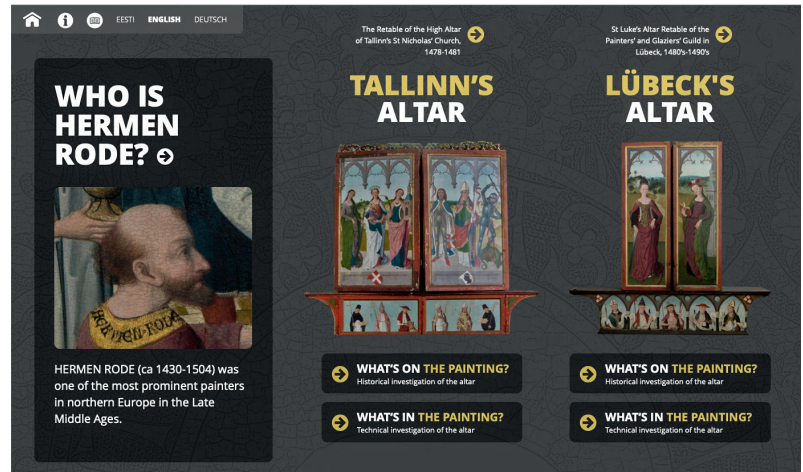


Fig. 1: Screenshot of the webpage of the project *Rode Altarpiece in Close-Up* (2019).



Fig. 2: Screenshot of the webpage of the project *Christian Ackermann: Tallinn's Phidias – Arrogant and Talented* (2019).

co-operation has been mutually beneficial.

In addition to academic results, these projects have importance for the general public: the research results have been presented in innovative and popular ways to large and varied audiences, and these results have inspired new artistic creation.

In the following subchapters, the partners of these projects will be introduced through their interdisciplinary contributions to the common goal.

Estonian Environmental Research Centre and XRF

The Estonian Environmental Research Centre usually deals with the study of environmental hazards, such as soil contamination with heavy metals or consumer protection, like checking to see if new products (e.g. children's toys) contain metals dangerous to people by using X-ray fluorescence technology (XRF).

However, in our projects their chemists use the portable XRF device for primary pigment analysis of the visible and, more importantly, the hidden paint layers on artworks. This is a welcome change in the daily routine of the Estonian Environmental Research Centre, and significant for broadening the scope of their services.⁵

Department of Analytical Chemistry at Tartu University and instrumental analysis

More precise chemical analysis of pigments and binders is carried out in close co-operation with the scientists in the Department of Analytical Chemistry at Tartu University. While their chemists have the know-how and instruments to conduct scanning electron microscopy with energy dispersive spectroscopy (SEM-EDS) and Fourier-transform infrared spectroscopy (FT-IR), it is the materials from the historically significant artworks in our projects that have promoted their laboratory research internationally, thus making the cooperation mutually beneficial for all partners.⁶

Department of Geography at Tartu University and dendrochronology

Another example of collaborating with research communities outside of the field of cultural heritage is dendrochronology. Dendrochronologists at the Department of Geography at Tartu University study

climate change on a daily basis and usually investigate living trees, but in our case dendro dating and dendro provenance analysis is used on wooden artworks and can provide important new information for the interpretation of the artefacts.⁷

Imaging techniques

The field which has a special focus in the Estonian Academy of Arts and has been developed at the doctoral school is related to multispectral photography and imaging techniques. Objects can be studied at different wavelengths and the images produced can be further developed into various forms of presentation. These methods have become essential in the study, with the documentation of objects, as well as the visualisation and presentation of the research results. Here, as in other aspects of our projects, co-operation is essential.

Estonian Tax and Customs Board and X-ray

X-raying has been used for almost 100 years in researching cultural heritage. It is a method known mainly from the field of medical diagnostics and that's the reason why we usually travel with our artworks to hospitals in order to carry out X-ray analyses.

But there are a lot of artistic objects which cannot be transported to hospitals because of their size and/or fragility, e.g. all of the artworks

