Hertziana Studies
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BIBLIOTHECA HERTZIANA
MAX PLANCK INSTITUTE
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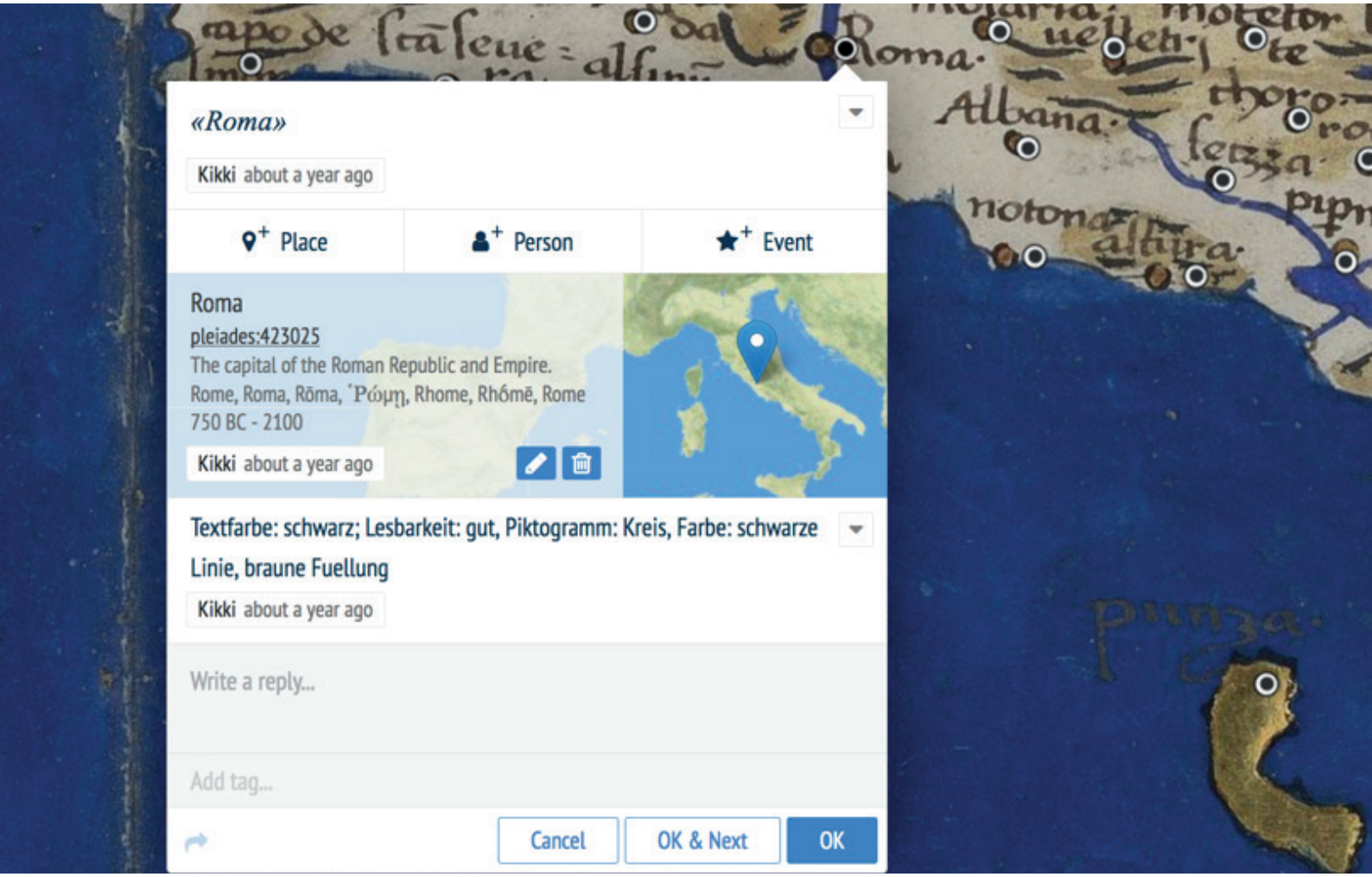
Walking Through History

An Interdisciplinary Approach to Flavio Biondo's Spaces in the "Italia illustrata"

Edited by Tanja Michalsky & Martin Thiering



HUMANITIESCONNECT

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keywords – *Flavio Biondo*, Italia Illustrata

This volume presents the results of an ongoing research about the use of digital humanities methods for analyzing spatial meanings in Renaissance texts and maps, specifically focusing on Flavio Biondo's Italia Illustrata. The authors use computational and corpus-driven text and map analysis, as well as cognitive anthropology and gestalt theory, to identify and visualize spatial concepts encoded in historical maps and texts. They aim to discover sources and provide a cognitive map for readers by encoding information in a way that helps readers understand spatial information. The text also discusses the plurality of spaces and the changing perspectives of spatial concepts over time, particularly from the Renaissance to the digital age.

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Introduction

Tanja Michalsky &
Martin Thiering (eds.)

Prologue: Spring 2016

In 2016 various researchers from different disciplines and different research focuses met to work on a canonical Italian text, Flavio Biondo's *Italia Illustrata*. They were interested in the spatial cues in the text and in the contemporary maps available (mostly portolans), but also in creating a virtual map of the text based on additional maps from the Renaissance. Establishing a common language and common research questions proved challenging, but the diversity of research backgrounds and research cultures made it fruitful. After a workshop at the Bibliotheca Hertziana – Max Planck Institute for Art History in Rome and some initial publications and conference presentations, we decided to publish a co-edited volume. And then time passed and many unforeseen obstacles made it difficult to arrive at a point we could call final, and at which we would have been able to call the pilot a successfully accomplished project.

Winter 2022

Tanja Michalsky & Martin Thiering

Introduction

Many of the most recently-developed research methods in the humanities are called 'digital humanities'. The term covers several research heuristics and methods. This book deals specifically with one, computational and corpus-driven text and map analysis, and provides a glimpse into its possibilities and limits. For empirical sources based on Latin texts or maps, for example, digital humanities and its often quantitative focus offers a means to the end of qualitatively analyzing spatial meanings. We joined forces to narrow the scope of spatial meanings and meaning-making processes in a textual source that, because of its content, invites such an analysis: Flavio Biondo's *Italia Illustrata* (1474), a detailed topographical (and historical) description of Renaissance Italy based on different sources in different media. One of the major issues is carrying out a comparative diachronic approach to spatial concepts and how they change over time based on different contemporary maps and a canonical text on Italian topography. Of course, *Italia Illustrata* represents only one moment in the constant change and evolution of spatial concepts, orientation and navigation. To name one such change, consider the different applications of perspective – a fairly modern way of structuring and perceiving spaces–based on its use in different media like photography, texts, maps, advertisements, graphic novels, video games, but also design objects, building-information modeling in architecture (BIM and also CAD) and exhibitions.

With the advent of the spatial turn, the humanities adopted different spatial concepts and ideas from different disciplines to gain a better understanding of the plurality of spaces and notions of space. Space is a heterogenous, polyphonic, multiperspectival concept. For example, one very specific concept of space – the

idea of spatial frames of references – comes from cognitive anthropology and, in particular, gestalt theory. In this understanding, spaces are not only based on the human body as a relative space, but also on the intrinsic qualities and affordance of objects (the so-called 'intrinsic frame') and on environmental spaces based on landmarks (the so-called 'absolute frame'). Space as heterogenous means also the empty space of a blank sheet of paper, the digital and virtual space, the urban and rural space, the safer space etc. It is this plurality of space that the volume addresses.

This volume shows the intricacies and interplay between two semiotic systems – texts and maps – and their performative practices of manifesting spaces. These manifestations are based on the map producer's techniques and knowledge systems, and also on the author's way of producing a spatial narrative. This narrative triggers ways of conceiving space that were arguably also at work in the Renaissance author's mind. The point of departure is a discussion about what kind of spatial concepts (re)emerged in the Renaissance and how these conceptual changes are encoded in historical maps and texts over time. Spatial concepts such as visual perspective and different viewpoints are historically embedded in cultural- and media-specific meaning-making processes. The perspectives have changed from the Renaissance to the digital age but also neo-analogue processes of today. We are interested not only in identifying fundamental spatial concepts in the selected text and map examples, but also how different spatial data points are represented in various mental maps.

The first step is to identify spatial concepts based on the existing maps and text. This requires a focus on linguistically morphosyntactic and semantic parts-of-speech that encode the spatial relations in the text or map. This is a nitty-gritty job done in a semi-automatic computational annotation environment, word for word, sentence for sentence and place by place or location in the respective maps. We decided to provide a semi-automated annotation procedure, in which parts-of-speech are given a label. We then use these labels to visualize the different spatial relations based on simple diagrams. These diagrams are graph-relate, and indicate the semantic relationships of words in a sentence. In Biondo's text and the different contemporary maps, we based the information on a number of established cognitive-semantic parameters.

As mentioned in the prologue, this book is the result of "Flavio Biondo's *Italia Illustrata*: Representations of spatial language and spatial thinking in text and maps", a workshop held in Rome in May 2018. The project benefited from the orchestrated work of a number of dedicated researchers in Rome, Berlin, and Erlangen from 2016 to 2019. The case study takes a prominent historical, map-like text as its source. Biondo's narrative is a detailed textual description of the topography of Renaissance Italy based on a number of empirical sources, some of which are known, others unknown and subject to speculation. The project aimed at discovering some of the sources using a number of analytical tools such as computational parsers and annotation techniques (these techniques are discussed in the contributions). Furthermore, the project applied not only computational methods onto texts and maps, but used also the theoretical framework of cognitive semantics and of course the better known hermeneutical and philological approaches.

The case study proved to be a fruitful data analysis for such a rather limited data set.

The broad research questions were:

a) What kind of spatial information do we find in the text and in different maps?
b) How best to encode the information so that it can not only serve as anchorage for *Italia Illustrata*, but also help the reader to construe a cognitive map?
c) Which maps might Biondo have used and what sort of maps actually existed in his time?
d) Can this digital work tell us anything about spatial representations in the Renaissance and how those might have changed over time?

Our particular interest was in the processes associated with the reconstruction of cognitive maps: how 'real' spatial objects such like landmarks are represented as cognitive mental models. We sought to map the spatial cues onto a modern GIS (Geographic Information System) based map representation. We annotated the

text and maps with their places, people, and events in order to visualize the different spatial entries on modern and historical maps and to add relevant text descriptions. With a special configuration of the visualizing tool Brat, we explicitly referenced the meta-langauge as developed in cognitive semantics using digital computational annotation and parsing techniques. This allowed us to show the intricate and detailed network of spatial relations from a modern perspective. As such, the different papers in this edited volume shed light on various facets of the text and maps. The main conclusion of the workshop was that, because of its detailed geographical description of actual and metaphorical spatial cues, Biondo's text serves as a cognitive map or county guide, a textual coordinate system that enables readers to travel mentally through the different regions of Italy.

The aim was to analyze the topographical knowledge in the text, together with its forms of organization, based on various information cues, among them toponyms (place names, points-of-interest), landmarks, streets, places, rivers, walls, historic sites, but first and foremost based on ancient authors such as Livy, Pliny or Strabo (the latter for the Latium chapter only).

We were especially interested in the epistemology of spaces from a panchronic perspective, that is, from a historical (diachronic) and a contemporary (synchronic) background.

In addition to the more general questions listed above we were interested in:

a) Which knowledge systems represent spatial relations in the text and in maps?
b) How can texts, maps and images that represent spatial relations be contextualized?
c) What is the relationship between culture-specific practices of spatial orientation and cognitive spatial representations?
d) How did different social groups use their respective texts, maps and pictures?
e) What is the relationship between historical spatial concepts and current spatial conceptions?

This volume presents a case study and current state of spatial description of a single paragraph of text, and offers an in-depth description from different analytical angles. Philologists meet cognitive linguists, geographers, historians, and computer linguists. When we began the project, this variety of research backgrounds presented a novel approach to a text that, because of the level of detail in its portrait of Italy, was itself novel.

The Individual Chapters

The volume begins with a theoretical framing of the project, followed by two case analyses of maps. Chapters four and five offer two philological descriptions of the data. These more historical treatments of Biondo are followed by two case studies based on cognitive linguistic applications, which leads to a semiotic outlook in the last chapter.

In their contribution *Linked Biondo: Modeling Geographical Features in Renaissance Text and Maps*, Günther Görz, Chiara Seidl and Martin Thiering present a case study on annotating the Latin text and selected maps, and show how to use a cognitive-semantic analysis to link Flavio Biondo's *Italia Illustrata* (1474) with contemporary maps. Their aim is to explore the historical understanding of space and the knowledge associated with it, combining cognitive-semantic parameters with computational linguistic analysis. They argue that all maps are cognitive maps, depicting culture-specific spatial knowledge and practices. The chapter outlines the data modeling infrasture of the project. It comprises all research data generated, their storage and access as well as their publication as Linked Open Data. The annotation platform Recogito is being used as the main tool for static annotations in maps. Based on geographic coordinates, Recogito helps to identify and label a place or region on a map. These are complemented by cognitive-linguistic spatial role descriptions that is, we use simple linguistic terminology to show the meaning-making processes in the text. The goal of this contribution is to discuss a selection of linguistic constructions of textual spaces as examples of different "worlds" or worldviews from which insights about the spatial organization of cultural practices in the Renaissance are gained.

Chapters three and four focus on maps. Kurt Guckelsberger and Klaus Geus present a study on *Measurements, Maps and other Source Material in Biondo's* Italia Illustrata*: The Example of Latium*.

They start with the observation that the *Italia Illustrata*, published posthumously in 1474, is widely considered as one of the master models for topographical and geographical works. But while modern scholarship has paid much attention to its objective, content, sources, and style, the geographical elements – the toponyms and measurement specifications – have been almost entirely neglected. Their study analyzes and discusses the use of numerical data in Biondo's *Italia Illustrata*. Emphasis has been placed on the Latium chapter where Biondo allegedly used Strabo's Geographika as a key source.

In chapter four, *Two Great Maps of Italy — A Comparison*, Kurt Guckelsberger compares the Cotton map and the Strasbourg map in the hope of identifying the maps Biondo used as sources for *Italia Illustrata*. As shown in the preceding chapter, Biondo reports more than 2000 toponyms, more than any other map of the 15th century hitherto known and discussed, except one: the 12th-century Cotton, with its 1220 vignettes signaling habitats from single buildings to large cities. In addition, an extended river system provides hundreds of landmarks like sources, confluences and estuaries for orientation and localisation. Strangely enough, this early masterpiece of Venetian map-making somehow escaped attention, having received only very few scholarly descriptions. Guckelsberger argues that it was perhaps not available for Italian scholars in the British Library, where it was carefully kept, presumably perceived interesting, but at the same time just "another map of Italy" among thousands. It was a surprise, Guckelsberger states, that both maps share almost identical content, shape and size at radically different style. This discovery opens a new window on early map-making and "database" studies. Early on in this study, it became clear that despite the richness of content and obvious overlap, Biondo certainly did not use the Cotton map, as the structure and content of his text being very different. Guckelsberger's focus is on the geographical ground-truth which he presents for the Cotton's main features, that is, the coastline, the cities and the river system, followed by a description of the Strasbourg map with its unique grid system and a discussion of its southern end. Following this Guckelsberger explores the similarities between the two maps by first looking at the coastlines and then at the possible distortions of the parchment, which introduces changes in the images, independent of the mapmaker's choices. The chapter concludes with a discussion of the probability of a common source and an outline of some of the differences, such as design of the rivers and the rendering of extended objects including a strange "mutilation" of the Strasbourg.

Chapters five and six, Marc Laurey's *'Illustrating' Italy: Biondo's Concept of Illustration* and Nathalie Bouloux's *L'usage des cartes dans l'*Italia illustrata *de Biondo Flavio (The Use of Maps in the* Italia Illustrata *of Biondo Flavio)* are the philological parts of this volume. Laurey starts by underlining *Italia Illustrata*'s popularity, and highlights the fact that it is one of Biondo's most personal and pioneering writings. In a highly original fashion, he combined chorography, prosopography, and historiography in an effort to record the historical legacy of 'Italia', interpreted not as a geographical space but as a humanistic concept. All three fields share precedents that stretch back to classical antiquity, but until Biondo, they had never been merged in a single project, nor indeed one with an aim as specific as his: to document the sustained Roman-ness of the core province of the ancient Roman empire. By showing that Biondo's understanding of 'illustratio' spans nearly the entire semantic range the term can cover in Latin, Laurey points to the wide semantic net of this concept. All possible facets of the word in classical antiquity consistently derive from the basic meaning of the verb 'illustrare': to shed light (*lux*) on a person or an object that was previously indistinct or unknown. This general notion can be made more specific in three ways: 'illustratio' can mean (1) vivid description or visualization, (2) explanation or elucidation, and (3) celebration or glorification. Laurey states that the natural semantic opposite of 'illustrare' is 'obscurare' translated as 'to cast darkness (obscuritas) over someone' or 'something who/that was previously distinctly perceptible or well-known'. According to Laurey, Biondo's conception of space is (1) determined by an ancient, not a contemporary political or ecclesiastical geographical

framework, (2) structured into modular units on various geographical (national, regional, and local) levels that constantly interact, (3) inspired by cultural and historical rather than political or diplomatic claims, (4) visualized by rhetorical means rather than empirical evidence, (5) underpinned by references to classical and medieval, predominantly literary, sources that serve as a commentary to the localities mentioned and described, and (6) filled with history more than with topographical or ethnographical details.

In *L'usage des cartes dans l'*Italia Illustrata *de Biondo Flavio*, Nathalie Bouloux studies how Biondo uses maps to construct the *Italia Illustrata*. Italy is described topographically based on a survey of the texts of ancient geographers and historians, modern data collected from various sources and maps of various kinds. In order to better understand Biondo's working method, Bouloux examines the modes of composition in *Italia Illustrata*, the nature of the maps Biondo mentions, and the way he uses them. It is still difficult to be certain which modern map or maps of Italy he used, though, and it should be borne in mind that he used several ways of representing the world – modern and ancient maps, and geographical descriptions – in tandem. While the use of the map as a tool for constructing geographical writings is not so exceptional, the way Biondo discriminates between ancient and modern space is remarkable, as for example in his application of the principles of philological method to a the Ptolemaic ancient maps. The discussion of the contribution of map data is a distinctive feature of the humanist geography then being developed, and in this respect Biondo's contribution was seminal.

Chapters seven and eight are two case studies. Raphale Berthele's and Martin Thiering's *Flavio Biondo's* Italia Illustrata*. Spatial Language Analyses of the Latium* Chapter uses insights from spatial text annotation. The analysis is enriched by formal ontologies and based on cognitive semantics. Their main assumption is that Biondo's textual elements are grounded in cognitive maps or mental models which help the reader to navigate different spatial references and spatial relations. In this way, the reader can add missing information – cognitive contours – to form a coherent gestalt.

Berthele and Thiering argue that the analysis of historical texts spanning from antiquity to the early modern period and beyond improve the understanding of spatial cognition and its epistemological development. They discuss Biondo's description of Latium and outline the fundamental cognitive parameters in the spaces in Biondo's text. These fundamentals lead to the basic matrix of a cognitive map built upon semantic cues embedded in a skillfully organized spatio-historical description.

Biondo's main goal was to provide a description that was not just accurate from the contemporary point of view, but that at the same time reconstructs and integrates the historic landscapes evoked in the texts of the classical authors who have described the same land. He draws on authors of Roman antiquity such as Livy, Vergil, Pliny the Elder, as well as Ptolemy, and in the Latium chapter a Latin translation of Strabo. Biondo also aimed at reconstructing toponyms and their changes over time. Places, towns, cities were built up and destroyed. Some places simply vanished; others sprang up as new habitats. *Italia Illustrata* is therefore on the one hand a description of places, and on the other a history of these places and their names.

In contrast to the first six chapters, which mostly deal with textual criticism, biographical, literary and art-historical references, Berthele and Thiering's goal is to provide a linguistic analysis of what we refer to as 'construal', i.e., the linguistically triggered mental pathways and maps. Spatial role labels are applied, based on a cognitive-linguistic framework. The expression of static spatial relationships as well as dynamic pathways are at the center of their analysis. The goal of this contribution is to discuss a selection of linguistic constructions of spaces as examples of different "worlds" or worldviews from which insights about the spatial organization of cultural practices are gained.

In his contribution *The Description of Places in Biondo's* Italia Illustrata*: Outlining an Analysis of their Granularity and Spatial Relationship*, Kai-Florian Richter presents an approach to analyzing location descriptions using quantitative measures. Such an analysis allows for the identification of the predominant features

of these descriptions and, given a sufficiently large corpus, some statistical inferences. The analyzed features include the frequency (distribution) of the level of granularity of those entities referred to in the descriptions; which hierarchical structure appears most frequently; and which spatial relationships between entities dominate the descriptions. This quantitative data in turn allows for conclusions about stylistic preferences in describing locations. More interestingly, it tells us something about both the underlying spatial knowledge and conceptualization of space (the mental image) of those providing the descriptions, and the knowledge and level of familiarity the author assumes in the recipients. Richter demonstrates that his sample corpus can in principle be employed to any collection of verbal or textual location descriptions. The approach was originally developed for analyzing verbal descriptions collected through a location-based game that asked participants to "tell me where you are." Using it on a different corpus may require some adaptations in practice, but Richter shows that such an approach helps to understand spatial cognition in a rather diachronic fashion.

The volume concludes with a semiotic account and outlook: *Challenges and Potentials in Connecting Historical, Meaning and Memory as Maps* by Francis Harvey. Harvey argues that, while contemporary cartography faces numerous challenges in adequately accounting for hodological descriptions, Biondo's *Italia Illustrata* (1474) could be imagined in the form of a topographical map, based on consistent spatial dimensions. At the same time, however, basic cartographic uncertainties in the text require that we improve the reliability of our analysis. After centuries of refinement the topographic map may well become the ubiquitous cultural and material representation of geography in the humanities and sciences. According to Harvey it has already become a central part of many fields of science and scholarship, although he states that readers lack full comprehension of how maps influence our understanding. Given what is known about the ambiguity of knowledge representations from the sociology of science, it seems highly relevant to broaden the scope of considerations through semiotics to examine maps' representations of geographical and cultural memory as institutionalized mnemonic devices that distill complex meanings into symbolic representations.

Analyzing Biondo, Harvey argues that, leaving behind the certitude and exactitude of contemporary geoscience representations, researchers can begin to reflect on explicit as well as implicit issues and ideological claims. Considerations of the so-called cartographic gaze of modernity arise, which has in the passing centuries became second nature for most makers and users of maps, also in the fields of science and humanities.

Epilogue: Winter 2022

The reader will decide whether or not we have found a common language. We made a promising effort, but in transdisciplinary approaches such as this, common ground – let alone a common theory of Biondo's spaces – is hard to find. But we nevertheless walked through the history of Biondo's Renaissance as he walked through Italy and its history. Thus the book's title: *Walking Through History. An Interdisciplinary Approach to Flavio Biondo's Spaces in the "Italia Illustrata".*

We hope that reading the different chapters is an interesting challenge, and invites for food for thought, new ideas and projects. Join us walking through different disciplines and approaches.

Abstract

Günther Görz, Chiara Seidl, Martin Thiering
Linked Biondo: Generating and Processing Research Data Based on Geographical Feature Modeling

keywords – *Linked Open Data, Map annotation, Text annotation. Text analysis, Spatial cognition*

Bibliotheca Hertziana's project "Historical spaces in texts and maps" aims at a cognitive-semantic analysis of Flavio Biondo's Italia Illustrata *(1474) linking with contemporary maps. At focus are relations between historical maps and texts aiming to explore the historical understanding of space and the knowledge associated with it. Our research combines cognitive-semantic parameters such as toponyms, landmarks, spatial frames of reference, geometric relations, gestalt principles and different perspectives with computational linguistic analysis. Contributing to Spatial Humanities, we are convinced that all maps are cognitive maps, depicting culture-specific spatial knowledge and practices. This chapter focuses on data modeling comprising all research data generated within the project, their storage and access as well as their publication as Linked Open Data in the Semantic Web. Recogito is being used as the main tool for static annotations of places and persons/peoples in text and maps. These are complemented by cognitive-linguistic spatial role markups by means of the* Brat *tool. To achieve a deeper and more generic semantic level of linguistic and map-related annotations, we pursue the transition to an ontology-based representation. For this purpose, we defined a domain ontology based on the event-based* Cidoc *Conceptual Reference Model (*Crm*) and its spatiotemporal extension* Crmgeo *in* owl-dl*, and appropriate mappings to be applied to the annotations exported in* Csv*,* Rdf *and* Json *formats. Using the* Crm *opens up a wide spectrum of interoperability and linking to many web resources, such as the gazetteers being used with Recogito. For ontological enrichment and processing of the primary data, we use the Virtual Research Environment WissKi with* Crm *as the top conceptual model. This allows for a semantic interpretation of annotations such that, e.g., for each place, we generate an instantiated* Crm *description in triple format, ready for storage and publication as Linked Data. In the same fashion, mappings are applied to the results of spatial role labeling – these triples encode cognitive parameters, primarily figure – spatial_indicator – ground constructions.*

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Linked Biondo: Generating and Processing Research Data Based on Geographical Feature Modeling

Günther Görz
Chiara Seidl
Martin Thiering

1. Introduction: Research Question and Methodological Approach

This chapter deals with the generation and processing of research data in the Bibliotheca Hertziana's research project "Historical Spaces in Flavio Biondo's *Italia Illustrata*", investigating the historical understanding of social space and its evolution in the Renaissance. The study of the relations between historical maps and texts aims to explore the historical understanding of space and the knowledge associated with it by taking up approaches from cognitive science and in particular cognitive linguistics. Cognitive maps depict culture-specific spatial knowledge and practices. This knowledge is represented in different ways, which change historically through different processes and practices. The epistemological focus is therefore framed by questions such as which forms of knowledge represent spatial relations, how can processes of spatial transformation be represented and analyzed, and what is the connection between culture-specific practices and cognitive representations? In order to approach this complex of questions, the project combines cognitive-semantic parameters such as toponyms, landmarks, spatial frames of reference, geometric relations, gestalt principles, and different perspectives with computational linguistic analysis methods deployed according to our "Common Sense Geography"[1] approach.

The project design had its starting point in the introduction and description of its general objectives, as stated in the project outline on the Bibliotheca Hertziana's website.[2] The project design is based on the assumption that precise research questions can be derived from it that will lead to operationalized hypotheses, which in turn can be tested on data. In the following, the data aspect of the project is addressed, i.e., the generation, organization, indexing, storage, and publication of research data. In principle, the underlying theoretical ([art]-historical, cognitive) framework had determined which data should be obtained from the available sources and in what way. The selection of sources was guided by various parameters: availability and effort for provision as well as the quality of digital reproductions (especially readability) of the texts and map images in digital form. For our work with geographic/cartographic data, we owe valuable suggestions to the geographic research group around Werner Kuhn[3] (formerly of the Universität Münster, now UCSB) and Simon Scheider[4] (previously at Universität Münster, now Universiteit Utrecht), particularly for their clear reference to cognition and knowledge representation and processing. Accordingly, we developed a three-phase structure for the project:

1. Analysis
2. Cognitive-linguistic and (art-) historical interpretation
3. Synthesis (sketch reconstruction).

In the analysis phase, historical texts are processed and reinterpreted using new text and map markups and corpus-specific quantitative methods. The very general categorization pattern of spatial relations in visual perception is based on the gestalt theoretic figure-ground asymmetry adapted from the founders of cognitive linguistics, Ronald W. Langacker[5] and

1 Geus/Thiering 2014.

2 URL: https://www.biblhertz.it/en/dept-michalsky/historical-spaces-texts-maps. All links in this paper were accessed and verified on May 4, 2020, and again on August 4, 2020.

3 For example, Kuhn 2013; see also his "Research Questions" page: http://geog.ucsb.edu/~kuhn/Questions.htm

4 In particular Scheider 2014 and Simon Scheider's website "Geographic Knowledge Representation", URL: http://www.geographicknowledge.de

5 See Langacker 2008.

Leonard Talmy.[6] This asymmetry is not only constitutive in visual perception, but also in components of linguistic meaning in a sentence; hence, rather than clausal phrases with a subject and object, the theory instead uses figure and ground. Here the "figure" is a moving or conceptually movable entity whose site, path, or orientation is conceived as a variable, whose particular value is the relevant issue. The "ground", meanwhile, is a reference entity, one that has a stationary setting relative to a frame of reference, with respect to which the figure's site, path, or orientation is characterized.[7]

Flavio Biondo's (1392–1463) work *Italia Illustrata*, published posthumously in 1474, serves as the key text. Flavio Biondo is rightly regarded as the true founder of archaeological science and antiquarian topography. Particularly in his *Italia Illustrata*, the first premodern description of Italy, he draws on famous authors of Roman antiquity such as Livy, Virgil, and Pliny. Greek authors such as Strabo and Ptolemy, on the other hand, are rarely considered – despite their geographical and topographical content and despite the intentions of Biondo's work. An exception is the Latium chapter ("Regio Latina"), in which Biondo draws intensively on a hitherto undiscovered Latin translation of Strabo. Strabo's work not only serves as a data basis but also as a structural principle: Biondo uses Strabo's hodological description technique to locate all the Latin cities and settlements relative to each other and transforms them into a narrative structure on the west coast of Italy and three Roman roads (Via Appia, Via Latina, Via Valeria). This raises the question of whether the *Italia Illustrata* was actually written using many maps, as current Biondo research[8] generally assumes. Since only a few regional sheet maps from the early fifteenth century have been preserved and even literary references to cartographic knowledge are rare, this problem has to be put into a larger context and possible alternatives have to be discussed in an interdisciplinary approach. Our main hypothesis within a cognitive-linguistic framework is that Biondo's narrative is based on cognitive maps or mental models enabling the reader to mentally triangulate different spatial references. In particular, it is necessary to discuss which strategies Biondo used to collect, filter, and process his heterogeneous material of historical, geographical, archaeological, and art-historical information and to translate it into a text that could be read by a contemporary audience. Because the Latium chapter (Book II) plays a key role within *Italia Illustrata*, the interdisciplinary project begins with the analysis and commentary of "Regio tertia: Latina". In contrast to previous publications on Biondo, which are comprehensive in textual criticism, biographical, literary, and art-historical references as well as in the 'afterlife' of Biondo's writings, we pay particular attention to the identification of toponyms and the geographical vocabulary, spatial relations, the reception of Strabo, contemporary cartography, and mental maps.

