

Two maps of Hungary

A critical study of Wolfgang Lazius's
chorographic maps (1556–1557)

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Fig. 1: Detail of Wolfgang Lazius's 1556 map of Hungary
(OBERHUMMER, WIESER, *Wolfgang Lazius. Karten der österreichischen Lande*, n. 4)

INTRODUCTION

Wolfgang Lazius, one of the most important humanists and scholars in mid-16th-century Vienna was born in the imperial capital in 1514. Five hundred years later, his name is internationally acknowledged by map historians for his influential cartographic works, in particular for the first printed regional atlas devoted to the Austrian provinces, *Typi chorographici Provinciae Austriae*, which was presumably etched by the author and published in Vienna in 1561¹. Of the some two dozens maps and topographic sketches that survived the 'wear and tear' of the past centuries, in this paper we would like to focus on two of Lazius's most significant cartographic works, both representing the territory of the Kingdom of Hungary. One of them is a large size *chorographic* wall map of the whole country², while the other represents also a remarkably early regional map, military events of the Turkish Wars in Western Hungary³.

Since the publication of Oberhummer and Wieser's monograph⁴ in 1906 Lazius's Hungary-related maps have received relatively little attention in the history of cartography. When considering them together in this paper, we would like to go beyond traditional, empirist map history⁵. Our interest lies neither in the cartographic description of a country in the 16th century, nor in an instructive comparative analysis of these and other maps. The study of

¹ [Lazius, Wolfgang]. *Typi chorographici provinciarum Austriae cum explicatione earundem pro commentariis rerum Austriacarum concinnati ad heros suos Ferdinandum Imp. Rom. P. F. et Maximilianum regem. Auctore Wolfgango Lazio, Viennensi, Medico et Historico.* Wien 1561.

² The unique copy of the Latin edition: Wolfgang Lazius, *Regni Hungariae descriptio vera*. Wien 1556 (Basel, Kartensammlung, AA 86–89). Fragments of the 1552 German edition are in the Széchenyi National Library, Budapest and in the private collection of Tamás G. Korányi, Budapest. See TÖRÖK, *Renaissance Cartography* (n. 5), 1835.

³ Wolfgang Lazius. [Rei contra Turcas gestae anno MDLVI brevis descriptio.] Basel 1557.

⁴ Eugen OBERHUMMER, Franz R. von WIESER, *Wolfgang Lazius. Karten der österreichischen Lande und des Königreichs Ungarn aus dem Jahre 1545–1563*. Innsbruck 1906.

⁵ Zsolt G. TÖRÖK, *Renaissance Cartography in East-Central Europe c. 1450–1650*. In: David Woodward (Hg.), *Cartography in the European Renaissance*. Chicago 2007 (*The History of Cartography* 3/2), 1806–1851.

these related works provides us with an opportunity for a deeper understanding of Lazius's concept of cartography, and especially the techniques he employed to express his ideas in his maps.

MAPPINGS AND CARTOGRAPHIC PROCESSES

This case study demonstrates that it is rather misleading to consider early modern maps as straightforward representations of geographical location. Instead of this traditional misinterpretation, we suggest trying to interpret maps in their contemporary historical, technical, cultural and social contexts.

When approaching historical cartographic material, it must be kept in mind that 16th century map making was very much different from our modern understanding of cartography. As we see below, Lazius's maps reveal significant features of the author's own, contemporary interpretation of cartographic representation. For the modern reader the most apparent difference between early maps and their present-day counterparts is their strikingly different graphic style and geometric structure. When compared with modern maps early maps are usually called 'wrong' or 'distorted' representations – even if at the time they were made there was no other map and any comparison regarding their geometric structure was impossible. While modern maps are considered to represent homogeneous, geometrically controlled space, early modern chorographic map making practice lacked this generally accepted conceptual and technological uniformity.

Not only the theoretical foundations of geometric space were absent in the 16th century, but the available measuring and surveying methods and instruments did not allow early modern map makers to achieve their ideal of spatial representation: the absolutely true map, a correct representation of everything. Although anyone familiar with basics of cartography knows well that this idea is paradoxical, this belief is part of a professional ideology, which was questioned only in the past decades.

For practical reasons, although theoretical works suggested otherwise, apart from a few large-scale, but limited extension mapping projects, early modern regional map making was in general a compromise. Lazius's two maps of Hungary are good examples of a characteristic late Renaissance heterogeneity of cartographic information and practical map compilation:

although both maps can be interpreted in the context of a developing regional cartographic paradigm, an emerging practice of early modern map making, at first sight they seem hardly comparable.

The two maps, with considerable overlapping, represent the same geography of Western Hungary in distinctly different geometric structures. Actually, it seems hard to believe that they were published approximately at the same time (1556, 1557) by the same author. Although a remarkable feature, the difference in the geometric structures and the difference in these early maps' accuracy might not be the key issue the historian of cartography should study. By analyzing the maps' geometry we certainly notice the difference, but our task is to provide an explanation. It is not enough to show that maps were different in the past – even today they are not the same. If we would like to better understand them from a historical point of view, we should study the ways how they were actually made and used in various ways over time.

Why did the *same* map maker, around the *same* time, and presumably from almost the *same* sources, create so *different* maps? This is the significant historical question in the focus of this paper. We hope that the study of Wolfgang Lazius's particular maps results in some new methodological insights in the history of the map in general⁶.

As stated above, in this formative period of *chorographic*, regional mapping the representations of the same region were usually different. Contrary to the common belief, a perfect match is rather an oddity, except for the cases of copying. Lazius, who was more a compiler than a surveyor, could well use the same sources at hand to create the same image of the region. However, he did not do so. In the frame of the traditional, progressive approach this behaviour cannot be explained: Lazius should have created the most *accurate* map. The explanation of his pluralistic cartography is not obvious in the *contextual* approach: given the fact that he produced these different maps in a short period, it is hard to believe that the social, technical or cultural contexts dramatically changed. The contextual approach of his maps as cartographic texts cannot explain the alternative representations. It is

⁶ Matthew EDNEY, *Academic Cartography, Internal Map History, and the Critical Study of Mapping Processes. Imago Mundi* 66, Suppl. (2014), 83–106.

suggested here that the differences are results of different map making processes, or mappings.

Since the 2000s, a new theoretical approach to the making and use of maps, known as processual cartography, has emerged. This new relation to maps is to substitute the earlier, naïve-positivist opinion that maps are representations of geographical space. Instead, maps are interpreted as permanently changing objects and mental images, always in the state of becoming and emerging from different practices⁷.

The processual history of cartography is an extension of critical cartography to the field of past mappings, including processes of map production and usage. After the period of map history dominated by socio-cultural theories, the study of cartographic processes leads us back to map objects, which incorporated spatial discourses, mapping practices, social institutions determined by their makers and users. From the general to particular, from long duration to short term processes, from a unified cartography to individual map making: these are the characteristic changes of the suggested, new research paradigm.

