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Rivers as categories of order. A methodical assessment of the position of art geography

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Abstract
In art history, rivers are used to describe relational spatial constellations which enable the spatial distribution of specific styles of artworks in a topographical classification. River courses are used to delimit the distribution areas of buildings or objects of different genres in order to define artistic landscapes. According to this spatial concept, medieval wooden sculptures, for example, can be found between the Eider and Königsau (Danish *Kongeå*) and Romanesque churches can be found on the Meuse and Rhine, each with artistic characteristics which—as cultural units—can seldom be found beyond their designated natural borders. This article examines the methodological position of art geography, its role today and its potential for art history in general. Accordingly, it will present the broad outlines of the historiographical development of this field, summarise the current focal points and discuss application-oriented perspectives for medieval art history, taking digital humanities, in particular, into account.

Keywords Art geography · Northern Europe · Art history · Knowledge graphs · Middle ages

Introduction

In art history, rivers serve to describe relational spatial constellations which enable the spatial distribution of works of art with specific characteristics within a topographical classification. River courses are used to delimit the distribution areas of buildings or objects of different genres in order to define art centres, artistic landscapes and cultural landscapes. According to this spatial concept, medieval wooden sculptures, for example, can be found between the Eider and Königsau (Danish *Kongeå*), and Romanesque churches can be found on the Meuse and Rhine, each with artistic characteristics that are unusualcultural units beyond their designated natural boundaries. This also gave rise to categories oriented upon

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and named after rivers, some of which are still in use today (Täube 2007), such as "Rhenish stained-glass" (*Rheinische Glasmalerei*), the title of an exhibition at the Schnütgen Museum in 2007 (rather than "stained glass in the Rhineland").[1] This observation implies the need for a critical analysis of the genesis of the underlying methodological concept which, on the one hand, is central to art-historical, spatially-oriented fundamental research and, on the other, forms part of the tradition of concepts such as regional or national identity which, in the past, have been clearly delineated and "othered" for political purposes.

In the following text, therefore, I will examine the methodological status of art geography, its role today and its potential for art history—against the backdrop of the study of rivers as a methodological tool. Accordingly, I will present the broad outlines of historiographical development in this area, summarise the focal points of current work in the field, and discuss application-oriented perspectives for medieval art history research. The focus at this point, therefore, will not be on questions of the concept of landscape in art, the genesis of the concept of the artistic landscape, or the construct of identity or region per se.[2] Rather, my interest is centred on how rivers can help to define these concepts, and how river spaces are related to the economic prosperity of places, but also to the material deposits, the transport infrastructures needed for them, and the travel routes of people and knowledge. What role do flowing spaces play in revising the concept of art geography?

History of methods

Art geography is a method used in art history to analyse the cultural heritage of a region and to relate it directly to spatial categories. This method was established very early and went through several phases: from establishment at the turn of the 20th century; instrumentalization in the 1920s to 1940s; dissociation in the post-war years; and cautious revision in the late 1960s; before returning to the discipline's consciousness in the course of the spatial turn. The parallel technological progress and associated digitisation in areas of art history now open up new opportunities to explore digital humanities methods as they interact with the method of art geography.

The basis for the formation of research in art geography was "anthrogeography", founded by Friedrich Ratzel in 1882. Following Darwin's theory of evolution, this method linked the categories of ethnicity, race and space. Ratzel worked with the concepts of *habitat* and *cultural race*, which corresponded with the common assumption that the "characteristics of a people, tribe or race" could also be detected in otherwise very heterogeneous works of art or other cultural products.[3] This led, for example, to the juxtaposition of Nordic-Germanic and Romance-Italian styles, each of which was attributed specific qualities (Engel 2012: 91). The term "art geography" was first used in Austria in 1910 by Hugo Hassinger, who created distribution maps of house types and building forms in the context of

[1] In contrast, the Corpus Vitrearum Medii Aevi (CVMA) research centre has been working on individual regions since 1952; see for example "Die mittelalterlichen Glasmalereien in Frankfurt und im Rhein-Main-Gebiet", Hess (1999).

[2] On various facets of the concept of landscape, see Hespers (2007: 47–76) and the contributions in Felten et al. (2012); on the methodological critique of the concept of artistic landscape and region, see Hespers (2007: 30–46, 126–131, 145–146).

[3] All translations of German quotations are by the author.

geological and geographical conditions. This had a lasting influence on monument topography and monument conservation (Engel 2012: 92).