Thus, after preparing and conditioning the sources, our next step entailed elementary text statistics, concordance generation, morpho-syntactic tagging, dependency parsing, and the creation of geographical annotations. Furthermore, the spatial relations expressed in the text were annotated according to the above-mentioned cognitive-linguistic parameters, especially figure–spatial_indicator–ground triples. All research data (text and map annotations) developed so far were semantically represented by an application ontology for historical texts and maps as well as annotated content and stored in the Virtual Research Environment WissKI (see section 5. Generated Research Data and Their Semantic Enhancement through Ontology-Based Data Modeling). They are thus available as linked open data (LOD) for publication on the Semantic Web. Further research data, especially the linguistic analyses, are stored in a repository in the framework of WissKI.

The second phase – cognitive-linguistic and (art-) historical interpretation of the data (i.e., the text compared to contemporary maps) – constitutes the center of the project. To answer questions about the historical understanding of geographic space and its shifting development in premodern times, the research topic

6 Talmy 2000 and Talmy 2003.

7 Talmy 2003, p. 184.

8 See, for example, Clavuot 1990.

is "cognitive maps" in the broadest sense, as stated above in the paragraph on Biondo. The interpretation phase is not the subject of this paper; the first results of a cognitive-linguistic analysis are available in the contribution by Berthele and Thiering[9] in this volume.

Finally, it should be mentioned that the plan to reconstruct map sketches from the data (synthesis phase) was from the very beginning part of the agenda as a long-term project goal. This would require the following steps at the least:

- Extraction of triples (in particular *figure–spatial_relation–ground*) from spatial role labeling.
- Generation of relation graphs.[10]
- Graphical realization of sketches on a coordinate grid based on an outline map of Italy.[11]
- Evaluation based on the existing geovisualization.

2. Sources, Their Preparation, and Conditioning

First of all, there are some fundamental issues regarding the available text sources. The textual transmission of Flavio Biondo's *Italia Illustrata* is rather complex due to different available editions. Modern editions are based on the surviving manuscripts,[12] or the first printed edition (Biondo 1474) as supervised by Gaspare Biondo,[13] or purportedly the "best-known, most-cited early printed edition" (Biondo (1531) 1559).[14] The manuscripts, written and reworked over a long time span, are not uniform in orthography, punctuation, or style, thus making it difficult to use the text for digital and linguistic analyses. According to his own confession, Gaspare changed Flavio's original for stylistic reasons before printing; and the Froben edition clearly deviates in many instances from the earlier ones. The *editio princeps* has been transmitted in two versions, which are, contrary to common belief, not identical, and there are, for instance, more than one hundred textual deviations between White's and Castner's texts in the Latium chapter alone. In the long run, our study will be extended to apply to the complete text. We decided to work with the White edition because it is still the closest one to the editio princeps; unfortunately, his English translation is not error-free and is inspected in this analysis purely for heuristic reasons and as a reference point for comparative studies.

3. Preprocessing Steps, Word Lists, Concordance, and Part-of-Speech Tagging

As a prerequisite for the analysis and interpretation of Biondo's text in the framework of cognitive semantics, we designed a workflow for text analysis, which contains automatic and semi-automatic processing steps. Its ultimate goal is to annotate, that is, to markup individual words or word sequences such as proper names of places (and also of persons and events) in different text sources as well as spatial relations in texts in the framework of cognitive semantics. Moreover, these annotations will be related to similar annotations in (historical) geographical maps.

Basically, we worked with two UTF-8[15] encoded text representations, plain text and TEI/XML.[16] All texts have been generated digitally, mostly based on spelling-corrected OCR (Optical Character Recognition).

To get a first overview of the language register used in our selected text passage, we ran some simple analysis procedures on the Latin text and its English translation as a whole. As for the tools, we used some command line scripts of our own, and we applied a KWIC (Key Word in Context) concordance program[17] and the TreeTagger with the Stuttgart-Tübingen Tagset (STTS).[18] For word lists and statistics, concordances, n-grams, and collocations (by de facto word co-occurrences), we also found the interactive AntConc[19] tool and the browser-based

9 Thiering/Berthele 2022.

10 As outlined by, for example, Vasardani *et al.* 2013, algorithms 1 and 2.

11 Compare Tobler 1979.

12 Biondo 2011, Biondo 2014, Biondo 2017.

13 Biondo 2005b, Biondo 2016.

14 Biondo 2005a, Biondo 2010.

15 UTF-8 is a Unicode character encoding; see URL: http://unicode.org/.

16 TEI: Text Encoding Initiative, providing a modular set of tags for various text types; see URL: http://www.tei-c.org/. Although many software tools already accept TEI encoding as a text input format, there are still some which require plain text.

17 KWIC for Windows Version 4.7 and 5.3 by Satoru Tsukamoto; URL: https://kwic-concordance.software.informer.com/4.7/.

18 See "German Tagsets", Universität Stuttgart, Institut für Maschinelle Sprachverarbeitung (IMS), URL: https://www.ims.uni-stuttgart.de/forschung/ressourcen/lexika/germantagsets/.

19 AntConc is an easy to use word statistics

online Voyant tools[20] very useful. All results for Latin and English acquired in batch processing mode have been posted on a project webpage[21] for quick lookup. They include:[22]

- Alphabetic word (form) list with frequencies, endings-sorted word (form) list with frequencies, ascending and descending word (form) lists with frequencies.
- Concordance (Kwic), and word index for concordance.
- TreeTagged (Stts) word list with lemmata, TreeTagged (Stts) word list with frequencies, sorted by tags.

For the annotation of Latin, there are still only a few computational resources and tools available. Besides a few scanned classical lexica, there is an online version of WordNet for Latin as a lexical resource.[23] Powerful lemmatizers and morphological analyzers for Latin are Collatinus,[24] freely available in web-based and standalone versions, and the recent Lemlat 3.0.25 The Perseus Digital Library provides access to its "word study tool", an online version of a Latin morphological analyzer.[26] The well-known TreeTagger[27] – a tool for annotating text word by word with part-of-speech, lemma, word class, and inflection information – is available for many language models, among them Latin and English. We therefore decided to work in parallel language mode for some steps, that is, with Latin *and* English, as far as appropriate tools were available, synchronized sentence by sentence. Ideally, we could synchronize glossing word by word using linguistic terminology, as is known in field linguistics research.[28]

Our goal in the first phase of analyzing and interpreting Biondo's text in a cognitive-semantic framework was the identification of places by toponyms or definite descriptions, and of spatial relations between them. Hence, beyond the morphosyntactic and semantic information on words as provided by the above-mentioned tools, we also needed information about grammatical structures. Parsers are computational tools for grammatical analysis beyond the word level which provide structural data about constructions and collocations and reveal the constituent and dependency structures of sentences. In particular, the latter grammatical structures are particularly important for semantic representation.[29] For Latin, a promising dependency parser has only recently become available,[30] which we applied to the full text with promising results.[31]

Finally, we aim for annotated logical forms which express the spatial relations of different geographical objects described in the text. Because up to now no general tools for spatial role labeling have been available, we opted for a semi-automatic annotation procedure.

4. Toponyms and Spatial Relations: Text and Map Annotation

4.1 Text Annotation

For semi-automatic markup of places (but also of persons and named events) in the Latin and English texts, we use the Recogito 2 annotation tool,[32] which contains a good named entity recognition (Ner) component. The plain text annotation provides an integrated geographical verification mode with several gazetteers that provide the necessary information, whereas for historical texts we prefer using Pleiades,[33] but also the Digital Atlas of the Roman Empire

and concordance program. It has several options to support semantic analysis, such as annotating clusters or marking single lexical items embedded in their textual context, etc. See Url: http://www.laurenceanthony.net/software/antconc/.

20 Url: https://voyant-tools.org.

21 Url: https://www.biblhertz.it/en/dept-michalsky/historical-spaces-texts-maps, containing links to the freely available results.

22 For English, we also used Lancaster University's Wmatrix3 toolbox (Url: http://ucrel.lancs.ac.uk/wmatrix/), which also provides a semantic tagger. These tools are flexible in a variety of output formats, including Xml.

23 Url: http://multiwordnet.fbk.eu/online/multiwordnet.php.

24 Url: http://outils.biblissima.fr/en/collatinus/.

25 Url: http://www.lemlat3.eu/.

26 Url: http://www.perseus.tufts.edu/hopper/morph?redirect=true&lang=la.

27 Url: http://www.cis.uni-muenchen.de/~schmid/tools/TreeTagger/.

28 Levinson/Wilkins 2006, Thiering 2015.

29 Ágel/Fischer 2010.

30 Straka/Straková 2017.

31 Udpipe Dependency Parser Ud 2.4 (Url: http://ufal.mff.cuni.cz/udpipe) with the Latin language model latin-ittb-ud-2.4-190531. The check against the results of the manually generated spatial role labeling is still awaiting completion. For heuristic reasons, we initially used the Stanford Parser (Url: https://nlp.stanford.edu/software/lex-parser.shtml) on the English translation, a lexicalized stochastic parser whose English language model generates dependency trees of reliable and sufficient quality.

32 Compare Simon *et al*. 2015; Recogito, Url: http://recogito.pelagios.org/.

33 Url: https://Pleiades.stoa.org/.

(Dare)[34] and GeoNames. The annotation results can be exported in several formats, for example as Open Annotation/Rdf[35] data or as tables (containing comma-separated values, Csv: particularly useful for comparison and further processing), Geojson,[36] and also as simple Tei/Xml[37] files containing appropriate tags that are well suited as a basis for further tagging. Furthermore, Recogito (see below and figure 1 and figure 3) also allows users to annotate map images and display (annotated) places on different types of maps like OpenStreetMap[38] or Dare.

The most important step of text processing is spatial role labeling (i.e., the markup of spatial object descriptors and the relations between them). For this purpose, international standard proposals have been developed,[39] including, for example, the "SpaceEval Annotation Guidelines"[40] and competitions on automatic Spatial Role Labeling by means of machine-learning techniques organized at several international computational linguistics conferences, most notably at Lrec (Linguistic Resources and Evaluation Conference).[41]

In this case, labeled texts have to be provided as training data. Independent of our decision to apply machine learning in the long run, we still had to label our actual text manually anyway so as to create a labeled training corpus of considerable size. Therefore, we decided to use the interactive *brat rapid annotation tool*[42] (Brat) and made a configuration file defining all entities, relations, and events to be annotated according to the requirements for spatial construals (i.e., the ascriptions of meaning components such as figure-ground asymmetries) and its parameters. To be compatible with the subsequent step of semantic modeling, we selected the entity types of the Pleiades vocabulary.

The Latin text and its English translation were split into individual, aligned sentences. In Brat, the marks and lines are entered graphically using the mouse-track function – essentially allowing the user to drag and drop a landmark, toponym, or other spatial encoding from point A to point B, and thus relate these two points to form a unit or construction. The results are stored in a purely text-based standoff format that can also be exported in an Xml version. Brat also allows for a parallel display of aligned sentences, so that the already labeled English sentence can be shown statically together with the Latin yet to be labeled.

The annotation principles were first identified according to the cognitive-linguistic foundation of our project. We identified the following basic abstract spatial parameters that in turn apply to a number of theoretic principles:

- Toponyms (place names, buildings, roads, squares, regions, etc.) and landmarks, natural (mountains, rivers, forests, etc.) versus man-made.
- Gestalt principles of figure–ground asymmetries as *figure–trajectory/path* [=*spatial_indicator*]–*ground* triples.
- Spatial frames of reference: relative/deictic, intrinsic/geometrical, absolute/allocentric
- Topology and geometry.
- Perspective: bird's eye perspective frog's eye view, hodological perspective, vectoral perspective.
- Distances: scale, scope, size – linguistically encoded in adjectives, adverbs, verbs, but mostly in adpositions and case systems.
- Metrical systems – encoded in verbal systems such as posture verbs and case systems.
- Motion events: source–trajectory–goal.
- References to common-sense knowledge, such as itineraries or travel reports.

Biondo's narrative presents enough spatial cues to reconstruct a cognitive map; he even gives detailed references to distances between places.

In the long run, the ideal scenario is the adoption of an automatic annotation procedure that not only annotates lemmas (word forms) but bases its analysis on the above-mentioned cognitive parameters. This would not only result in

34 Url: http://dare.ht.lu.se/.
35 Open Annotation Data Model, Url: http://www.openannotation.org/spec/core/.
36 Json (JavaScript Object Notation) format for encoding geographic data, Url: http://geojson.org/.
37 Tei: Text Encoding Initiative, Url: https://tei-c.org/.
38 Url: https://www.openstreetmap.org/.
39 Mani *et al*. 2010.
40 Url: http://jamespusto.com/wp-content/uploads/2014/07/SpaceEval-guidelines.pdf.
41 Url: https://www.cs.york.ac.uk/semeval-2013/task3/.
42 Url: http://brat.nlplab.org/index.html.

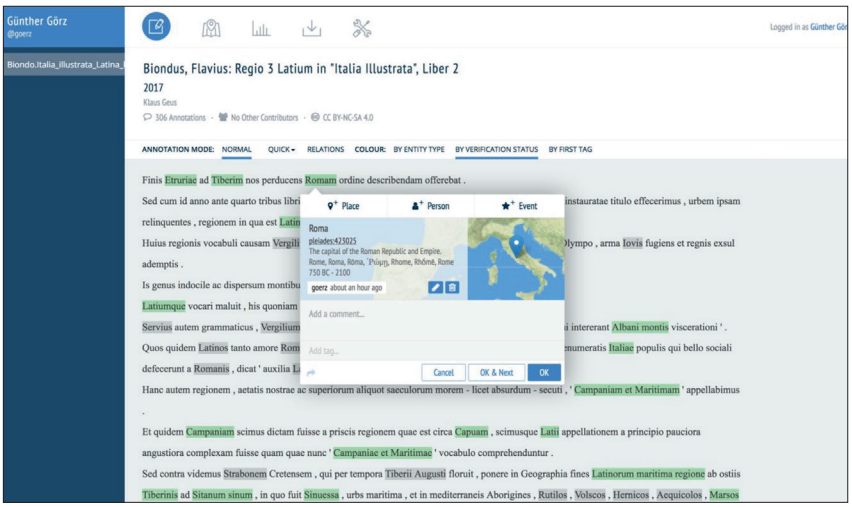


Figure 1
Screenshot from Recogito 2 with text annotation example.

a text and its lexical semantics being searched for spatial encodings such as upstream/downstream or up/down a mountain slope, but for absolute frames of reference, such as upstream/downstream in some cultures. Again, a frame of reference is an abstract cognitive representation of spatial alignment between different participants, enabling spatial orientation. For an absolute frame of reference, no perceiver is indicated, as it is in the case of the relative frame of reference (encoded as "left" and "right" in many languages).[43]

4.2 Map Annotation

Besides the survey of text, it is also important to annotate maps in their relation to each other. Biondo mentions his use of (not identifiable) maps, but further discussion of the role they played in aiding him is essential. In any case, it is worth studying fourteenth- and fifteenth-century maps of Italy in detail for a comparison of toponyms mentioned in Biondo's text and those displayed on maps. We are convinced that texts, maps, and images were often used in parallel as a complement to each other rather than existing in a hierarchical order. Nevertheless, some maps are known to have been produced based on textual sources (see, for instance, Ptolemy's *Geography*, or portolan texts versus portolan charts). Furthermore, limitations of space are more restrictive when it comes to drawing up and reading map images than is the case for written descriptions. Nevertheless, visualization adds a new dimension to the understanding of geographical texts.[44]

Our selection of maps for annotation comprises the earliest single sheet maps of Italy by Paulinus Minorita (fourteenth century), six further maps of Italy from the fifteenth century (chosen here according to the excellent selection by Marica Milanesi),[45] two relevant sections of the *Tabula Peutingeriana* (showing Roman roads), some portolan charts dating from before 1465 for coastal towns, and more than twenty-five Ptolemaic maps from the fifteenth century, both of the traditional variety as well as *Tabulae Novae* from the edition of Donnus Nicolaus Germanus, after 1466.

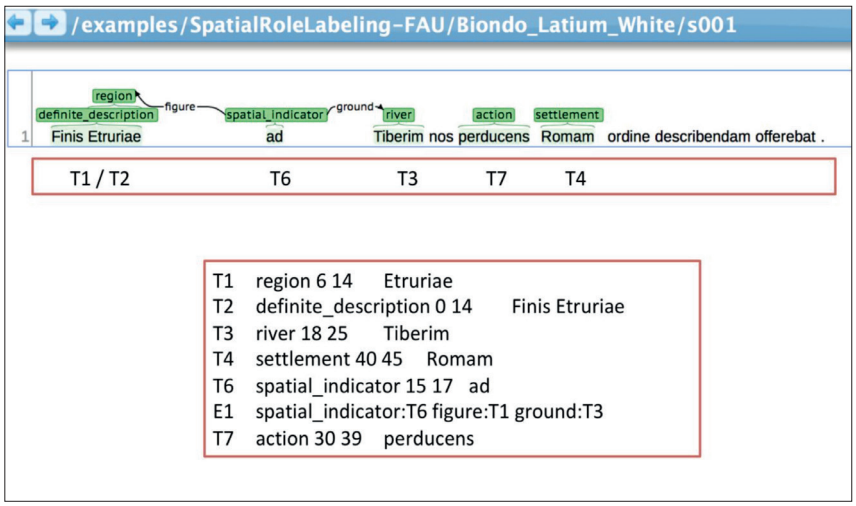
In order to annotate toponyms and ethnonyms in maps, the online tool Recogito 2 with its geographic verification mode is being used as well (figure 3). Up to now a sufficient number of maps – 'traditional' and 'novae' Ptolemaic maps, as well as others – have been annotated and their corresponding tables analyzed, comparing the occurrences of toponyms and their spellings, in relation to the text. With the results of geographic verification, spatial relations and distances between the places can be calculated for maps and the text as well. Furthermore, we plan to visualize Biondo's imaginary routes in historical and modern maps. It is still a matter of debate whether further investigations such as cartometric measurements would provide useful information for the interpretation. At

43 See the cognitive-linguistic evaluation of the chapter by Thiering /Berthele 2022 in this volume, as well as Görz *et al*. 2018.

44 See MacEachren 1995.

45 Milanesi 2008.

Figure 2
Screenshot from annotation tool.



this point, we are performing some experiments with MapAnalyst,[46] an image registration tool for the analysis of ancient maps.[47]

4.3 Case Study: Ptolemaic *Tabulae Novae*

In a case study, we completely annotated and analyzed three *Tabulae Novae* of Italy, from the second and third editions of Donnus Nicolaus Germanus.[48] Over the course of several centuries, many ancient places have been renamed or disappeared, while many new places have sprung up. Therefore, it was an obvious task to 'update' the maps by way of juxtaposing more recent maps with the older ones. Which early modern sources the *Tabulae Novae* were based upon is not known, but they were probably the same kind of sources also available to Biondo. The maps in the Latin editions of Ptolemy translated from the Greek provide the names of ancient places in accordance with the respective coordinate tables in the text *Geography*, Book 3, Europe, Tabula 6, but there are no coordinate lists of the *Tabulae Novae*.

The selection of these three maps from the *Tabulae Novae* – all ascribed to Donnus Nicolaus Germanus known as L20-nova[49] from the year 1466, L23-nova from 1467, and L26-nova from 1468 – are to be understood as a preliminary case study comparing contemporary cartographic representations with Biondo's text. Three different re-editions are known today which were prepared by himself or under his supervision. While L20-nova and L23-nova were part of the second edition, L26-nova appeared in the third. L23-nova is dated just one year later than L20-nova and is part of *Codex Urbinas Latinus 277* (Bibliotheca Vaticana). In appearance, this map is nearly identical to its predecessor in the edition before it. Minor differences are to be found, however, in the inscriptions. The names of the islands are mostly set on the blue ground of the surrounding sea, not on the area of the islands themselves. Due to discoloration through aging, these inscriptions are more difficult to read. In general, however, both maps feature the same style of writing, so one may assign them to the same scribe. This conjecture is further confirmed by the identical use of abbreviations and diacritics. For instance, suffixes such as *–us* and *–um* are replaced by *ũ* ("alsinũ" = alsinum), and the tilde is set within a word to replace the following *n* ("pallestrĩa" = pallestrina). Both maps (L20-nova and L23-nova) do not write the usual *s*, but instead use the ſ (as in "oſtia" or "aſtura").

L26-nova is a map taken from Germanus's third edition of 1486 and covers a double page of the *Codex Vaticanus Latinus 3811*. The information inscribed on the map is similar insofar as place names are set horizontally in dark brown script and combined with the same pictograms. But a distinction is made between major cities, where the names are rendered in majuscules, and smaller towns with names in minuscules.

The names of rivers are also set parallel to the curvature of the river, and the names of islands are mostly placed in the blue water zone, like

46 URL: http://mapanalyst.org/.
47 See also the contribution by Guckelsberger/Geus in this volume.
48 Compare Dalché 2007.
49 The identification labels given here are cited after Joseph Fischer, see Geus 2009.

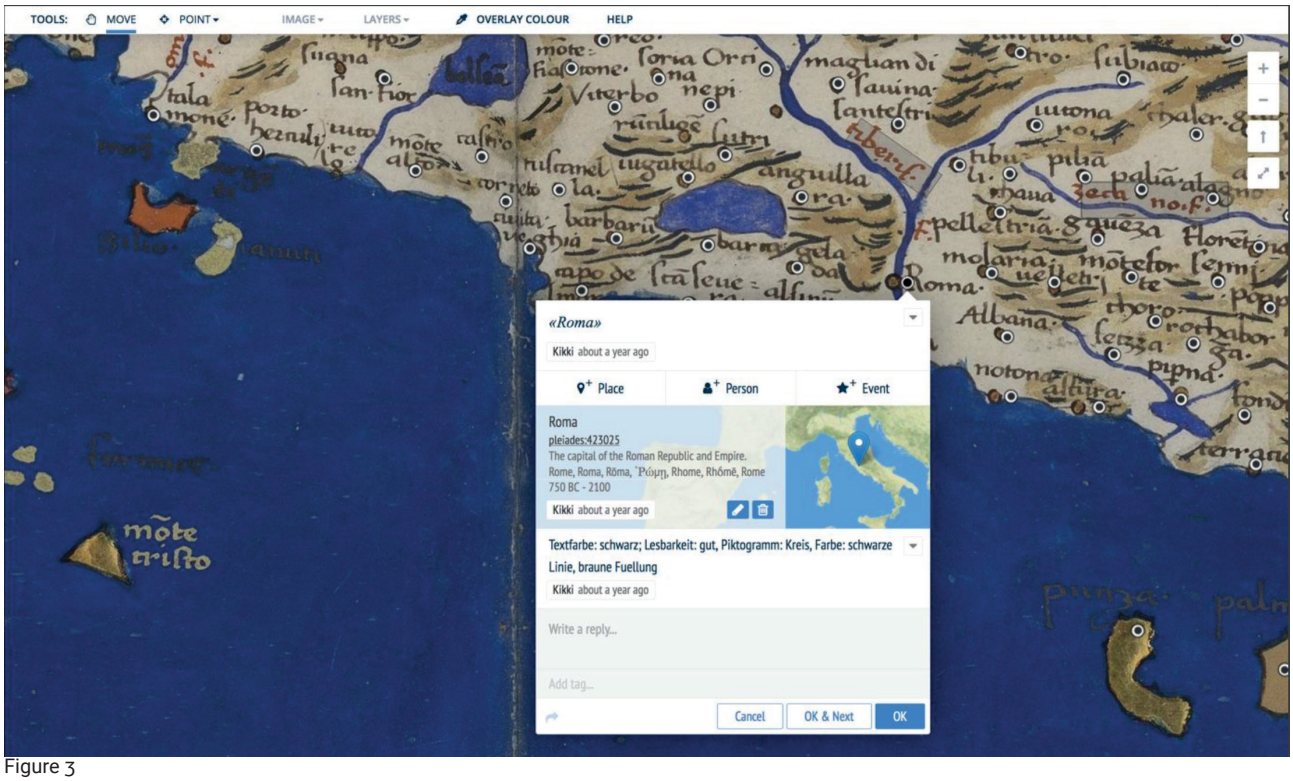


Figure 3
Map annotation in Recogito 2 of Ptolemaic Tabula Nova by Donnus Nicolaus Germanus.

on map L23-nova. A golden inscription in majuscules, "ITALIA", has been placed on the violet ground in a black-framed box, the only indication of the name of the whole country on any of the three maps. In addition to these differences, close inspection of all the writing makes it evident that it was executed by another hand. This scribe sometimes uses the long s (ſ) (as in "oſtia"), but also the standard s when it stands as an initial (as in "subiaco"). Furthermore, suffixes are partially marked by diacritics like in the older maps ("alsinũ" = alsinum), partially written out ("paliam"). The tilde is used only rarely to replace the *n* ("belmõte" = belmonte).

Using Recogito, it was possible to identify further differences with reference to the names of places. L20-nova was indicated with 626 annotations, L23-nova with 647, and L26-nova with 615 annotations. For places, point annotation was used, whereas mountains, rivers, and also lakes were annotated with rectangular boxes. A short description of the annotation (text color, readability, pictogram) was added and completed by geographic verification. If possible, the respective location was verified with the *Pleiades* gazetteer, in other cases also with DARE or, as the last option, with GeoNames. If a location could not be verified,[50] the annotation was marked "flag this place" and tagged with "settlement", "river", etc.

A problem in verification with a gazetteer is encountered when the available places do not refer to a town or city as such but to theaters, spas, or other physical objects named after the city. In such cases we tried, if possible, not to work with *Pleiades* but to use DARE or GeoNames (as long as it contained the city or town).[51] In general, by way of the annotations and verifications, it could be shown that there are several differences amounting to a general shift between the maps of the second and third edition, especially with regard to outline and handwriting. For some places, naming or spelling had changed or even disappeared completely.

1. Singular letter:
   L20-nova/L23-nova: lexi; L26-nova: *Lesi* (Pleiades: 442642).

50 This was true of 25 percent in L20-nova, 26 percent in L23-nova, and 24 percent in L26-nova.

51 L20-nova: 63 percent annotated with Pleiades, 2 percent annotated with DARE, 35 percent annotated with GeoNames.
L23-nova: 65 percent annotated with Pleiades, 2 percent annotated with DARE, 33 percent annotated with GeoNames.

2. ſ and s:
   L20-nova: *chiverſ*; L23-nova: *chiaverſ*; L26-nova: chiavers (Pleiades: 383555).
3. Tilde:
   L20-nova/L23-nova: *levãto*; L26-nova: *levanto* (GeoNames: 3174793).
4. Upper and lower case of initial letters:
   L20-nova/L23-nova: *lamatrice*; L26-nova: *Lamatrice* (GeoNames: 3183121).
5. Shift of lines:
   L20-nova/L23-nova: *alagno* (in one line)
   L26-nova: *alag-no* (over two lines) (Pleiades: 422833).
6. Places not indicated on L26-nova:
   Sora (Pleiades: 433126), *Sausa* (Pleiades: 167919), *Fumione* (GeoNames: 3176486), *Asti* (Pleiades: 383669), *Ostiglia* (Pleiades: 393438), *Frusolone* (Pleiades: 432851).
7. Places not indicated on L23-nova at all:
   Panego (GeoNames: 3170937), the indication of the *Anguillare* (Pleiades: 413015).

The observation that there must have been a change of scribe between the second and third edition is also confirmed by the Recogito analysis of these three maps. Specific changes are recognizable over the course of the maps' reproduction during the three years considered here (1466–1468). Single letters have been exchanged, or the ſ has been replaced by the regular s, there is less frequent use of tildes, and the names of places are written out more often. Conspicuously, some names are not indicated any more in the later version, perhaps because they could no longer be identified. In two cases where places are indicated in L20-nova and L26-nova but not in L23-nova, a scribal error might be the cause, but the frequency of places which are missing in L26-nova should make us wary of leaping to this assumption.

Although there were obviously formal restrictions of space for placing toponyms on a map, it nevertheless seemed reasonable to compare the toponym lists of the three maps with the downloaded table of Biondo's Latium chapter in the *Italia Illustrata*. The annotated toponyms in the White edition ("Lazio") amount to a total of 334. But there are also many repetitions of the same places with different names (in English and Latin), such as "Campagna", "Campania", or "Campania and Marittima". Also, some places are titled with two different names, for example "Subiaco" and "Sublaqueum" or "Supine" and "Trasacco".[52] Furthermore, these labels are not limited to towns and settlements, but also apply to trails ("Via Latina", "Via Salaria"), rivers and lakes ("Lake of Subiaco", "Tiber"), regions ("Lazio", "Sicily", "Umbria"), hills ("Mt. Alban", "Mt. Algidus"), and other names ("Roman Empire", "Roman Republic", "Kingdom of Naples", "Italy"), as well as names not located in Italy ("Nicaea", "Athens").

Regarding our research question for the relation of historical spaces in text and maps, we consider the use of the toponyms in both. Although the space for placing toponyms on maps is restricted, it seems reasonable to compare the geographical annotations in the Csv tables of the three maps with the table of annotations from Biondo's Latium chapter as translated by Jeffrey White, drawn from Recogito. It was found that of 191 place names stated in the text, the maps indicated 48 place names. Among these, 33 are written identically in the text and on the maps, while the remaining 15 are also spelled differently among the maps themselves. Among the 33 identical toponyms, 14 toponyms are written identically on all three maps as well as matching the spelling in the White edition.[53] With all other annotations, the spelling changes mostly only minimally ("Anagnia" becomes, for example, "Alagno", "Celano" becomes "Cela").

In two individual cases, L20-nova and L23-nova contain the toponym, but L26-nova does not.[54]

What is the result of this analysis? It is interesting that the White edition titles the same places with different spellings. Whether this is due to White's translation or not is questionable. Within the maps, there are only minimal differences in spelling.

L26-nova: 63 percent annotated with Pleiades, 2 percent annotated with Dare, 35 percent annotated with GeoNames.