LAZIUS, THE MAP MAKER

About five hundred years ago, in 1514, the powerful medieval Kingdom of Hungary was already a historical entity. The European expansion of the powerful Ottoman Empire continued in the early 16th century, and directly threatened the southern borders of the country, which formed the frontier of Christianity. The Hungarian kings no longer had the power to organize an effective defense of their country. The Turkish menace was taken seriously by the newly elected Pope, Leo X, who issued a papal bull, authorizing the Hungarian legate, Cardinal Tamás Bakócz, to proclaim a new crusade against the Turks. This crusade turned into a bloody peasant revolt in the summer of 1514.

Probably at the same time, during that hot summer, the unidentified Hungarian *Secretarius Lazarus* worked in Buda with the German humanist,

⁷ Rob KITCHIN, Martin DODGE, Rethinking Maps. *Progress in Human Geography* 31/3 (2007), 1–14.

Jacob Ziegler, on a map of the country. We know this information from Ziegler's letter sent to professor Tannstetter in Vienna.

Lazarus' map was printed in the workshop of *Petrus Apianus* in Ingolstadt in 1528 and, in the same year, the young Wolfgang Lazius enrolled at the University of Vienna. The publisher of that map of Hungary was Johannes Cuspinianus, who had found the manuscript in Buda one year earlier. However, before the manuscript went to print it was thoroughly revised in Vienna by a scholarly editor, Georg Tannstetter, known as *Collimitius*, professor of astronomy and mathematics at the University of Vienna, and a leading figure of the second Vienna school of mathematical cosmography. Lazius's father was member of the *Sodalitas Collimitiana*, a scholarly society in the city, organized around the influential Tannstetter. It is important to emphasize here that Wolfgang Lazius was brought up in a stimulating intellectual environment, where scholarly problems relating to map making were certainly discussed. It is also noteworthy that members of that scholarly community were involved in the publication of some very early regional maps, including the Lazarus map. We do not have any documentary evidence, but the circumstances suggest that fourteen-years old Lazius could be a witness of the editorial process of the 1528 Lazarus map. Among all the scholarly activities that the young student could experience in Vienna, cartography was to remain one of his favourites in later years.

Lazius's self made *ex libris* is documentary evidence that the author was very proud both of his books and maps. His coat of arms is surrounded by his major scholarly works, most of them identified by their title. It is remarkable that Lazius decided to include not only his printed volumes, but also his chorographies, which are depicted as map scrolls with titles. To the left of the circular laurels with the shield, a *Chorographia Hungariae* is visible on the bookshelf. Lazius considered his map of Hungary as a major achievement: it was his largest printed chorography. This representation can be identified as evidence of the contemporary appreciation of map making by court humanists in 16th-century Vienna.

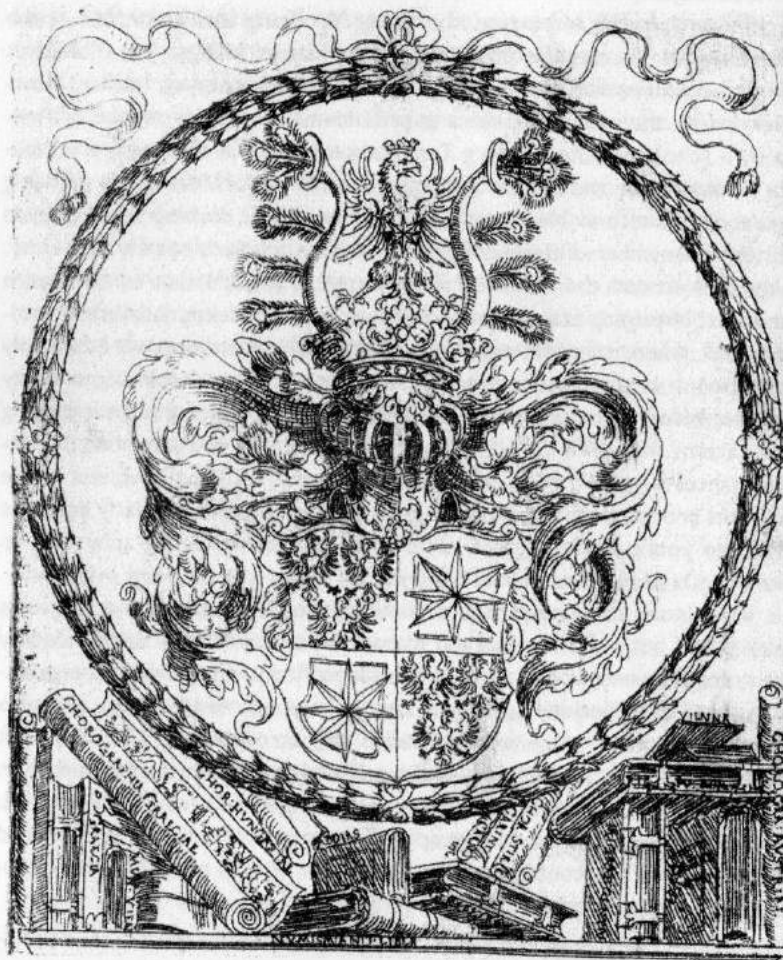


Fig. 2 Detail of Wolfgang Lazius's bookplate with the representation of his printed books and chorographies, including a map of Hungary (see this volume: DONECKER, SVATEK, 24, fig. 4)

After his years of study Vienna and Ingolstadt, Lazius participated as a "Veltdoctor" (military surgeon) in the Habsburg military campaign of 1541 in Northwest Hungary, an unsuccessful attempt to reconquer the Hungarian capital, Buda. His fragmentary topographic sketch of Lake Fertő (Neusiedler See) from this period⁸ may be a forerunner of the later series of regional maps, published during his tenure as personal physician to the Habsburg Emperor, Ferdinand I. In recognition of his services to the House of Habsburg, Lazius became court historian and curator of the imperial collection of medals and antiques.

Not unlike his humanist contemporaries, albeit with a somewhat stronger sense of dynastic loyalty, Lazius was keenly interested in the glorious past of the Habsburg provinces. His most important works, which were devoted to regional or local history, testify to his activities in the field of humanities⁹. This is in sharp contrast with his professional life, which is much less documented and did not result in major printed works on medicine – although he remained active as physician during his whole life. While his medical service and teaching were generally acknowledged, his works in the field of history triggered strong criticism already among his contemporaries.

To better understand his subject, a Renaissance historian needed geography, that is maps. Abraham Ortelius, the publisher of the first modern atlas in 1570, formulated this theoretical and methodological attitude a few decades later in his preface: 'geography is the eye of history'¹⁰. One generation earlier, Wolfgang Lazius became a pioneer of regional cartography in Central Europe, and the publisher of a very early printed regional atlas. Undoubtedly, he can be considered as a forerunner of the much better known generation of cosmographers and influential atlas publishers in Western Europe.