As a method, art geography has developed in two directions since 1920, and today's German-language research sees itself in the French tradition of *géographie humaine* and *géographie artistique*, developed by the so-called *school of annales* (Engel 2012: 93).[4] In line with this, the *Institut für geschichtliche Landeskunde* (Institute for Historical Regional Studies), founded in Bonn, dedicated itself to historical cultural space research. This included an examination of the artistic landscape, in an interdisciplinary and thus methodologically innovative manner (Engel 2012: 93–94). The art historians involved in this movement focused on delimitable artistic landscapes, in which the idea of a "uniform Germanic cultural area in Western Europe" (Engel 2012: 94) became increasingly central. Here, moreover, cartography served less to illustrate than to gather knowledge about the dissemination of "cultural currents" (Engel 2012: 94). It was against this background that a theory of art geography based on "tribal and folk character" emerged in 1936, with Paul Pieper's dissertation at the Bonn Institute, a theory utilised by the National Socialists for their own purposes.[5]

On the other hand, from the 1920s, the starting point for French cultural geography and *géographie artistique* was the understanding that, in the Middle Ages, artistic forms, types and styles spread in waves or via traffic routes from the centre into surrounding areas (Engel 2012: 93). In the 1960s, Kenneth Clark and Reiner Haussherr took up these ideas and called for a reorientation of the method that would focus on the dynamic routes of dispersal from art centres deep into the periphery (Clark 1962; Haussherr 1965: 371; Engel 2012: 99). Rivers have not received much attention in these concepts, often being subsumed under transport routes in general or overlooked in the discourse of centre and periphery.

In the post-war period, Walther Zimmermann, Hans Erich Kubach and Albert Verbeek dealt fundamentally with a cultural landscape oriented on river courses for the first time, specifically focused on the Rhine and the Meuse, and published the four-volume corpus work "Romanische Baukunst an Rhein und Maas" (Romanesque Architecture on the Rhine and Meuse) between 1976–1989. This consisted of two catalogue volumes, a further one with illustrations and a substantive discussion of "architectural history and artistic landscape" (Engel 2012: 101; Kubach and Verbeek 1976–1989). This cultural landscape consisted of types and forms within the region shaped by the rivers, which, despite having no fixed border, was distinct from adjacent regions such as that of the river Scheldt. In their view, this cultural landscape existed independent of linguistic borders and territorial or geographical boundaries and referred exclusively to the periods they studied (Engel 2012: 101).

From the 1970s, the role of the sea, with its many tributaries, as a connecting element between diverse coastal regions, has been the focus of attention with regard to art in the Baltic Sea. Here, Nicolaus Zaske and Jan Białostocki were the first to raise the questions of *Hanseatic art* and *art space* (Białostocki 1976a, 1976b; Zaske and Zaske 1985). From the 1990s, Michael North, Lars Olof Larsson, Uwe Albrecht and Jan von Bonsdorff in particular have been working on art production and the art trade in this region in the period from the Middle Ages (North 1996; North 2004; North 2011; North 2021a; North 2021b; Buttlar

[4] This included Paul Vidal de la Blache, Jean-Auguste Brutails, Henri Focillon, Arthur Kingsley Porter, Josep Puig i Cadafalch.

[5] Engel (2012: 95, 97–98) explains this in detail.

et al. 1998; Albrecht and Bonsdorff 1994; Albrecht 1995; Krohm and Albrecht 2004; Mänd and Albrecht 2013; Albrecht 2009–2019; Larsson and Bonsdorff 1988; Bonsdorff 1993a; Bonsdorff 1993b; Bonsdorff 1998; Bonsdorff 2018; Bonsdorff et al. 2022). In Scandinavia in particular, waterways play a central role in transport: due to the geographical conditions and the cold climate, major transport projects for people and material have always taken place in winter, using the frozen roads as often the most direct links between places via rivers, lakes, swamps and even the sea (Trinkert 2023).

At the same time, the working instruments in this field were also expanded in response to the digitalisation which began in the 1990s, which saw the establishment of numerous image databases. Among the earliest such projects are the image database *prometheus* at the University of Cologne, designed for teaching, and the *Bildindex* database of the German Documentation Centre for Art History—Bildarchiv Foto Marburg, which was made available for research and heritage conservation (Raspe and Schelbert 2024). These have been followed by countless examples, linked to institutions from the so-called GLAM sector comprising Galleries, Libraries, Archives, Museums. Such institutions rarely interact with each other or provide the other institutions with data sets. Frequently, analogue information from archives or card catalogues istransferred into digital data sets. This is how digital collection management came into being and, as a result, the need for the keywording of image files, and a standardisation of this keywording, became visible for the first time. This led to the development of individual, in-house systematics or, increasingly, overarching standards such as *Iconclass*. It was only this early form of standardisation which made the use of relational queries possible and thus has gone beyond the indexing, collecting and ordering of art objects to finally expand the role of these databases to the research and mediation of art objects (Kailus and Stein 2018: 124). From a data perspective, these are *closed worlds:* homogeneous in themselves but unrelated to similar offerings (Kailus and Stein 2018: 124).

Basic art historical research and border demarcation

For object-related basic research in art history, the monument-based large-scale research described by Uwe Albrecht remains central. In this respect, it ties in with the tradition of inventorying works of art and the subsequent visualisation of the spatial spread of these works on maps, as has been practised for a wide variety of regions since the 1910s. In this context, critics of large-scale basic research projects in art history cite not only the often inevitable format of long-term research projects, the associated historicization of their own initially applied method and the high funding volume, but also a potentially critical, since supposedly unreflective, proximity to positivist-cognitivist methods, such as those advocated by Giovanni Morelli in the founding period of art history (Augustyn 2015: 7).