52 Further examples include: Alatri/Aletrium, Anxur/Terracine, Capua/Casilinum, Praeneste/Palestrina, Astura/Torre Astura, Veroli/Verulae.

53 These places are Alba, Astura, Benevento, Civitella, Capua, Bologna, Velletri, Gaeta, Itri, Roma, Suessa, Ravenna, Ostia, Tagliacozzo.

54 Celano (L20-nova/L23-nova Cela), Fratte (L20-nova/L23-nova Fratta).

The first conclusions we can draw are: (a) geographical knowledge changed considerably during the fifteenth century; and (b) this change is reflected in the differences between the maps as well as between them and the *Tabulae Novae*. Part of this change can be understood as the evolving geographical knowledge which took place in the process of re-editing and revision. Thus, it may be assumed that the editions of Donnus Nicolaus Germanus were based on similar – if not the selfsame – sources on which Biondo drew.

5. Generated Research Data and Their Semantic Enhancement Through Ontology-Based Data Modeling

As already mentioned, Recogito offers several formats for exporting text and image annotation results. Annotations of toponyms, but also of persons (in our case also geographically important, because names of peoples often reflect names of regions), and named events can be exported, grosso modo, on two different levels of information:

- In Rdf Open Annotation format and equivalently in Json-Ld,[55] which identify the described object, the annotator, the data of annotation, the comment, and, if identified in a gazetteer, the Uri of the identified place.
- As a Csv table or equivalently in Geojson, which presents the annotation content in more detail, including geographical information from the gazetteer(s).

In the latter format, in particular Csv tables, the following information is contained:

- Uuid, a unique identifier for the particular annotation.
- Quote_transcription, the textual transcription of the inscription.
- Anchor, the position of the annotated item in the text (character position) or image (pixel coordinates).
- Type, either Place or Person or Event
- uri, the unique web identifier of the place in a gazetteer, if the place can be geographically verified.
- Vocab_label, the spelling of the name in the gazetteer, including variants.
- Lat, geographical latitude of the place.
- Lng, geographical longitude of the place.
- Place_type, a descriptor from a standardized vocabulary, such as the Pleiades vocabulary, e.g., "settlement", "river", "mountain", etc.
- Verification_status, either geographically Verified, or Not_identifiable, if the place cannot be found in one of the available gazetteers, or Unverified, if the verification step has not been completed.
- Tags, a free field which can be used for place types in the case of not identifiable places.
- Comments.

Recently, a possibility for annotating relations between annotated entities in the text has been introduced in Recogito 2. Relations can be exported as Csv tables – nodes and edges lists – ready for processing with the Gephi[56] graph visualization platform. Generally, the relations can be chosen arbitrarily, but we found it more useful to have a predefined set, as is given in Brat configurations and the constraints that come with them, which is why we chose to use Brat instead. For now, we are focusing on the *figure–spatial_indicator–ground* triples.

The annotations described so far are bound to the linguistic level (i.e., directly related to the text and map image "surface"). To achieve a deeper and more generic semantic level, we pursued a transition to the methodological level of general knowledge representation.[57] This allows the toponyms and other place descriptions in the cognitive-linguistic spatial role annotations – primarily *figure–spatial_indicator–ground* constructions – to be identified, enriched with general geographic information, and linked to a variety of (online) resources. The semantic and epistemic level in which these representations are anchored is determined by domain models, so-called 'formal ontologies',[58] which may be regarded as the conceptual core of appropriate domain theories. Their underlying abstractions are hence integrated, providing much more

55 Json (JavaScript Object Notation) for Linking Data, Url: https://json-ld.org/.

56 Url: https://gephi.org/.

57 Compare, for example Allemang/Hendler 2011.

58 A formal ontology defines the conceptual system of a domain of discourse, see, for example, Noy 2003.

content about the conceptualization of space[59] and the geographic domain.[60]

For the conceptual framework we built upon the CIDOC CRM (the conceptual reference model of the International Council for Documentation/ International Council of Museums), a fairly generic ('reference') ontology,[61] originally defined for the cultural heritage sector, and acknowledged as an ISO[62] standard 21127 since 2006.[63] A decisive reason for choosing the CRM and its spatiotemporal extension CRMgeo[64] was that being a standard, it opens up a wide spectrum of interoperability and linking to many web resources. Ontological enrichment with the CRM as a top conceptual model, which, in its basic design, is *event-based*, provides, for example, a generic 'assignment event' which has open positions to be filled or linked with the semantic roles, regarding agent, constituents (material and immaterial), time span, and place.[65]

A remarkable feature of Recogito is that – if defined by the gazetteer – the places are further tagged with controlled terms from a thesaurus, for example the Pleiades vocabulary.[66] It allows for a more detailed characterization of the named place (for example, as a settlement, a river, or a mountain), which can immediately be integrated with the ontology-based representation. The same controlled vocabulary is used for classifying the linguistically annotated entities in spatial role labeling, defined in a BRAT configuration.

With formal ontologies, we provide an answer to the question: what is the meaning of annotations? And, at the same time, in particular with the use of a standardized formal ontology like CRM, we can directly transform the annotations into semantic representations ready for publication as linked open data.

First of all, we defined a domain ontology for the description of historical maps and their content ("hmap:"), connected to the generic CRM/ CRMgeo ("ECRM:" for Erlangen CRM), based on an extension of an ontology we had already developed for a database of medieval maps several years ago.[67] The ontology offers a framework for the general metadata of maps and geographical texts as well as for descriptions of their content as provided by the above-mentioned annotations.[68] The meaning of each metadata component (property) is defined by a so-called 'ontology path' (i.e., a sequence of triples built from entities and properties of the ontology). As an example, in a map production event (*hmap:M9_Map_Production*) there is an actor, the creator, defined by:

hmap:M28_Map –> hmap:A3i_was_ produced_by –> hmap:M9_Map_Production –> hmap:A4_carried_out_by_map_author –> hmap:M1_Map_Author –> ecrm:P131_is_ identified_by –> ecrm:E82_Actor_Appellation

As an illustration, we shall present a small selection of metadata components of a historical map (*hmap:E28_Map*) in a simplified manner:

- ID: an *ecrm:E42_Identifier.*
- Title: a *hmap:M2_Title.*
- Creator: an *ecrm:E82_Actor_Appellation.*
- Material: an *ecrm:E75_Conceptual_Object_ Appellation.*
- Production Place: an *ecrm:E44_Place_ Appellation.*

59 The concept of space is related to the question of the spatial orientation of the ancients, and more specifically to Biondo's adaption of ancient spatial thinking. Traditionally, ancient geographical literature uses natural points of orientation (coastlines, rivers, mountains, winds, etc.), with which the observer may locate different directions or geographical objects. All geographical points of orientation depend on the perspective of an imaginary observer. See, for example, papers on 'Common Sense Geography' in Geus/Thiering 2014; see also Dan *et al*. 2016.

60 Compare, for example, Guarino 1998, and Menzel 2002.

61 URL: http://www.cidoc-crm.org/.

62 International Organization for Standardization.

63 We implemented CRM in a description logic language, the Semantic Web Ontology Language (OWL-DL): Görz/Oischinger/ Schiemann 2008. URL: http://erlangen-crm.org/. For OWL-DL, URL: https://www.w3.org/TR/owl2-primer/.

64 See Doerr/Eide/Hiebel 2017. URL: http://new.cidoc-crm.org/crmgeo/sites/default/files/Crmgeo1_2.pdf (accessed 04.08.2020).

65 For a similar approach, see the ontological framework developed by Grossner/Janowicz/Kessler 2016, and in particular their Ontological Design Pattern for "setting" which comes close to the definition of "spacetime volume" in CRM.

66 URL: https://pleiades.stoa.org/docs/partners/pleiades-rdf-vocabulary. In principle, other controlled vocabularies could be considered as well, such as the ones released by the Getty, available as linked open data, see URL: http://www.getty.edu/research/tools/vocabularies/.

67 See Görz 2007, pp. 539–572.

68 For very similar work, compare Gkadolou/ Stefanakis 2013, 813 or p. 6 in online version; and Chalkias/Vradis/Kokla 2017, 6, with their historical map ontology design pattern, URL: http://ontologydesignpatterns.org/wiki/Submissions:HistoricalMap (accessed

- Production Date: an *hmap:M10_Production_Date.*
- Scale: an *ecrm:E75_Conceptual_Object_Appellation.*

For each map we may have several images in which depicted objects are annotated. For this reason we have an analogous data model for images (hmap:M34_Image). For each annotated place (hmap:M3_Annotated_Place is a subclass of CRMgeo:SP6_Declarative_Place) where the (geographical) contents of the annotations are encoded in the columns of the CSV tables, each column is transformed into a component, with similar ontology paths defined for it. The annotated place is linked to the image by:

hmap:M3_Annotated_Place –> hmap:A43i_is_depicted by –> E36_Visual_Item –> P65i_is_shown_by –> hmap:M34_Image

So, for example, the path for QUOTE_TRANSCRIPTION is:

hmap:M3_Annotated_Place –> P48_has_preferred_identifier –> hmap:M42_Transcribed_Place_Appellation

Each annotation, represented as a line in the table, has a universally unique identifier (UUID) and refers to a visual item (*E36*) which represents at least an inscription (and may in some cases also consist of an image like a wall or tower, etc.), for example:

- QUOTE_TRANSCRIPTION: an *hmap:M42_Transcribed_Place_Appellation.*
- Type: an *ecrm:E55_Type* (here: PLACE, PERSON, OR EVENT).
- URL: an *ecrm:E51_Contact_Point.*
- VOCAB_LABEL: an *ecrm:E44_Place_Appellation.*
- LAT/LNG: *crmgeo:SP5_Geometric_Place_Expression.*

There are also further data models for image series and suites or portfolios of works, such as map collections or atlases. The triples resulting from the BRAT annotation are modeled as "Annotated Connections" with a Source (figure), a Label (spatial_indicator), and a Target (ground).

Recogito also offers an export option for annotated texts in TEI/XML format. To define the semantics of TEI annotations[69] of named entities (i.e., place, person, and event names in texts), a mapping is applied to the respective TEI tags (thus defining the meaning of these tags in terms of CRM), as outlined, for example, by Christian-Emil Smith Ore and Øyvind Eide.[70] Of course, in terms of Recogito annotations, there is a strict equivalence between TEI tags and CSV table entries.

6. Linked Open Data with the Virtual Research Environment WissKI

In recent years, semantic technologies have become increasingly popular to represent, manage, and publish data in the humanities. Therefore, virtual research environments with semantic backends are used to build complex knowledge networks. Data is exposed as triples using RDF, and important vocabularies and thesauri are available as linked data. Ontologies like the CIDOC CRM, mentioned above, are the semantic backbone of this approach and provide interoperability and data exchange beyond pure linking.

WissKI[71] is a ready-to-be-used web-based virtual research environment and publishing framework that, at its core, relies on Semantic Web technologies to represent curated knowledge. The system enables digital humanists to produce high-quality linked data without having to cope with the technical issues of the Semantic Web and ontologies, in particular those of CIDOC CRM. This is achieved by defining, on the one hand, a mapping between traditional index card or tabular styles and, on the other, graph-based linked data. The mapping may be opaque to the users and only managed by a (modeling) administrator.

By default, data may be input and displayed either as structured data via forms or as free text. Free text may be input through a graphical editor and is semantically indexed in terms of named entity recognition results, calendar date specifications, mentioned events, and also

04.08.2020). See also Scheider 2014, pp. 251–73.

69 For the verbal, albeit not formal definition of tags, see the TEI Guidelines, URL: http://www.tei-c.org/.

70 Smith Ore/Eide 2009. As suggested by the late Sebastian Rahtz, the mappings are expressed by transformation rules, see Rahtz 2010, URL: http://tei.it.ox.ac.uk/Talks/2010-11-12-Crm/talk.pdf (accessed 04.08.2020).

71 WissKI (URL: http://wiss-ki.eu/) was developed by our Digital Humanities Research Group at FAU Erlangen-Nuremberg in cooperation with the Germanisches Nationalmuseum, Nuremberg, and is currently in use in more than 150 projects,

technical terms as far as appropriate authority files such as gazetteers are available.

Form input provides mechanisms for error reduction by showing autocompletion hints that are backed by available authority files. From the textual annotations, RDF triples may be generated and reused as structured data. Furthermore, the system allows the upload, derivation, display, and processing of images based on IIIF (International Image Interoperability Framework).[72]

From a technical perspective, WissKI is based on Drupal[73] (version 8), a widely used web content management system with a big and active user and developer community. It has a modular architecture with a vast variety of third-party extensions available. Being such an extension, WissKI profits from a stable core system and also from these community contributions, providing all sorts of functionality.

We decided to use WissKI for the representation, storage, and access of all research data which are produced in our project.[74] First of all, the system has to be configured with the ontology introduced above, ECRM with CRMgeo, extended by hmap. Then, with its Pathbuilder tool, all ontology paths for the metadata of images, image series, maps, and work suites (collections) have been defined. In addition, for images, the paths for the annotated content are defined in the same way; a URL provides access to the digital image. For each object type, WissKI generates an input form (and also an equivalent search form), based on the paths. Whenever the value of a metadata component is entered, the underlying ontology path is instantiated and broken down into triples, which are stored in a triple database. For the transfer of the annotations in Csv tables, WissKI provides a table input mode. Images and raw data of different types can be stored in WissKI as well, using Drupal pages for the latter ones. Hence, everything represented in the lower part of figure 4 is implemented in WissKI (and Drupal).

Using the semantically enriched geoinformation from text (and map) annotations as CRM instances, the spatial entities (*figure, ground*) and relations obtained by spatial role labeling as *figure–spatial_indicator–ground* triples can now be upgraded to this rich semantic level by linking data. Due to the fundamental underlying triple structure for all kinds of annotations, the data are immediately ready for publication as standardized Linked (Open) Data. For this purpose, WissKI provides a SPARQL query interface. These triple data constitute a huge knowledge graph; they are the 'raw material' for further research steps (i.e., the exploration of the historical understanding of spaces and the associated knowledge). It is crucial to operationalize the research questions in order to address them as questions to the processing of data. Of course, a SPARQL query interface is primarily suited for machine access. For a user-friendly exploration of the database and the formulation of queries in accordance with the dimensions of space and time as well as other semantic concepts, a graphical interface would be the first choice. At this point we can only refer to the experimental query interfaces of the British Museum's ResearchSpace project[75] and the exploratory query system adopted by Simon Scheider *et al*.[76] In this context, standardized query forms in the sense of (cultural-historical) 'query patterns' would be helpful.[77]

7. An Outlook on Cognitive Maps and Spatial Reasoning

The statement that "[i]n the last analysis all maps are cognitive maps" by Michael Blakemore and Brian J. Harley[78] indicates an important topic of recent research in the history of cartography. Georeferencing (i.e., reference to geographical locations), is the underlying principle for organizing and presenting all kinds of information in maps. In addition to the analytic perspective, as described in the above sections, the idea of cognitive maps also provides us with a synthetic view, in the sense that we will use

see Görz/Scholz 2012, p. 2, URL: http://www2.lirmm.fr/ecai2012/ (accessed 04.08.2020).

72 URL: http://iiif.io/technical-details/.

73 URL: http://drupal.org/.

74 URL: http://wisski.biblhertz.it.

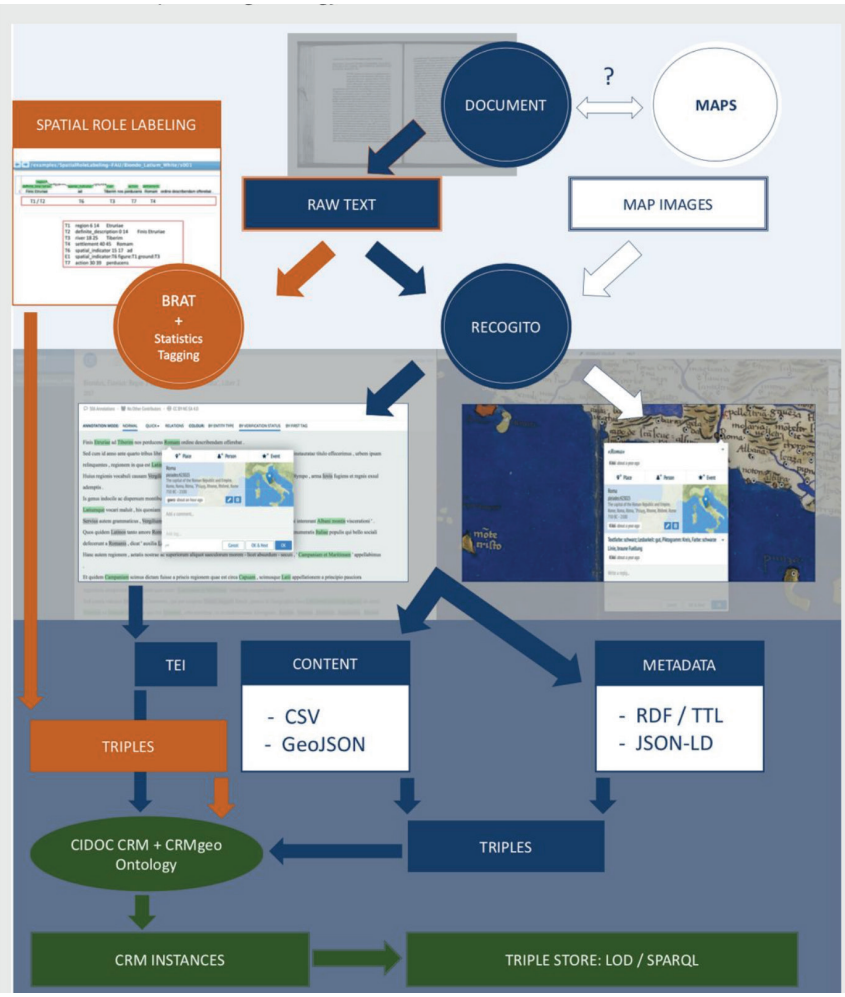
75 URL: https://researchspace.org, in particular the "Demo" link (Semantic Search).

76 Scheider *et al.* 2017.

77 Compare, for example, Constantopoulos 2008.

78 Blakemore/Harley/Dahl 1980.

Figure 4
Overview of the processing ontology.



the data found by the analytic steps to reconstruct plausible sketch maps.

Easy access to cognitive mapping can be achieved by systematically investigating the questions of "where", "what", and "when".[79] For the "where" question (i.e., spatial information in a proper sense), naming is an elementary means to determine identity. It should be noted, though, that "where" and "what" questions are not readily applicable to all languages. Hence, it is not clear how universal these markers are.[80]

For a description of places, depending on the frame of reference, a specification of states or processes and of distance and direction must be added. An example of a process specification would be a route description, how a certain place can be reached. "What" (the objective) and "when" become important for the solution of spatial problems: a set of suitable properties must be given which are useful in finding a solution by means of cognitive mapping. In other words, first of all, we have to identify the elements which are necessary for an epistemological organization of spatial knowledge. And then, in a second step, we need to develop an analogical or depictional representation suitable for computational processing. Obviously, regions and their relative positions play a key role as do directions, orientation, and distance. We argue that perceiving and identifying these elements and refering to them in discourse is an accomplishment in abstraction which has in any case also a cognitive foundation. Hence, we are considering the assembly of maps and their description in terms of those primarily qualitative categories with (qualitative) spatial reasoning in mind.

79 Levinson 2003, Landau/Jackendoff 1993.
80 For an extensive crosslinguistic overview, Levinson/Wilkins 2006; Thiering 2015.

There are several formal approaches to qualitative theories of geographic (Euclidean) space which are suitable for spatial reasoning.[81] Thus, the most obvious approach is to combine spatial reasoning with logical inferences in the framework of the formal ontology, expressed in OWL-DL. Laure Vieu has elaborated a theory which is particularly well suited for our approach.[82] On the basis of mereology as an axiomatized part-whole relation, she provides a formalization of topological concepts as well as geometrical concepts, in particular distance and orientation in first-order logic.

The Region Connection Calculus (RCC-8),[83] developed by Anthony Cohn *et al*. is an elementary topological theory with regard to qualitative spatial reasoning. An interesting question here is whether or not the theoretically identified primitives (in RCC-8, for instance) are not only epistemologically but also cognitively plausible. We are aware of the fact that testing the plausibility of cognitive salience is commonly outlined based on online psycholinguistic test designs with individual participants. Our argument is that a large database of historical encodings in texts and maps does indeed reveal fundamental spatial patterns grounded in general cognitive principles of, for example, visual perception processes. On the other hand, there are theoretical considerations which point in the same direction, such as the concept of 'primary theory' in cognition, in particular in the geographical domain.[84]

For the final step of generating a cognitive map representation of Biondo's *Italia Illustrata*, the salient data to be considered from linguistic analysis are:

- Toponyms.
- Enumeration of ethno-geographical terms including modifiers of size, shape, etc.
- Spatial relations, directions, etc., from prepositional phrases.
- Subject/object from predicate-argument structures.
- Frame of reference with the help of movement and position verbs and toponyms.

Starting with the analysis based on spatial role labeling, we plan to transform the descriptions of spatial objects and their spatial relations extracted from the text into plausible cognitive sketch maps.[85]

Cognitive-linguistic annotation results in the *figure–spatial_indicator–ground* triples – geographically adjusted and semantically enriched – that deliver a set of cognitive parameters from which we can build spatial property graphs. With the help of these graphs, we will survey the possibilities to generate plausible cognitive sketch maps, similar to the procedures outlined by Maria Vasardani and Junchul Kim and others.[86] Technically, we will fall back to the approach of 'cellular geography' developed by the geographer Waldo Tobler in 1979[87], which, built upon a coordinate grid, offers advantages over the irregular spatial polygons following political or other borderlines. Similarly, in IBM's LILOG project,[88] Mohammed Nadjib Khenkar developed a procedure for the object-oriented representation of depictions on the basis of a (coordinate) grid, the so-called 'cell matrices'.[89] Finally, these sketch maps will be evaluated in comparison to the above-mentioned geo-visualization and contemporary maps as well.

8. Conclusion

We built a semi-automatic environment designed to facilitate annotating and analyzing historical texts and maps with linguistic and geographical content and outlined a new methodology based on the generated data which may help scholars understand and compare cognitive maps. Biondo presents a number of different spaces in his (re)construction of Italy. Our main aim is to analyze historical constructions of spaces, but also the spatial encodings from a cognitive-semantic point of view. In

81 For example, Egenhofer/Mark 1995, Vieu 1997, Hernández 1994.
82 Vieu 1997.
83 Cohn *et al.* 1997.
84 See Smith/Mark 2001.
85 See Vasardani *et al.* 2013, Kim/Vasardani/Winter 2016.
86 Vasardani *et al.* 2013, Kim/Vasardani/Winter 2016.
87 Tobler 1979.
88 For an overview of LILOG, see Herzog/Rollinger 1991.
89 Nadjib Khenkar 1991.

Thiering/Berthele 2022, referring to Biondo's text, we present the different forms of knowledge represented in spatial relations and spatial perception as elaborated from these representations. Particularly in his many quotations of classical authors, Biondo makes frequent reference to their naming of places, landmarks, toponyms, and spatial relations. Facing the problem that many place names and ancient places were no longer extant or at least no longer identifiable in his time, he was unable to refer to many places as a reference system. The text also refers to a number of different semiotic encodings such as other texts and maps. These intertextual traces are one of the major tasks facing scholars in tackling spatial conceptions of the Renaissance with respect to the ancient world as the guiding spatial matrix.

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Abstract

Kurt Guckelsberger, Klaus Geus
Measurements, Maps, and Other Source Material in Biondo's Italia Illustrata: The Example of Latium

keywords – *Linked Open Data, Map annotation, Text annotation, Text analysis, Spatial cognition*

In his chorographic work Italia Illustrata, Flavio Biondo wishes to generate in his readers' minds a more or less complete image of Italy. The present paper aims at elucidating how he does that. Surprisingly, Biondo makes only sporadic use of maps. The line of thought which he expects his readers to envisage, is, in the end, an imagined itinerary: the reader is invited to follow strings of locations along the coasts, rivers, streets etc., without resorting to maps, sketches or other pictorial devices. Ubiquitous measurement data helps in qualifying and enhancing the underlying mental map or script. In this sense, Italia Illustrata must be considered a typical work of 'common sense geography' which was the master model for geographical and chorographical descriptions in Antiquity, Middle Ages, and Early modern time.

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Measurements, Maps, and Other Source Material in Biondo's *Italia Illustrata*: The Example of Latium

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Klaus Geus

1. Describing Italy in *Italia Illustrata*: Some Problems

Flavio Biondo's project of writing an *Italia Illustrata* was a huge and daunting task. It started in 1448, was cut short in 1453,[1] taken up again over a period of several months in 1462, and, sadly, was never brought to the end which Biondo originally envisaged. His work was finally published posthumously in 1474 by his son Gaspare Biondo (Biondo 1474). Although – indeed because – Biondo was a thoughtful, experienced, and prolific writer, he faced some major challenges and unexpected problems while working on his *Italia Illustrata*.[2] He himself points to this in his first chapter:

> It is very difficult indeed, amidst such huge changes in the history and topography (as those who have carefully read Roman history realize), to find a means to delimit the regions and to verify the names of their cities, towns, mountains, and rivers in proper fashion. (Est vero perdifficile in tanta mutatione rerum regionumque – quantam vident factam qui Romanas historias attente legunt – modum adinvenire dividendis regionibus, recensendisque ordine civitatum, oppidorum, montium, fluminumque vocabulis.)(1.5)[3]

In the following, we analyze and discuss some of the problems related to writing a geographical or topographical treatise in premodern times. These problems especially concern the availability and usage of Biondo's sources. In approaching the challenge, we pay particular attention to the measurement data which figure prominently in Biondo's text.

Biondo's *Italia Illustrata* is, as far as the geographical information is concerned, a mixture of different sources and literary genres. Biondo has the habit of citing his sources regularly throughout the text. They are, first and foremost, literary sources from antiquity. Among them are Ptolemy's *Geography* (clearly in a Latin translation), Strabo's *Geography* (most probably in Guarino's then unpublished Latin translation),[4] Pomponius Mela's *Chorography*, and – because of the geographical information connected with Hannibal's campaigns in Italy – Livy's *History of Rome*. Of primary importance for the geographical framework of *Italia Illustrata* are Pliny the Elder's chapters on Italy in his *Natural History* (III.95–131). Biondo cites – and uses – Pliny more often than any other geographical author. He even considers Pliny more reliable than Ptolemy, the ultimate authority in geographical matters in the fifteenth century.[5]

But, as figure 1 and figure 2 below show, Biondo is not shy of diverging from his Roman literary model, Pliny. His changes are not only 'updates' of nomenclature or historical transformation, often involving the insertion of modern towns into his text, but also concern traditionally held factual truths, like the boundaries of regions or the numbering and ordering of the Italian regions.[6]

1 On the genesis of the *Italia Illustrata*, see esp. Biondo 1927, p. 241; Gentile 1992; Salmeri 1988, pp. 303–305; Paolo Pontari's introduction, in Biondo 2011; and Dalché 2017, esp. p. 370.

2 The concept of physical changes to the human environment, especially regarding toponyms, can be traced not only to Petrarch and Boccaccio, see Gentile 1992, but to Pliny's *Naturalis historia* (VI.105): "[…] quae omnia […] nomina apud neminem priorium reperiuntur, quo apparet mutari locorum status."

3 The English translations are our own.

4 See Diller/Kristeller 1971; see Geus 2020.

5 See 12.36: "Ptolemy lists Ortona, along with the mouth of the Aterno, as being in Paelignian territory. But Pliny (who when it comes to Italian matters is in my view more trustworthy) assigned the whole stretch from the mouth of the Aterno to the territory of Larino to the land of the Frentani. Not only that, but Ptolemy himself puts the city of Frentana to the left of the Aterno, where Francavilla now is, as Pliny does too, so that I am quite sure that either Ptolemy's map was distorted [*ut aut Ptolemaei picturam esse depravatam*], since it is self-contradictory, or his informants were in error."

6 In 1.7 Biondo claims that Iginius (elsewhere "Hyginus", i.e., the 'Ravenna

Figure 1
The Regions of Italy according to Pliny. Image by the authors.

Figure 2
The Regions of Italy according to Biondo. Image by the authors.

Why does Biondo choose different boundaries to Pliny? And how does he do it? A key may be found in 12.1, where Biondo, when starting to describe the region of Abruzzo, drastically modifies the traditional boundaries (see figure 3).[7]

Here Biondo writes of the remaining regions to be described (Samnium, Campania, Apulia, Lucania, and the territories of the Salentini, Calabri, and Bruttii). These seven regions had since been fused into a single entity called "the Kingdom" ("septem hae regiones in unicam regni appellationem sunt confusae").

The political landscape of central and southern Italy had drastically changed in the century before Biondo, and therefore so too had the organization of the different regions.[8] In the same passage Biondo goes on to say:

> [...] what and where the enemies of these regions in more ancient times did will be easily gathered from the Histories of our ancestors or from my own, and will be easily expounded through the individual descriptions of cities and places, as I have done earlier [...]

Cosmographer') and Guido of Pisa knew of 700 towns in Italy see Parthey/Pinder 1860, 249.15-287.17 but Biondo, who follows the *Romanae ecclesiae stilum* (i.e., *loca quae episcopos habent*), counts only 264, ignoring 40 civitates, which now belong to other dioeceses. Biondo concludes from these numbers that since the time of Guido (which was, according to his statement in 1.8, around 600 years ago), 396 towns or settlements had been destroyed or abandoned. He adds his personal observation that more than 30 civitates et oppida were razed to the ground in his own lifetime. That Biondo cites a number of 700 towns is puzzling. In the standard edition of the *Ravenna Cosmography* we find 492 entries. Subtracting the number of duplications in the text and adding the additional toponyms from Guido's periplus in Book V of his *Geographia*, we arrive at approximately 450 towns at the very most. This huge discrepancy is difficult to explain. As the first edition was only published by David Placidus Porcheron in 1688, Biondo may have had access to more or different manuscripts than the surviving three (now in Paris, Basel, and the Vatican).