LAZIUS IN HUNGARIAN MAP HISTORY

As early as 1807 the famous Hungarian author and a map collector, Ferenc Kazinczy (1759–1831), proposed that Lazius's 1557 war map could have

⁸ ÖNB, Cod. 8664, fol. 81.

⁹ Michael MAYR, *Wolfgang Lazius als Geschichtsschreiber Österreichs. Ein Beitrag zur Historiographie des 16. Jahrhunderts; mit Nachträgen zur Biographie*. Innsbruck 1894.

¹⁰ Abraham Ortelius, *Theatrum Orbis Terrarum*. Antwerp 1570.

been the earliest printed map of the country¹¹. Actually, he had the second edition of the map (1577) in his own collection of Hungary-related material, and during the discussion Lazius's map of the whole country, published in an Ortelius atlas (dated 1573), was also mentioned. Similar opinions from other authors reflected the lack of information regarding the early maps of the country in the 18th century, when the Lutheran clergyman Mátyás Bél (Matthias Belius) tried to summarize the history of the geographical description of Hungary.

In 1724 Belius contacted Eberhard David Hauber in Stuttgart, who worked on a systematic and comprehensive account of contemporary maps. Hauber replied and sent him a list of early maps of Hungary¹². In Hauber's attempt to sketch the outlines of a general history of cartography¹³ there is a short but reliable summary, mentioning both the 1528 Lazarus map and the Lazius map of 1552 (!)¹⁴. Unfortunately, until now this important reference in this historic work has remained unnoticed by Hungarian map historians. It must be added that Belius was not the only source Hauber could use: the first map of Hungary had been listed in Gregorii's earlier work on map history¹⁵.

The first publication on Wolfgang Lazius as a cartographer by Eugen Oberhammer and Franz Wieser in 1906 enormously contributed to international research on his maps¹⁶. The monograph and facsimile atlas represented outstanding scholarship and gave a model for later map historians. Written by Austrian authors, the book was published in the Dual Monarchy, and

¹¹ Ferenc KAZINCZY, Magyar-Országnak talán első abrosza [Perhaps the first map of Hungary]. *Hazai Tudósítások* [Homeland Reports] 2 (1807), 151–153.

¹² Zsolt TÖRÖK, *Bél Mátyás, Mikoviny Sámuel és a honismereti iskola* [Matthias Belius, Samuel Mikoviny and the school of 'Heimatkunde']. Budapest 2003.

¹³ Eberhard David Hauber, *Versuch einer umstaendlichen Historie der Land-Charten sowohl von denen Land-Charten insgemein, derselben ersten Ursprung, ihrer Beschaffenheit etc. von M. Eberhard David Hauber*. Ulm: Verlegte Daniel Bartholomaei 1724.

¹⁴ Hauber, *Versuch* (n. 13), 104, footnote (e): „Wolfgangus Lazius, der berühmte Kaeyser. Historiographus hat A. 1552 durch Bey-Huelfe vieler ungarischer Magnate, eine neue und mit vielen Fleiss vermehrte Chartre von Ungarn gegeben, und dem damaligen Roemischen und Ungarischen Koenig Ferdinando dediciret.” – It is worth mentioning that Gregorii (n. 15) did not mention Lazius, although its reduced versions were available in 16–17th century European atlases.

¹⁵ *Curieuse Gedancken von den vornehmsten und accuratesten alt- und neuen Land-Charten nach Ihrem ersten Ursprunge etc. durch Johann Gotfried Gregorii*. Frankfurt, Leipzig 1713.

¹⁶ OBERHAMMER, WIESER, *Wolfgang Lazius* (n. 4).

this historical context explains why the earliest maps of Hungary were included. The book first described the 1528 Lazarus map and included a full page illustration of the unique copy recently rediscovered, at that time in Sándor Apponyi's private collection in Hungary. Thus, when describing Lazius's 1556 map, Oberhammer and Wieser were able to compare the first and second printed map of Hungary, putting both works into the context of 16th-century Austrian map making. In their interpretation Lazarus was the author of the manuscript, but – according to the map's dedication – the 1528 map was edited by Tannstetter. Oberhammer and Wieser suggested he was an 'experienced map maker', who extensively corrected and completed the material, and they concluded that the printed work was actually a "Lazarus-Tannstetter" map.

After this introduction the purpose of the 1556 map was apparent: the 1528 map was wrongly oriented and contained topographical errors, so Emperor Ferdinand I commissioned Wolfgang Lazius to make a larger map¹⁷. The explanation was so tempting that it was readily accepted by map historians. In this way Lazius 1556 wall map, rediscovered before the publication of the monograph by von Wieser in Basel¹⁸, was put into the progressive line of Austrian-Habsburg regional cartography of the early 16th century.

The argument was effectively supported by visual material, the sheets of the wall map, enclosed in facsimile as a supplement to the text. The size of Lazius's 1556 map and the abundance of topographic details were most convincing evidences that the largest map of the Viennese humanist was superior, a milestone work. Oberhammer and Wieser's monograph was, and still is, a major source of map historical information. Perhaps more importantly, this publication made the 1556 map available for further research, which was the original purpose of the authors. Of course, when learning about the discovery of the wall map in Basel map historians in Hungary happily included the additional Lazius map in their evolutionary, national map histories.

In his general history of Hungarian map making, the geographer Ferenc Fodor (1952) devoted five pages to Lazius's 1556 map¹⁹. Beginning with the

¹⁷ OBERHAMMER, WIESER, *Wolfgang Lazius* (n. 4), 38–40.

¹⁸ See n. 2.

¹⁹ Ferenc FODOR, *A magyar térképvás* [Hungarian map-making] I. Budapest 1952 (*A Térképészeti Közlöny külömfüzete* [Cartographical reviews, special volume] 15), 30–35.



Fig. 3: The representation of Tihany peninsula in Lake Balaton on early chorographic maps. Note the different shape of the lake and the depiction of the peninsula.
From left: Lazarus 1528, Lazius 1556 and Lazius 1557
(Constructed by the author)

Generally speaking, Wolfgang Lazius's name is well known in the history of Hungarian cartography today. On the other hand, his importance is rather underestimated, just as Lazarus is not considered an important map maker in Austrian map histories. Despite the fact that Lazius published the second printed map of the country in 1556, and one of the earliest modern country maps in Europe, in Hungarian publications he is not considered as an original author, but as a – rather unsuccessful – compiler or copyist³⁰. Lazius 1556 map is generally interpreted by historians of cartography as a version of the earliest printed map of Hungary. As the first map is attributed to Lazarus, whose manuscript was published in 1528, in this theoretical approach all later maps were based on this work. In this paper we reconsider this accepted opinion, which is, curiously enough, essentially based on the wrong interpretation of Lazius's own statement.