The art-scientific spatial concept of the artistic landscape and the necessary demarcation of boundaries that accompanies it is a further uncertain factor. Simone Hespers dealt with this spatial concept in detail in her dissertation, published in 2007, and attested to its methodological shortcomings with regard to comparative procedures of specification as well as the possibility of spatial boundary definitions (Hespers 2007: 147). In practice, however, there is still a need to spatially define study regions for such fundamental large-scale projects and the artworks to be studied within them. Such regions can hardly be delimited on the basis of the objects or buildings still present there. For this, historical conditions from the time of the works' creation would have

Fig. 1 Inventory of the preserved medieval wood carvings and panel paintings in the historical area of investigation of the Prussian province of Schleswig–Holstein, map by Jan von Bonsdorff

to be reconstructed, taking into account ecclesiastical or secular administrative units or natural space restrictions within certain temporal coordinates (Schmid 1994: 23–24; Engel 2012: 100; Trinkert 2014: 15, Trinkert 2020: 8). In the pragmatic demarcation of study areas, however, inventory projects very often resort to modern administrative boundaries which, in turn, do not remain in place, even over lengthier periods of time. This can be seen, for example, in the corpus project "Medieval Wooden Sculpture and Panel Painting in Schleswig–Holstein" (Fig. 1), initiated in the early 1990s, which followed Richard Haupt's inventory of architectural and artistic monuments from 1887–1925 as the first cataloguing work of this kind in the then Prussian province of Schleswig–Holstein (1867–1920) (Haupt 1887–1889; Haupt 1890; Albrecht 2009–2019) or, more recently in regional funding programmes, such as the INTERREG project "Late Medieval Sculpture between the Meuse, Rur and Wurm" (Schäfer 2001),

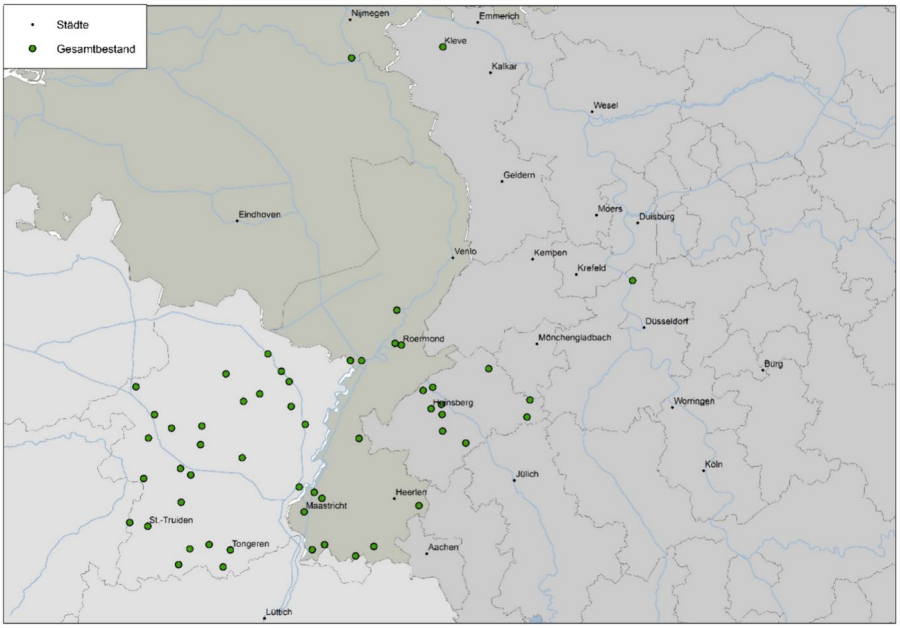

Fig. 2 Inventory of the late medieval sculpture between the Meuse, Rur and Wurm, map by Julia Trinkert

which recorded the holdings in the district of Heinsberg and the Diocese of Roermond, who also sponsored the project (Schäfer 2001).

Although there is no ideal solution, static, territorial boundaries such as bishoprics; or geographical boundaries such as coastlines and river courses which, in turn, also denote territorial boundaries in many instances, prove to be probably the most suitable (Engel 2012: 100). If the works of art examined in this study are plotted on a map without their (current) administrative boundaries, their location on or near rivers around Meuse, Rur and Wurm or canals becomes clear (Fig. 2). In the 2007 art-geographical study of medieval architecture in Prussia, Christofer Herrmann thus oriented himself to the borders of the four Prussian bishoprics of Kulm, Pomesania, Warmia and Samland in the Middle Ages (Herrmann 2007). Finally, the method of art geography used in a defined region to research the works of art there concerns a cross-sectional area which touches on the conservation of monuments and on cultural heritage, and it therefore continues to be of great social relevance beyond purely art historical research: When recording the artworks of a particular region as comprehensively as possible on the basis of monument inventories and monument topographies, it is possible to determine conservation quantities and make even recent losses visible. These works of art also include those that are no longer in their original location but are now in museum collections and in private collections—with all their limitations. The inventory can thus be secured at a fixed point in time. These quantitative data are catalogued and supplemented with technical details and descriptions, along with information about their provenance, their context of origin and their research history, through preserved sources and photographic documentation (Engel 2012: 99–100; Trinkert 2020: 8). Less frequently, there are also scientific or art conservation analyses available, which also belong to the qualitative data.

