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Doctoral Dissertation
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AN ARTWORK FROM THE MASTER'S CIRCLE, A WORK OF A FOLLOWER, A COPY, A COLLAGE, OR A FORGERY: EXAMINATION OF *THE LAST JUDGEMENT* TRIPTYCH ATTRIBUTED TO HIERONYMUS BOSCH IN THE COLLECTION OF WAWEL ROYAL CASTLE

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SUMMARY

The collection of Wawel Royal Castle includes the most valuable works of art gathered in Poland. One of them is a triptych registered in the collection as *The Last Judgement* by Hieronymus Bosch or his follower, assumed to have been painted in the mid-16th century in the Netherlands (inventory number 1011). The triptych was entrusted to Wawel Castle in 1935 as a gift of Leon Piniński.[1] The catalogue card describes it as unsigned, oil on panel,[2] and dates

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[1] Earlier, in 1921–39, Wawel received the collection of Count Piniński composed of paintings, sculptures, and furniture. From the start, the count intended his collection to be exhibited in what he considered the one and only possible location – the Royal Castle.

[2] This is how paintings on wood were called in the past. Quoted from *Spis dzieł sztuki, Ekscelencji Leona hr. Pinińskiego zdeponowanych w Kierownictwie odnowienie zamku na Wawelu.* Amended and signed M. Morelowski, Kraków Wawel 2.III. **1927**. List No. III, p. 69, Stocktaking description of the triptych made in 1927 Item No. 31, p. 3.

it to c. 1540–50. It has become a custom to attribute this work to Hieronymus Bosch, which has resulted in clear attribution for example during temporary displays abroad.
In 1979, *The Last Judgement* triptych, attributed to Hieronymus Bosch, was sent to the Exhibition of the Polish National Treasury of Arts in Japan, along with Quenten Massys's *Imago Pietatis*, Pieter Bruegel the Elder's *Sermon of St John the Baptist*, Bartholomeus Spranger's *Vanitas*, Lucas Cranach the Elder's *Lucretia*, and a self-portrait by Rembrandt van Rijn.
Despite this, the triptych did not attract particular attention for years.

In 1961 Anna Misiąg-Bocheńska described the triptych as "one of the versions of Hieronymus Bosch's *The Final Judgement*". In the conclusion of her description, which survived until 2015, as some information was changed and reduced, Bocheńska expressed her belief about the need to have the work examined in future to analyse the style and perform conservation and technological studies.

As part of cooperation with other academic centres in the world, an inquiry regarding the time of origin of triptych's framing was submitted to the Management of Wawel Castle in 2015. The question prompted transfer of the triptych from the exhibition rooms to the Painting Conservation Studio, which made it possible to start the research procedures. A photo documentation was made, and the triptych was examined in detail for its state of preservation. The examination demonstrated a detachment of the ground layer in the lower parts of the central panel's surface. A deterioration and partial separation of the connection were also noticed where the boards were joined in the lower part. The two wings featured glued cracks of the boards covered with retouches altering their colour range. The reverses, in turn, featured secondary layers of paint. Those conclusions provided another pretext to include *The Last Judgement* triptych in the comprehensive research project carried out in 2015/16 by the National Institute of Museology and Collections Protection (NIMOZ) and the National Museum in Kraków, led by the National Heritage Research Centre. The project launched an objects database, and its tangible results included an interdisciplinary investigation of the item. The procedures applied included non-invasive tests, studies of pigments, and a comparative analysis of physicochemical test results.

In 2016, the triptych was delivered to me for conservation as the enquiry about the dating of the frame provided a pretext to start focused research. The decision of key importance for the conserved work concerned the dendrochronological analysis of the wooden boards, frame, and the secondary backings protecting the reverse sides of the side panels.

The dendrochronological study aimed at determining the species of the tree, the time of acquisition of timber and its origin, and at estimating the date when using this piece of wood was used for the panel. The obtained knowledge about the dating of the panels significantly channelled the concept of my work and answered the question whether the painting was a work of Hieronymus Bosch or his workshop, or a work of a later imitator.