Another contributing fact to the generally negative assessment of Wolfgang Lazius in Hungarian map history is related to his Austrian nationality, and, even more importantly, to his close connection and loyalty to the Habsburgs. In the late 19th century, when the study of early maps started in Hungary, a foreigner and a promoter of the imperial idea of centralization was apparently not considered the right person to make a 'good' map of Hungary. Moreover,

³⁰ See e. g. Pál HRENKÓ, Lazius magyarországi térképei [Lazius's maps of Hungary]. *Geodézia és Kartográfia* 31/4 (1979), 276–287, and 31/5 (1979), 362–367.

Lazius worked in the period when, after the gradual decline of royal power and the disastrous defeat at Mohács in 1526, the country was increasingly dominated by the Habsburgs. In the early 16th century the Kingdom of Hungary lost her independence, and for centuries it was a separate, but subordinated part of the Habsburg Empire. However, in the late 19th century Hungary was a partner state in the dual, Austro-Hungarian Monarchy (from 1867). In the era of the development of strong national ideology, based on an artificially created, but glorious past of an independent country, early maps were considered apparent pictorial expressions of past national identity. Ignoring the different meaning of the concept 'nation', old maps were celebrated as strong historical evidence of continuity and territorial claims. This vision was actually similar to Lazius's own approach to cartography as the producer of historical evidence. Anyhow, Lazius's 1556–57 maps were put into a progressive national map history in Hungary. However, as we would like to demonstrate, they do not fit into the traditional patterns of cartographic progress.

THE WALL MAP

Lazius's large size wall map, the *Regni Hungariae Descriptio vera*, was printed from ten wood blocks in the workshop of Michael Zimmermann in Vienna. There are two dates on the map: 1556 is given in the upper left corner of the map, and the date 1552 appears in the dedicatory text to Emperor Ferdinand I located in the center. These confusing dates can be explained if we assume the manuscript map was already completed in 1552 and was printed in 1556 with changes in the textual explanations. This view is supported by the fact that Ferdinand was elected Holy Roman Emperor in 1556, and he is mentioned with this title in the text panel along the lower right margin.

In a panel in the bottom right corner Lazius listed twenty-four prominent Hungarians, who contributed to the map. As the biographical information of the persons included suggests, this list was most likely created in 1552. Pál Istvánffy, for example, died in the following year and János Bornemissza, who was recorded as the bishop of Veszprém, was already bishop of Kolozsvár in the spring of 1553.

Lazius's manuscript map was certainly published in 1556, when a booklet was also printed by Michael Zimmerman in Vienna³¹. The work is a detailed description of the country's history and contemporary administration, with a chapter on the succession of the different nations. Throughout the pages there are textual references to the chorographic map of the country which was published by the author in Latin and German, for example when mentioning the most important gold mines in Upper Hungary.

The wall map was printed in Latin but a German edition was published shortly thereafter under the title *Des Khünigreich Hungern sampt seinen eingeleibten Landen gründliche und warhafftige Chorographica Beschreybung*. A fragment of this edition was recorded in Vienna in the 19th century by Flóris Rómer. In 1988 more fragments were identified in Budapest and from these fragments the title was reconstructed. As it turned out this was identical with Lazius's 1556 booklet mentioned above. In 1995 one sheet of Lazius's map, with part of its German title, was discovered in an antiquarian book shop in Budapest. From the dedication of the German edition it is clear that Lazius was ordered to translate his large map into German. Although the author emphasized his efforts it was actually not much labour. A comparison of the fragments of the German edition with the unique copy of the Latin edition reveals no change in the map's content. It is highly possible that the same woodcut blocks were used for printing the Latin (1552?, 1556) and the German (1566) editions of the map, and only the title and textual explanations, which were set in metal types and inserted into the wood blocks, were changed.

The technically relatively simple change of the map's language had a significant effect on the its readership. In the introductory part of his description of Hungary, dedicated to Archduke Karl, Lazius himself anticipated the use of his map now in German by general readers, and especially referred to the needs of war³². In other words, the translation of the text from Latin to German transferred the map immediately from humanist court circles to the hands of more practically minded people: those involved in state administra-

³¹ [Wolfgang Lazius] *Des Khünigreichs Hungern sampt seinen eingeleibten landen gruntliche und Warhafftige Chorographische beschreybung*. Gedruckt zu Wienn Austria durch Michel Zimmerman in S. Annen Hof [1556].

³² Lazius (n. 31), I „[...] dieselb Mappa hab ich auf ettlicher dit verteutschet | damit Sie dem gemeinem man | und in sunderhayt anligunden noetten des kriegs auch zunuss kheme [...]”.

tion, commercial or military matters. With this change of readership the readings of the map also changed. What had been a representation of historical continuity and support of Habsburg territorial claims, now became a depiction of the theatre of war, a good summary of the places to be defended or occupied.

In this context we must consider that the publication of the German edition of the chorographic map of Hungary was published in the year when the Aulic War Council (*Hofkriegsrath*) was established in Vienna. This was by no means coincidental, since the supervision of the war against the Ottomans required effective tools of control. By the mid-16th century, maps were already generally recognized as useful tools of administration and warfare. With the establishment of the War Council, the plans and maps produced by military architects became classified documents and only very rarely took printed form³³. However, Lazius could publish his chorographic map of the Kingdom of Hungary before the new policy of secrecy was in effect. For long time, until the publication of Martin Stier's map in 1661, Lazius's work remained the major available map source for private cartography in Europe. As it had practically no competitors, the 1556 map was kept in circulation throughout Europe, mainly in the form of atlas sheets, for more than a century.

Now, if we take a fresh look at the map, we can see an image familiar to the modern reader, a map similar to the geography of the Carpathian Basin. Lazius 'corrected' the confusing orientation of Lazarus's 1528 map. There, the directions on the map did not match the cardinal directions, inscribed along the frame. The problem was certainly noted by contemporary cartographers. Already Tannstetter instructed the reader to turn the map to the right direction, and we can conclude that the manuscript had no orientation clue and the cardinal directions were added during the printing process in Apian's workshop in Ingolstadt. To solve the problem, instead of a standing rectangle, a poster format, Lazius placed the Kingdom of Hungary into a horizontal rectangle, with margins corresponding to the cardinal directions.

However, the novel format and the changed proportions of the map actually resulted in a much distorted geographical image. In fact, the spatial

³³ Zsolt Győző Török, 16th Century Fortification Atlases of the Habsburg-Ottoman Border Zone. In: Gerhard Holzer, Valerie Newby, Petra Svatek, Georg Zotti (eds.), *A World of Innovation. Cartography in the Time of Gerhard Mercator*. Newcastle 2015, 63–84.

structure of the earlier Lazarus map was more realistic. Lazius's misguided solution can be attributed to his limited geographical knowledge, and his attempt to strike a compromise between the information he had and contemporary geographies. Despite its heavy structural problems, Lazius's map was certainly more easily comprehensible for the reader familiar with the geography of Europe. The rather misleading clarity of the 1556 map enormously contributed to its popularity. Moreover, contemporary map readers were more interested in a fitting geographical overview than in the accuracy of the coordinates.