At the same time, works of art in a region help to create cultural identity; indeed, they are part of the cultural heritage of that region. Waterways, such as rivers or seas, often offer opportunities for the development of cultural regions: In their agency as navigable or non-navigable, they are shapers of a region's cultural heritage. The network of Hanseatic merchants along the coasts of northern Europe, based on economic alliances on the North and Baltic Seas, developed as early as the Early Middle Ages. The waterways thus provided the basis for the supra-regional dominance of this network from the mid-12th to the mid-seventeenth centuries (Müller 2012: 55). While the northern countries had a very long coastline along the Baltic and the North Sea, with all that this entailed, the cold and wet climate also made agriculture dependent on drainage systems and dikes. Rain, flooding and frost affected people and changed landscapes and transport routes throughout the year. For example, frozen lakes, moors and rivers became additional transport routes in winter (Poulsen, Gundersen: 3), while rivers could become impassable regardless of climatic conditions due to low water, whirlpools or cliffs, as well as artificial obstacles such as mills, weirs and fishing nets (Freund 2007: 49–50; Trinkert 2023: 113). In this vast region, natural features have played an important role. The land masses are surrounded by seas into which rivers flow; rivers open up the interior and flow back into other rivers. This creates"connected systems" (Burkhardt, Kolditz: 101). As early as the Middle Ages, these systems, in combination with harbours and short overland routes, formed an extensive network of routes across several river courses. In this historic transport network, waterways are the edges, while ports and landings are the nodes (Ellmers 2018: 297). In the early Middle Ages, long distances were mostly travelled by water, with different rivers being connected by short land routes (Ellmers 2018: 297). However, this network changed from the High Middle Ages onwards, as the growth of hydraulic engineering with its dams and supply canals for the operation of mills hindered inland navigation. This led to longer land routes between river sections, which in turn gave rise to long-distance transport (Ellmers 2018: 305, 307). Rivers remained very attractive for the transport of heavy or fragile goods, which required considerable effort by land (Freund 2007: 52; Trinkert 2023: 115). For this reason, water has historically also been part of the cultural identity of this region.

The concept of identity in the context of art geography is highly problematic, and it was instrumentalised for political purposes in German-language research at the turn of and in the first half of the twentieth century. In addition to focussing on the significance of "national characteristics" in art, the international debate since the 1930s has been concerned with the role of national styles and their various manifestations, from systematising collections of material to art-psychological classifications (Engel 2012: 96–97). In these thematic fields, mention should be made of the research of the Jewish scientist Paul Frankl, which was visionary for its time. During the period of his emigration to the USA in 1938, Frankl published "Das System der Kunstwissenschaft" (The System of Art Studies), in which he linked the category of "place" (*Ort*) with the "spiritual unity" of a people ("*geistige Einheit eines Volkes"*), defined in a multi-layered manner, which he attributed not to the individual's ancestry, but rather to their ability to assimilate (Frankl 1938; Kaufmann 2004: 84–85; Engel 2012: 97). In the post-war period, spatially related cultural identity played a role in the development of the concept of the artistic landscape, coined by Harald Keller, using Italy as an example (Keller 1960). A fundamental factor in the practice of cultural identity formation is temporal permanence. A synopsis of works from different periods of origin within a geographical area, conducted from the present, therefore creates a supposed cultural unity in the past, in which characteristics of identity are understood to be revealed. Keller applied this historicising procedure in 1960 in his survey of the artistic landscapes of Italy, arguing that works of art created over two millennia within a consistent

development of interconnections between people, landscape and art were significant in the construction of a sense of "home" (Keller 1960: 15; Hespers 2007: 89). Due to the ideological charge of the concept of artistic landscape and the constant need for distancing, Marc C. Schurr most recently suggested the use of "cultural landscape" as more appropriate, referring back to the genesis of the method in the nineteenth century and thus Ratzel's anthrogeography (Schurr 2019: 56–57; Schurr 2023: 92–93).

Questions of regional identity related to works of art and cultural heritage remain omnipresent, whether in relation to political elections, marketing-strategic tourism concepts, commercial marketing or as a safeguard in the case of anticipating losses, such as the Red List of the German Association for Art History appealing to a "monument conscience" or that of the digital mapping efforts of works and institutions in Ukraine initiated at short notice (Bredenbeck 2022; Müller 2023).

The locating of works of art that have been moved presents art geography with the methodological challenge of placing a special focus on the object biography and thus also the provenance of these works. It is only the historical tradition of the object that provides information about its life, its mobility, its circulation and, beyond that, also about changes in the values and interpretations assigned to it (Wenzel 2019: 195). Waterways must also be taken into account in terms of their importance for relevant aspects of communication. The underlying infrastructure, which enables the exchange of concepts, forms and materials via actors, also has a major influence on an object's biography and its itinerary. Within an object-biographical approach, re-contextualisations of objects are also conceivable, for example through musealisation. The art object thus acquires new meanings, functions and ownership (Wenzel 2019: 197). On the one hand, the art value of the object is defined by material and artistic quality but, in the museum context, it is also attributed an indeterminable increase in value through the "succession of owners, collections and functions" (Wenzel 2019: 216). It is precisely in these object-biographical qualities of a work, which emerge through their sum, as well as in individual observation, that lie the results of the layers of the time of the work, as visualised by Jan von Bonsdorff on the basis of medieval wooden sculptures and panel paintings in Schleswig–Holstein (Bonsdorff 1994: 14).