The examinations conducted by Professor Tomasz Ważny indicated 1547 as the date of timber acquisition, and bearing in mind the need for seasoning timber to use it for such a panel, it can be presumed that the panels had not originated before 1550. However, taking into account our current knowledge on wooden panels produced in the 16th and 17th centuries, dates around 1556 are the most realistic and potential time of production of the triptych panels.[3] The dating thus obtained clearly excludes the authorship of Hieronymus Bosch or of his workshop.

The following purpose of my work was the study of the technology and style of the piece to answer the question whether the Wawel triptych is one of the versions of Hieronymus Bosch's *Last Judgement*? Is it a work of a follower, or from the artistic circles? Is it a work of one of the imitators, or is it an integration of Boschian motifs? Or is it at 19th-century forgery? Or maybe a copy? Perhaps it is a particular "collage" melding together the assembly, design, and composition from the available ready-made motifs?

The motivation to face the questions thus posed was the opportunity to penetrate the structure of the piece. The only option available were conservation activities, for they are the only way to penetrate so deeply into the material dimension of the artwork, which holds the answers to these questions hidden deep within.

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[3] Tomasz Ważny, *Analiza dendrochronologiczna tryptyku „Sąd Ostateczny" ze zbiorów Zamku Królewskiego na Wawelu*, Toruń 2016, p. 3, "The wood comes from a tree felled after 1547 (Fig. 3). The average period of seasoning wood for 16th- and 17th-century European painting ranged from 2 to 8 years. Accounting for the minimum two-year period of transporting and seasoning, this corresponds to **the year 1550** as the earliest potential date of creation of the painting, and a date **around or after 1556** as the most probable, due to the unknown number of the missing growth rings". "That is why the time **around 1556** can be assumed as the most probable date of production of the wooden boards of the triptych."

My conviction in this matter was inspired and reinforced by the scientific work of Roger Van Schoute[4] and Jan Piet Filedt Kok[5] from 1971 that offered the option to acquire and record information, and to capture and record the composition drawing on the ground layer that was never intended to be seen, as the artist covered it in the process of painting, proved to be a trailblazing breakthrough. Understanding the hand of the master, his hidden gesture, and the working style represents a quantum leap in learning the modus operandi and the creative process behind such works. Another important factor were the conclusions on the type and scope of damage to the work that may highly significantly influence the assessment of authorship and distort its interpretation. Penetration of the unaltered and undisturbed substance, such as the painting layer may be, is an invaluable record of information. Following this path, scientists concluded that it is only the combination of various tests that allows a proper insight into the examined piece, in this case, a particular painting.

I found the path followed by the Dutch scientists a profound inspiration. Quite likely a similar impulse was given to the Bosch Research and Conservation Project (BRCP) team who tackled the masterpieces of Hieronymus Bosch in 2010–16. A different scale of operation and potential resulted from the experience accrued in the years of research they conducted, improvements of the methods, and collection and cataloguing of data. A significant and favourable feature was the development of technologies related to the digital recording of information through special software that allows large-scale enlargement of the surfaces of paintings, and overlaying them with the recorded images of the corresponding sections of the piece in different visible and electromagnetic wavelengths for the purpose of analysis.

A similar method adopted for the work on *The Last Judgement* from Wawel was not only based on routine tests and comparison of the results but also on the quest for data and multi-faceted analysis, including dendrochronology, chemical analysis, physical and physicochemical

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[4] Roger Van Schoute (1930–2017). Holder of a doctoral degree in art history and professor at the Catholic University of Leuven, Van Schoute was the founder of the Laboratoire d'étude des oeuvres d'art (Museum of Louvain-la-Neuve) and played a key role in Le dessin sous-jacent et de la technologie dans la peinture symposium (from 1975). He was one of the first art historians to conduct scientific examinations of the works of Hieronymus Bosch. https://vlaamseprimitieven.vlaamsekunstcollectie.be/en/news/in-memoriam-roger-van-schoute/.