Another advancement, which was important for the users, was that the geographical names on Lazius's map were written in Hungarian with generally excellent, contemporary orthography. We can assume that this was due to the many Hungarian contributors who could check the spelling of the names of settlements. In the light of a newly discovered list of settlements we can say more about the role of those contributors, at the same time, allowing insight into Lazius's non-cartographic sources³⁴. The document was prepared for the German Reichstag in Vienna, most likely with the contribution of Hungarian and Croatian representatives. The list includes 262 settlements, cities, castles and forts in the Kingdom of Hungary, which were occupied by the Turks until 1556. These places, among them hardly identifiable minor places, were almost all represented on Lazius's printed map. Probably a manuscript version was used by the committee in Vienna, and this could be a way how the content was updated.

In the bottom left corner of the wall map the reader could find a woodcut illustration, which was included to put the map into a wider cultural context³⁵. The representation of the Virgin Mary with the Son, and two Hungarian kings on the sides is explained by a Latin poem, which expounds

³⁴ Géza PÁLFFY, *Egy rendkívüli forrás a magyar politikai elit 16. századi földrajzi ismereteiről. Az 1526 és 1556 között török kézbe került magyarországi városok, várak és kastélyok összeírása a Német-római Birodalom rendjei számára.* In: György Terei, Gyöngyi Kovács, György Domokos, Zsuzsa Miklós, Maxim Mordovin (edd.), *Várak nyomában. Tanulmányok a 60 éves Feld István tiszteletére / On the trail of castles. Studies in honour of István Feld in his 60th birthday.* Budapest 2011, 177–194.

³⁵ Júlia PAPP, „Vitézül védjétek a nemzetet.” Wolfgang Lazius nagy Magyarország-térképének Szűz Mária-, Szent István- és Szent László-ábrázolásáról [‘Bravely defend the Nation.’ About the representation of the Virgin Mary, Saint Stephan and Saint Ladislaus on Wolfgang Lazius' large map of Hungary]. *Ars Hungarica* 30/1 (2002), 25–48.

the map's ideological message. The unknown writer, who could be János Sylvester³⁶, evokes to the Virgin Mary and the canonized Hungarian Kings, Saint Stephen and Saint Ladislaus, to defend the Christian people of Hungary against the infidel enemy. The saints' reply is somewhat surprising, referring to the end of the world in 1554. The political-ideological message, however, is rather clear: King Ferdinand should follow his predecessors, and a Habsburg king should protect Christianity and restore the territory of the country.

This message was expressed, perhaps less poetically but more effectively, by the depiction of the Hungarian coat of arms on the breast of the large Habsburg eagle, placed in the central part of the map. Note that the symbol of Habsburg military power, the eagle's head, is turned to the East, the Empire keeps an eye on and guards her Hungarian territories (fig. 1).

Lazius's map is a very early example of a cartographical work with a legend: the meaning of the icons was given in three languages: Latin, German, and Hungarian. In addition to settlements (cities, market places, and villages), castles and monasteries were also represented. Places of economic importance such as vineyards, mines, and natural spas were marked with pictorial symbols, while ancient ruins were indicated with black dots. Similarly to Wapowski's post-1526 map of Poland, Lazius's map marked bishopric seats by mitre and crozier signs. With its unusual symbols, considered special by modern researchers, the map is a forerunner of thematic cartography³⁷. This interpretation is retrospective: early modern maps, including those produced with special content, were by no means intended to be thematic representations in the modern sense. Instead, in lack of a canon of cartographic language or conventions, map makers could experiment with their tool. A closer look at early maps reveals the strange fact that, due to their unusual form and content, practically all of them could be classified thematic³⁸.

³⁶ After 1543 János Sylvester was professor of Hebrew at the University of Vienna. As a colleague of Lazius, he wrote a laudatory poem for Lazius's first book, *Vienna Austriae: Wolfgang Lazius, Vienna Austriae. Rerum Viennensium Commentarij in Quatuor Libros distincti, in quib. celeberrimae illius Austriae civitatis exordia, vetustas, nobilitas, magistratus, familiaeque, ad plenum (quod aiunt) explicantur.* Basel 1546 (VD16 L 855).

³⁷ Petra SVATEK, *Die Geschichtskarten des Wolfgang Lazius. Die Anfänge der thematischen Kartographie in Österreich. Cartographica Helvetica* 37 (2008), 35–43.

³⁸ Zsolt Győző TÖRÖK, *Thematic Mapping in the Enlightenment.* In: Matthew H. Edney, Mary Sponberg Pedley (Hgg.), *The History of Cartography. Volume Four: Cartography in the Enlightenment.* Chicago 2020 (forthcoming).

Turning our attention to the actual process of production, we are now going to consider the development of this chorographical map in detail: As mentioned above, traditional map history studies focused on the description in the dedication of Lazius's 1556 map, a text of key importance since it was written by the author himself. Lazius dedicated the work to Emperor Ferdinand I, and explains that his work was prepared because of the errors of the map of Hungary, made by several years earlier by Cuspinianus and the Hungarian Lazarus. This reference to the 1528 *Tabula Hungarie* together with the statement regarding its correction gave ground to later stipulations that Lazius prepared his map only on the basis of Lazarus's work. This could lead to a general misunderstanding as to the preparation of the map. The map historians, who uncritically accepted the explanation appearing in Oberhammer and Wieser's monograph in 1906, could not resist comparing Lazius with Lazarus. Though the results of any such comparison will indicate problems with the premises³⁹, the documentary evidence was given priority over the contradictions and the research framework did not allow alternatives.

In the dedicatory text, Lazius mentions the 'observation of the poles', the first documented determination of geographical latitude in Hungary. For positivist map history it was taken granted as strong evidence that the map's accuracy was a concern. In this paper we can not analyze the structure of the 1556 map in order to answer the question regarding its construction. However, we can demonstrate with a simple figure, representing the distortions of the map in Western Hungary, that it is by no means accurate.

The traditional explanations are insufficient; the explanation that "Lazius 'corrected' the orientation of Lazarus 1528 map and placed the Kingdom of Hungary, the territory claimed by Ferdinand I, into a horizontally expanded rectangle, with margins corresponding to the cardinal directions"⁴⁰ is useless if we follow the instructions suggested, and compare the two maps.

³⁹ Albrecht PENCK, Wolfgang Lazius' Karten von Österreich und Ungarn. *Zeitschrift der Gesellschaft für Erdkunde zu Berlin* 1907, 82–85.