Locating: art geography today

Over the past 15 years, art geography has returned its focus to art historical research. In 2004, Thomas DaCosta Kaufmann took up the discussion on *géographie humaine* and *géographie artistique* and, following the positions of George Kubler or Paul Vidal de la Blache on the role of materiality in art history and its circulation, saw material culture and the "history of things" as productive terms of analysis for art geography (Kaufmann 2004: 341–344). In the Baltic region, for example, the preferred use of brick or oak for architecture suggests geographically localisable spaces that constitute "artistic regions" (Kaufmann 2004: 344). Materials such as Gdansk brick, Gotland sandstone and limestone, Baltic oak, and Mechelen or Northumbria alabaster were moved across the borders between such identifiable artistic regions, travelling by water along the coast and then further inland via rivers, first as ship ballast and then as a product. They provided evidence of communicative interactions (Kaufmann 2004: 345–347, Trinkert 2023). In 2004, Thomas DaCosta Kaufmann expanded the formal criteria for artworks in the context of an art-geographical analysis, adding cultural-historical factors and the significance of artists, ideologies, functions, techniques, artistic skills, styles, patterns of commissioning and foundations, production,

distribution, appreciation of art in the form of art criticism or historicization (Kaufmann 2004: 349). In order to consider these criteria in relation to the role of waterways and works of art, it is necessary to distinguish between the functions of the various rivers and coastal areas, as well as the seas that link the coasts. Different means of transport have also been used to transport people, materials or goods, such as finished works of art, depending on navigability, navigation conditions and the size of the goods to be transported (Ellmers 2018: 297; Trinkert 2023: 118).

Today's understanding of art geography has thus long since gone far beyond positivist-cognoscenti descriptions and integrates multifactorial influences which give rise to a work of art in its various diachronic layers, locate it spatially on the synchronic level and thus make it possible to describe an art production in a geographical space (Engel 2012: 114). A cultural-historical approach that analyses a work of art or a group of works of art transdisciplinarily and from different perspectives is most likely to understand the character of a cultural landscape, which André Corboz and Dario Gamboni describe as a "palimpsest", and to trace the resulting dynamics of overwriting and the continuation of artistic processes (Coboz 1983: 12, note 9; Gamboni 1987: 16–19; Gamboni 2008: 7–8; Engel 2012: 114). Here, five spatial-theoretical focal points can be identified for current research, each of which can merge into the other. These are listed by Ute Engel as follows: 1. *geography and geology* (building materials, materials and transport routes); 2. *favourable space and densification, centre and periphery*; 3. *charisma, diffusion and transfer*; 4. *workshop, role model and school*; and 5. *space for communication and action* (Engel 2012: 106–114). Using the example of movable medieval art objects, the wooden sculptures or panel paintings that were created in what is now Schleswig–Holstein and southern Denmark, or which can still be found there today, these concepts certainly do apply from an art historical perspective, albeit to varying degrees.

The material from which the objects of these genres are made, here predominantly oak, allows us to reconstruct the trade routes, which mostly led across the Baltic Sea and, eventually, further inland, via rivers or established land routes such as the Ox Trail (Kaufmann 2004: 345–346; Engel 2012: 106; Trinkert 2023: 122–124). The oak used in these works of art mainly came from the large forest areas of the Vistula and Düna rivers and was shipped to the trading metropolises on the coasts via Gdansk and Riga, which dominated the timber trade in the Baltic region from the 14th–sixteenth centuries (Zwick 2019: 191). From Lübeck, the hinterland was made accessible from around 1390 by the Stecknitz Canal, through which a waterway into the Elbe had been constructed, thus establishing a connection between the Baltic and the North Sea (Trinkert 2023: 119–121). Furthermore, salt transport from Lüneburg to Lübeck, which was central to the herring trade and thus an important pillar of the Hanseatic network, was also secured via this route (Ellmers 2018). Such historical trade routes in Northern Europe are currently being digitally processed, meaning that frequently used routes, the time of travel with various means of transport, river systems and obstacles such as locks, stacks or customs stations can be traced even more clearly (Holterman 2021).

In Schleswig–Holstein and southern Denmark, too, there were towns which were well located in infrastructural terms and which, as transport hubs, were situated at the intersections of river mouths and land routes, at the lower reaches of rivers or on fjords, and which can thus be described in geographical terms as "favourable areas" (Engel 2012: 106). These included Lübeck, Kiel, Schleswig, Flensburg, Sønderborg, Aabenrå and Haderslev on the Baltic coast, Husum and Ribe on the North Sea coast, but also Løgumkloster, Tønder, Heide, Bordesholm, Preetz, Eutin, Mölln, Ratzeburg and Lauenburg and, last but not least, the islands just off the coast. These centres thrived on prosperous structures, as

well as economically successful and well-connected actors, be they merchants, burghers, nobles, those at the court, or monasteries (Engel 2012: 106). This also made them attractive for settling craftsmen and, later, for artists, since there was demand for their products, meaning there was both a market and potential clients (Engel 2012: 106). In this context, the relationship between the centre and the periphery is discussed in terms of the spread and influence of artworks on the art production of neighbouring regions and places which had less access to the resources required (Engel 2012: 107; Trinkert 2014: 15–16). However, the one-sided influence on artistic trends is relativised by concepts such as those of *transperiphery*, which Peter Cornelius Claussen speaks of in his research on Gothic figure portals, or "transfer culture", which Gerhard Weilandt uses to differentiate art in late medieval Gdansk, thereby emphasising the productive character of peripheral locations (Weilandt 2010: 75).