[5] Jan Piet Filedt Kok was a senior curator at the painting department of the Rijksmuseum in Amsterdam in the Netherlands, author of the exhibition catalogue *Lucas van Leyden* (Rijksmuseum, 1978), and a co-author of *Livelier Than Life: The Master of the Amsterdam Cabinet or the Housebook Master, ca. 1470–1500*, whose publication accompanied an exhibition at the Rijksprentenkabinet in Amsterdam. At Clark University, he worked with Walter S. Gibson on a monograph about an early Dutch painter Cornelis Engelbrechtsz. The researcher follows the claim Gibson made in 1969 and focuses his recent research on the composition drawings and technical aspects of the artist's works, providing additional insights into his working methods and painting practices. https://www.clarkart.edu/fellow/detail/jan-piet-filedt-kok.

examination, as well as stylistic, geometric, historical, and archival analyses. Only the combination of their results made it possible to draw comparative conclusions.

Repeating all the tests on all the panels of the triptych aimed to prove that the whole is an integral work, and despite differences in construction it did not result from combinig unrelated panels created in different circumstances, but was intended as a whole from the start.

The order of studies was determined by the conservation of the triptych. As conservation works were envisaged, the state of preservation had to be investigated, the condition of individual technological layers that the work is built of, had to be investigated first. That required physical examination of all three panels using ultraviolet (UV) photography, comprehensive photography using dispersed visible light (VIS), lateral photography, macrophotography, and X-ray radiography (RTG).

Gathering the maximum possible information about the technological construction of the piece served answering the questions about its uniformity and attribution. Differences in painting techniques were noticed at the stage of its preliminary analysis. Heavy and stiff, meticulous and downright passionless with rigid figures in the celestial section, the style of the central panel differs from that of the left wing. The observed lack of uniformity in the execution of the three paintings caused doubts and called for technological investigation of the triptych. The reasons went beyond just differences in the paintings between panels. The pronounced dissonance between the painted celestial and terrestrial parts of the central composition prompted the question whether perhaps a single composition was executed by two individuals. Is the difference in the techniques used to paint these spaces related to the technology and the use of different pigments for the upper and lower sections of the composition?

The following question resulted from the difference between the texture of the celestial realm and the smooth surface at the lower part of the piece, and differences between the crack patterns in the painted layer of the upper and lower parts. That difference raised concern whether the work could perhaps be a 19th-century forgery. The analyses of the binder and pigments offered an opportunity to obtain an answer and resulted in the decision to carry out a range of tests: X-ray fluorescence spectroscopy (XRF), Fourier-transform infrared spectroscopy (FTIR) microscopic and microchemical analysis of pigments, elemental composition analysis of pigment samples through energy-dispersive X-ray spectroscopy (SEM) with the use of a scanning electron microscope, scanning macro X-ray fluorescence (MA-XRF), analysis of the

primary paint layer binder using gas chromatography, and a study of the primary paint layer binder, overpaints and retouches using infrared spectroscopy.

During further examinations and analyses assessing the state of preservation of the triptych, attention was drawn to an element in the central part of the main panel. In a strong light, a composition drawing of an oval detail was visible on the ground layer from under the layer of paint showing a demon playing a lute held over his head. Moreover, the drawing did not correspond to the shape of the demon rendered in the painted version. That prompted the question whether there are differences in the composition drawing between the three parts of the triptych? Is the drawing within each panel uniform or do the styles differ?
The answers to these questions were provided by studies of the paintings in infrared light. The digital records of the infrared photography and the analysis of the nature of the composition drawing on the ground layer revealed a style diverging from the original composition drawings of Hieronymus Bosch. They were more closely aligned with the composition drawings for the later copies of these works (e.g. *Haywain* in Escorial in Spain).
Hieronymus Bosch was accustomed to making composition drawings on the ground layer with a brush.
However, the composition drawing on the Wawel triptych was made with a hard drawing tool, a stylus.

Identification of individual characteristic features developed during the process of creation and discovered during the conservation allowed to compare the piece with the previously researched original works of Hieronymus Bosch and their copies. This in particular concerned the technological aspects: the range of smalt and azure pigments, characteristically filling the surface, and breaking the composition into halves: the upper celestial and the lower mundane realms, and the application of a layer of lead white onto the ground layer for impregnation rather than using a layer of linseed oil, which was a customary practice in Bosch's workshop.