7 In this sketch the previous two maps are superimposed to emphasize the changes Biondo introduces with his textual mind-map of Latium compared to Pliny's earlier version (broken lines). Only the Tiber, Biferno, and Sele rivers remain as defining features. The former unity of Latium and Campagna is now divided along the Liris/Garigliano. Pliny's Samnium is redeployed with regio Latina advancing to the main ridge of the Apennines. Ancient Picenum, once reaching from the River Esino to the River Pescara is nearly cut in half to form newly founded Aprutium between the Tronto and Biferno (14.1: "Having dealt above with the region of the Samnites on the right bank of the River Biferno, I should have passed over to the left bank and started on Puglia"). Finally, Umbria advances from the River Nera to the Aniene, barely three miles from Rome.

8 For the concept of "regional geography" in early modern times, see esp. Tolias 2015.

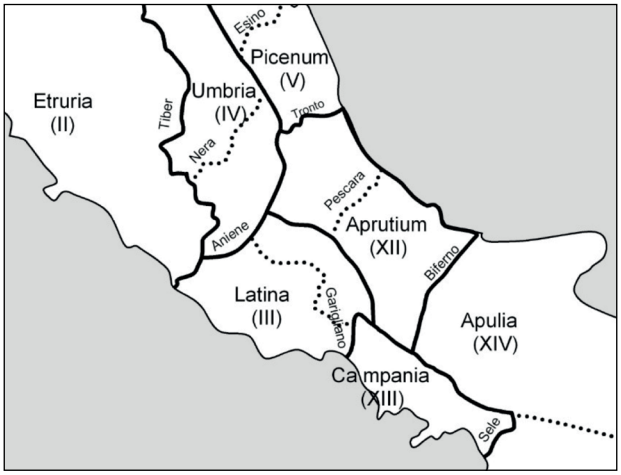

Figure 3.
Regio 12 (Aprutium/ Abruzzo) in Biondo's *Italia Ilustrata*.
In this sketch the previous two maps are superimposed to emphasize the changes Biondo introduces with his textual mind-map of Latium compared to Pliny's earlier version (broken lines). Only the Tiber, Biferno, and Sele rivers remain as defining features. The former unity of Latium and Campagna is now divided along the Liris/Garigliano. Pliny's Samnium is redeployed with regio Latina advancing to the main ridge of the Apennines. Ancient Picenum, once reaching from the River Esino to the River Pescara is nearly cut in half to form newly founded Aprutium between the Tronto and Biferno (14.1: "Having dealt above with the region of the Samnites on the right bank of the River Biferno, I should have passed over to the left bank and started on Puglia"). Finally, Umbria advances from the River Nera to the Aniene, barely three miles from Rome.

> ([…] a maiorum aut nostris Historiis sumere et per singulas civitatum locorumque descriptiones [sicut supra fecimus] edocere […]).(14.1)

Biondo explicitly enumerates the sources he has used in his previous chapters. Interestingly, these are descriptions – not maps – of cities and places.[9] Note also that such *descriptiones*, i.e., literary texts, often consisting of simple lists of place names, remained popular until the eighteenth century. If one only takes into account the literature of the 'Western' world, the tradition harkens back to the Catalogue of Ships in Homer's *Iliad* (II.494–759), if not earlier. Ancient geographical literature such as Strabo's *Geography*, Pomponius Mela's *Chorography*, and the books on Europe, Asia, and Africa in Pliny's *Natural History* were full of lists and lacked maps, which, after all, were expensive and difficult to produce (and reproduce). As modern geographical information systems are mostly image-based (atlases, GPS systems, Google Earth, etc.), it is sometimes not easy for us to appreciate the importance of such lists and the skill of authors who compiled, arranged, and 'narrated' seemingly endless lines of place names.

Of course, the lists and borders in Biondo's sources needed to be updated and organized according to contemporary (i.e., fifteenth century) administrative and ecclesiastical domains. How exactly Biondo approached this kind of updating remains unclear. He almost exclusively quotes authors from Greco-Roman and early medieval times. That he indeed makes use of very few contemporary sources can be gleaned from a passage in the *Additiones correctionesque Italiae illustratae*. In this passage, Biondo claims that he has prefaced the original version of his *Italia Illustrata* with a catalogue of the authors of his time. It was later deleted by the "perfidious bishop" (Francesco Condulmer?) who brought his work – prematurely – to light ("viros aetatis nostrae in catalogum principio promissum multis in operis urbibus et oppidis a me positos").[10] As such a catalogue has not come down to us, we can only speculate about the quantity and quality of contemporary authors. Occasionally, Biondo mentions modern historical and regional studies (for example, Leonardo Bruni's *History of the Florentine People*) which was surely important for his own chapter on Etruria (Tuscany) in the *Italia Illustrata*. It is difficult to make an educated guess as to the extent of use of contemporary sources. This is especially true for the source material outside the humanist canon of exemplary authors: travel reports, archival material, administrative documents, oral sources,[11] and

9 For the current *communis opinio* that Biondo depends heavily on maps, see, for example, Stauber 2005, p. 294, (here in translation): "Time and again, Biondo's basic idea of roaming, wandering through the country is to be heard, and, correspondingly, a *cartographically* [our emphasis] inspired ordering of the lore and maps [our emphasis] were of importance for Biondo's work." ("Immer wieder klingt bei Biondo die Grundidee des Durchstreifens, des Durchwandern des Landes an, und entsprechend wichtig war ein kartographisch inspiriertes Ordnen der Überlieferung und waren Karten selbst für Biondos Arbeit.") Especially on the use of maps, see Clavuot 1990, pp. 55–84; see also Clavuot 2007, p. 146: "ausgiebig von Kartenmaterial Gebrauch gemacht". See also Pontari 2009b; Pontari 2009a; Pontari's extensive introduction in Biondo 2014, pp. 155–178; and rather more cautiously now Tanja Michalsky, who speaks of "mental maps" from a historical point of view, see Michalsky 2019. We cannot discuss Biondo's use (or non-use) of maps here due to the constraints and objectives of this article. We plan to come to this point in another paper soon.

10 Biondo 2016, appendix 1.2. One may wonder why Biondo (or his son) did not insert this list into the book again. Did the author (or the editor) feel it was no longer up to date?

11 The role of oral reports (and, probably,

– perhaps – regional maps may have been used by Biondo. But, again, this falls into the realm of speculation.[12]

2. Describing Italy Without Maps

Despite the huge differences between the regions of Italy in terms of morphology, culture, and history, Biondo constructs and narrates spaces throughout his work in a rather stereotypical fashion. Of primary importance are the waterways. The larger regions in Italy are mostly shaped by the coastlines and by the rivers emptying into the sea. Quite often, rivers subdivide these larger regions into smaller units, thus also structuring the interior of the country.

> The Puglia chapter at the end of Biondo's work illustrates his method. It consists of only eight paragraphs but contains no less than 57 toponyms[13] and 23 distance specifications. As we may be dealing here with a section of *Italia Illustrata* that has to a large extent remained a fragment, it is best suited to study Biondo's methodology. At the very beginning[14] we find an explanation for his approach:
>
> Having dealt above with the region of the Samnites on the right bank of the River Tifernus [Samnium or Aprutium in regio 12], we could have passed over to the left bank of the river and started there with Puglia; but we were obliged to describe Campania first, because Campania is connected[15] with Samnium (as was shown before). But with Campania completed, we therefore must go back [to Puglia].
>
> (Oportuit supra Samnitium regione ad Tiferni amnis dexteram a nobis expedita ad eiusdem fluvii sinistram transire et ibi inchoantem Apuliam exordiri, sed connexam [sicut ostensum est] Samnio Campaniam prius describere coacti fuimus. Itaque ad Apuliam, finita Campania, redeundum est.)(14.1)

Here Biondo explains why he feels the urge to abandon the 'natural' course of his narrative. And here, as elsewhere,[16] we see Biondo prioritizing historical considerations over geographical ones. In the following, Biondo, like a virtual ship captain, cruises along the Adriatic coastline of Puglia to the mouth of the first river, Tifernus (Biforno), which he follows upstream. In the beginning, he only names the places lying on the one side (the right-hand side) of the river. The distances between the locations are indicated in miles, whenever they are known to him. Having arrived at the source of the river, Biondo does not 'sail back', now describing the locations on the other (left-hand) side of the river, but instead starts his voyage anew at the mouth of the River Tifernus.[17] This 'redeployment' was probably induced by his source material. Having again reached the source of the river, Biondo now turns to the second Apulian river, the Fortorius/Fortore, the mouth of which is claimed to be twenty miles from that of the River Tifernus "along the coast [*viginti milia passuum in litore distat*]" (14.4). And once again, the virtual cruising along the river enables Biondo to enumerate the towns, castles, lakes, etc. in the interior of Puglia. This kind of narrative – which is reminiscent, *mutatis mutandis*, of a string of pearls or rosary – is both simple and effective.

Again, it harkens back to ancient times, when geographical authors like Strabo and Pliny employed it on a regular basis to describe regions

autopsy, too) is underestimated in modern scholarship. Biondo did indeed question the locals for geographical information. See, for example, 13.18: "But who later effected the relocation of the city to a spot two miles away, where it is now, and when I have been unable to find out, either from reading or from the local inhabitants [ab his, qui inhabitant civibus]…".

12 Biondo makes mention of maps only six times in his whole *Italia Illustrata*, citing only the "maps of Ptolemy", "carte nautiche", and the mysterious "carta d'Italia" of Petrarch. See, for example, Pontari 2009a. For Petrarch's map, see also Cesareo 1904; Cesareo 1918; Siragusa 1918; and, for its cultural context, Bouloux 2002; Bouloux 2006; and Edson 2008.

13 We find 51 toponyms, excluding those of 14.1, and 57, if one includes the overview.

14 In 14.1 Biondo also gives a general overview where Bari, Aequum Tuticum, Argyrippa, and Tarentum are located in (our understanding of) Apulia, before starting his proper description of Puglia in 14.2.

15 White, in Biondo 2016, p. 351, translates connexam with "adjacent" but, clearly, the relation between Samnium and Campania is more than a 'topological' connection.

16 See, for example, 3.3: "Near the mouth of the Aniene, where it enters the Tiber, but beyond it in the region of Umbria, was where I calculate the ancient city of Fidenae was located. In his Life of Tiberius, Suetonius writes of Fidenae […]." Biondo then goes on to describe the "Umbrian" city in his chapter on Latium.

17 We have not found any instance where Biondo does not adhere to his alternate definition of orientation on a river. One always finds him looking upstream, regardless of starting point: the sea, a tributary, or even a shore of a lake. Our modern convention of looking downstream was only instituted in Germany in the Eighteenth century (see, for

and spaces without resorting to a map (arguably resorting instead to a cognitive map). We may call Biondo's method 'hodological' (from the Greek *hodós*, for road, path, way),[18] as the reader is left without a bird's-eye view, i.e., without a cartographic perspective of the region, and has instead only the 'street view' of someone traveling virtually along a road or coastline (or any other route).

Sticking to such a 'one-dimensional' view has certain consequences. For one, the transmitted distances between two locations are rarely meant as linear distances, but as routes along roads or coastlines, which deviate more or less from any lines that may be drawn 'as the crow flies'.[19] Such distances, regularly expressed in miles (or rather, in steps, as a mile is defined as 1000 steps: *mille passuum*), are contingent to many factors, among them the length of the stride, the morphology of the terrain, the condition of roads, the currents of the waterways, the possible existence of barriers and obstacles, etc. In fact, in premodern times, when there was no practical means to measure distances between towns, distances were either calculated or rather counted in steps or recalculated based on the amount of time (normally in hours) spent walking or sailing. It goes without saying that distances in this 'hodological' system provide a relatively good estimation of the time required for a journey between any two points, but are difficult to use and adapt for a cartographical or geographical representation of space. In other words, depending on the context, distances can be of either a more 'practical' or more 'theoretical' nature.

Biondo is obviously aware of this intrinsic problem. For him, distances are neither geometrical lines nor simple roads. Therefore, every once in a while, he adds some qualification to his measurement data, as the following in his Aprutium (Abruzzo) chapter (14.54): "[…] these places are ten miles from Beneventum (at the points where the crossing of the rivers is possible) [absunt haec loca a Benevento (fluviis ubi expedit transmissis) decimo [sc. miliario]]".[20]

While the number of distances transmitted by Biondo is impressive in itself, he is also interested in the *quality* of the data. As Biondo often cites the sources of the measurement data – in nearly all instances works from Greco-Roman antiquity – this underlines his broad reading and diligent extraction from sources.[21] Apparently, he pays much attention to distances throughout his work, which eventually resulted in a considerable amount of metrological information. Sometimes, he even makes an explicit effort to evaluate his data by refining his numbers with certain qualifiers like "plus/minus" (3.8). To his mind, informing the readers about the exact distances is an integral part of his endeavor. But distances are rarely simple elements of geographical information. Distances are very important for conveying a *sense* of spatiality.[22] By using words and

example, Wikipedia, URL: https://de.wikipedia.org/wiki/Orographisch_links_und_rechts, accessed 20.04.2020). For the upstream/downstream perspective in early Greek prose, especially Herodotus, see Boshnakov, forthcoming.

18 See Janni 1984. This hodological principle can be interpreted as the application of a device known from ancient rhetoric and mnemonics (described in Engels 2006, p. 409) to transform complex entities into linear structures and to connect the various elements of this scheme. With the help of measurement data it is even possible to define the size and distances of these elements and thus make them well-structured and reproducible for others.

19 Very rarely, Biondo gives linear distances, qualified as being "on a straight line, directly [recto itinere instituto]", for example, in 3.21, between Velitrae and Sarmineta. In Biondo 2005, p. 110, White translates the passage concerning the distance between Viterbo and Valeria as: "six miles […] as the crow flies […]." But this is not in the Latin text and contradicts Biondo's geographical vocabulary, with ad sextum lapidem ("at the sixth milestone") being reserved for distances along roads. In modern literature, such deviations are often exaggerated. In a few cases they may even yield multiples of the linear distances and contribute to some geographical confusion and misconceptions in geographical literature. On the contrary, as our database on measurement data shows, on average, such deviations are approximately 30 percent off. Ingeniously, Ptolemy in his *Geography* (I.12.3; cf. I.13.2) gives the practical advice of shortening such distances by a third in order to arrive at the linear distance.

20 As an example, see also 4.18: "Close to these [towns] and to Interamnia [Terni], too – were it not for the River Nar [Nera] – is Sanctus Geminus [San Gemini], a prominent town in the region [of Umbria]." The 'proximity' of a place – in this case between Interamnia/Terni and Sanctus Geminus/San Gemini – is clearly not measured in terms of distance (which here is approximately twelve kilometers or eight miles), but by the accessibility of a place, which was apparently obstructed by the flow of the river. Both modern Terni and San Gemini are located north of the Nera but the ancient name of Interamnia (literally, "between the rivers") shows that Terni was thought to lie to the south of the Nera.

21 We tend to think here – to a large extent – of textual sources, as it is difficult to read off distances from premodern maps, which either have no scale whatsoever or often exhibit toponyms of settlements which lie only a few kilometers from each other. Only the *Tabula Peutingeriana* and, centuries later, Erhard Etzlaub show numbers in miles next to the intervals.

22 See, for example, Thiering 2014.

numbers, Biondo evokes mental images not only of the absolute and relative location of places, but also of the intervals between them and thus of the position, shape, and size of the regions described in *Italia Illustrata*.

3. Measurement Data According to the Regions in *Italia Illustrata*: Some Remarks

> So in describing the eighteen regions of Italy (excluding the islands) – for we determined that she could be most conveniently divided so – we shall follow that nomenclature (out of the many possible) that is most familiar to our era [quae cum in aetate nostra sint notiora][23] and seems best adapted to my purpose. These names are: Liguria (or the Genoese territory), Tuscany (Etruria), Latium (or Campania and the coastal region [Campania et Maritima]), Umbria (or the Duchy of Spoleto), Picenum (or the March of Ancona), Romandiola (or Flaminia et Aemilia), Cisalpine Gaul (or Lombardy), Venice, Transpadine Italy (or the March of Treviso), Aquileia (or Foroiuliana), Istria, Samnium or Aprutium, Terra di Lavoro (or Old Campania), Lucania, Apuglia, the Salentines (or Terra d'Otranto), Calabria and the land of the Brutii.(1.9)[24]

For reasons explained in quite vague detail in the appendix titled *Additiones correctionesque* in later editions, Biondo was unable to finish the task he himself outlined in the passage cited above. *Italia Illustrata* has remained a torso. Out of the eighteen regions of Italy mentioned in his introduction, the last four are not treated at all. And the fourteenth region, Puglia, contains some features that suggest it was worked on hastily, not the least because, as can be seen from Biondo's text cited above, Puglia should have come behind Lucania as *regio* 15.

In the following, we discuss the measurement data in Biondo's *Italia Illustrata*. As outlined in the previous paragraph, distances play a crucial role in establishing a cognitive map[25] of Italy in the minds of Biondo's readers. We present some numerical tables for the whole *Italia Illustrata* at the outset, then analyze Biondo's source material, and finally go into detail by looking at Biondo's Latium chapter more closely. A summary will conclude our findings.

Figure 4 presents the toponyms and distances in Biondo's *Italia Illustrata*, arranged according to the fourteen regions he describes.[26] The first two columns give the number and names of the regions in Biondo's ordering.[27] As Biondo has a paragraph on the size of Italy as a whole (1.3), we have excluded four distance specifications on the length and width of Italy contained therein. On the other hand, we have included from the *Additiones correctionesque* the toponyms and distances for Liguria and Etruria. The third column shows the number of words for each chapter. As Paolo Pontari's definitive "national edition" has not yet been completed, we have used Jeffrey A. White's version of 2005–2016.[28] The fourth column states the number of *regional toponyms*. In this, we excluded generic terms like "Italy", "Latium", or the "Tyrrhenian Sea", names of locations which do not in fact lie in the described region (for example, Alexandria in Egypt, or Verona, which

23 In 1.11, Biondo is more precise: "[…] regarding it sufficient if I adapt to our own times the regional division of Italy obtained while the Roman state was at the height of its power (satis fore tenemus, si divisionem Italiae, quae Romana re publica florente fuit, nostris temporibus accomodare poterimus)." In his 2005 translation (Biondo 2005, p. 11), White translates *res publica* here with "Republic", which we consider wrong in this context: the Roman state was at the height of its power and most expansive in imperial times.

24 For the sake of clarity, we do not follow in our translations an abstract rule in nomenclature but use interchangeably the Latin, old Italian, and modern names, selecting according to the context the ones which we deem most common and familiar to our readers.

25 In recent years, some scholars – Martin Thiering first and foremost among them – have advocated the utilization of theories and methods of cognitive linguistics in a diachronic perspective. This novel approach, adopted by the Berlin 'Common Sense Geography' group, first bore fruit in Geus/Thiering 2014. See also Dan *et al.* 2016; and Geus/Thiering, forthcoming.

26 See also the contributions by Thiering and Berthele in this volume; and Richter in this volume.

27 From regio 8 (*Venetiae*) through to regio 9 (*Histria*), attributing toponyms is complicated by the fact that Biondo states in Regio 8.2 that: "the region of the duchy is 80 miles long from Aquae Gradatae/San Canzian to Lauretum/Loreo […] and variable in breadth (habet autem eius ducatus regio longitudinem milium octoginta, ab Aquis olim Gradatis […] Latitudo autem varia)." The problem arises from the fact that San Canzian is east of the Isonzo and some coastal towns belong to Venice but are again listed as being in either regio *9* or regio *10*. Here we have chosen all names mentioned in regio 8 south of the swamp line, as compared to places mentioned in *regio 9* and regio *10*. The sole remaining ambiguity is Monselice near Este, but that was only mentioned in regio 8.

28 A preliminary comparison shows only minuscule differences in terms of toponyms and distances.

Number	Region	Latin text word count	Toponyms	Toponyms per 10,000 words	Distances	Distances in miles	Distances in other measure-ment units	Distances per 10,000 words
(0	**Praefatio (+ Italy)**	**619**	-	-	**4**	**4**	-	**65)**
1	Liguria	3840	56	146	16	15	1 (strides)	42
2	**Tuscany**	**9049**	**215**	**238**	**19 (+ 5 AeC)**	**19 (+ 5 AeC)**	-	**21 (27)**
3	Latium	10125	143	141	53	45	8 (strides, stadia)	52
4	Umbria	4827	108	224	18	17	1 (stadia)	37
5	Picenum	4465	101	226	33	30	3 (feet, stadia)	74
6	Romandiola	9407	249	265	31	30	1 (stadia)	33
7	Lombardy	8636	389	450	10	9	1 (day's journey)	12
8	Venice	3633	25	68	1	1	-	3
9	**Transpadine Italy**	**6498**	**125**	**192**	**7**	**7**	-	**11**
10	Aquileia	1375	31	225	6	5	1 (day's journey)	44
11	Istria	1448	29	200	14	13	1 (feet)	97
12	Samnium	11,001	366	333	54	53	1 (stadia)	49
13	Campania	9674	36		37	31	6 (feet, stadia)	38
14	**Puglia**	**1259**	**53**	**421**	**23**	**23**	-	**183**
	Sums	**85,856**	**1926**	**224 (average)**	**326 (+ 5 AeC)**	**302 (+ 5 AeC)**	**24**	**83 (average) (39 AeC)**

Figure 4
Toponyms and distances

is mentioned in the Liguria chapter: "a Plinio Veronense"), variants of names, subcategories (for example, a church within a settlement or town), anonymous towns, and – quite often – mountains and rivers. Mountains and rivers are included, however, whenever Biondo indicates a specific 'landmark' in association with them, such as the source or mouth of a river, or a part of a mountain, island, or coast. In other words, we have taken "toponym" to mean "point in the landscape". The sixth column states the number of distances in the chapter.[29] Distances are defined here as the "extension of space between two points on a measured course". The "extension" is usually expressed in a specific unit of measurement and defined by a certain quantity. "The distance from A to B is x miles" is an example of the standard phrasing used in Biondo's *Italia Illustrata*. In most cases, Biondo's mile is the traditional Roman mile, equaling, roughly,[30] 1.5 kilometers. This can be inferred from passages when Biondo feels compelled to make a conversion to the 'modern' mile[31] or adds a qualification to his numerical statement,

29 Distance specifications concerning measurement across boundaries are counted separately.

30 As mentioned above, the Roman mile simply equals 1000 steps, the latter contingent to the height of the body, the terrain, weather, and other factors.

31 See 1.38: "The ancients have passed on to us a figure for the length of the Ligurian coast which we have surveyed from the River Varus to the mouth of the River Macra as being more than 211 miles, but in our

like "as today [*ut nunc*]".[32] That said, however, he also uses other units of measurement, like feet,[33] steps,[34] stades,[35] or day's journeys,[36] often depending in each case on his ancient and medieval sources. In our statistics, we have not included unspecific general statements such as "in the vicinity" or "not far from" and have only included *numerical* distances.[37]

The fifth and eighth columns give the numbers of toponyms per 10,000 words in *Italia Illustrata*, which helps us understand how often distances appear in the text and how Biondo attempts to create a mental map of Italy.

In all, we find 297 distance specifications in the *Italia Illustrata*. As an average, this equates to 21 stated distances per region or a ratio of 423 words of description per every numerical distance. For the sake of comparison: Strabo's *Geography*, which lends itself to comparison with *Italia Illustrata* in scope and form, has an average of 77 measurements of distance per country (or more exactly, 65 for the northern part of Italy and 94 for the southern), which in turn equates to a ratio of 211 words of description for every numerical distance.[38] This means that Biondo conveys less than half the measured distances that Strabo gives over the same amount of words. Even if we do account for differences in language, historical period, and topic, the discrepancy is nevertheless remarkable. To our mind, it cannot be explained merely by the difference in availability of source material. In fact, the most comprehensive collection of measured distances in the Greco-Roman world, the *Itinerarium Antonini* or Antonine Itinerary, which contains nearly 2900 distance specifications, was indeed known to Biondo – he actually quotes it twice in his *Italia Illustrata*.[39] However, it remains, strangely enough, hardly exploited, if at all, in this regard. The same holds true for the eighth-century *Ravenna Cosmography*, which Biondo attributes to a "Guido of Ravenna" or "Guido Presbyter of Ravenna".[40] Most likely, Biondo's approach to the topography of Italy was induced by *historical* rather than geographical considerations. As we have seen while discussing the changes of the regional border made by Biondo, his 'Herodotean' objective consists in battling against historical oblivion. Geographical exhaustiveness is not his primary goal.

We turn now to the measurement data in Biondo's chapter on Latium, which contains 53 distance specifications.[41] Several of them are taken from Strabo's *Geography*.

4. A Change of Plan? Biondo's Latium Chapter

> In order to follow the most knowledgeable author in antiquity and also Pliny (who drew on him), we are compelled to attach the region of the Latins to our present-day Campania and the coastal region [Campania et Maritima]. And I do not know for sure as to whether I can do justice to the present-day Latium in the same way as I could do justice – with the help of Livy of Padua, the divine Augustus, Vergil, Strabo, and Pliny – to the ancient times […]
>
> (Unde peritissimum hunc vetustatis scriptorem et simul Plinium [qui ab eo sumpsit] secuturi, eam Latinorum regionem nostrae nunc Campaniae et Maritimae cogimur applicare. Nec satis scio si in nostra Latina regione rebus praesentibus

era the length is calculated as hardly 180 miles"; 12.24: "[Hadria] was three miles from the sea according to Pliny, but five miles as calculated now". See also 3.13, where Biondo has a conversion rate of 1:5 (instead of 1:8) for miles:stades. Cf. also 13.4.

32 13.4.

33 5.6; 11.3; 11.8; 13.30; 13.56.

34 1.22; 3.15; 5.14.

35 3.5; 3.8; 3.11; 3.12; 3.13; 3.40; 4.10; 5.7 (where White, vol. 1, p. 253, translates secundo […] stadio as "a quarter of a mile"!); 6.58; 12.58.

36 7.44; 10.5.

37 To cite just a few examples in Latin: "paululum abest" (1.35), "paribus prope intervallis" (1.35), "remotius ad sinistram" (2.14), "proximo" (2.21), "paulo inde abest" (2.25), etc. It needs to be added here that we find far fewer expressions of such kind in Biondo than in ancient authors like Strabo and Pliny. The scope of this paper prevents us from discussing this interesting element of common sense geography.

38 See Geus/Guckelsberger 2017.

39 In 7.4, Biondo quotes among his sources the Itinerarium Antonini, but makes no use of it for the many distances it offers for Lombardy. In 12.55, Biondo writes: "Nam Antoninus Pius in Itinerario viam describens a Benevento ad Columnas, ad Mercurialem primum, post ad Matrem Magnam posuit." Neither the plural "ad Columnas" nor the site of Mercurialis are mentioned in the Itinerarium Antonini. Is Biondo perhaps playing here with the homonymy of Columna in order to flatter his patron Colonna?

40 1.7; 1.8; 12.43; 13.24, see also note 6.

41 We do not include measurement data which feature as 'non-itinerary' expressions, such as "the Neptunians cover all the shoreland's dunes of ancient Antium with continuous netting for a space of five miles" (3.7) or "circuit of the island of Circeo as being eighty stades" (3.11).

ita satis potero facere sicut Livii Patavini, Divi Augusti, Vergilii, Strabonis [...])(3.2)

In the Latium chapter, Biondo claims to follow – among other authors like "Augustus",[42] Vergil,[43] and Livy[44] – both Strabo, "peritissimum hunc vetustatis scriptorem" (3.2), and Pliny, who allegedly drew upon his predecessor.[45] The last statement is pure guesswork on Biondo's part. Nowhere in his *Natural History* does Pliny mention Strabo and according to modern scholarship it is questionable that he even knew his writings.[46]

While Biondo names more than 200 toponyms and ethnonyms in this chapter, 143 can be defined as toponyms of Latium.[47]

Here is a list of the toponyms in Biondo's Latium chapter (3.3ff.):

1 = Ostia; 2 = Antium; 3 = Neptunium; 4 = Lanuvium/Lavinia (White: Civita Indivina Prosperi Columnae cardinalis); Lavinium (the reading has rightly been emended to Lanuvium); 5 = Ardea ; 6 = Astura/Astur; 7 = Mons Circeius/Oppidum Sanctae Felicitatis; 8 = Pontine Sea; 9 = Terracina/Terracinae/Anxur/Anxurus/Amyklai; 10 = Satura; 11 = Praetorium; 12 = Formium/Formiae/Formia/Hormiae; 13 = Fundana/Fondi/Funda; 14 = Villa; 15 = Lacus Fundanus; 16 = Itrum; 17 = Caieta; 18 = Turris Sancti Anastasii; 19 = Spelunca/Sperlonga; 20 = "well-known village"; 21 = Castellonum oppidum et Honorarum villa; 22 = (island of) Pandana; 23 = (island of) Pontia; 24 = Caecubum; 25 = Sinuessa/mouth of Liris/Gaurianus; 26 = Speninum; 27 = Fractae; 28 = Pons Corvus (Fregellae); 29 = Ceperanum; 30 = Marinum/Villa Mariana/Portium/Marianum; 31 = Velitrae; 32 = Cora; 33 = Mons Catilius; 34 = Sarmineta; 35 = Aquae Foetidae; 36 = Setia; 37 = Privernum; 38 = Maientia (oppidula); 39 = Gorga (arx); 40 = Sicca (arx); 41 = Somnianum; 42 = Alba; 43 = village of the Savelli (with monastery); 44 = Aricia; 45 = Forum Appi/Fossa Nova; 46 = Columna; 47 = Valmontonum (= Lavici?); 48 = Gallicanum (= Gabii?); 49 = Praeneste/Palestrina; 50 = Cavae; 51 = Zinazanum; 52 = Anagnia; 53 = Ferentinum; 54 = Frusinona; 55 = Pallianum; 56 = Serronum; 57 = Pillium; 58 = Acutum; 59 = Trivilianum; 60 = Colla Pardi; 61 = Anticulum; 62 = Verulae; 63 = Alatrum; 64 = Babucum (= Bovillae); 65 = Turritium; 66 = Pofae; 67 = Vicus; 68 = Ripae; 69 = Porcilianum; 70 = Trevum; 71 = Felectinum; Lavicanum/Lavici/Lavicum/Valmontone (= no. 47); 72 = Monsfortinus; 73 = Zanchatum; 74 = Gavignanum; 75 = Signia; 76 = Scurcula; 77 = Merulum; 78 = Supinum; 79 = Patrica; 80 = Caecanum; 81 = Castrum; 82 = Tibur; 83 = Vicus Varroni; 84 = Portella; 85 = Cantalupum; 86 = Rivus Frigidus (mountain); 87 = Arceolum/Carseoli; 88 = Cellae; 89 = Sculcula; 90= Peretum; 91 = Taliacotium/Tallacoccium; 92 = Valeria/(= town of the) Marsi; 93 = Alba (probably not the same as no. 42, but Alba Marsorum); 94 = Marubia; 95 = Sanctus Apetitus

42 With the "divine Augustus", Biondo is surely thinking of the so-called *Divisio orbis terrarum*, a late-antique topography, which claims to have been initiated by Augustus: "Terrarum orbis divitur tribus nominibus: Europa, Asia, Libya. quem divus Augustus primus omnium per chorographiam ostendit" (*Praefatio*).