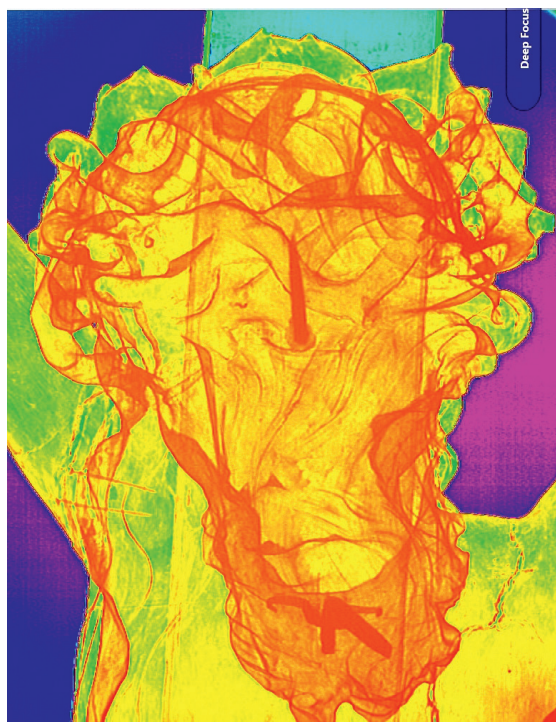


Fig. 3, 4: X-ray images of the head of Christ by Christian Ackermann which enable to detect different materials (colour image) and to inspect the inner structure of the artefacts (black and white image) (2018).

in our three projects discussed here. As a result, we looked for co-operation with institutions possessing portable X-ray equipment which could be taken to the objects.

Out of this need arose the co-operation with the Estonian Tax and Customs Board some years ago; customs officers who usually serve on the Estonian borders have come with their devices and carried out investigations in situ on our art works. It is an excellent investigation tool for us, and it provides great opportunities to the Estonian Tax and Custom Board as well: it is a means of training their employees to recognize objects of artistic value which are illegally transported over the borders. In addition, we have seen during our collaboration how much joy it gives people who are usually searching for drugs and illegal cigarettes, probably for the first time in their lives to have such close contact with cultural heritage (Fig. 3).

Archeovision, RTI and 3D modelling

In co-operation with *Archeovision*, a company which started with imaging techniques on archaeological finds, we have used reflectance transformation imaging (RTI) for the documentation and study of sculptures in the Rode altarpiece project. This method was developed in the cultural heritage field as a fast, simple and robust method of '2.5D' imaging for archaeological field work but can be adapted for any three-dimensional object and provides very good results for polychrome wooden sculptures.

In addition to scientific research, the purpose of technical investigation is to visualise information both for researchers and for the general public. 3D documentation is a useful way to show details which are usually invisible due to the inaccessibility of the objects. It has been a leading principle that all information gained in these projects, including 3D documentation, is shared with the general public via the Internet on special web pages. Different IT techniques, such as digital reconstructions on 3D models, can be used to recreate the past appearances of art works (Fig. 4).⁸

Since 3D modelling for conservation and presentation in the field of cultural heritage is a rapidly developing area of research, the Rode altarpiece project attracted international specialists to a hackathon in Tallinn in 2014, and the solutions developed for the Christian Ackermann project have gained attention in the international academic press.⁹

Digital reconstructions

Digital reconstructions can be used in architectural settings as well. To present a case on another scale and in a different environment the medieval murals in the church in Põide were chosen. Fragments of a painted rose window were uncovered on the blind chancel wall, and with the help of architects we were able to reconstruct from these fairly small but very accurate traces the composition of a rose window. Through digital means it is possible to present it without altering the original.

Even scarcer remains of another faux rose window were discovered on the nave wall, and again a hypothetical reconstruction was possible. The digital visualisation made the presentation of this hypothesis possible (Fig. 5). Furthermore, this reconstruction can be taken back into the real interior and can be displayed on the original wall in scale.¹⁰

Artistic synergy

So far, the close co-operation between conservation research and science has been presented, but how about art? Does artistic creativity have a place in our projects?



Fig. 5: 3D model of the figure of Christ by Christian Ackermann (2018).



Fig. 6: Digital reconstruction of the painted rose windows in Põide church (2017).

After all, the Department of Cultural Heritage and Conservation is part of the Estonian Academy of Arts and this has yielded a different kind of synergy. Our research projects have inspired new creative actions. Actually, the Christian Ackermann project grew out of a joint art project of students of interior architecture, graphic design and conservation: the aim was to design the scaffolding for the altar retable of the Tallinn cathedral by Christian Ackermann's workshop, which would take into account the artwork, its history and spatial context, as well as its liturgical use.

The scaffolding afforded close-up views of the retable not only to the specialists, but also to the general public. In the course of a year (from November 2016 to November 2017) around 3000 people from very different interest groups went on tours on the scaffolding.

Research on Christian Ackermann provoked an artist to organise a vernissage for this 17th-century artist and the X-ray images of the sculptures were transformed into a modern lamp design.¹¹

Sharing with communities

Having discussed the research partners with whom cultural heritage can be fruitfully shared, we would like to return to the local communities. In all three projects, it has been essential not only to publicise the results on the Internet, but to work on site with the people who are closest to this heritage: church communities, children and teachers from local schools, village activists and others. These people have shown keen interest and pride in the artworks that are still in their original settings and perform their primary function everywhere.