The following difference is the use of the tempera binder in the Wawel triptych in the place of an oil binder, linseed oil, or walnut oil. It is also significant to note how the wooden panels were prepared.[6] The height and width of the boards, and the characteristic treatment of the wood on

[6] Described in detail in chapter "Budowa technologiczna", p.175.

the side panels made it possible to compare and find similarities and differences with the works of Bosch's imitators.

The discovered error in the composition drawing in the central part of the triptych (a started but unfinished drawing of the cylinder of a drum) revealed the possible origin of the motif of a demon playing the lute with his tail,[7] absent from the original works of Hieronymus Bosch. It originated in the place where an error was made in the composition drawing and thus became a distinctive element of the Wawel triptych, which the Wawel triptych shares with the pieces in Berlin and New York.

The error discovered is a proof that the Wawel triptych was the "principaal", that is a model from which the successive copies were made and for that reason repeated the motif resulting from the error in the composition drawing. This can be compared to the copying of manuscripts by scribes, when an error thus made is repeated in all the successive copies. Similarly, in this case, the error returned in the following copy, as proven by *The Last Judgement* from the Deutsches Historisches Museum in Berlin, and *The Last Judgement* from a private collection in New York.

Analysis of the construction of the triptych allows the statement that its execution is a proof of high-level craftsmanship. Each and every part and technological layer – from the working of timber, via the ground layer well bonded to the board, with smooth and finely finished surface, to the painted layers – was precisely and meticulously crafted. The use of tempera binding was a puzzle at the start of research and conservation activity, as other contemporary artists were known to have used oil-based binders, and for example all the painted works of Hieronymus Bosch are described as paintings using oil binders on wooden panels.[8]

The observations made, especially at high magnifications (available online at http://boschproject.org/#/),[10] and the repeated many-hours-long studies of crack patterns on the

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7 The way this detail was executed is described in detail pp. 91-102, 303-308.

8 Elena Vázquez Dueñas, *The Appreciation of Bosch's paintings in Spanish sources,* 2016, pp. 12–13. Vázquez Dueñas meticulously examined the archives of the Spanish rulers (and not only) for the reception of Hieronymus Bosch and his works in 16th- and 17th-century Spain. Therein she found descriptions and "catalogues" of Bosch's paintings with recurring annotations about using tempera as binder and technique Bosch used in his paintings. This validates certain observations made by the author of this work and creates a sense of shortage of information on the subject, which she grappled with while writing this work.

9 Robert G. Erdmann, 2016, Robert G. Erdmann et al., http://boschproject.org/#/.

10 Robert G. Erdmann, 2016, Robert G. Erdmann et al., http://boschproject.org/#/.

photographed works of Hieronymus Bosch and their comparison to the Wawel piece[11] confirmed the doubts and continued to raise the concern regarding the type of binder used in the works of the Dutch master. Yet, like in the case of the composition drawing, the answer concerning this technical aspect of the painting also came from the Bosch Research and Conservation Project. *The Technical Studies: Hieronymus Bosch. Painter and Draughtsman* includes information about the painted layers of Bosch's works and concludes that Bosch had a habit of applying mixed techniques, which means that examinations of the binder demonstrated the presence of tempera, linseed oil, and walnut oil,[12] which were used for different sections of the composition, and not necessarily for the whole, as in the case of walnut oil.

The 27 works of followers and imitators scattered all around the world were compared to the Wawel triptych. I believe that it is precisely the use of the tempera binder for the painted layer that makes the Wawel triptych closer to Bosch. *The Last Judgement* from the Wawel Royal Castle collection is neither a forgery nor a copy. It is a work of an imitator. Furthermore, in terms of execution, it is superior to many works found and presented for comparison in this work.

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[11] The pattern of cracks in the paint layer was logged and measured with a Hirox digital microscope, which, free from distortion of the optical systems, allows to capture images at magnifications up to 900x. The use of information regarding the influence of atmosphere on changes in the condition of the item thus acquired can be helpful in research on the optimisation of transporting works of art for museum loans.

[12] Chapter 5 of this work, *Tryptyk wawelski Sąd Ostateczny, Warsztat badawczy XXI wieku, (2016-2021),* pp. 161-162.