Subsequently, various multi-layered models of the distribution dynamics of artworks have been developed. Rivers, as infrastructure, were travel routes for artists, patrons or traders, as well as transport routes for materials, knowledge and works of art (Trinkert 2023: 109–113), taking into account the mobility of artists, patrons and supra-regional transfer processes, as well as spatial categories such as upper, middle and lower centres (Schmid 1994: 22–25, Engel 2012: 107–110, Trinkert 2014: 15–16).[6] In order to visualise these areas of distribution, maps of the artworks in question have been used which, in my previous research on the late medieval winged reredos in Mecklenburg, have identified hitherto unnoticed centres of art, as well as diachronic shifts to the supposed periphery. In this context, clusters of work groups in the catchment areas of the larger cities of the duchy can be identified. However, there was demand from neighbouring cities and surrounding networks for outstanding individual works from within such clusters. Diachronically, it becomes clear that, with the economic downturn of the coastal cities of Wismar and Rostock and the onset of the Reformation, these clusters shifted inland as well as to smaller towns and monasteries. A more complete analysis of the works in question in Schleswig–Holstein and southern Denmark is likely to yield similar results.

Here the question of "workshop, role model and school" becomes particularly significant (Engel 2012: 56). Outstanding works of art with characteristic features presumably had a formative effect, which in turn could be limited, both temporally and spatially. This effect is described by Marc Schurr with regard to the reception of artistic innovations in Gothic architecture on the Upper Rhine, for example at the building lodge of Strasbourg Cathedral, as well as by Anne-Christine Brehm for the supra-regional building regulations passed in Regensburg in 1459 and applied at the building lodges in the Rhine, Main, Neckar and Danube regions (Schurr 2008; Engel 2012: 111; Brehm 2013). In the course of research into the works of the unknown workshop, referred to by the provisional name "Imperialissima Master", Jan Friedrich Richter also argues that the starting point for these works is the town of Schleswig in the southern part of the Duchy of Schleswig, specifically the workshop of the carver Lütje Möller, whose wooden sculptures became prototypes for imitations throughout northern Europe (Trinkert 2018: 200–201, Richter 2011: 358, note 26).

The communicative networks between all actors involved in art productions in a limited region thereby form *artistic landscapes*, which are conceived in accordance with the

[6] A diffusion model developed by geographer Birgit Bornemeier on the basis of Renaissance architecture in Germany attempts to do justice to these multi-layered dynamics using the example of early modern stationary art, Bornemeier (2006: 522, Fig. 13).

sociological model of communication and the space for action (*Handlungsraum*) (Engel 2012: 112). By integrating the intentions of clients, artists and recipients related to the artwork, the motives behind the genesis of artistic commissions become clearer, and these also take political, religious or individual circumstances into account. These, in turn, can be related to historical territories, whether spiritual or secular (Hausherr 1970: 167; Engel 2012: 112). In this context, Engel also sees the concept of *lieux de memoire* as being applicable to the evaluation of multi-layered decorations of buildings which various actors created as memorials to themselves (Engel 2012: 112, 114). In relation to the topic of this article, communicative networks can also be found in many places where water has particular agency: In particular, interfaces in goods handling played an important role. This applies to transhipment between wagon and inland waterway vessel, between inland waterway vessel and coastal or seagoing vessel, or between inland lake and inland waterway vessel. In the early Middle Ages, the need for this necessary infrastructure led first to the development of riverside markets, then to riverside settlements and finally to port towns (Ellmers 2018: 300, 301; Trinkert 2023: 117).

Perspective

On the basis of this most recently established art-geographical approach, it is possible to observe promising developments in this field: For the time being, fundamental working steps remain in place. For example, the artworks recorded within a region under investigation are compared and mapped on the basis of their typological, formal and stylistic characteristics within a specific time layer. In combination with statistical data, the evaluation of these mappings can reveal synchronous and diachronic spatial distribution areas as well as showing art centres, sales areas, border areas and densification areas (Schmid 1994: 24, 26; Engel 2012: 100; Trinkert 2020: 8–9). Depending on the chosen research question, interrelationships, networks and development dynamics—that is economic, political and historical factors—thus become comprehensible in such a cartographic representation. As a method today, therefore, art geography deliberately does not identify artistic landscapes in the traditional sense, which can be spatially delimited from others. From the perspective of art geography, objects have a spatial impact that is shaped by their creation, distribution and reception. Schmidt characterizes these as 'media spaces': The objects' individual stations are independent within a communicative network, but they also influence each other (Schmidt 2013: 42). A larger project on the interdisciplinary investigation of the Upper Rhine for its cultural landscape qualities in the late Middle Ages therefore came to the conclusion that such a supra-temporal artistic landscape or cultural landscape with constant characteristics did not exist but that, rather, it was possible to identify dynamic spaces around art centres such as Strasbourg or a spatial condensation of certain motifs e.g. the Romanesque tympana with Christ between St. Peter and St. Paul (Schmidt 2008: 422; Boerner 2022: 370–377; Engel 2012: 104). The location on the Rhine and its role in medieval transport infrastructure promoted dynamics of artistic exchange with other art centres and regions, even at greater distances (Engel 2012: 104; Hülsen-Esch 2023: 49, 62–63, 66–74). This can also be assumed for other regions located along and around rivers, lakes or seas, be it the Danube, Middle Rhine, the Lower Rhine, the Maasland or the coastal areas on the North Sea and the Baltic Sea.