In conclusion

In this paper we have briefly shown the possibilities of sharing cultural heritage and the academic research of this heritage with various interest groups who are not usually regarded as stakeholders in this context: natural scientists, IT specialists, customs officers, medics and artists. These projects illustrate how such co-operation can be mutually beneficial and can contribute to the greater awareness of the monuments both locally and internationally.

Image sources

- 1 rode.ekm.ee
- 2 www.ackermann.ee
- 3, 4 ETCB
- 5 Andres Uueni, Archeovision
- 6 Ainar Luik

Notes

- 1 See e. g. Hermens, Emma: Technical Art History. The Synergy of Art, Conservation and Science, in: *Art History and Visual Studies in Europe*, ed. Matthew Rampley et al., Leiden 2012, pp. 151–165.
- 2 Rode altar lähivaates / Rode Altarpiece in Close Up, ed. Hilka Hiiop, Merike Kurisoo, Tallinn 2016; rode.ekm.ee (01/02/2019); <https://nigulistemuuseum.ekm.ee/en/on-view/on-view/rode-altarpiece-in-close-up> (01/02/2019).
- 3 kirikud.muinas.ee (02/02/2019); Randla, Anneli: New Finds of Murals and Other Interior Decorations in Churches, Manors and Town Houses, in: *Estonian Cultural Heritage. Preservation and Conservation*, vol. 2, 2013–2017, Tallinn 2017, pp. 143–146.
- 4 www.ackermann.ee (02/02/2019); Kreem, Tiina-Mall: Christian Ackermann – the Arrogant and Talented Phidias from Tallinn (2016–2020): A major new research project has started, in: *Estonian Cultural Heritage. Preservation and Conservation 2017* (as in note 3), pp. 160–161.
- 5 Vahur, Signe / Rebane, Riin / Hiiop, Hilka: The Sciences in the Service of Art Research. Chemical Analyses in Studying Works of Art, in: *Rode altar lähivaates / Rode Altarpiece in Close Up 2016* (as in note 2), pp. 93–114.
- 6 Uueni, Andres / Vahur, Signe / Hiiop, Hilka / Rebane, Riin / Pagi, Hembo: Comparative Technical Analysis of the Medieval Altarpieces by Hermen Rode in Tallinn and in Lübeck, in: *TECHNART 2017*, ed. J.A. Carrero, L.A. Fernandez, O. Gomez, L. Gomez, Bilbao 2017, p. 104.
- 7 Läänelaid, Alar / Daly, Aoife / Sohar, Kristina: What Wood Tells Us. On Dendrochronological Research Methodology, in: *Rode altar lähivaates / Rode Altarpiece in Close Up 2016* (as in note 2), pp. 115–134.
- 8 Hiiop, Hilka / Randla, Anneli: Medieval Painted Saints Meeting Modern Media. Project: “Rode Altarpiece in Close-Up”, in: *Baltic Journal of Art History*, vol. 7, 2014, pp. 171–180; Hiiop, Hilka: What is Under the Paint Layer of the Rode Altarpieces, in: *Baltic Journal of Art History*, vol. 9, 2015, pp. 239–253; Hiiop, Hilka: Natural Sciences and Information Technology in the Service of Art: the Rode Altarpiece in Close-up Project (2013–2016), in: *Estonian Cultural Heritage: Preservation and Conservation 2017* (as in note 3), pp. 157–159.
- 9 Uueni, Andres / Hiiop, Hilka / Apollonio, Fabrizio Ivan: The Combination of 3D and Multispectral Imaging for Scientific Visualization – Tool for Conservation and Heritage Specialists, in: *Archiving 2017 Final Program and Proceedings 2017*, ed. S. Abrams, et al., Riga 2017, pp. 133–137; Uueni, Andres / Apollonio, Fabrizio Ivan / Hiiop, Hilka: Photogrammetry and Multispectral Imaging for Conservation Documentation – Tools for Heritage Specialists, in: *New Activities For Cultural Heritage*, ed. M. Ceccarelli, M. Cigola, G. Recinto, Cham 2017, pp. 122–130; Uueni, Andres / Hiiop, Hilka / Apollonio, Fabrizio Ivan: 3D application in Estonian Cultural Heritage. Benefits and Considerations Based on the Chr. Ackermann Investigation Project, in: *Kermes: la rivista del restauro*, vol. 107, 2019, pp. 40–44.
- 10 Randla, Anneli: Rose Window: A Dream or Reality?, in: *Sacred Monuments and Practices in the Baltic Sea Region – New Visits to Old Churches*, ed. Janne Harjula, et al., Cambridge 2017, pp. 156–169.
- 11 <https://issuu.com/vatsonagency/docs/ackermann> (03/03/2019).