43 The mentioning of Vergil/Virgil in this context may come as a surprise here. But the laudes Italiae passage in the second book of Vergil's *Georgics* was considered not only a literary masterpiece but also a traditional model in terms of topography.

44 Due to his description of Hannibal's campaigns in Italy, Livy's *History of Rome* is, next to Pliny, Biondo's most important source for his Latium chapter.

45 On the coastline of Latium, Pliny (NH III.56) says: "[formerly] from Ostia to Circei 50 miles". The *Tabula Peutingeriana* has it as 70 miles; the geodesic would be 87 kilometers or 1.74 kilometers/mile for Pliny and 1.24 kilometers/mile for the T*abula Peutingeriana* (which equates to a 16 percent discrepancy, which is reasonable). Pliny then goes on to state "from whence the name Latium reached as far as the River Liris", before listing several points along the coast, starting with Ostia, the town of Laurentum, the sacred grove of Jupiter Indiges, the River Numicius and Ardea, the former site of Aphrodisium, the colony of Antium, the river and island of Astura, the River Nymphaeus, the Clostra Romana, Circeii (formerly an island), the River Ufens, the city of Terracina ("called in the language of the Volsci 'Anxur'"), Amyclae, a cave, Lake Fundanus, the port of Caieta, the town of Formiae (formerly Hormiae), the town of Pyrae, the colony of Minturnae, through which the River Liris flows (also known as the Glanis), and the town of Sinuessa – the last point of the new Latii (NH III.56–60). We do not claim that Biondo is citing Pliny here, but it is useful to compare the distances with those Biondo read elsewhere. This also highlights the reliability of ancient sources in the area. At the very least, such a literary comparison gives us a sense of the 'variability' in the length of a mile, as compared to those which Biondo reports.

46 For Strabo as a source for later authors, see Sørensen 2017.

47 As outlined above, we have neither included toponyms from other regions and countries (e.g., Capua, Olympus, Crete), nor names of rivers or roads (except where they form a crossroads), nor parts of a city (e.g., a temple or forum), nor names of peoples (e.g., Ausoni), nor areas (e.g., Campus Pontinus). If a toponym shows up more than once in Biondo's narrative, we have assigned the number according to its geographical position.

(castellum); 96 = Sancta Iona (castellum); 97 = Paternum; 98 = Transacum; 99 = Gaianum; 100 = Avecianum; 101 = Mallianum; 102 = Celanum; 103 = Piscina; 104 = Oppidum Veneris; 105 = Viticula; 106 = Castrum Vetus; 107 = Gorgianum; 108 = Rhoca Cavarum; 109 = Guadagnolum; 110 = Folium; 111 = Casa Corbola; 112 = Sanctus Gregorius; 113 = Rocha Liricis; 114 = Caecilianum; 115 = Sambuca; 116 = Sarracinescum; 117 = Rocha Mutiorum; 118 = Giranum; 119 = Ceretum; 120 = Anticulum; 121 = Rivate; 122 = Afile; 123 = Civitella; 124 = Olibanum; 125= Piscianum; 126 = Sanctus Vitus; 127 = Sublacum/Sublaquaeum; 128 = Tusculum; 129 = Sanctus Iohannes in Campo Horatii; 130 = Sancta Maria de Gripta Ferrata/Tusculanum Ciceronis; 131 = Rocha Papae; 132 = Lucullanum/ Frascatum; 133 = Lake Alban; 134 = Lake Nemorensic; 135 = Nemus; 136 = Cinthianum; 137 = Castrum Gandulfum; 138 = Pons Mamolus; 139 = Bridge of the Via Numentana; 140 = Bridge of the Via Salaria; 141 = Fidenae/ Fidena; 142 = Vatican; 143 = Pupinia.

The sheer number dwarfs the toponyms we find in the descriptions and catalogues of Ptolemy, Strabo, Pliny, Mela, Livy, and others. In fact, the sum of toponyms found in Biondo's Latium chapter is much higher than the sum of all the ancient sources combined.

It goes without saying that the list of toponyms presented in the previous paragraph shows only cumulative and average numbers per chapter. The actual distribution of toponyms in the text is rather uneven. Biondo has a propensity of assembling consecutive toponyms into clusters, without explanatory text. According to Ottavio Clavuot, "[…] nearly two thirds of the place names are given as uncommented clusters".[48]

The structure of such conglomerations of toponyms, hereafter termed "clusters", reveal what type of source Biondo may have used:

a) a 'one-dimensional' itinerary or a two-dimensional sheet map or
b) an administrative document (be it civil, military, or clerical), organized in exhaustive lists or
c) a mixture of two or three types.

Especially the latter may have a geographically random sequence of names, their structure dominated by other considerations such as date of acquisition, economic importance, or similar principles.

For Latium we find four clusters.[49] They are all related to the ancient roads (*viae*), which Biondo intends to follow, by declaring:

> But in the inland areas there were many cities and almost numberless towns and castles, of which, according to Pliny, fifty-three peoples have perished without trace. In describing this inland region, we shall not be able to adhere to the method which we have used in other [regions] – starting with the mouths, sources, and courses of the rivers. But we shall adopt another, which will meet our needs better and which cannot be applied to other regions of Italy: by proceeding along the three roads – Appia, Latina, and Tiburtina – which by different routes will lead to the River Liris and to Sinuessa and Caieta. Nor will we be able to advance with such steady progress step by step, to avoid the appearance of digressing and going astray (inevitably so, since the roads have sometimes deviated from their route), when bridges have been ruined, sometimes because they have since been completely destroyed and are completely unknown as a result.(3.18–19)

Interestingly, Biondo does not inform his readers that he has inherited the "new method" of presenting locations "on", "near", and "between" from the Greek geographer Strabo. In Book V of *Geography*, Strabo, an ardent admirer of Roman craftmanship, writes as follows:

> As for the rest of the cities of Latium, their position may be defined, some by a different set of distinctive marks, and others by the best-known roads that have been constructed through Latium; for they are situated either on

48 Clavuot 1990, p. 85: "Von den […] Ortsnamen hat Biondo 65% ohne Erläuterungen […] aufgelistet." On p. 86 Clavuot continues: "[…] in my opinion they were read off from maps and other documents including autopsy […]" (our translation).

49 One finds along the Via Appia also a small aggregation of three names (3.22): "Around Priverno are the little towns of Maenza, Roccagorga, and Roccasecca […]" We do not consider a body of less than four elements to constitute a "cluster".

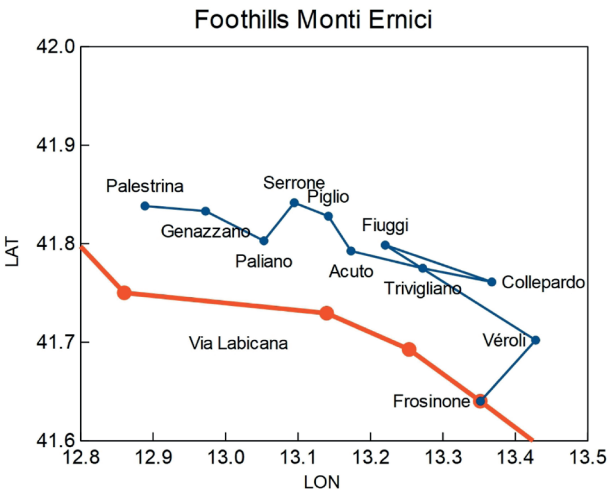

Figure 5
Foothills Monti Ernici.

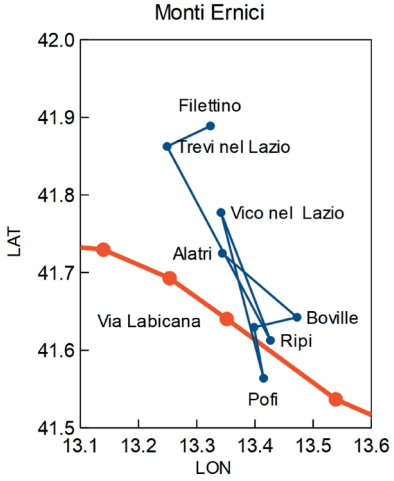

Figure 6
Monti Ernici

> these roads, or near them, or between them. The best known of the roads are the Via Appia, the Via Latina, and the Via Valeria [...].(V.3.9, C 236)

Why does Biondo choose to pass over this fact in silence, given his fondness of citing Strabo as his main authority throughout the Latium chapter?

In 3.19, after "narrating" the coastline of Latium until Sinuessa and some settlements along the River Liris, Biondo claims that he can longer use the "traditional method", "Ariadne's thread", as employed in his description of the previous regions (i.e., using the rivers from their mouth and heading upstream as his 'unspooling' guide in describing the inland regions). Instead he declares his intention of following the three *viae Appia, Latina,* and *Tiburtina*, which lead to the River Liris and the towns of Sinuessa and Caieta.

As one may guess from the titular endpoints of these three roads (which are in fact rivers!), Biondo, like his predecessor Strabo, is unwilling to entirely give up his proven 'river method'. For example, in 3.33, when describing locations along the *Via Tiburtina*, he writes as follows: "To the left of the River Aniene in these mountains is first a town called Vicovaro [...]. Higher up are the little towns of Portella and Cantalupo. Then there is Riofreddo on a steep hill [...] etc." Obviously, even the "new method" was unable to solve every problem.

The three 'surrogate rivers' (i.e., the ancient roads first skirting the Pontine Marches [*Via Appia*], then following the River Sacco [*Via Latina*], before heading eastwards [*Via Tiburtina*]) were separated by the western Monti Lepini and the eastern Monti Ernici respectively.[50] In the case of the central valley, the route taken was the *Via Lavicana* of the *Itinerarium Antonini*, but in other documents and in other times or sections it was variously known as the *Via Latina* or *Via Casilina*. East of the Monti Ernici, Biondo follows the Via Tiburtina which changes its name beyond Tivoli/Tibur to *Via Valeria* and still further east in the vicinity of Lake Fucino to *Via Claudia Valeria*. Biondo is perfectly clear by saying that he is unable to follow these ancient roads, due to their general disintegration and changes to the landscape since ancient times. In fact, in Biondo's time, the *Via Appia* was replaced by an *Appia Pedemontana*, following the foothills of the Monti Lipini.[51]

The first cluster, consisting of eight towns and settlements, apparently follows the

50 It is obvious that – even in the vicinity of Rome – the requirements of a system of local roads were in medieval times quite different to those of antiquity. This essay merely contains a collection of known distances from various epochs, with the focus (unfortunately) lying predominantly on ancient sources. Throughout, our kilometric distances are geodesic shortest paths. An effort was made to retrace medieval pilgrim and trade routes using visible roads on the ground. Evidently, many of these roads have since been subsumed by modern construction, especially in the heavily urbanized centers of Rome, Naples, and the cities in Lombardy. However, none of these 'modern' (i.e., fifteenth century) routes are available in Latium (the only exception being the former Via Flaminia).

51 Most toponyms in Biondo's Latium do not follow classical roads or urban sites but trace out hilltop settlements. This is unsurprising in the context of historical evolution after the decline and fall of the Roman Empire. Climate

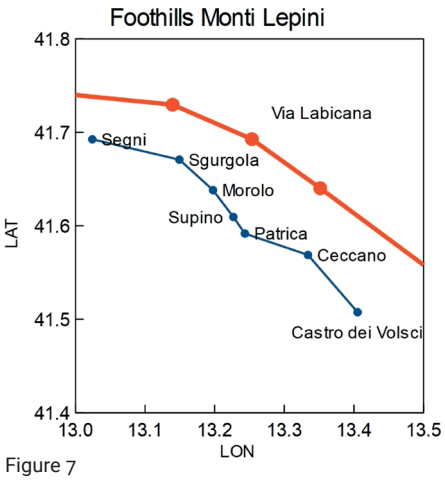

Figure 7
Foothills Monti Lepini

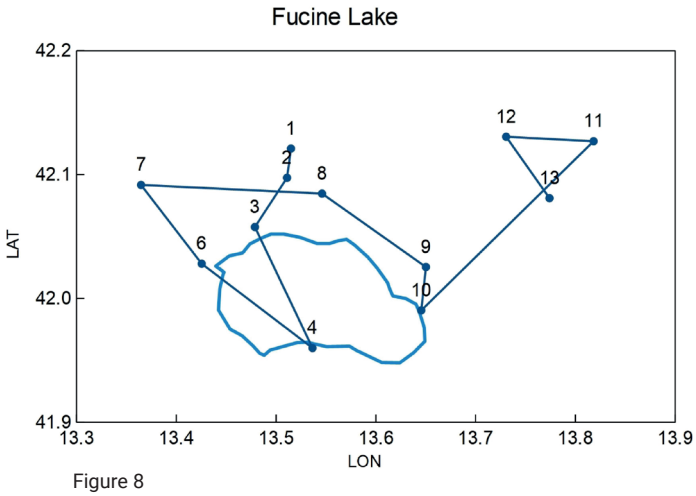

Figure 8
Fucine Lake

fifteenth-century road from Palestrina to Frosinone:

> But on the road near this town [Frosinone], are, on the right side of Zinazani [Genazzano]: Pallianum, Serronum, Pillium, Acutum, Trivilianum, Collis Pardi, Anticulum [and] the ancient town of Verulae, about which Livy in Book IX says [...].(3.29)

This is indeed a collection of 'interior towns' mostly located in the Monti Ernici and surely lying, on our map, all "to the right of Zinazani [Genazzano]", as Biondo says. Except for Frosinone, Biondo's selection occupies the foothills dominating the valley and following the ancient road at a distance of roughly eight kilometers. The wrong sequence between Acutum (modern-day Acuto) and Trivilianum (modern-day Véroli) is difficult to explain. It may be a simple *lapsuscalami*.[52] We cannot trace it to either a map or an itinerary as a single source. Both types of records occasionally feature two switched points but rarely see-saw back and forth between several.

The second cluster closely follows 3.29, consisting of nine towns and settlements:

> Then comes Alatrum [...] and Babucum, formerly a town by the name Bovillae in Livy, [then] Turritium, Pofae, Vicus, Ripae, Porcilianum, Trevum, [and] Felectinum.

This cluster appears to be a disorderly complement to the previous selection, which is difficult to trace to an itinerary as a possible single source.[53] Searching for a (hypothetical) use of historical records, we have not found any statistically relevant information on 'family records' of any kind in this selection of towns. During Biondo's lifetime, only Alatri, Vico, and Ripi belonged to the Colonna family. The third cluster of six towns occurs in 3.31:

> And farther on [beyond Segni] are Scurcula, Merulum, Supinum, Patrica, Caecanum, and Castrum, where there is another border of our region of Latium [now Campania].

As in the previous clusters, the settlements do not follow the ancient road, the *Via Labicana*,[54] but a somewhat parallel course in the foothills of the Monti Lepini. Again, there is no trace of dominance by the Colonna family and, by extension, no archival documentation.

> The fourth cluster in 3.38, consisting of no less than thirteen settlements, is grouped around Lake Fucine, including an 'excursion' along the *Via Claudia Valeria*, the main road across the Apennines, connecting Latium to the Adriatic Sea.[55]

change and the breakdown of infrastructure such as roads and engineering (drainage, Pontine Marshes) made fertile valleys unsafe for habitation. Later, Arab raids increased the necessity to 'take to the hills' (see Purton 2010, p. 99). Subsequent marauding French (Angevin), German (Suebian), and Spanish (Aragonese) soldiery sustained the pressure and reinforced the transition to the medieval feudal system, in which protection, control, and exploitation of the population at large emanated from these predominantly hilltop installations. Regional variants arose and are subject to intense archaeological study with findings that are still ongoing.

52 Biondo writes: A-T-C-F-V-F. A more realistic itinerary would read A-F-T-C-V-F. Single line switches do occur occasionally in manuscript copies of records. But the above sequence requires a double line switch: Biondo (or the scribe he consulted) had to amend the omission of Fiuggi two lines later, which is rare.

53 As we have no clue as to an archival documentation, the sequence could be randomly read off from a map.

54 See Barbetta 1995.

55 As a dominant feature, the Apennines are

> Around the lake stand the castles of St. Apetitus and St. Iona and the towns of Paternum, Transacum, Gaianum, Avecianum, and Mallianum and also Celanum, which is ruled by Leonellus, who, distinguished by the title of Count, is very dedicated to the liberal arts and history in particular. And along the shores of [Lake] Fucine and Celano there are also Piscina, the town of Venus, Viticula, Castrum Vetus, [and] Gorgianum, which also forms the border in this part of our region of Latium.

The sequence of towns and settlements does not follow the ancient road nor the shoreline and seems unlikely to have been read off a map. Perhaps it is ordered into three localized sub-clusters: the first lies to the northwest of the lake (San Potito–Magliano), the second is connected to the eastern part of the lake (Celano–Venere), and the third would be the three settlements marking the outer limits of Latium (Goriano Sicoli–Vittorito). Note that these last three towns are beyond the watershed on the Adriatic side of the Apennines range.

Another statement by Biondo adds to the confusion. In 3.38 he informs his readers that he "has left out some *castella* and *oppida* […] which do not lie in the vicinity of the three roads mentioned above [*omissa vero sunt a nobis superius nulli praedictarum trium viarum propinqua aliquot castella et oppida*]." What a bewildering statement! Effectively, Biondo admits here that he has deliberately chosen to ignore geographical information which does not fit in to his preconceived authorial framework. He nevertheless then mentions Rhoca Cavarum, "lying between Palestrina and Tivoli as well as Vicovaro and Gennezauno [*Praeneste Tiburque inter et Vicum Varronis ac Zinazanum sita*]" as the origin of the "Capranica". After an *elogium* on the noble ancestry of this family, he then spouts the names of another eighteen settlements, whose location remains unclear as Biondo merely uses the adverbial expressions *deinceps*, *his proxima*, *post*, *propinquum*, without, however, bothering to state the directions (a common circumstance in the *Italia Illustrata*, which has very few indications of compass roses or winds).

None of the clusters describes the modern sites along the ancient roads, rather they broadly follow their path through the foothills in Latium. The structure of the sequence of settlements suggests Biondo was drawing from a mixture of literary records, maps, and personal experience as possible sources. Family estates (after all, Biondo was apostolic secretary to Pope Eugene IV and the next two popes) do not seem to play a role. Indeed, the many *Baroni di Roma*, including the papal administration of Campania et Maritima, presided over estates in Latium that were exceedingly scattered – territorially and temporally.

The number of cluster names – 36 – compared to a total of 143 toponyms shows, on the one hand, that Biondo resorts to this means in presenting geographical information at his disposal (and, moreover, feels at liberty to leave it out, if inconvenient). On the other hand, however, it does not support, at least not in the case of Latium, Ottavio Clavuot's exaggerated claim that on average 65 percent of them are to be found in textual conglomerations of such kind.

Interestingly, Biondo makes no mention anywhere of maps for the Latium chapter. In fact, our discussion of the distances suggests that Biondo has neither a map of Latium nor an itinerary with all the distances. He seems not even to have had access to a 'road map' containing distances for points along the *Via Latina*.

On a final note: despite the fact that Biondo cites Strabo throughout the Latium chapter more often than any other source, we nevertheless can state that the Greek geographer played only a limited, if not marginal role. It is true, Biondo loves to quote Strabo, especially for distances and information otherwise unknown, but he clearly does not adopt his structure or narrative accordingly. These were already defined *before* his acquaintance with Strabo. And even his novel idea of illustrating Latium, not by rivers

readily apparent in our first three maps (see above), marking the political divisions along the ridge's spine.

but by roads – an idea which does indeed date back to Strabo – is not really carried out.

Conclusion

As we have seen, Biondo's *Italia Illustrata* makes (at best) sporadic use of maps; neither does Biondo require it of readers to use a map alongside his text. Following *le tre corone* of the fourteenth century, Biondo wishes to generate in his readers' minds a more or less complete image of Italy.[56] The line of thought which Biondo expects his readers to follow, is, in the end, an *imagined* itinerary, based on a mental map or cognitive script. For this purpose, he does not feel the need to rely on a map (certainly not for his description of Latium, although he uses or claims to have used them for other regions), and instead employs the dominant master-model of premodern times, the hodological view. Those rare passages where he does employ a bird's eye view change neither his basic approach to topography nor the fundamental construction principle of his narrative.

Common sense geography in the broadest sense is concerned with a premodern 'geometric' model of reality which is intuitive and therefore non-mathematical. It works surprisingly well with approximated directions and distances because it can 'crystalize' into real locations and meeting places (like Stonehenge, for example) by way of a sequence of remembered and memorized landmarks.

Seen like this, a river or a road is a reassuring sequence of landmarks leading to sites of reverence (like Rome or Jerusalem) as well as being of military or mercantile nature. In this sense, Biondo appears to stand at the turning point in history, solidly anchored in traditional and proven usage while collecting the proud but non-mathematical heritage of the past. The future lies ahead of him – already in sight, but still vague and fuzzy: Ptolemy's purely mathematical model, rendering the surface of the earth to scale and defining its respective elements in pairs of geodesic coordinates (i.e., longitudes and latitudes). In the absence of sufficiently precise instruments and methods to properly locate the landmarks in mathematical terms, this task would eventually take several centuries to complete.

56 See Michalsky 2019.

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Abstract

Kurt Guckelsberger
Two Great Maps of Italy – A Comparison

keywords – *Common sense geography, Maps measurements, Biondo*

Two large maps, contemporary with Flavio Biondo's Italia Illustrata, *create a rather comprehensive image of Italy. In this paper, I show that the Cotton Roll* XIII.44 *of the British Library is put together from two maps of different scale: one for Italy north of Rome and a smaller scale for southern Italy. It displays more than 1200 toponyms and six-thousand kilometres of rivers. The second map,* MS.1.816 *of the University of Strasbourg, is almost identical to the northern part in content. Devoid of political boundaries, there is no orography and an unusual flat hierarchy of icons. Despite large differences in appearance, they share a common data base. Both derive probably from a lost master chart. Despite necessary overlap, Biondo's regional inventories differ substantially. He may have seen these maps but he did not rely on them.*

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Two Great Maps of Italy – A Comparison

Kurt Guckelsberger

1. Introduction

This article makes the case that two of the seven "grandi carte d'Italia" of the early fifteenth century, proposed as a subgenre of historical maps by Marica Milanesi in her talk in 2006,[1] evolved from a common but yet unknown source document or 'ancestor'. Indeed, the map known by its shelf mark as Cotton Roll XIII.44 now in the British Library (henceforth "the Cotton") and manuscript Ms.1.816 at the Bibliothèque nationale et universitaire de Strasbourg (henceforth "the Strasbourg") share a large part of their toponyms, rivers, size, and general layout characteristics. Both appear as a visual complement to the textual vision of Flavio Biondo's *Italia Illustrata*, namely a complete survey of mainland Italy from the Alpine arc to the Ionian Sea, albeit with different coverage areas. The present study is part of the quest for the maps Biondo used as sources for his seminal work *Italia Illustrata*. As shown in a companion paper,[2] Biondo reports more than 2000 toponyms, far outnumbering the labeling on any map of the fifteenth century hitherto known and discussed – except one: the Cotton, with its 1220 vignettes denoting settlements, from single buildings to large cities. In addition, an extended river system provides hundreds of landmarks for orientation and localization, such as springs and sources, confluences and estuaries. Strangely enough, this early masterpiece of Venetian terrestrial mapmaking, has somehow largely escaped historical attention, with very few scholars making any reference to it over the centuries. Perhaps to Italian scholars it was not easily accessible due to its location in the British Library, where, although carefully preserved, it was presumably perceived as 'just another' (albeit interesting) map of Italy, one among thousands.[3] Even scarcer are studies of the Strasbourg map, which also escaped historical attention, perhaps arguably due to its poor preservation.[4] Hence it was a surprise that both maps – or rather what has survived of them – share almost identical content, shape, and size, albeit presented in radically different styles. This discovery opens a new window on early European mapmaking and 'database studies'. Early on in this study, it became clear that, despite the richness of content and obvious overlap, Biondo certainly did not use either of these two particular maps, as in many areas the structure and content are widely different in both Biondo's text and the maps. However, Milanesi recently showed that Biondo must have used or consulted the Cotton – or a very similar map – in one particular region at least, namely in the Rhaetian Alps.[5] Biondo's accounts of three rivers – the Adda, Oglio, and the River Non (a tributary of the Adige) – share a common error with the Cotton: the rivers appear to rise from a single source, which is not possible because they are separated by passes. This error is unique to the Cotton because the mutilated Strasbourg shows only the passage of the Oglio across the Passo Tonale to the Noce river, and on other surviving maps (and in chorographical texts), the connection of the Oglio and the Adda across the Passo Gavia persisted into the sixteenth century. The discovery that Biondo must have studied a Cotton-like map (if not the Cotton itself) and the fact that we have two surviving artifacts displaying quite different

1 Milanesi 2008.

2 Guckelsberger/Geus 2022.

3 A notable exception is Harvey 1991, p. 77, which shows a slither of the map around the Venetian Lagoon and the Po Delta. Milanesi gives the few available citations prior to 2006, see (Milanesi 2008), specifically note 3 there. Since 2009, a few remarks have been included in some book publications referring to Milanesi's text, but a thorough discussion or analysis has yet to come to my attention.

4 Grenacher 1948. It reports the few facts known about its provenance and is accessible online, URL: http://doi.org/10.5169/seals-323083 (accessed 15.07.2020).

5 Milanesi 2022, preprint available through personal communication with author in 2019.

versions hints at other maps of similarly grand design that have, however, since perished. This all suggests that in both the Cotton and Strasbourg, a big effort was made to map the whole Italian peninsula in detail, on a scale greater than the known regional maps. It surely was an expensive enterprise to collect quite precise information on distance and direction for more than 6000 kilometers of nearly every river of Italy – including all tributaries – and collate and design a consistent image without the required cartographic and surveying tools of the coming centuries.[6] The scope, reach, and erudition of the two maps equal or better complement the ambition and mental image of a unified Italy as embodied in Biondo's *Italia Illustrata*.

In the following, I will give a very brief overview of the main characteristics of the Cotton on a somewhat numerical basis to establish its outstanding properties before exploring the familial relationship between the two uneven 'sisters'. Although the Strasbourg covers the peninsula only down to Rome, both objects share an outline of Italy clearly derived from portolan charts with a rich and (relatively) precise mapping of settlements, rivers, and lakes in the interior. Thus, they uniquely combine the outlines of a maritime chart with the content of a truly land-based map. This clearly distinguishes them from the numerous maps created in the second half of the fifteenth century which use the (geographically inaccurate) outlines of Italy as described by Ptolemy in the third book of his *Geography*. This fundamental change in fifteenth century cartography is deeply rooted in the work of Donnus Nicolaus Germanus, a German monk who arrived in Florence around 1460.[7] In his (and others') *tabulae novae* (or *tabulae modernae*), he interpolated between known ancient sites many new towns unknown in Antiquity. Prior to this shift, early humanists apparently completely ignored the first book, in which Ptolemy explains the mathematics required to properly project the spherical coordinates of a spherical Earth onto a flat surface with minimal distortions.

Early fifteenth-century cartography is generally associated with Venetian craftsmanship in providing increasingly reliable maps for religious, economic, and military enterprises (Crusades and long-distance trade). They were soon augmented by the works of mapmakers based in Genoa, Mallorca, and other predominantly maritime communities. Known as portolan charts, this genre of nautical map survived for roughly the next 400 years. Relying predominantly on landmarks on shorelines and associated settlements and river mouths, they rarely showed settlements of the interior. As a result, maps of whole countries were generally less known. In chapter 20 of the extremely influential *History of Cartography*, published in 1987, P. A. D. Harvey writes:

> A very few are maps of entire countries: the maps of Palestine, the Matthew Paris and Gough maps of Britain, the maps of Germany and central Europe by Nicolas of Cusa and Erhard Etzlaub. But most are maps of small areas.[8]

Harvey goes on to list in appendix 20.1 only eight regional maps of Italy, without mentioning either of our maps.[9] After discussing Paolino Veneto's map of Italy of circa 1340, containing few toponyms, he continues:

> [I]t is not until the fifteenth century that we find further detailed maps of the whole of Italy. Two seem to be unique productions, but five others form a single series of closely related maps from which further maps were indeed derived in the early sixteenth century. Three of the five occur in copies of Ptolemy's *Geography* [...].[10]

By leaving out all details, it might be that these 'obscure' specimens indeed refer to our maps. Later, in 2006, Milanesi suggested a generic name, the "grandi carte d'Italia", mostly due to their common large size.[11] They usually measure at least 110 centimeters in height and are designed to a scale of around 1:1.8–1:2 for the size of the peninsula, measured horizontally between Nice and Pola and the Simplon Pass to Cape

Milanesi also shows that Biondo depends on Cotton-like maps and not the other way round because he ignores some other Alpine rivers which are presented in great detail on the Cotton.

6 The corresponding cartometric enquiry is vast and thus outside the scope of the present publication. See also fig. 8 in this article.