In order, on the one hand, to link all these entities and objects in a meaningfully qualified way and, on the other, to question them in relation to one another in this context,

Semantic Web technologies with Linked Open Data (LOD) and graph-based databases offer possibilities which go far beyond traditional databases for knowledge organisation and structuring (Kailus and Stein 2018: 126). By linking databases and semantically-enriched data from archives, libraries, museums and research institutions in a common infrastructure that uses standard data, it becomes possible to approach this goal. LOD uses unique names on the web, HTTP URIs (Uniform Resource Identifiers), which are based on the RDF (Resource Description Framework) standards, and which share a common reference system (Kailus and Stein 2018: 126). In graphic databases, objects, artefacts, texts or persons constitute circulating entities which continually form new relations and, through their semantic enrichment, open up new spaces that are also relevant to art geography, depending on the question and combination of search parameters. Each graph consists of two elements, the node (the entities) and the edge (the relation) (Wübbena 2018a: 152). Spaces opened up in this way have a 'double-dwelling' character: On the one hand, real objects are reproduced and duplicated in digital space; on the other, more complex query options and a focus on relationships as well as the georeferencing of datasets open up an implication of cultural spaces which only become visible in the digital space and invite a comparison with reality as a phenomenon. One might speak of "ephemeral cultural landscapes", and thus of flowing spaces. Based on the LOD, different types of evaluations and visualisations can be carried out using digital tools, which can lead to new insights. In addition to network analysis, GIS mapping is also possible, as has been shown in previous research on medieval wooden sculpture in Mecklenburg or southern Denmark (Trinkert 2014, 2018, 2020).

Wooden sculptures and panel painting in Schleswig–Holstein

As a concrete example, let us explore the application of this vision to wooden sculptures and panel painting from Schleswig–Holstein. Here, a medieval saint sculpture made of oak in a village church, remote from today's perspective, can be examined different art-historical and art-technological ways. Laboratory analytical methods may also be able to provide information about the material, such as its composition, origin or age. In the best case, there might be local sources that make it possible to reconstruct the provenance of the sculpture, its original location, its function, its artistic genesis, its role in the liturgy and its history of piety. Under these conditions, however, research would have already dealt comprehensively with this sculpture, which is not the case in this example. This applies, for example, to the sculpture of a saintly knight in the church of Mjolden in Tønder (Moltke et al. 1963: 1448–1450; Haupt 1888: 592; Plum and Sparring-Petersen 1953–1954 vol. 1: 57; Horskjær 1970: 225). The first mention of a knightly saint, St. Mauritius, is attested in 1514. This sculpture is listed as "useless" in the parish archives in 1860 and has been on the north wall of the chancel since 1957. The present colour scheme was restored in 1966/67, ten years after the first restoration, and is based on a previous version from the late eighteenth century. The medieval state has been lost. At this point, the importance of the transport infrastructure becomes clear, and with it that of the waterways. Based on an art geography approach, digital tools using LOD are now opening up new research opportunities to answer the following questions: Where did the materials, wood, colour pigments, chalk and glue come from? In which workshop was the sculpture carved and where was it located? How was the sculpture transported to the church? Were waterways such as the river Ribe Å or coastal shipping on the North Sea used (Fig. 2)? Who were the possible commissioners and where and how were they connected?

This lack of traditional knowledge is part of everyday research and leads to different consequences. In addition to perceiving and accepting these limitations, the temptation remains to construct missing contexts on the basis of circumstantial evidence, especially through drawing on data on comparable wooden sculptures from the immediate surroundings, if these are available.

Through integration into a corresponding graphic database, where semantically enriched data from many other disciplines are also available, possible relations arise which contain the information that seems to be missing at first glance—albeit via detours. A multi-layered network emerges in which nodes and edges shift depending on the question. All research data collected for a specific purpose potentially interact with data from other projects. Criteria such as land and water trade routes for wood in the immediate vicinity could therefore be added via digitised archival records from medieval business correspondence or account books, and thus the potential traders of such goods, routes or clients could also be identified. The distribution of the specific motif of the depicted saint could be mapped spatially and temporally in various genres, thus forming clusters that, in turn, define their own limited or fluid spaces. The question of the artist or the workshop, often still central in art history, could also be approached if there were other works outside the respective researcher's own field of perception with closely comparable and, at first glance, inconspicuous artistic criteria, the production of which, for example, is secured through sources. Object biographies could reveal translocations: Within a place, into and out of a museum, into the art trade, etc. Furthermore, the state of preservation can provide information about the spatial distribution of monument conservation and restoration/conservation standards at a certain time, possibly also opening up a connection to the actors involved.