⁴⁰ TÖRÖK, *Renaissance Cartography* (n. 5), 1835.

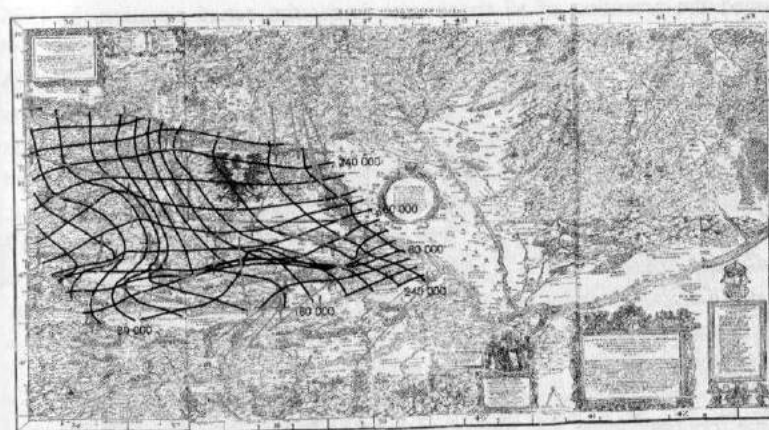


Fig. 4: The distortions of Lazius's 1556 map do not suggest uniform scale or any regularity. Here the Western Hungarian part, where the author's sources were apparently more reliable, is analyzed in MapAnalyst (Figure by the author)

As we could see above, perhaps the most confusing detail on Lazius's map is the strange representation of Lake Balaton (Plattensee) and its surroundings. While the overall shape of the lake is realistic, Lazius misplaced the Tihany peninsula on the southern coast. This was a mistake, but appeared on all later copies over the centuries. For map historians it is a clear indicator that Lazius was their source. Interestingly enough, the representation of the lake is also very obscure on the Lazarus map, although the lake was certainly known. As one can see, Tihany is represented on the 1528 map as an island with very different shape and orientation (fig. 3). Earlier it was suggested that the strange shape of the lake is due to Tannstetter's editorial work, who mistook a surveying route on the manuscript for the actual coastline. Another explanation is that the map represented the conditions in the early 16th century, when the lake's water level was higher and the lower part, i. e. the neck of the peninsula was under water. In any case, in 1552–56 Lazius did not follow Tannstetter's model.

His depiction is much closer to geographical reality, except for one feature: he placed the peninsula on the wrong side. This mistake certainly

gained the attention of all those who knew the actual situation. In 1595 Levinus Hulsius published a book, *Chronologia Pannoniae*, in Nuremberg, and in this historical work he gave an explanation for the mistake. According to Hulsius, the reason was the wrong interpretation of the description of the lake in Antonio Bonfini's work. Bonfini mentioned that Tihany peninsula was 'on this side of the lake', and his readers supposed this statement reflected an Italian point of view. But Bonfini stayed in Buda when he wrote the book, and from his point of view 'this side' meant the peninsula was on the northern coast of Lake Balaton. This is a small detail of a large wall map where Lazius did not follow his presumed model. But there are differences in other places as well: e. g. already Penck observed that in southern Hungary Lazius included fewer settlements than the earlier map.

According to the accepted view, Lazius revised the earlier map and added some content from his personal knowledge as well as reconnaissance sketches that were available to him. If we compare the two maps, it becomes apparent that not only the shape and orientation of the two maps are different. As it is clear from the measurements, Lazius's map is more than twice the size of Lazarus' map, moreover it covers a smaller region. From this simple fact we can assume that in general Lazius map is much more detailed than the first printed map of the country.

But how could Lazius in Vienna construct a larger and more detailed map of Hungary from only a smaller map of less detail? And how could Lazius compilation work result in a map with such a different geometrical structure? The problem is best illustrated if one takes a look at the result of a simple comparison. Lazius's (1556) map was compared with Lazarus's (1528) with the useful, open source cartometric software, *MapAnalyst*⁴¹. Based on identical points selected and marked on both maps the software calculates the transformations of structure to the other. We used major cities for our study and exported a diagram showing the geometrical transformation of the Lazius map as contrasted to the geometry of the Lazarus map.

⁴¹ Bernhard JENNY, *MapAnalyst – A digital tool for the analysis of the planimetric accuracy of historical maps*. e-Perimtron 2006, 1–3, 239–245 <<http://mapanalyst.org/>>.

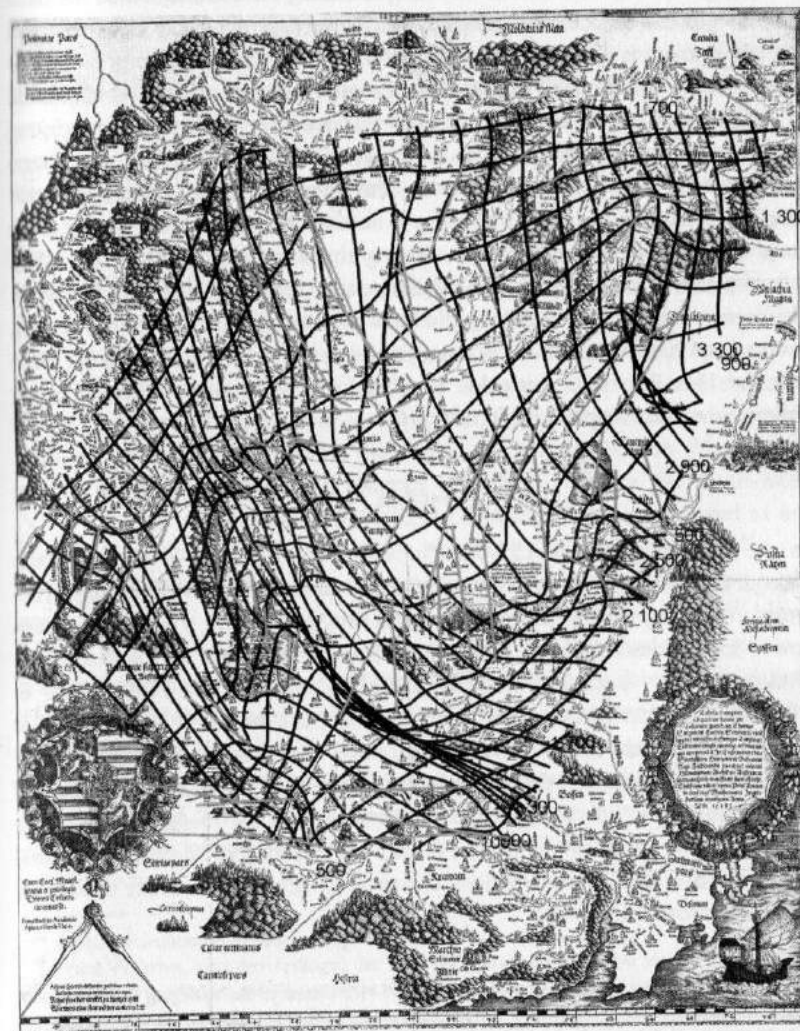


Fig. 5: The distortion grid drawn on Lazarus's 1528 map demonstrates that the Lazius 1556 chorography was enormously different (Figure by the author)