7 Meurer 1999. URL: https://www.deutsche-biographie.de/pnd100955037.html#ndbcontent (accessed 15.07.2020).

8 Harvey 1987, p. 464.

9 Harvey 1987, p. 498 appendix 20.1.

10 Harvey 1987, p 481.

11 Milanesi 2008, p. 153.

Leuca at the southern end. This is comparable to the map scale of 1:1.9 of a modern-day sheet map. Taking into account the actual size of Italy, this gives us an average scale of approximately 1:600,000 or 6 kilometers/centimeter. According to Milanesi, several of these seven maps had a distinct purpose: displayed in antechambers of princely palaces they had to demonstrate the mastery of territory and superior knowledge of the prince, or, in the case of Venice, the magistrate. Only these seven specimens have survived. Considering the 'natural habitat' of such maps, princely *palazzi*, the two maps presented here form an unlikely couple. The Cotton is a spectacular display-piece, which Peter Barber, recently retired Head of Map Collections at the British Library, believes was probably presented as a gift to the English king sometime in the fifteenth century (personal communication, February 6, 2018). More than 1200 toponyms, 64 river systems, and carefully crafted miniature vignettes characterize this outstanding testament to terrestrial cartography. By displaying subtle designations of rank instead of crude (even brutal) representations of the size of the powers that be, and by ignoring political boundaries and adopting a remarkably precise scale (albeit of a shifting magnitude), it is a unique early 'topographic' enterprise. It shares the same vision of a united Italy from the Alpine watershed to the Ionian Sea (subsequently only realized in 1919 with the annexation of Trentino-Alto Adige but already described by Ptolemy), as cited both by the author of the Cotton in the first sentence of the text accompanying the map and by Biondo in *Italia Illustrata*.[12]

In the following, I focus on the geographical 'ground truth' by first presenting the Cotton's main features – the coastline, the settlements, and the river system – followed by a description of the Strasbourg map with its unique grid system and a discussion of its southern end. Following this I explore the similarities between the two maps by first looking at the coastlines and then at possible distortions in the parchment and cotton support which may have altered the images, quite independent of the mapmaker's original intentions. The probability of a common source is discussed and, lastly, some of the remaining differences are highlighted, such as the drawing of the rivers, the rendering of extended objects, including a strange 'mutilation' of the Strasbourg.

2. The Description of Italy by the Cotton

From a geographical, cartographical, and historical point of view, the Cotton map is of the highest interest and helps in understanding contemporary attitudes toward all three fields of learning. In this paper, the emphasis is on the historical perspective in relation to Biondo's project of *Italia Illustrata*. However, it adds to our understanding if one also considers the two other facets – the geographical and cartographical – in gaining further insight into the problems Biondo probably faced when setting out on his agenda. In that respect, for a terrestrial map of the early fifteenth century, the Cotton's 'vital statistics' are nothing less than impressive when one considers all three points of view. The two diagrams combined in figure 1 best summarize the extraordinary craftsmanship involved.

Three main elements come together:

- The outline is apparently derived from portolan charts. It features 245 littoral points: 191 harbors – coastal towns (some of them in the interior, as represented on all maritime charts of the time) – and 54 estuaries, good for shelter or up-river travel. Distributed over about 3450 kilometers from the mouth of the Isonzo to mouth of the Var in what is now France, it covers every 14 kilometers of the 'lay of the land', or more precisely, the coast. It is richer in detail than contemporary maritime charts: Among these, only 128 (52 percent) are found in Tony Campbell's 'magisterial' list of 2015, which in turn contains 400-plus entries from all portolan charts between Var and Isonzo.[13] From this we can extrapolate that the compilers of the Cotton did not simply copy existing portolan charts but provided more points than the sailors deemed worthy of note. The coastline provides the frame for

12 See also Cachey Jr. 2018.

13 Campbell 2011, URL: https://www.maphistory.info/portolancensus.html (accessed 09.09.2017).

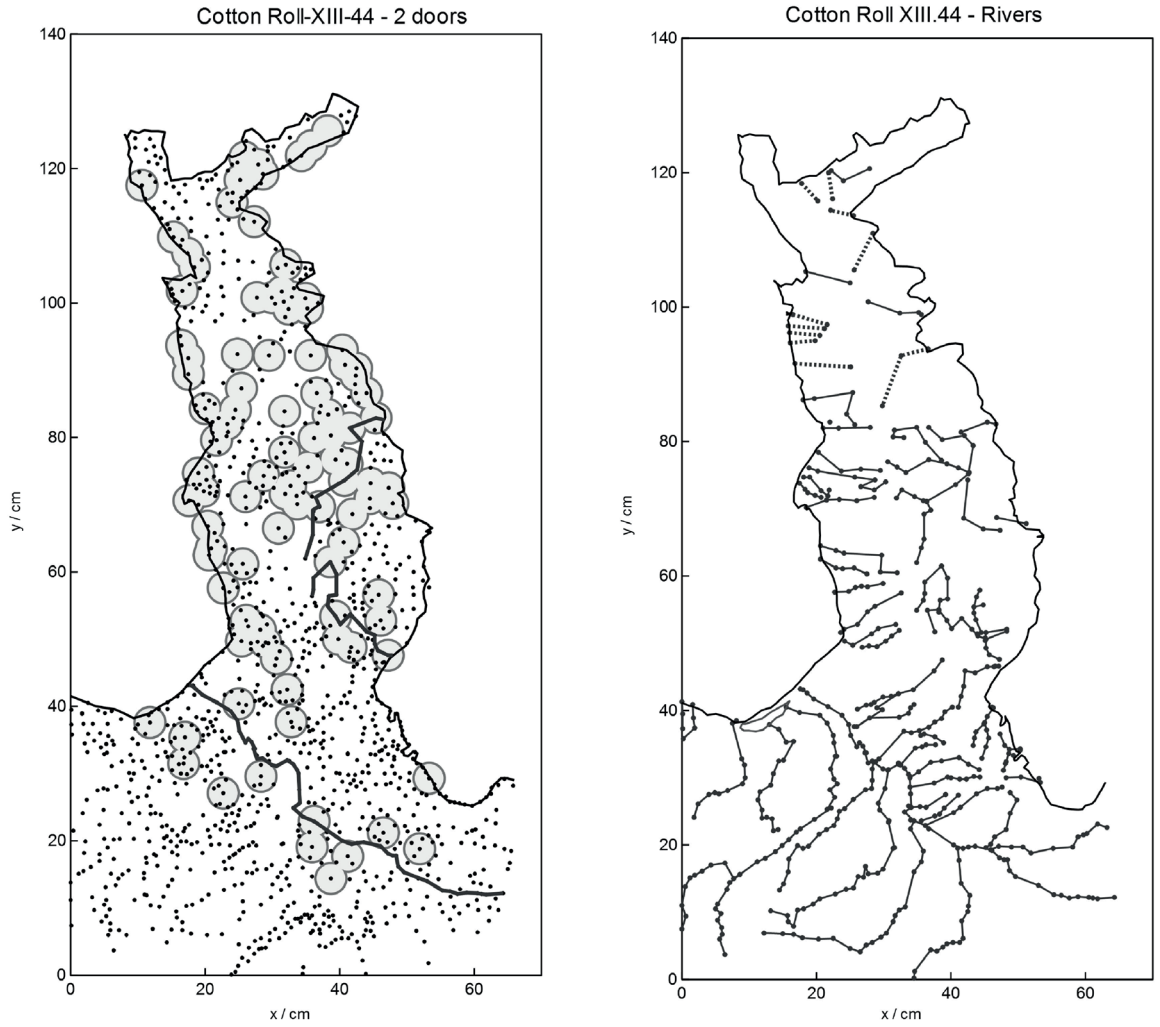

Figure 1.
The Cotton in outline. The left diagram shows the locations of all 1220 vignettes. The 100 cities highlighted with two or more doors are shown with circles of ca 30km radius. The right diagram traces part of the extensive river system of more than 8000 km.

the other two data compilations, namely the inland settlements and rivers.

- The total number of settlements amounts to 1220. As far as I know, no other fifteenth century map that has come down to us boasts a similar number. Erhard Etzlaub's *Romweg* map of 1496 of Central Europe to Rome only has 515 marked settlements. The extremely well-studied and publicized Gough Map of Britain displays 600-plus place names, with the exact number no longer determinable as some have faded over the centuries.[14] None of the German fifteenth century maps approaches the 1220 named settlements in the Cotton.[15] Settlement and city rank is expressed through subtle indications in the miniature vignettes. In 288 vignettes, roofs are emphasized by a blot of lapis lazuli, the most precious of pigments. However, this color distinction seems not to convey rank, because even some tiny hamlets are so adorned and I could find no correlation between these points with places of power, political or ecclesiastical, in times predating or concurrent to the map. In contrast, for six vignettes, the rendering of three portcullises in the city wall does indeed serve to emphasize the city's importance. These cities are Rome, Narnia (Narni), Florence, Venice, Verona, and Alessandria.[16] Another 93 vignettes show two portcullises and all 100 two- or three-portcullis entries

14 Lilley/Millea/Vetch, http://www.goughmap.org/about/ (accessed 15.07.2020).

15 A compilation of such maps was published in the 1950s, see Bennet Durand 1952. By the 1990s, however, this designation as a 'corpus' was shown to be meaningless, see Dalché 1996.

16 Why is Narnia a member of this illustrious assembly? Mapmakers are known to have sometimes highlighted their home towns in a particular way. See, for instance, the

represent important cities, from Rome to Urbino or Milan, or similar regional 'heavyweights'. The remaining vignettes have only one portcullis and pertain to all manner of settlements: important sites ranging from single fortresses, such as the Castello di Canossa, to isolated monasteries, hamlets, and villages, to small towns which have sometimes since dwindled, now with only two or three buildings remaining. In figure 1 the 100 important cities are emphasized by a circle representing 'a day's ride' radius of roughly 30 to 40 kilometers depending on local scale, to underline the sophistication of the vignette choice. The pattern is still dominated by a large number of port towns and a cluster in the region around Naples.[17] In the Papal States, the Tiber river basin does not dominate, but Latium and the Umbrian and Ancona territories stand out, contrasting with a relative paucity in the Po Basin. In the left diagram of figure 1, one first sees the spine of the Apennine Mountains – especially in the south – separating the central valleys from the coastal plains. Interestingly, an unbroken chain of wealthy towns can be observed, stretching over more than 400 kilometers from Sulmona in Abruzzo to Modena and following the ancient Roman roads of the Via Salaria, Via Flaminia, and finally Via Aemilia. Mountainous regions stand out, especially in the foothills of the Alps. The map includes outlines of the Po, Arno, and Tiber rivers and faithfully traces their bends and turns as a further sign of well-researched and detailed features.

- A network of 6324 kilometers of rivers[18] structures the interior into interconnected smaller domains, allowing the mapmaker to plot the settlements' relative position from each other, using fluctuating local scales in the absence of a uniform scale for the entire area coverage.[19] This fluvial scaffold covers 59 rivers emptying into the sea and 67 tributaries, with 693 settlements documented on their banks and 139 settlements at their mouths.[20] In a sense, this intricate lattice can and probably did stand in for the thoroughly abstract mathematical grid of astronomically determined parallels and meridians proposed some 1200 years earlier by Ptolemy. It was a much simpler mapmaking technique than using a laboriously determined solar altitude (with its considerable scope for error) and a longitude based on pure guesswork.[21] Indeed, Ptolemy's work was not fully understood or even accepted after its rediscovery in the thirteenth century and would arguably only be so later in the fifteenth century, after the Cotton had been made.[22] After all, in real terms, the adjacent headwaters of the Arno and Tiber provide a satisfactory topographical point of reference, being somewhere halfway between Rimini and Montevarchi.[23] However, we also see that the second most important river in Tuscany after the Arno – the Ombrone – has been forgotten entirely.[24] Together with a scarcity of major settlements in the lowlands, one reason for such an omission may well be that the area was of little interest for military and

French scribe Hugo Comminelli (Hugues Commineau) and his illustrations in the "Octavus et ultimus liber" of Claudius Ptolomaeus, *Cosmographia, Jacobus Angelus interpres*, 1451–1500[?], Commineau 1451. The online "Historique de la conservation" on this object (Latin 4802) states: "Le copiste, originaire de Mézières sur la Meuse, a indiqué sa ville natale au f. 126 en petites lettres noires: 'Macerie supra Mosa(m)'", URL: https://archivesetmanuscrits.bnf.fr/ark:/12148/cc63677b (accessed 15.07.2020).

17 Within a radius of 40 kilometers there are eight important towns in the region: Salerno, Naples, Nola, Aversa, Castel Volturno, Capua, Benevento, and Ariano-Irpino.

18 The distance and graphical representation of the network is solely based on the identification of locations which I could identify along the rivers, not on their course in the landscape.

19 On the central role of rivers as a reference grid for organizing urban space see, for instance, Dalché 2005. With respect to the twelfth-century *Expositio mappe mundi*, he writes: "Il y a des points fixes ou des lignes, par rapport auxquels les peuples et les cités sont disposés. […] les réalités géographiques les plus importantes pour la structuration de l'espace continental sont internes à celui-ci: ce sont les fleuves."

20 At the moment of writing, not all of the tributaries to tributaries are documented but the importance for mapmaking, organization of space, and the impressively detailed knowledge displayed are sufficiently clear.

21 See the revealing chapter by Florian Mittenhuber on the catastrophic consequences for the outline of the Mediterranean due to erroneous coordinates for Tunis, Marseille, and Istanbul, Mittenhuber 2009.

22 In contrast to the stellar catalogues useful for astrology, Ptolemy's *Geography* was never really commented on or used before the 1460s. On its reception, see Mittenhuber/Klöti 2009.

23 Geodesically accurate to within 1 kilometer.

24 It is also missing from another "great map of Italy", the anonymous map of 1449, from Cicogna, preserved in Venice, at the Museo Correr, Dept. 19, Milanesi 2008.

> economical enterprises at the time due to the swampy conditions of the terrain and the threat of malaria. As already pointed out by Milanesi, the Cotton's representation of the coastal plain of Tuscany is much too narrow, implying a rapid scale-change over the last few centimeters before the coast. Another reason for the missing river and spatial inconsistencies may be that the chart was 'filled in' from left to right, from the Adriatic toward the Tyrrhenian coast. If the general outline was fixed first, then the impressive crowding of vignettes and their names in the Adriatic half may have crowded out the last entries before the western coast was reached. Against the background of careful execution in the Po Basin, these omissions appear as ad-hoc decisions during the drawing-in phase, not a deliberate truncation for other reasons. Together with flexible scales along the rivers, both features appear as a natural consequence of non-geodesic mapmaking.

Such complete coverage as a general map of the peninsula (ignoring for the moment some deficiencies and lacunae in the Kingdom of Naples in the south) goes far beyond military or economic surveying purposes, during a time characterized by a constant struggle for supremacy among rival principalities and states. Extensive portolan charts were also expensive but had a completely different (linear) background in commerce and warfare, piracy and domination.

This leads to the following question: what were the underlying intellectual or political ambitions that warranted the financing and commissioning of the traveling surveyors, mapmakers, artists, and executioners for such a project in early fifteenth-century Venice? (By comparison, it is perhaps worth noting that Biondo probably had a variety of helpful assistants but essentially worked alone.)

The next subsection presents the fascinating subject of how near or far the two maps with their almost identical chorographic content resemble each other, given their dramatically different appearance. Before doing so, it is first necessary to provide a brief description of the Strasbourg map, before embarking on a more detailed comparison.

3. A Brief Description of the Strasbourg Map

Every image, painting, or map, 'speaks a language' to communicate with its readers or audience. The Cotton (140 × 66 centimeters), for example, consists of an elaborate headline "Italie provincie modernus situs", a laudatory text describing the historic excellence of the land – and the map. The image of the peninsula is surrounded by beautifully executed sea creatures and a variety of maritime scenes. The islands and adjacent countries are indicated by twelve round medallions that merely allude to their existence. With gold lettering on lapis lazuli for the title, clear calligraphic script, and a precise execution of the illustrations, the Cotton conveys a sense of power, confidence, and aesthetic ambition.

In contrast, the Strasbourg (65 × 95 centimeters) presents a rather austere image which is best illustrated with the two vignettes for Rome, both fitting into a 3 × 3 centimeter frame. The Cotton has finely crenellated city walls and towers (one even flying a flag), a cupola (perhaps the Pantheon?), and steeples. The Tiber enters at the front and flows out the other side, thereby creating a more natural image of a real city. The Strasbourg map, by contrast, only shows a clumsily drawn front of a strange building with the outline of a church with three spires and some military apparatus, with the river simply stopping at the left edge of the building.[25]

Also, whereas the Cotton has a finely drawn red frame around the cartographic image and is bordered by a carefully drawn, nearly straight initial border (see below), the raw outlines of the animal hide, including the neck, are good enough for the Strasbourg, and indeed most portolan charts of the time look the same. A faded dark-green, rather sloppily applied wash represents the Adriatic and Tyrrhenian Sea without any embellishments, whereas the Cotton displays decoratively rippling waves and

25 Both the black-and-white format and the lower-resolution image of the Cotton as compared to the Strasbourg diminish the visually pleasing rendering of the Cotton, which assembles five buildings behind a wall.

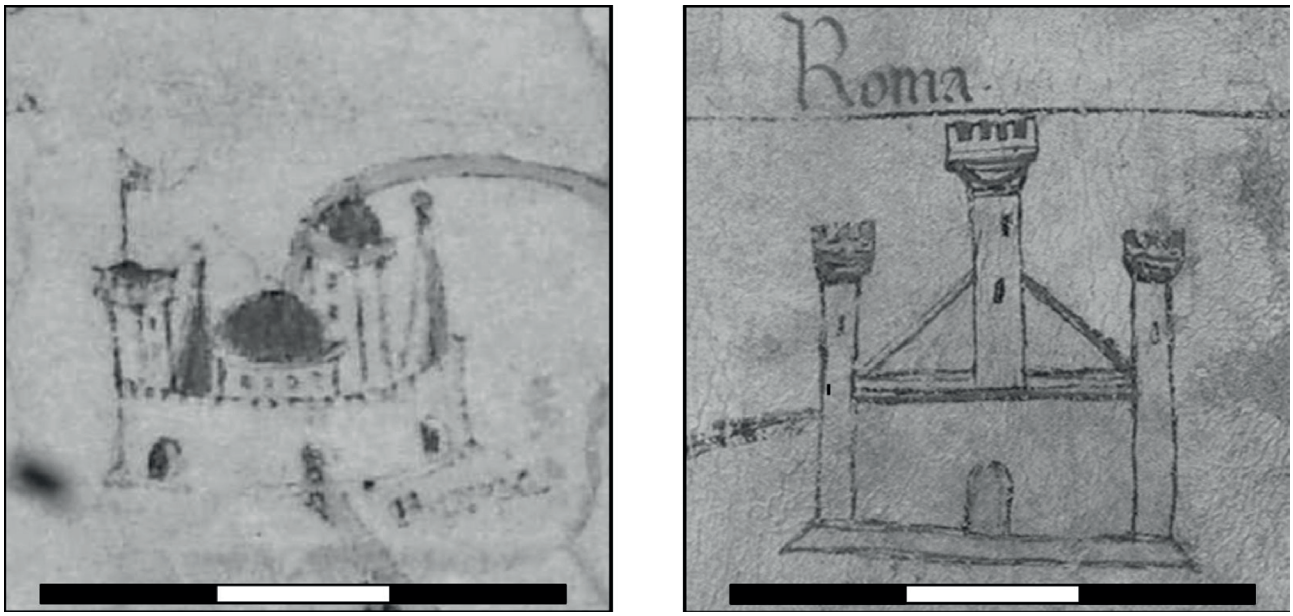

Figure 2.
The two images representing Rome in the two maps juxtapose the aesthetic and factual differences between them. The name Roma on the Cotton is nearly obliterated by frequently pointing at it. [left: Coll. et photogr. BNU de Strasbourg; right: © British Library].

joyful images of dolphins and miniature scenes of busy maritime life. In short, the Strasbourg is indeed a poor relative, as Milanesi states.[26]

To us today, the Strasbourg looks much like a technical sketch rather than a (princely) map. Modern geographers would call it a *brouillon* (rough sketch) that nevertheless contains important data for distance and direction, brought back from fieldwork to be turned into a polished draft in the office.

Tiny crenellated vignettes, 3 × 3 millimeters wide, indicate settlements and towns. A few important ones are marked in red, with Rome naturally the largest. Thin black lines, retraced by a slightly broader green line represent rivers and lake outlines; lake surfaces are washed in light grey-green. The sharp thin lines, visibly preceding the overlay of color and broader lines for rivers and coasts, indicate a preliminary sketch. In many passages, this likely 'first attempt' was not subsequently laid in with the bolder lines of the more visible final image. All these features are visible, for example, in the detail around Arezzo in figure 3. Here we see the thin sharp lines sketched in black along part of the Arno river to the left, emphasized later in greenish-grey ink, the tiny crenellated town-vignettes below, the clumsy attempt at a vignette in perspective reserved for important towns, including red lettering, and finally the alternate coloring of the rhumb lines.

From a modern perspective, the Strasbourg gives the impression of a 'work in progress'. This impression is reinforced by a unique feature for land maps: superimposed on the map are three primary, equally spaced land-based sixteen-point 'stars', placed near Arezzo, Roteglia (near Modena), and Lecco, with additional stars placed off-shore from Venice and Genoa, and yet others (albeit incomplete) ten-point secondary stars located at the four 45-degree angles from the central star near Arezzo.

They form a set of rectangular cells approximately 24 × 24 centimeters wide. Where the lines do not help (outside terra firma and beyond Fermo), they appear incomplete and peter out, thus suggesting a half-hearted attempt to imitate the manner of the portolan charts of the day. Nearly all these maps are first sectioned by a central horizontal line extending from the neck to the tail forming the west–east axis and a vertical, central line forming the north–south axis.[27] Additional rhumb lines complete the wind roses, mostly with a sixteen or

26 Milanesi 2008 writes in note 60 when describing the Cotton: "[…] Strasburgo, che le assomiglia tanto da sembrarne una brutta copia, o una parente povera."

27 Pujades i Bataller 2007, p. 199.

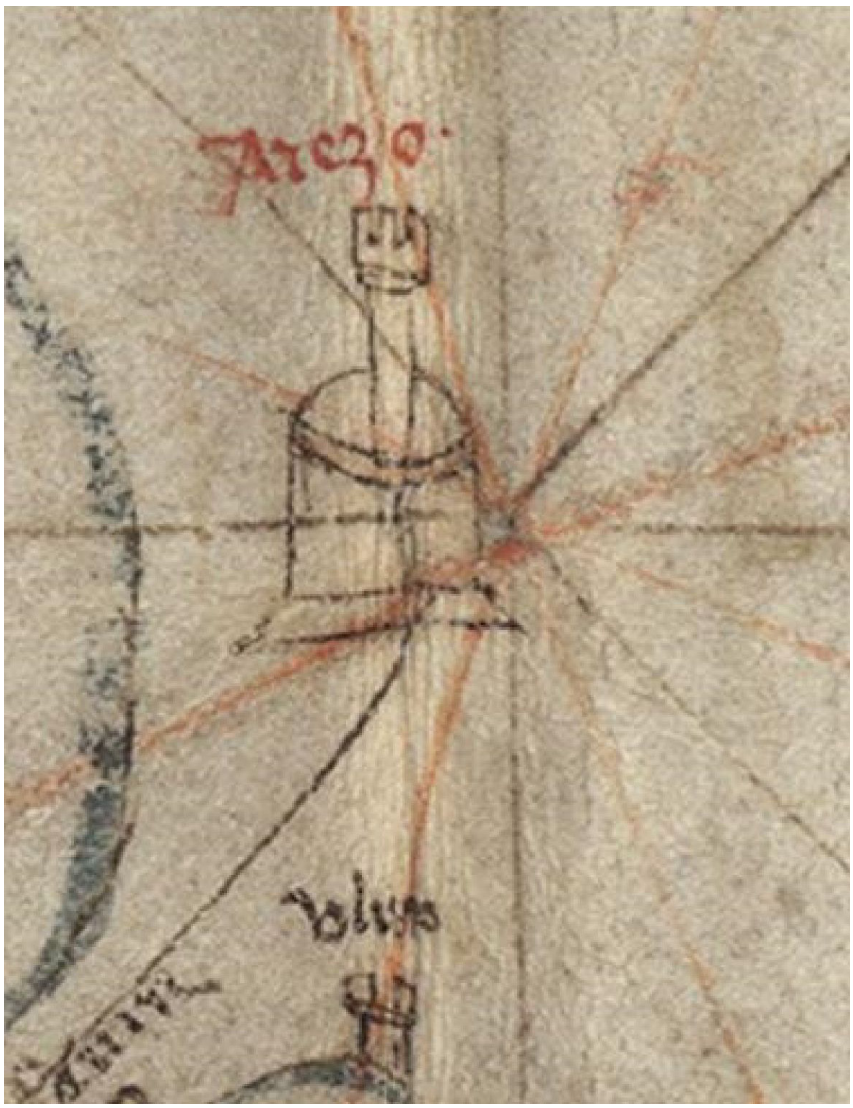

Figure 3.
The image of the vicinity of Arezzo displays the typical graphical features of the Strasbourg map: The alternately coloured grid-lines, the large vignette and red lettering of important towns (Arezzo), the tiny other vignettes like Ulmo below Arezzo and the thin, discontinuous black sketch-line for the rivers with its bluegreen thick enhancement.

thirty-two-fold symmetry. In the Strasbourg, there is no relation to geographical north nor to the size of the animal skin. In fig. 4 one sees that the center line does not form the bisecting axis and the horizontal subdivision does not lie halfway down from any discernible future format the mapmaker may have originally had in mind. The 45-degree system is marked by a short dotted (. . .) line and the bisecting red lines in the original are denoted by dashed lines (---). One has the impression that the two vertical markers in the Adriatic and Tyrrhenian Sea are merely there to help place the coastal towns and the center line through "arezo"/Arezzo and the inland sites. The additional tighter grid at 22.5 degrees (with a 9.3 × 9.3 centimeter grid width, roughly equating to 50 × 50 kilometers) just happens to somehow organize the landmass into more manageable sections. The grid is irregular and appears haphazard and perhaps not well thought out. In short, it structures map-space, not the geographical relation of the peninsula with its surroundings. Questions as to why, when, and how these markings were made require complex historical cartographic study and are therefore excluded from the present article. Suffice it to say that this unique map merits further study and opens a rare window onto early European mapmaking.

Another feature which the Strasbourg shares with portolan charts but not with the Cotton is the use of red lettering in the labeling of some cities. On his website on the history of cartography, Tony Campbell found that 630 of the grand total of 2750 (or 23 percent) of the names collected from portolan charts are written in red.

He adds:

> As an indicator of responsiveness to political and commercial developments, the red names are a disappointing witness [and] there was little

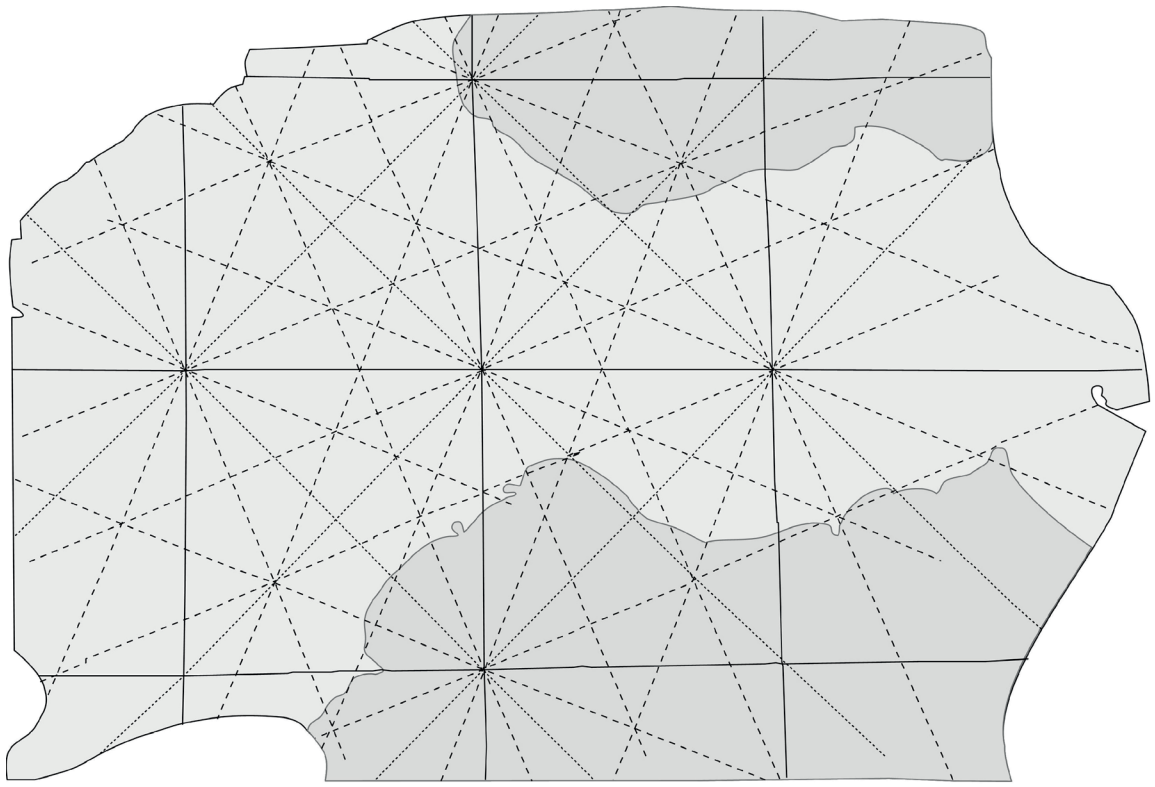

Figure 4.
This redrawing of the system of terrestrial wind-rose lines visible in MS 1.816 shows that the mapmaker developed the classical system of 16-fold symmetry only up to eight nodes plus a central node and using it only in certain places.

relation between the historical record and the introduction or abandonment of red names.[28]

On the Strasbourg map, this ratio is 95 out of a total of 649 vignettes (see Table. 1) or only 14.6 percent (roughly one in seven) and the more sparingly used distinctions generally relate to important cities. Such differences suggest that the mapmaker liked the lettering in red (probably) seen on portolan charts, but modified the criteria for its application on his own map.