For this vision of a virtual networked research environment, which would be a decisive step for art geography as a method of art history, two intertwined challenges are particularly worth mentioning:

1. A technical, sustainable and shared international infrastructure, still missing, which expands modularly in terms of system architecture and that makes the publication of research data the real basis for subsequent use in the form of future research projects. This forms the basis for a broad accessibility of research materials which are currently isolated solutions in customised, project context-oriented or institutional formats each of which a researcher must know in order to use (Kailus and Stein 2018: 119). Wikidata, a freely usable database with very large data sets, is moving in this direction and is being used to build an open, semantic network in the field of cultural heritage (Kailus and Stein 2018: 128). Data is aggregated primarily from Wikipedia, but also from other sources. However, due to the crowdsourcing character of Wikipedia, the reliability and referencing of all data cannot be reliably guaranteed (Kailus and Stein 2018: 135). Nevertheless, visualisations of relational queries can already be carried out via Wikidata which are also of interest for research in art geography. As one of the earliest initiatives for research in the humanities of this kind in Germany, the open-source graph database system ConedaKOR was developed at the University of Frankfurt as early as 2009, but this does not have sufficient resources of its own to be used *as a service* and is therefore only suitable for long-term research projects that can plan for corresponding resources of their own (Wübbena 2018a: 153–154; Wübbena 2018b; Wübbena 2020). The easy use and integration of project-specific data is ensured and simplified via the CIDOC Conceptual Reference Model (CIDOC

CRM) (Wübbena 2018a: 155–156, Raspe and Schelbert 2024).[7] Throughout Europe, each of which is working with the *Explore infrastructure*: the RKD (Nederlands Instituut voor Kunstgeschiedenis) in the Netherlands, the *ResearchSpace platform* hosted by the British Museum in the UK and, in Italy, Switzerland and Germany *The Consortium for Open Research Data in the Humanities* (CORDH), hosted at the Bibliotheca Hertziana.[8]

2. The documentation and semantic structuring of objects with standardised metadata and, above all, the homogenisation of previously existing semantically structured and unstructured data using standardised descriptions or classifications (Kailus and Stein 2018: 123). Initiatives such as Europeana or the Deutsche Digitale Bibliothek strive to standardise heterogeneous, cross-disciplinary data in the sense of the *Open World Concept,* even though the quality of research tends to suffer as a result (Kailus and Stein 2018: 125). Furthermore, open, maintained-standards data, such as those following the standards of the Gemeinsame Normdatei (GND) or Iconclass, are necessary for resource-saving indexing. These can, for example, bundle different name variants of a place under a preferred name and thus make "name" an entity via an identifiable URI (Kailus and Stein 2018: 131–132). In this respect, Wikidata already offers the formats of Virtual International Authority File (VIAF), GND, Art and Architecture Thesaurus (AAT) and Iconclass (Kailus and Stein 2018: 135).

Since October 2020, the *Common infrastructures* section of the NFDI4culture consortium, part of the National Research Data Infrastructure (NFDI) initiative, has been addressing these two major challenges and developing a strategic concept for shared and interconnected information infrastructures. Further, this aims to establish a multi-cloud-based, sustainable basic infrastructure, the so-called "Research Data Commons" (RDC) (Diepenbroek et al. 2021: 1, 3–6; Shigapov 2022). In terms of humanities research, this means that NFDI4culture is working with the Wikibase database on a *Culture Knowledge Graph* which will connect research data from all participating disciplines in standardised metadata formats and LOD formats (Sack 2022; Rossenova 2022; Bruhns et al. 2024).[9]

A methodological assessment of the position of art geography thus shows potential in various respects. The criticism of a positivistic, connoisseurial and thus outdated method of art history can be countered by current developments. Indeed, there are reasons to strengthen this area of art historical research in a future-oriented way and, in view of the endangerment of works of art, the information technology development of digital infrastructures in the context of semantic web technologies and the unstoppable internationalisation of research in every respect, to rely on multi-layered, networked and cooperative research methods, which art geography can be today (Raspe and Schelbert 2024). The method of art geography and its applicability to this research problem has here been explored on the basis of works of art from a limited region in northern Europe, for which waterways play a central role in communication. River spaces are to be understood in relation to the economic prosperity of places, material deposits, and necessary transport infrastructures; but also for goods, people and knowledge. Digital methods, based on a knowledge graph, are a promising perspective to use and develop this method for my research

[7] For the cultural heritage sector, this data model has been established with the reference ontology ISO 21127, which any project working on this model can translate into a corresponding LOD publication, Kailus and Stein (2018: 129).

[8] https://rkd.nl/en/explore and https://researchspace.org and https://www.cordh.net/#partners. Accessed 20 January 2023.

[9] https://nfdi4culture.de/de/aufgaben/services.html. Accessed 20 January 2023.

questions. As a data entity, rivers would take on a new role in their historical function as a theoretical category of order.

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