The grid makes it obvious, how Lazius should have transformed his base map to get the structure of the 1556 map. At first sight it is clear that the transformation is irregular, one part is reduced, the other magnified, and there are no details with regular orientation difference. Such a fundamental transformation would make no sense. Moreover, for a map maker working with compasses and rulers it was not possible in the mid-16th century to achieve what our computers can do. The question of what sources Lazius used to construct his map is difficult to answer, but we can be sure that he used multiple sources. Of course, among these one can think of the 1528 Lazarus-Tannstetter map, but not as a base map. Based on the circumstances we cannot rule out that Lazius could have used Lazarus's original manuscript, or parts of it, which could have been preserved in Vienna and could be available for him. But there are other possible sources of information, including unknown or lost maps of the country.

LAZIUS AS MEDIA DESIGNER?

In the following year, in 1557, Lazius had a military map of the Western Hungarian campaign printed by Johann Oporinus in Basel. The map itself measured 35 by 45 cm, but the woodcut was printed on a broadsheet, below a longer description in Latin, starting with *Rei contra Turcas gestae*...⁴². The explanatory text described the important events of the Turkish War in 1556 and the map was intended to visually support the text⁴³. The work was published for those readers who did not know much about the geography of Hungary. Lazius realized that without some knowledge about the location of places mentioned in the text the series of events on Hungarian territory could become meaningless. But how could a map maker construct a meaningful cartographic representation, a map that includes the most important pieces of information only?

⁴² Petra SVATEK, 'Rei contra Turcas gestae...'. Eine Geschichtskarte des Wolfgang Lazius aus dem Jahre 1557. In: Beineke Dieter, Heunecke Otto, Horst Thomas, Kleim Uwe (Hgg.), *Festschrift für Univ.-Prof. Dr.-Ing. Kurt Brunner anlässlich des Ausscheidens aus dem aktiven Dienst*. München 2012 (Schriftenreihe des Instituts für Geodäsie Universität der Bundeswehr München 87), 237–248.

⁴³ Helga HÜHNEL, Wolfgang Lazius, Kriegsschauplatz in Westungarn 1556. In: Franz Wawrik, Helga Hühnel, Helga, Jan Mokre, Elisabeth Zeiliger (Hgg.), *Kartographische Zimelien. Die 50 schönsten Karten und Globen der Österreichischen Nationalbibliothek*. Wien 1995, 64–65.

This is the problem of good design, well known for any map maker who should make decisions regarding his/her maps' form. Obviously, a level of detail comparable to the 1556 chorographic map, initially prepared for the educated humanists, could not be a good solution here. The detailed chorographic representation was available but could have been too complicated to read, and, especially if a smaller region is represented, it was difficult to be used for general orientation. Perhaps these were the considerations leading Lazius to a better solution: he constructed a special, in modern, 'thematic' map, to represent the military events in southern Hungary. This approach explains the curious characteristic of the cartographic picture: a peculiar representation of the theatre of war, the stage of the military events in 1556.

The war map shows Western Hungary, the territory defined by the river Raba (Raab) in the west, the Danube in the north and east and the river Drava in the south. Diagonally running, the Transdanubian mountain range with the Bakony forest divides the region, with Lake Balaton (Plattensee), and its extensive marshes and swamps stretching more to the south-west. From the mid-16th century these natural conditions were considered as important elements of the defence of the Habsburg military border zone⁴⁴.

As a synoptic, spatial-temporal representation of past events, from modern point of view the 1557 print can be considered a historical map⁴⁵. However, it might be more appropriate to consider the fact that it was rather a graphic summary of the events of the year preceding the date of publication. The war in Hungary was certainly considered a most pressing and actual problem for the Western European reader who were eager to learn more about the actual situation of the Ottoman expansion. In other word, the map Lazius published in 1557 in Basel was a *news map*, or – in modern terminology – impressive infographics.

⁴⁴ TÖRÖK, Fortification Atlases (n. 33).

⁴⁵ Franz WAWRIK, Von den Anfängen der österreichischen Kartographie bis zur Zweiten Türkenbelagerung Wiens (1683). In: Ingrid Kretschmer, Johannes Dörflinger, Franz Wawrik, Österreichische Kartographie. Von den Anfängen im 15. Jahrhundert bis zum 21. Jahrhundert. Wien 2004 (*Wiener Schriften zur Geographie und Kartographie* 15), 11–75, esp. 22; Zsolt TÖRÖK, Die Geschichte der thematischen Kartographie im Karpatenbecken unter besonderer Berücksichtigung der ungarischen geowissenschaftlichen Karten. *Nova Acta Leopoldina* 94/349 (2007), 25–48, esp. 27–28; Petra SVATEK, Die Geschichtskarten des Wolfgang Lazius. Die Anfänge der thematischen Kartographie in Österreich. *Cartographica Helvetica* 37 (2008), 35–43.

This general statement is well demonstrated if we take a look at the geometrical structure of the representation. Here we used *MapAnalyst* software to demonstrate the positional errors of cities. In the figure the circles represent positional errors of the locations of settlements and misplacement vectors represent the actual distance and direction of the positional difference.

As one can see from the circles, the map was not drawn to one uniform scale. The northern part of the print, especially the areas around the dedicatory text, is highly inaccurate in geometrical terms. At the same time, geometric accuracy is slightly better in the southern part, where the relative position of the locations is acceptable. The distortion grid gives further cues as to the design of the map. Apparently, the geographical content was moved to make graphic place for the dedication and the pictorial elements, dominating the image.