Very little is known about the origin of the Strasbourg. It was first presented to the public in 1933.[29] According to records, it was acquired (after 1883) from the estate of Karl Witte (Halle), renowned translator and founder of the German Dante Society who spent many years in Italy.[30] It is possible that while in Italy he searched of Biondo's or Petrarch's / Dante's map. Characteristics of script and toponyms date the Strasbourg to the Italy of the early 1400s. Not much else is known and precious little literature has been published on the subject.[31]

Paraphrasing an earlier study of the northeastern part of the country by Franz Grenacher,[32] time has not treated the Strasbourg map kindly: the outline is mutilated because someone cut off the corners at the bottom of both sides. Crude pin holes at the periphery show unsophisticated tacking and rough use, while water damage and mold renders many names difficult or impossible to read. For some time the skin lay, not rolled, but folded – while still damp. Evidence for this are red smudges near Florence which match mirror-image counterparts of heavily

28 Campbell 2013, URL: http://www.maphistory.info/RedNamesCommentary.html (accessed 11.10.2019).

29 According to Grenacher 1948, 18, the Strasbourg was first presented at the Seventh International Congress of Historical Sciences that took place in Warsaw in 1933.

30 Witte was the first philological editor of the *Divine Comedy*. His very rich collection on Dante's writings was acquired by the Universitäts- und Landesbibliothek in the then-German Strasbourg in 1883, but was lost after 1918, it seems along with the map. See Briguglia 2017 (link accessed 11.10.2019): "After the construction of the National and University Library, a great appeal was made to the Germanic world for donations of library funds, collections, books, manuscripts, and the Kaiser himself invested a great deal in acquiring as much as possible. This is how the library came into possession […] of the legacy of Karl Witte, which was sold in 1883." (My translation of: "dopo la costruzione della Biblioteca nazionale e dell'università, si lanciò un grande appello al mondo germanico a donazioni di fondi librari, di collezioni, di libri, di manoscritti, e il Kaiser stesso investì moltissimo nell'acquisizione di quanto più fosse possibile. È così che la Biblioteca venne in possesso […] del patrimonio di Karl Witte, che fu ceduto nel 1883.")

31 Milanesi 2008 only quotes Almagià 1929, p. 8.

32 Grenacher 1948.

smeared red inscriptions for Perugia and Orvieto, which have become nearly unreadable as a result.

What the Strasbourg shares with the Cotton is a 'flat' hierarchy of little difference in the vignettes' rendering of ordinary towns and important cities: the more important ones are only marginally larger and only slightly more elaborate in detail. This might indicate a similar restraint on their common source (or mutual copying past).

The Cotton shows the complete peninsula and is of superior craftsmanship. This leads to the question where was the lower third – essentially the territory of the Kingdom of Naples? The River Tronto forms, in a certain sense on both maps, the frontier between central and southern Italy. After 1272, it was the southern border of the March of Ancona under papal control with the Duchy of Abruzzo, part of the Kingdom of Sicily until the nineteenth century.[33] It is not difficult to demonstrate a sudden shift in scale on the Cotton using the locations of 21 river mouths into the Adriatic south of Rimini. On these rocky shores, estuaries do not move position over the course of just one millennium, in contrast to swampy areas, which may.

Down to the River Chienti, a scale of approximately 1:600,000 (= 6 kilometers/centimeter) prevails which characterizes the scale used to map northern Italy.[34] After this come three estuaries at an artificially compressed scale which runs until the Tronto, after which further southwards a scale of approximately 1:900,000 (= 9 kilometers/centimeter) is used until the mouth of the Tiber.[35] This regional scale-change of the Cotton is unique among contemporary maps. However, shifting scales are a well-known feature of portolan charts, where some parts, say the Black Sea, have an orientation and size that are different to those of the Mediterranean, and so on.[36] All this happens precisely where the Strasbourg ends, and this is significant. The outline of the southern part of the peninsula on the Cotton is appreciably slimmer than its northern part. Had the mapmaker decided to continue with the 'northern scale', the entire peninsula would have required an additional 33 centimeters or so in space, resulting in a total height of 170 centimeters. One might speculate that, in view of the expenses already incurred, another half-sheet would likely not have mattered much. However, given the idea that is basically suggested in the accompanying text, of uniting Italy under the leadership of Venice,[37] it perhaps came in handy that the Kingdom of Naples was expertly 'shrunk'.[38]

4. A Visual Comparison of the Outlines of Italy

In this section, I argue that the two maps are of the same size by discussing the outlines of the peninsula. This differentiates the pair from many other 'copies' of fifteenth century maps. As far as I know, there are few direct copies of fifteenth century maps.[39]

The first sign that both maps share a common data set stems from comparing the contours of Italy. Milanesi already notes that both maps look very much the same, so that the Strasbourg "appears as a bad copy or a poor relative".[40] Although all portolan charts tend to share a similar general appearance, differences in the details abound. This is also true in the case of

33 See Domenico 2002, p. 205.

34 By their very nature, the statistical numbers of course come with substantial uncertainties. It is thus reasonable to argue in rounded numbers.

35 Unfortunately, the counterpart to fig. 5 on the Tyrrhenian coast does not display a similarly distinctive break in scale, mostly due to a lack of named vignettes, possibly because the scribe had problems matching inconsistent information in the overlapping region.

36 Considerable scholarly effort is currently being made to better understand the emergence of portolan charts. For the general context, see Edson 2007, p. 37.

37 According to Milanesi 2008, p. 172, the text "De origine urbium Italie" on the Cotton proposes that: "Rome is but an episode, and not the principal, in the history of Italy; and the other cities, so important in the philo-Venetian *De origine urbium Italie*, literally disappear: the history of Italy is made complete with the foundation of Venice." (My translation of: "Roma non è che un episodio, e non il principale, della storia d'Italia; e le altre città, così importanti nel pur filoveneziano *De origine urbium Italie*, letteralmente scompaiono: la storia dell'Italia si compie con la fondazione di Venezia.")

38 For example, this is indeed the case for Scotland on the Gough Map. It is depicted on a perceptibly smaller scale than England.

39 The 38 maps in the *Cortona Atlas* appear as an exception. To quote Tony Campbell in his entry "Anonymous Works and the Question of Their Attribution to Individual Chartmakers or to Their Supposed Workshops", on *Map History/History of Cartography* (March 2011): "Because the traditional (i.e., Mediterranean and Black Sea) charts in this 'atlas' – which is actually much more than that, comprising also a merchant's and navigator's compendium – were evidently copied from archival copies in some Venetian repository around 1489," Campbell 2011 (link accessed: 23.10.2019).

40 My translation of Milanesi 2008, p. 164.

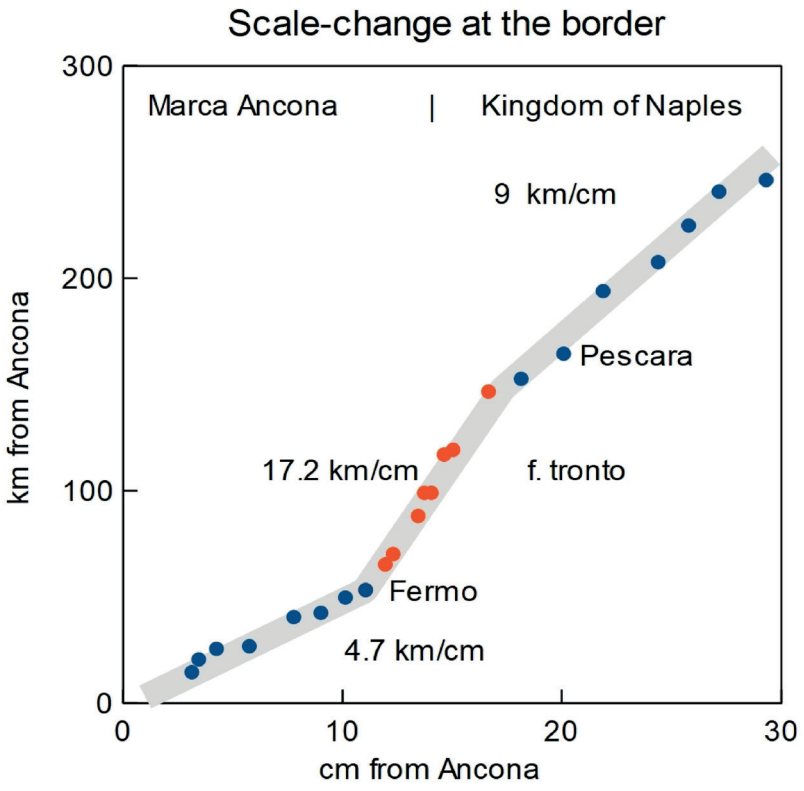

Figure 5.
Plotting the distance on the map along the coastline in centimetres against the distance on land in kilometres gives a local scale. The discontinuity near Fermo indicates that two dissimilar images of different scale were patched together.

the Cotton (which at 140 × 66 centimeters is made up of two skins glued together, of approximately 66.5 × 68 centimeters and 66.5 × 71 centimeters respectively) and the Strasbourg (65 × 95 centimeters, a single sheet). In keeping with a well-known method in philological studies, where questions arise as to what extent author A depended on author B or simply plagiarized content and meaning, one pores over maps for similarities and distinctions/marks of innovation. With the passing of time, however, the comparison is not always easy. In this section, I look at external agents influencing a more detailed comparison of the two artifacts. In the case of maps and their scaling, the predominant concern is of course shrinkage and warping of animal skins over 600 years. Albeit largely irrelevant in other medieval documents, in the case of maps these factors must be addressed in context, although such factors are difficult to quantify as they are heavily dependent on largely unknown historic storage conditions.

Peter Mesenburg reports of warping of circles with an approximately 29 centimeter radius on contemporary portolan charts in the millimeter region.[41] Shrinkage is of more concern, however, because after 600 years, lines rarely remain straight or at right angles: the Cotton has a two-millimeter-wide red frame just inside its outer edge. While the upper and lower boundaries run flush within a one millimeter margin, the vertical boundaries are indeed warped. The left margin (Adriatic side) deviates by ± eight millimeters from a straight line, the right margin (Tyrrhenian side) by even more. Hence, the width of the map between the red boundaries varies, starting with 63 centimeters at the top and (irregularly) increasing to 65.6 centimeters at the bottom. Assuming that the freshly drawn document really did have parallel vertical borders, shrinkage appears to have increased from the top (i.e., the outer layer when rolled?) to the bottom by 26 millimeters. From the fiducial marks, we can tell this

41 Mesenburg 1986. Mesenburg here presents a portolan chart by Ben Zar from 1497 which gave a radius of 327.5 ± 3.6 millimeters. See also (Mesenburg 1990), for the portolan chart of Petrus Roselli of 1449, which gave a radius of 257.7 ± 1.1 millimeters. These were the first and fundamental studies: the reference points for calibration were the sixteen tiny compass holes and their corresponding wind roses on the perimeter that were visible on the verso. In both cases, shrinkage was more pronounced head to tail (meaning east to west), compared to the direction perpendicular to it, 'belly to belly' (that is, north to south). This fact was confirmed in personal communication with the author in 2020.

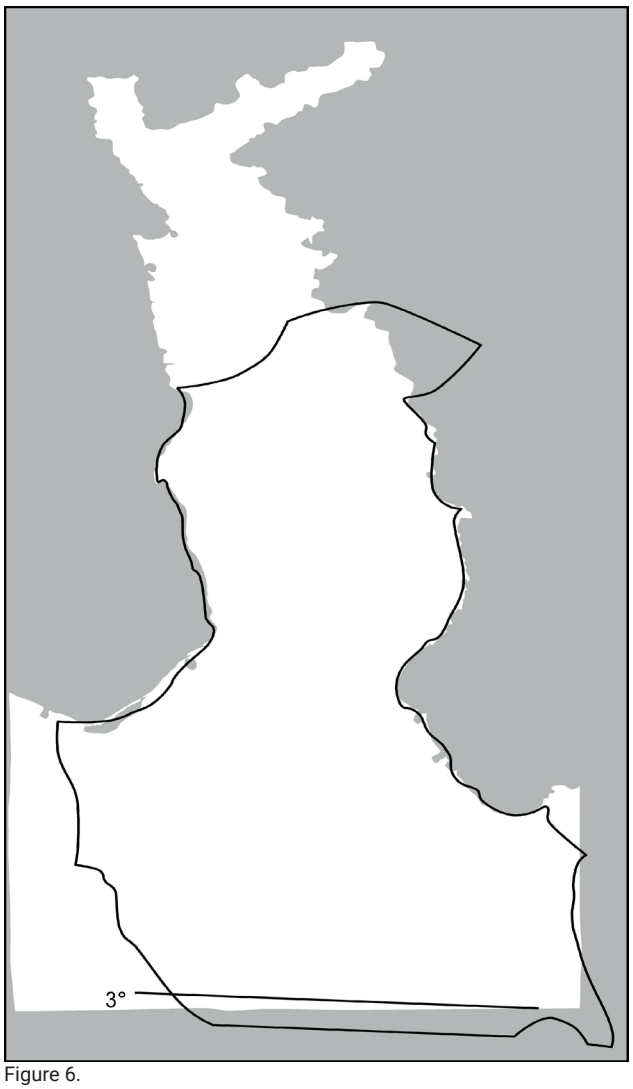

Figure 6.
The outline of the Strasbourg map in black is superposed on the Cotton is best fitted by a clockwise rotation by 3 degrees. Note that the Strasbourg is more "sketchy", for instance by omitting the Venetian lagoon completely.

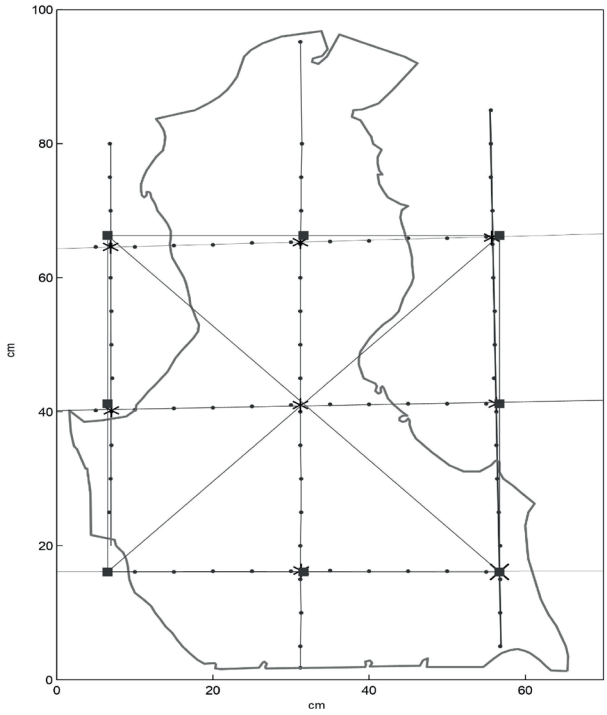

Figure 7.
A (simplified) rendering of the shrinkage documented in the Strasbourg map via its superimposed grid image.

number also includes, of course, warping by a (barely noticeable) pin-cushion distortion in the photographs and other errors made during the reproduction process and digital display. A tendency of more shrinkage toward the upper end is possibly connected to the differential drying of the outermost layer(s) when rolled. Compared to other similar documents, the Cotton appears to have been stored as a roll (hence its superior readability) and generally enjoyed careful handling during use. It should be noted, however, that a physical inspection of the original may alter some of the above measurements slightly.[42]

For the Strasbourg, we have the unique opportunity to quantify distortions with the help of the superimposed portolan-like grid lines, presumably conceived and drawn parallel and at right angles as intended. Inspecting fig. 4, we see a number of rectangular grids of variable widths which during their genesis were (presumably) intended to be at right angles and rotated by 22.5 degrees, as required. Close analysis of the grid indeed reveals differential shrinking of the parchment. Assuming an originally regular quadratic design of the system of rhumb lines (see the ■ markings) and comparing them to the actual stars (x markings in the figure) reveals increasing distortion toward the upper-left corner of the map with up to one centimeter mismatch. The overall size of the deformation is similar to that of the Cotton but

42 Within the present investigation concerning Biondo's source maps, this is not an option.

the pattern suggests more of a warping than the shrinkage of the Cotton. The corollary is of course a uniform or homogenous shrinkage of the Cotton roll depending on the distance of the ■ markings to the map margin, which cannot be tested in the same unique way as for the red border of the Cotton. However, it is reasonable to assume, considering the greater care the Cotton received over the centuries.

To summarize, we do thus have a 'component of mismatch' up to the order of one centimeter which is independent of the cartographic intent and graphic ability of the mapmakers and occasioned by the passage of time. It correlates well with the overall (mis-)matching results.[43] Hence, supporting the assumption, we have two independent findings of a relatively more severe mismatch on the Adriatic and the estimated average distortion of the Strasbourg based on a reasonable model for the original design of the map. The visually excellent match of the coastlines is subject to (small) distortions which were not present when both maps were made. The next section presents a number of additional differences of interest between the two maps.

5. Other Differences between the Two Maps

Which map is the copy of the other and which is the original? Both remain open questions. As already noted, the coastal outline of the Strasbourg is much simpler compared to the finely detailed inlets and promontories of the Cotton. This increased local content would suggest the Cotton is the original. In this context, if both depend on a primary (unknown) source, the Cotton appears a 'higher resolution' copy.

The next clue comes from the fact that a good match is obtained by rotating the Strasbourg map by three degrees in a clockwise direction, as shown in fig. 6.[44] As both maps have a similar sheet width of 65 centimeters, this leads to insufficient coverage at the Istrian end of each map. Remarkably, the remaining maximum differences between the two contours after optimizing their match are still about a centimeter or less. As both measurements are randomly distributed, they neither cancel out nor compensate the 'fuzziness' of the coordinate matching, but in fact tend to increase it somewhat.

The actual coastline from Genoa to Latium is carefully depicted and well matched for both maps except at both ends. In the Levante region, the coastline on the Strasbourg stops at Albenga (illegible because written into the sea but well defined by comparison with the Cotton). Inspection at high resolution shows that the pale green wash indicating seawater first forms a non-existing promontory and then departs at right angles to the coast, although until this arbitrary excursion it had curiously followed the (secondary) Torrente Aroscia closely, before the latter flows into the Tyrrhenian Sea at Albenga. This strange or arbitrary 'coastline' is verifiably continued up to the settlement of Mendatica, documented at precisely the same location on the Cotton and located next to the border with France. As far as I know, neither Albenga nor the small stream had a significant function in any historically documented regional treaties, wars, or border disputes.[45]

The reason for this deviation from the coastline on the Strasbourg is entirely unclear but similar to another deliberate departure at right angles from the coastline which is observed at Latium. There, the end of the excellent fit is reached at an unknown spot marked "gulorai" which on the Cotton is the last point before the port of Fiumicino at the mouth of the Tiber.[46] Beyond that point, the coastline of the Strasbourg map shows a right-angle trajectory out to sea which is, of course, contrary to ground truth, for the coast in fact continues straight on and forms the triangular protrusion seen in fig. 6 and fig. 7. Close inspection reveals that the thin

43 Details will be presented in a forthcoming cartometric study. Several tears, expertly repaired, have resulted in jumps in the grid lines at several places not documented in the above survey which only uses coordinates spaced five centimeters apart, as indicated by the dots.

44 I did this mathematically by rotating 96 Strasbourg coordinates against the Cotton coordinates around the point (x=0,y=0) of the Cotton and minimizing the root mean square error along the common coastal stretches in both seas. The minimum was well defined as 1.3 centimeters at 3 ± 0.25 degrees. The best fit is shown above for the whole outlines.

45 In the present context, the only significant mention of Albenga that I could find is its mention in the *Liber de Existencia Riveriarum et Forma Maris Nostri Mediterranei*, see Dalché 1995, line 1804.

46 The Cotton mentions a "geloran" at this location on the map. Campbell's list

Statistics on the Content of the Two Maps[47]

	Cotton	%	Strasbourg	%
Total vignettes	1220		649	53.2
Total important vignettes	104	8.5	95	14.6
On common site	937		649	69.3
Missing	12		278	42.8
Important towns therein	62	6.6	95	14.6
Agree	55	76	55	
Disagree	7	11	40	

Table 1.
Statistics on the Content of the Two Maps. [47]

preparatory tracing line does indeed continue out to sea, thus forming part of the original design. Therefore, the unrealistic right-angle bend of the coast was meant to signal the end of the studied area. These curious deviations from 'standard practice' may shed light on the mindset (one might say 'mental map') or intent of the mapmaker(s). One likely explanation could again be that it reflects a *brouillon*-type action signaling to a subsequent user the immediate end of reasonably ascertained knowledge. However, this speculation would have the Strasbourg adopt the role of precursor rather than plagiarist, without any further evidence to substantiate such a claim.

As to the coastline in the lower left-hand corner of the map (i.e., northeast Italy), there is no trace of the Venetian Lagoon in the upper Adriatic and the easternmost readable city is "exol"/Jesolo on an untraced coastline marked only by the green color of the sea to the northeastern end of the map. Again this may be interpreted as an unnecessarily subtle detail in an already well-known territory or as a sign of negligent tracing during hasty copying. At the upper end (i.e., southeast Italy) beyond Fermo, the mapmaker appears to have simply joined the end of the animal skin with a haphazard stroke which does not reflect the passage of the real coastline. This implies that he had reached the neck of the animal skin and, with it, the limits of his map's area coverage. It occurs at the same height as and is similar to the turn-off in the Tyrrhenian Sea. Also, no settlement above Fermo is marked out and the 'neck' is left empty, except for Rome. Apparently the mapmaker originally planned to cut off the neck of the skin at that level and was thereby willing to scarify the Rome vignette which thus only serves a 'placeholder' function as a landmark. This would in turn explain the noticeable scale-change between Lecco and Arezzo (approximately seven kilometers/centimeter), when compared to the distance between Arezzo and Rome (approximately nine kilometers/centimeter), as noted by Grenacher.

of portolan sites (Campbell 2011) has no mention of a "guloran" or "geloran" but lists Capo Linaro at modern-day Santa Marinella, which would indeed serve as the logical possible 'next stop' for seafarers after Fiumicino, but poses a wide linguistic gap in change of name.

47 Due to the bad state of preservation of the Strasbourg map, in a number of cases identification is subjective.

Strasbourg's Rome is located at the same place as on the Cotton, already implementing the scale-shift from northern to southern Italy.

We have no evidence that the mapmaker intended such a continuation into southern Italy and a reasonable estimate for the rectangular part of the skin (minus the neck) is 65 × 81 centimeters, which just about covers the carefully copied parts. To summarize, the coastline at all four corners of the map was left undetermined, thus reinforcing the sense of a 'work in progress'. However, the overall bad condition of the skin, with tears, nail holes, and missing parts, makes it equally likely that the project was abandoned at a rather late stage.

More generally, the detailed comparison of the outlines of the peninsula shows that the Strasbourg map cannot be a copy (or certainly at least not a careful copy) of the Cotton and cannot have served as a cartographic source for the Cotton, at least when considering the outlines of rivers and streams. The following sections present three separate regional studies focusing on extended objects like rivers and lakes and their toponym inventory. The aim here was to elucidate what could have happened during the elaboration of the two documents.

Beyond differences in contouring or geometrical placement, and the ensuing differences in geographical information density, there are other structural elements that differ between the two maps which merit further study. One important item on this list is the visual communication of 'importance', in other words, the ranking of Italian places of significance. Biondo searches for and glorifies the ancestry of historic sites, but what about his contemporaries, the two makers of our maps?

As shown above, there is little hierarchy expressed through graphic mark-making: lapis lazuli is applied randomly and only two-portcullis vignettes are a sign of 'importance' on the Cotton. In contrast, the Strasbourg transfers another element from portolan charts to its inland design: rubrication of place names. On average, about every fifth entry or so in these charts is rendered in red, many of them without reflecting any particular merit in our modern understanding but generally denoting 'significance'. The relevant numbers for our maps are compared in Table 1.

The Strasbourg retains only about 70 percent of the entries in the Cotton but has a much larger percentage of important towns and only twelve entries which do not appear in the Cotton. The distribution of these 'political statements' is interesting. Only seven two-portcullis names are not rubricated and four of those are missing entirely: Spoleto, Todi, Ostia, and Tivoli. Toscanello and Montefiascone are normal vignettes, and Asti in Piedmont is marked but unnamed, hence could not be rubricated. Thus overall concordance on the importance of two-portcullis sites is good. Among these, we have (of course, one might say) the important places like Rome, Florence, Pisa, Milan, and so on but there are also notable omissions. More importantly, north of the River Po, where the Cotton only has nine distinguished cities, the Strasbourg has eighteen rubricated entries – twice the number. Clearly, there must have been a different understanding of 'importance' – and this alone merits further study in future.

6. The Mutilation(?) of the Strasbourg Map

We have seen that one probably needed three sheets of (readily) available animal skin to render Italy at the scale of 1:600,000, as used in the Strasbourg map. Hence for a general survey map, the sheet-size of 65 × 95 centimeters is insufficient in width and, of course, in height, too, but more than that, the image of the Alpine region is severely abridged and has been strangely mutilated, as evidenced by its ragged edges. However, there is some evidence suggesting that the northeastern corner may have been already removed during the inscription phase. As shown in high resolution, the ragged cut was apparently made along a trace line marked in the same color as the river markings. The name of San Bartolomeo appears to have been squeezed into the margin *after* the removal of the missing part. The pale green ink along the rim otherwise serves to emphasize rivers and lakes. But here it was apparently used to delineate the cut.

Intriguingly, all this happens at the headwaters of the "olium"/Oglio river and up to San Bartolomeo on the Passo del Tonale. For centuries up to the present day, this little-known pass has marked the border between Italian Lombardy and German-speaking Trentino. The missing part depicts what in the Cotton is the Val Telline (Valtellina) – a pass that was heavily contested over the centuries between, on the one hand, northern powers that would (much later) coalesce into the Swiss Confederation and, on the other, the various powers that ruled over centuries in Lombardy.

The next deliberate removal of part of the animal skin is only identifiable through a comparison with the Cotton and clearly happens at the confluence of the Adige (German: Etsch, marked on the map as "f. addax") and the Torrente Noce from the Val di Non which descends from the Passo del Tonale described above. Again, the brutal cut follows a marking and, although undecipherable, the two vignettes facing each other across the river at this point are readily identified on the Cotton by the label "mez" (modern Mezzocorona/Kronmetz) and "conigsperg" (modern-day castello di Monreale/Königsberg, near Salorno).[48] And again, for centuries these two sites traditionally marked the southern border of German-speaking South Tyrol and Trentino, in other words between essentially Hapsburg dominions and Venetian ambitions. The deliberate cut crosses the Adige/Etsch at the last (now-illegible) entry identified on the Cotton as "formiga"/Frangart just five kilometers south of Bolzano/Bozen at the confluence of the Eisack and Etsch. Here ends the dark blue border marking the removal of the northeastern part of the skin. The cut itself ends just north of Bressanone/Brixen, exactly where the Cotton ends. Further evidence for a deliberate 'mutilation' or elision of the northeastern corner is manifest in the coastal stretch northeast of Venice. The same dark greenish marking appears to suggest deliberate removal. Further on toward the coast, the (indistinct) coastline of the Adria runs toward the upper-right edge.[49] The last readable entries before the 'border' marked in blue are the three settlements of "ouerzo"/Oderzo, "bufoleo"/?, and "cauclan"/Cavolano on the Livenza river. However, this border does not, as far as I know, represent a border separating languages.[50] Why would the mapmaker literally cut off the Friuli?

On the other hand, both maps are clearly 'non-political', in that they have neither boundaries nor territorial labels or markers, and only indicate settlements, rivers, and the coast. A more mundane explanation for the mutilations could be that they are the remnants of a rescue attempt to halt further deterioration through rot, without linguistic or political connotations. The coincidence with boundaries would then have happened by chance alone, a possibility that Marica Milanesi, after closer consultation with me on this matter, suggests.

On the French-speaking side, a narrow strip has also been removed. The tell-tale green marker is also present, suggesting that the strip was removed purposefully and that the map was not subject to a random act of vandalism. The prominently 'saved' feature is the source lake of the River Po, which all the relevant maps[51] retain, and the cut follows the Alpine watershed, as does the modern-day border between France and Italy. The rest is difficult to read even with the help of the Cotton as a cross-reference for designations. It is subsequently too early to draw any conclusions. Specialists in minority and relict languages can perhaps better shed

48 A travel diary of 1600 of August the Younger, duke of Brunswick-Lüneburg, reads: "den 28 Augusti ☌, Laviso dorf, Bressano dorf, La rave dorf, Castell Königsperg, Castell salorno mitten dorf, Newmarckt flecken zur kronen, 4 meill, biß Brunzuol dorf, Leyfers dorf, Botzen flecken zum Cardinalßhuett 3 meill, facit 7." A transcript is viewable online, see Ralle 2014 (link accessed 03.07.2020).

49 Better images and visual inspection of the original may clarify some of the remaining issues.

50 According to Luca Melchior: "[…] the historical Friuli are devoid of physical boundaries – hydrographic or orographic – that separate them clearly from the surrounding areas. However, if the southern border were the Adriatic Sea, then the 'natural' borders of the Friuli territory can be considered the River Isonzo to the east and the River Livenza to the west – while the territories to the left of the southern half of this are found, however, in the administrative region of Veneto." (My translation of: "Considerando il cosiddetto Friuli storico, questo risulta privo di confini fisici – idrografici o orografici – che lo separino nettamente dalle regioni circonvicine. Tuttavia, se a sud il confine è costituito dal mar Adriatico, i confini 'naturali' del territorio friulano possono essere considerati a est il fiume Isonzo, a ovest il fiume Livenza – i territori a sinistra della metà meridionale di questo si trovano tuttavia, nella regione amministrativa del Veneto.") Melchior 2018 (link accessed 16.07.2020).