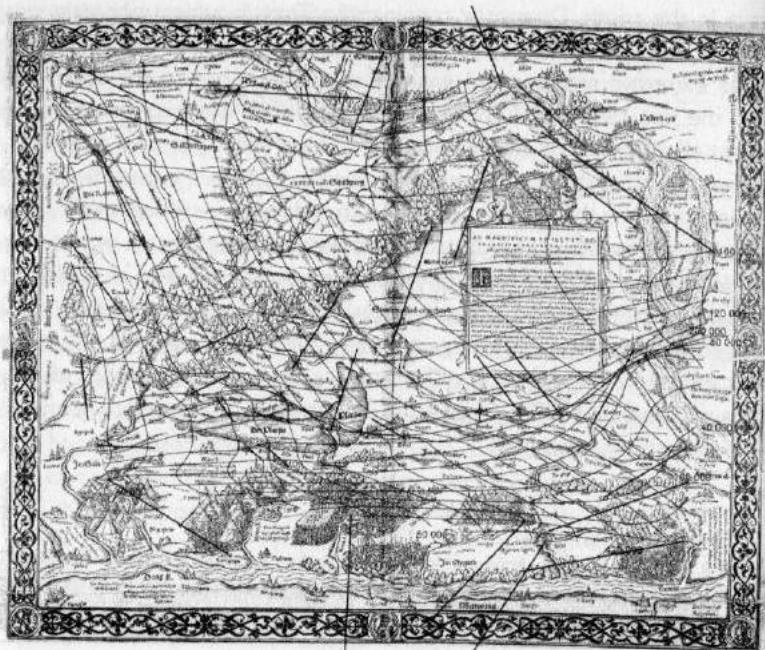


Fig. 6: The highly distorted geometry of Lazius's 1557 war map demonstrates the importance of media design in the 16th century (Figure by the author)



Fig. 7a: Detail of the central part of Lazius's 1557 war map with the dedication. The curious portrait in the medal along the left margin may be Attila, king of Huns (Budapest, Hadtörténeti Múzeum és Könyvtár [Institute and Museum for Military History, Map Collection], H III a 23)



Fig. 7bc: Details of Lazius's 1557 war map (Budapest, Hadtörténeti Múzeum és Könyvtár [Institute and Museum for Military History, Map Collection], H III a 23)

Here, in the focus area, the map represents almost true geographical structure, while the rest of the image is a sketchy and only topologically correct representation. In the early modern period, when maps drawn to scale become more and more common, the combination of cartographic and artistic perspectives, a medieval practice, was not only still acceptable but could serve the purpose better.

In the upper left corner the fortified city of Győr (Raab) is depicted. Although this is not shown directly on the map, the Transdanubian captainship, and especially the city of Győr, had a key role in the defense of the imperial capital, Vienna. The dotted line along the Danube is the representation of the route of the successful military campaign, led by Adam von Gall, the newly appointed captain-general of the northern military district. Other dotted lines show the routes taken by Christian and Turkish armies. It is remarkable to observe how the graphic representation is supported with written text on the map. The short textual explanations tell the reader what could not be shown pictorially: e. g. along the margins we find short notes, characterizing the regions in the cardinal directions. North of the Danube, along the upper margin one can read: '*hier ist die Bergstet wo man golt und silber graebt*'. To the East Eger (*Erla*) is mentioned, a castle which was heroically defended in 1552. The road to river Tisza, and further to Upper Hungary and the region of the mining industry is also indicated. It was important for the patron to whom the map was dedicated, Ulrich Fugger of Augsburg. He supported the Habsburgs and financed the military defense of the provinces. Thus, the pragmatism of Lazius's selection became evident: since the map was published by Oporinus in Basle, Fugger was undoubtedly a key addressee. The Fugger

family had interest in the mining industry and they possessed silver and copper mines in Upper Hungary. To point to these assets on the map was a warning that this economically important region was saved by the Habsburgs. The dedication praises Ulrich Fugger and, as it is published by a Habsburg court historian, emphasized Archduke Ferdinand's merits. According to Lazius's praises he was the protagonist of the campaign – which was more aggrandizement than fact.

The map's decorative frame deserves attention, especially if we keep in mind that Lazius was a historian. In his view contemporary events were interpreted from a historical perspective. Western Hungary was *Pannonia* for him, once a Roman province. The eight persons in the medallions around the map are symbols of the region's past; they represent the classic history of the territory. Seven of the represented rulers have been identified as Roman emperors, including Nero and Titus. The eighth person has not been identified. It can be a representation of an Ottoman Emperor, as Svatek suggested⁴⁶, as this would be not unusual iconography in the period.

Considering the historical context and the history of the region it is perhaps a personification of a much earlier period. It is suggested that the man is actually a representation of Attila, the King of the Huns. Lazius knew the Hun ruler from Roman sources, and could consider *Athila* as the king of Pannonia. The identification is provisoric, but is supported by the placement and style of the representation. The person wears an oriental helmet and there is part of a bow depicted in the background. The bowman in the centre of the Eastern margin is looking at the region between the Danube and Tisza, where, according to historical sources, Attila had his capital. The land beyond the Roman *limes* might be the indication of the demanded extension of Habsburg rule.

In the foreground an observer of the image could find more dynamic, pictorial elements, in the form of small miniatures representing another campaign and a major Habsburg victory in 1556. The series of events started with the Turkish offensive by the Pasha of Buda, who led his army to the southern part of the region and laid siege on the castle of Sziget. This fortification played a key role in the defence of the supply lines leading to Styria in the West, and Vienna in the north-west.

⁴⁶ SVATEK, '*Rei contra Turcas gestae...*' (n. 42).

Archduke Charles' Styrian troops camped south of Kanizsa, while the Turkish military camp was around Sziget. In September, the modest Austrian forces joined a powerful Croatian and Hungarian army. The Christian army attacked and, in the end, occupied the fortified Babócsa to distract the Ottoman forces from Sziget. The Turkish army abandoned the siege and retreated to Tolna at the Danube. The Christian army, moving in the opposite direction, occupied several smaller Turkish strongholds in the region.

In 1556, the new system of Habsburg defense in Hungary was introduced and the development of a network of border fortresses along the military frontier commenced. For a short time the region was liberated, and the 1556 campaign was indeed among the few successful counter-attacks in the long history of the Turkish Wars. Lazius's 1557 map celebrated and promoted the victorious Habsburgs, the defenders of Christian Europe. This message was repeated two decades later when a new edition of the war map was published in 1577⁴⁷. By that time the successful campaign was already a historical event, and Lazius's news map turned into a historical map.

CONCLUSION

The study of Wolfgang Lazius's two maps of Hungary demonstrated that a critical approach to traditional map history can result in new insights. The overview and assessment of the earlier studies on these maps pointed to general problems of theory-driven interpretation. In the case of the 1556 map of Hungary we showed how the misinterpretation of the author's statement by modern researchers and the uncritical acceptance of their arguments led to false conclusions regarding the creation of the map. With new digital tools we analyzed the geometrical structure of the map to demonstrate that it could not be based on one earlier source, the 1528 Lazarus-Tannstetter map. Instead, we suggested that Lazius's chorographic map making was more complex and included several processes. The 1557 war map has a different geometrical structure and can be interpreted as a news map for the general public. We argue that the different spatial structure and the pictorial form of the map were consequences of Lazius's selected design strategy.

⁴⁷ SVATEK, 'Rei contra Turcas gestae...' (n. 42), 244.

With the study of two contemporary maps from the same author we demonstrated that map making was not a simple practice. Alternative mappings always coexisted in the history of cartography. The new map history should explain how maps were produced, in other words how cartographic processes resulted in particular objects – and how these objects became parts of different processes in the circulation, distribution and use of the map throughout social history.