51 Many subsequent cartographers retained the source lake of the River Po, from Donnus Nicolaus Germanus's *Sexta Europa Tabula*

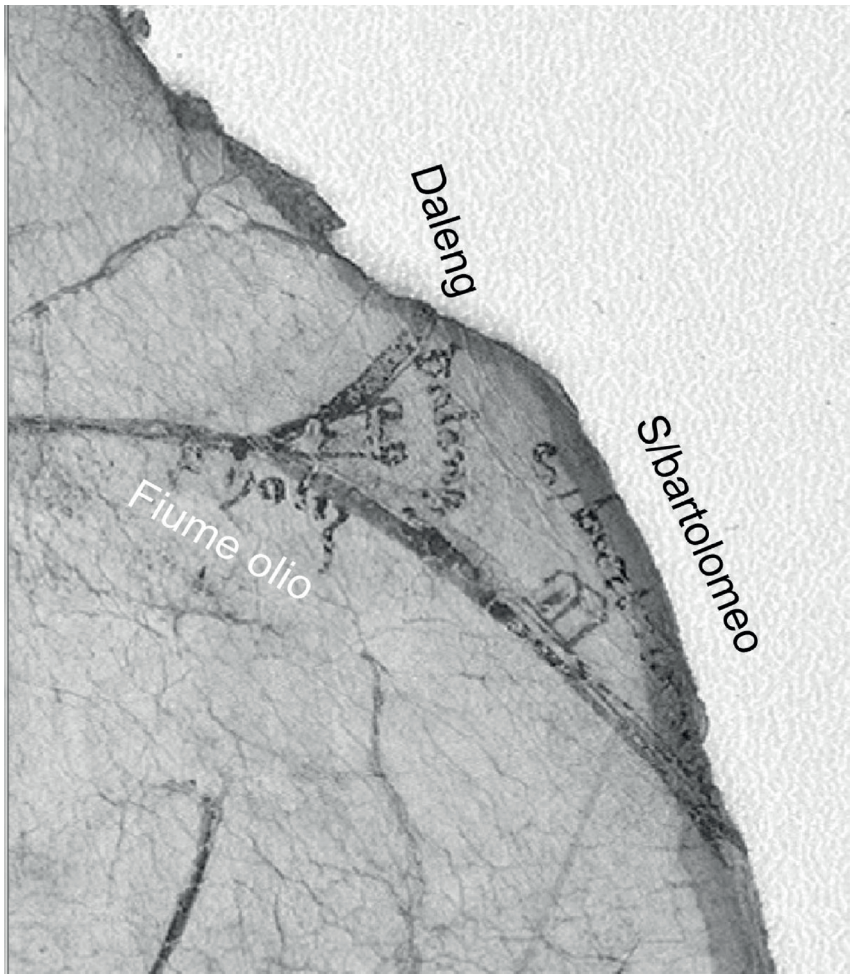

Figure 8.
This small excerpt of the Strasbourg map shows the ragged lower edge in the vicinity of the river Oglio. The Vignette of Daleng fits into a 3 × 4 mm rectangle. The dark band at the edge is taken as an indication that the cut was deliberate.

light on these suppositions. It is my personal belief that the unprecedented richness, diversity, and local precision of both maps may help other relevant investigations into early fifteenth-century thinking.

7. The Rendering of Swamp Areas

Beyond pure location, a map uses numerous conventions and symbols to communicate meaning to the audience, among them coloring and shading of extended objects like islands or lakes.[52] One example of such building blocks of what scholars call 'map-based dialogue' is an intriguing feature of the Cotton that distinguishes it from other maps of its time, namely the rendering of swamps with distinct graphic marks, quite different from those used to indicate lake surfaces. By comparison, the Strasbourg, for example, uses the same graphic marks for wetlands and lakes, making no distinction between the two.[53] This is best seen in the Chiana Valley (Valdichiana) between Arezzo and "chiusi", but other instances merit further study.

The stippled surface is quite different from the wavelets representing lakes, such as nearby

in the Ulm edition of Ptolemy of 1482, to Waldseemüller's *Tabula Moderna* of 1513 (with an enormous lake), and Sebastian Munster's *Italia XIX Nova Tabula* in his *Cosmographia* of 1545.

52 For an overview see Harvey 1980.

53 Milanesi 2008, p. 164, writes: "The rendering of the Adriatic and Tuscan wetlands and the lakes of northern Lazio is equally meticulous; the basins of the Arno and Tiber are well designed and in the right proportions, even if the caesura between coast and interior is made evident by the course of the Tiber, which in Tuscia runs too close to the coast. The design of Tuscany precedes that of Pietro del Massaio (1459), which, however, does not differ much, even in the fluid style of representation; however, the Ombrone Basin is missing, as in the Correr map, and the distribution of the centers of southern Tuscany is affected; La Chiana is also confused with Paglia, while the marshes of the Chiana and the Castiglione Lake (~Maremma) are well represented." (My translation of: "La resa delle paludi adriatiche e toscane, e dei laghi del Lazio settentrionale, è altrettanto minuziosa; i bacini dell'Arno e del Tevere sono ben disegnati e nelle giuste proporzioni, anche se la cesura tra costa e interno è resa evidente dal corso del Tevere, che nella Tuscia corre troppo vicino alla costa. Il disegno della Toscana precede quello di Pietro del Massaio [1459], che per

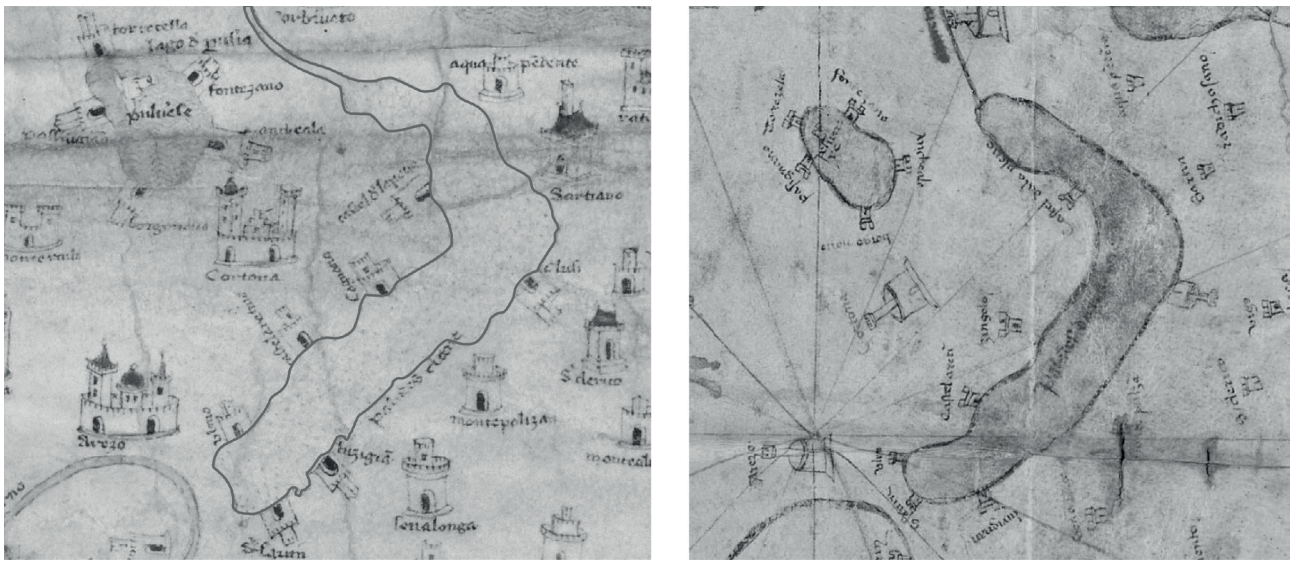

Figure 9
The rendering of the Chiana valley side by side of the Cotton (left) and the Strasbourg map (right).

Lake Trasimeno.[54] Other wetlands share this feature as well: the Maremma near Grosseto in Tuscany, the Valle Padusa northwest of Ravenna, and extensive wetlands around the Venetian Lagoon, extending from the Musone river to the "padus ficariolo"/Ficarolo.[55] To Biondo, these places had significance, attested by his introduction to the territory of Venice which he describes succinctly in chapter 8.2, 'Venice': [T]he duchy is eighty miles long […] The breadth of the region is variable, its only boundaries being the marshes formed by the waves of the sea, as they advance and recede toward and away from dry land.[56]

Remarkably, the Pontine Marshes south of Rome and the Clanio marshland north of Naples are simply ignored, appearing to have no demarcation at all. However, other wetlands such as Lake Fucine and those between Rieti and Terni, which have survived into our time, as well as some periodically inundated areas in the lower Arno Valley between Lucca and Pisa, are shown with the regular lake markings.[57]

One may wonder why these areas warranted a special area symbol, foreshadowing the sophisticated graphic 'special features' which tremendously enrich the vocabulary of modern maps. The consequences of the neglect of Roman hydraulic engineering works were dramatic, as, starting in the early tenth century, much traffic moved over to neighboring Val d'Elsa (Via Francigena) which then grew in political importance. However, despite flooding, the Chiana was still used for transport, as is shown by the following source:

> In the past, the hills of Chiuso (between Cortona, Valiano, and Foiano) were equipped, due to their strategic position, with castles and ports, albeit rudimentary, for the landing of boats in service on the Chiana. The name of "Il porto" remains today in the cases of Farneta, Cignano, Fasciano, Bettolle, Creti, Foiano, and Cesa. The port of Farneta is a neighbor of the port of Foiano della Chiana […].[58]

On the other hand, the Chiana wetlands were the theater of intense military struggles between

altro non se ne discosta molto, anche nello stile fluido dela rappresentazione; manca tuttavia il bacino dell'Ombrone, come nella carta del Correr, e la distribuzione dei centri della Toscana meridionale ne risente; la Chiana è inoltre confusa col Paglia, mentre sono ben rappresentati le paludi della Chiana e il Lago di Castiglione.")

54 "Lago d' prusia" in the upper-left corner of the image.

55 (Biondo 2005b, p. 313): "The Padusan marsh begins at the canal, according to the geographers the only marsh in Italy. Vergil says of it in the *Georgics*: 'or the stream of Padusa teeming with fish.' The term embraces all the lagoons, swamps and marshes that we see lying between the Po and the territory of Flaminia (or Emilia) […]."

56 Biondo 2016, p. 72, n. 55: "Venetias […] Habet autem eius ducatus regio longitudinem milium octoginta […] Latitudo autem varia nullos habet alios terminos quam quousque cedentes recedentesque mans aquae ad siccum stanando perveniunt."

57 The remnants are now known as the "Padule di Fucecchio".

58 My translation of [Anon.]: "Le colline del Chiuso (tra Cortona, Valiano e Foiano), per la posizione strategica, erano in antico munite di castelli e dotate, sebbene rudimentalmente, di porti per l' approdo di barche in servizio sulla Chiana. Rimane oggi la denominazione de 'Il porto' a Farneta, a

Guelph Florence, Ghibelline Siena/Arezzo, and the Papal States until 1492, when the Medici took control of Tuscany.[59] In the heavily contested territory, the marshlands (and indeed knowledge of their whereabouts) may have come in handy.[60] This area symbol thus may have had a military significance for the map's readers.

The topic of marshland markings distinguished from lake markings is apparently also taken up by Nicolaus Germanus in his *Italia Moderna* of 1467[61] and in Leonardo da Vinci's *Map of Tuscany and Chiana Valley* of circa 1503–1506,[62] which denotes marshy areas in a lighter blue. The use of such area symbols in all these maps indicates that the (educated) public – the mapmakers' patrons and clients – were aware of such subtle cartographic signals and suggests a sophisticated appreciation of semiotic features.

To summarize, the topic of special area symbols for marshland is a recurring style element in early mapping and perhaps one of the earliest (surviving) examples is found in the Cotton. For unknown reasons, the maker of the Strasbourg chose not to retain it, one assumption again being that the natural environments of such wetlands were known to its immediate users and thus did not warrant the extra effort, as was the case with the missing place names in known territory (see below).

8. A Common Source?

Further detailed comparison of the two maps shows that their similarities betray a common source, but with neither being an outright copy, either way. The idea does not rest only on the common overall size, but is also supported by two observations: common idiosyncrasies or errors on the one hand and distinct details in particular. Both maps share the banana-shaped outline of the swamp of the Valdichiana but the real Chiana wetlands extended only from "ulmo"/Ripa di Olmo (where the canal was later dug) to "clusi"/Chiusi on a straight north-south orientation. The bend toward the east (toward the left in fig. 9) follows the course of the Chiana through hilly terrain toward "orbiuato"/Orvieto but without the extended wetlands suggested by our two maps. Hence, the banana-shape appears unique to a particular rendering or rather misreading of a common source.[63] By comparison, Germanus's and Da Vinci's Valdichiana are pretty straight.

The outlines of extended objects (rivers and lakes) reveal a free-hand style of draftsmanship common to both the Cotton and Strasbourg. A typical example is Lake Trasimeno: all settlements are present, but the size and orientation of the oval are quite different. Note also the simplified outline of the swamps in the Strasbourg, which, within a margin of one to two centimeters, follow those of the Cotton – not bad for a manuscript map 60 × 100 centimeters in size!

The toponym inventory has a high degree of common places, albeit often with different spellings and selection. For instance, Cortona (494 meters ASL)[64] sits high above the valley floor and to the side, as shown in both maps. Below it, at the shoreline, the Cotton has the settlement of "cam?ia"/Camucia, whereas Strasbourg instead marks out "a zingolo"/?, which may possibly represent nearby Monsigliolo (Camucia-Monsigliolo; 273 meters ASL). Next to these sites, the Cotton has a "castel d'lapena" which cannot be identified, whereas Strasbourg displays a "castel dalla plane". In the area of Tuscany (for which high-resolution digital images taken from both maps are available)

Cignano, Fasciano, Bettolle, Creti, Foiano e Cesa. Il porto di Farneta è dirimpettaio del Porto di Foiano della Chiana […]", from "Gli interventi medievali e la situazione antecedente all' egemonia medicea sulla Toscana", URL: http://www.valdichiana.it/bonifica/storia2.php (accessed 15.07.2020).

59 Similarly, Guelph Grosseto was contested by Siena until 1336.

60 Warfare may also have hindered amelioration, the improvement of agricultural land by draining.

61 From the image with the highest resolution I could find in the public domain, in this case the *Cosmographia Claudii Ptolomaei Alexandrini Mathematicorum Principis* […], 1467, Biblioteka Ordynacji Zamojskiej w Warszawie, Rps BOZ 2, URL: https://polona.pl/item/cosmographia-claudii-ptolomaei-alexandrini-mathematicorum-principis-seculo-secundo,NzQ1NjM4Ng/18/#info:metadata (accessed 15.07.2020).

62 See, for example, image of acc. no. RCIN 912278 in the Royal Collection, URL: https://www.rct.uk/collection/912278/a-map-of-the-valdichiana (accessed 15.07.2020).

63 Similar observations are seen in the lake district of northern Italy: in reality the Ticino issues into Lago Maggiore at a point between Ascona and Locarno but both maps show it flowing into the lake at a spot east of Locarno. Also, Lake Varese is missing on both maps, as is the Ombrone river in Tuscany.

64 Above Sea Level.

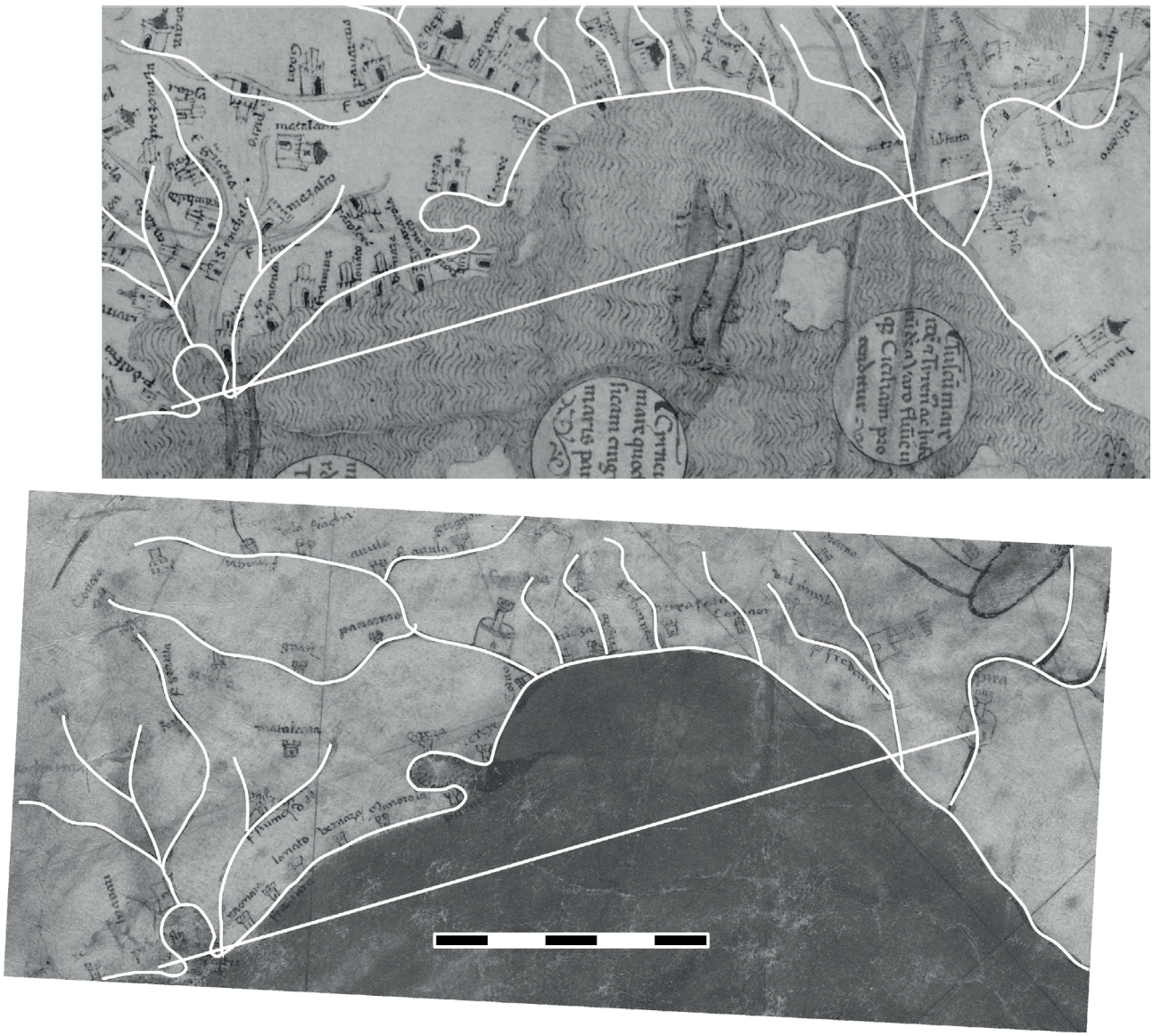

Figure 10
Comparison of the coast and rivers between Pisa and Portofino of the Cotton (on top) and the Strasbourg map (below).

other examples include the entry “bolsena” on the Cotton which becomes “Bolgena” on the Strasbourg, while “toscanello” becomes “Toschanela”, and “vicarello” and “anguillara” similarly lose an “l” on the Strasbourg, and so on. The lettering evidently holds many potential clues and perhaps paleolinguistic and paleographic studies of the name forms will provide further insights into the origin and/or makers of these exceptional charts.

A strikingly similar geographical lapse can be found at Lake Lugano where nine toponyms and the outline of the lake are squeezed into an area of only 3 × 4 centimeters. Here the characteristic U-shape of the lower half of the lake is faithfully reproduced by both maps but the upper-right half of the real lake to the northeast of Lugano is missing in both renderings. This clearly demonstrates their dependence on a similar (or same) source which also carried this inaccurate information. More detailed study is bound to unearth yet more telling examples but the message seems clear (to me): underlying these two maps is a common source.

9. The Coastline in *Liguria*

Having dealt with inland sections, a third detailed comparison deals with (part of) of the extensive littoral outline and hydrologic network of the two maps. Here, I choose the layout and marked settlements along a 115-kilometer-long stretch of the Ligurian and Tuscan coast between Portofino and Pisa.

The distance from Pisa to Portofino (116 kilometers) is shown by the straight line which is 15.2 centimeters long.[65] First the coastline will be discussed and then the placement of the rivers compared.

The bight of Portofino is not rendered accurately because in reality it already ends at Chiavari, the next marked point on both maps. This suggests that a verbal description of the coastline may have inspired the deep recess, whereas the bight running from Portovenere to La Spezia ("larexa"/Lerici) shows a fair degree of fidelity to ground truth. In between and beyond Sestri Levante (marked on both maps), the Strasbourg gives a schematic representation of the five equidistant vignettes of the Cinque Terre communities (not all named), whereas the Cotton clearly faces problems fitting and naming them in the space available. Apart from this, there is concordance as to the estuaries and the general curvature of the coast in both maps. In the hinterland, Sarzana, Lucca, and Pisa are each marked with two portcullises on the Cotton, whereas the Strasbourg assigns Chiavari distinctive red lettering. Starting with the Arno river, crossing Pisa, one immediately sees that the actual rendering of the river courses is largely dependent on the space available between the differently sized but accurately placed vignettes with, I believe, one significant exception: whenever a tributary reaches a main river or a river reaches the sea, their locations match. At least to the craftsmen of both maps executing the drawing, these geographical places held a significance, which is also attested by the numerous vignettes nestled in the confluences. These afford place recognition, confirming at least three elements and their relation to local space: river A flows into river B at town C.[66] In a sense, they provide spatial clues similar to promontories in portolan charts: direction from place A to B changes into the new direction from B to C at B. The continuation of the zig-zagging or curving lines further into the interior is subsequently subject to less stringent rules and accuracy.

10. Conclusion

As an image, the Cotton appears to follow the same principles that guided Biondo in structuring his narration of the *Italia Illustrata*. It 'illuminates' Italy from the Alpine Arc to the Ionian Sea and excludes the islands to form a single, magnificent unity, not the three-partite political structure of its day. It also applies the ancient technique of patterning the subsets of data along the rivers, just as Strabo did. And, finally, it even shares with Biondo's work the relative paucity and incompleteness of information in the region of the Kingdom of Sicily. But there the similarities end. Despite containing 1200-plus toponyms, the interior plotting is very different from Biondo's account, which features 2000-plus place names.[67] Obviously, the Cotton and Biondo share the noteworthy cities, the *poleis episemoi*, but the distribution of the other settlements differs locally. As such, we can come to the conclusion that the Cotton was certainly not Biondo's source but, perhaps, Biondo did see the map at some point, somewhere in northern Italy, and it might have inspired his literary write-up of a general survey purely in words. Also, Biondo's desire to resurrect Antiquity and its splendor has very little to do with the Venetians' detailed information on trade routes, military intelligence, and administrative knowledge of the various powers which the Cotton so clearly demonstrates.[68]

65 In measuring, I have used the lower central point of the relevant large vignettes on the Cotton. These usually feature a black portcullis which is easily spotted, especially in faded areas. Most vignettes on the Strasbourg are so tiny that they pose no problem when measuring the distance between two points.

66 A typical example in fig. 10 is "mazasco"/Massasco above Sestri Levante at the confluence of the River Torrente Petronio and a small stream. The vignette above that, "matalana"/Mattarano is correctly placed in the Strasbourg at the headwaters of the Petronio. In the Cotton, although at a similar place, its orientation suggests a very different location up-stream on the small stream. One may take this as an indication that the definitive placement and/or orientation of the vignette was left to the miniaturist of the map. This is also suggested by fairly frequent left bank/right bank switches, resulting from restricted space or aesthetic concerns. It is worth remembering that the map is extremely crowded, especially in the Levante, compared to the conventional density of features on modern maps.

67 Not only vignettes but also estuaries and confluences furnish additional geographical information which also figures frequently in Biondo's text. See also Guckelsberger/Geus in this volume.

68 The remote but disputed Alpine valleys are rendered in superb detail.

They are, to me, two views of the same entity: an illustrated and indeed *illustrious* Italy seen from different perspectives.

The existence of such extensive pre-modern maps of Italy firmly argues against the notion that Italian cartography developed rapidly after the discovery of Ptolemy's *Geography*: it was already emerging independently of his great legacy. The crossover from portolan charts to terrestrial maps of similar 'precision' is impressively documented by the two specimens discussed here. Indeed, Milanesi has already diagnosed the relative similarity between them to a lost or unknown prototype.[69] Furthermore, their widely different cartographic languages argue for a vigorous program or at least clear awareness of the cartographic requirements yet to be developed in subsequent centuries. After all, both maps are the earliest surviving attempts at a constructed landmap as evidenced by the portolan-like overlay. I believe in two master-maps, one for northern and central Italy and another for the Kingdom of Naples. The Strasbourg may even have been nearer to a source map (or be a copy thereof), despite its poor graphics. (Indeed it may be a *brouillon* or a draft copy?). In the area covered by both maps, the Cotton has 1220 names, while the Strasbourg contains only 649, at last count. Conversely, it has twelve names that do not appear on the Cotton and a clear case of alternate names in a sequence in the Chiana Valley demonstrates (among other things) independent or alternate input data.[70] The same applies for rivers. Such an exchange and correlation of nearby place names suggest that an itinerary-type data set was available from which one mapmaker chose one name and the other another. Of course, both mapmakers would have had additional information at their disposal and decided to add in or omit other points. Numerous variant spellings of the selfsame place names may well provide further clues on the relationship between the two artifacts. Clearly more examples are needed, but the case is now open.

The overwhelming majority of details suggest a common source but different graphical dexterity or attention. Finely traced – and in detail superbly faithful – inlets and promontories on the Cotton suggest superior local knowledge, while the Strasbourg's preparatory markings and penstrokes and factual but rather crude vignettes may signal a more technical 'preliminary', even preparatory stage of the same compilation. Furthermore, a study of the lettering by palaeographic experts would be a welcome approach to dating the document.

It seems likely that the master chart not only served Cotton and Strasbourg and Biondo, but also those mentioned below. (Indeed it would support, rather than contradict, the author's argument.) In fact, in her article cited at the start, Milanesi writes that in 1999 Molly Bourne vehemently advocated the hypothesis that one of these maps, the Cotton, is somehow related to the wall map of Italy designed for the second time by Antonio Leonardi in the Palazzo Ducale in Venice after the fire of 1483 and continues in footnote 21 that Peter Barber in personal communication with her on the matter believes that the two maps may have had, at least, a common source, which seems to me more than possible.[71] The Strasbourg may generally lack river names but not systematically. Without an extensive search, it appears to me that those names which *are* given may have served as a means of quick orientation in answering practical questions like "Where are we at the moment?" either during the drafting of the map or during a copying process. For instance: there are six rivers issuing into the Adriatic Sea between Ravenna and Rimini and each one is named in the Cotton, but only the fifth is named in the Strasbourg. Nearby, a total of nine rivers flow into the Valle Padusa between Bologna and the coast. On the Cotton

69 Milanesi 2008, p. 164.

70 A number of unreadable entries may or may not increase these numbers.

71 Milanesi 2008, 156. "Molly Bourne, nel 1999, avanzava velatamente l'ipotesi che una di queste carte, la Cotton, sia in qualche modo da mettere in rapporto con la carta murale dell'Italia disegnata per la seconda volta da Antonio Leonardi in palazzo Ducale a Venezia dopo l'incendio del 1483[21]", (her) note 21: "Bourne 1999, 65. Peter Barber (comunicazione personale) ritiene che le due carte possano avere avuto, quanto meno, una fonte comune; il che mi sembra più che possibile."

they are named and simply stop at the edge of the stippled area, whereas on the Strasbourg, they namelessly merge into a lake, but, again, only the next to last is named. More study is surely needed here.

Finally, it is unclear whether the imaginary boundary from Ostia to the River Tronto was a political, linguistic, or cultural watershed. The Tronto was indeed for many centuries the southern limit of the March of Ancona, whether under Langobardian, Carolingian, or Angevin rule. Note also that the earliest map of the whole of peninsular Italy,[72] the bisected map of Italy by Fra' Paolino, continues its northern half down to the Gargano Peninsula so that this terminus cannot be considered a fixture of historic geography.

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72 Paulini Minoritae de Venetiis opera historica, fol. 267v and 268r, known as Vat. Lat. 1960 and available in high resolution from DigiVatLib, the Vatican Library's digitized collections, URL: https://digi.vatlib.it/view/MSS_Vat.lat.1960 (accessed 15.07.2020).

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Abstract

Marc Laureys
‘Illustrating’ Italy: Biondo’s Concept of Illustratio

keywords – *Space and history, Historical geography,* llustratio, Italia Illustrata

The Italia Illustrata *of Biondo Flavio logically presupposes an ‘illustratio’ of Italy, but Biondo’s notion of ‘illustratio’ has hardly ever been discussed in detail. This article explores the various dimensions of this concept and tries to show how they help to elucidate Biondo’s working method in his* Italia Illustrata*. Such an analysis also intends to contribute to a better understanding of the scope and nature of the* Italia Illustrata, *the most original and most personal among Biondo’s major treatises. The multi-faceted idea of ‘illustratio’ informs, in particular, the innovative interlocking of space and history, evident in the* Italia illustrata*. Finally, Biondo’s conception of ‘illustratio’ can also be used as a yardstick for measuring the precise extent of the reception and influence of the* Italia Illustrata *on the development of historical geography, sometimes connected with Biondo in an all too perfunctory manner.*

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‘Illustrating’ Italy: Biondo’s Concept of *Illustratio*

Marc Laureys

Introduction

The title *Italia Illustrata* has often been used as an indicator of the popularity and the influence of Biondo’s historical-geographical description of Italy, arguably both the most personal and most pioneering of all his writings. In it Biondo attempted to combine in a highly original fashion chorography, prosopography, and historiography, in an effort to record the historical legacy of ‘Italia’, interpreted as a humanistic concept rather than a geographical space. All three of these fields of literature and scholarship share precedents that ultimately reached back to classical antiquity, but they had never before been conjoined in a project with a very specific and, until then, unparalleled agenda, namely to document the sustained Romanness of the core province of the ancient Roman Empire.[1] At the end of the introductory section of the first book, devoted to the “regio prima: Liguria”, Biondo articulated very clearly these three components of his work:

> Postquam vero omnem Italiam peragraturus ero, viros praestantiores, qui singulis in urbibus et locis pridem geniti fuerunt, eosque qui sunt superstites, praesertim literarum aut cuiuspiam virtutis gloria claros, enumerabo, atque res in singulis locis scribi dignas breviter narrabo, ut non magis haec Italiae sit descriptio quam virorum eius illustrium praestantiumque catalogus ac non parvae partis historiarum Italiae breviarium.
>
> (After I have ranged over all of Italy, I shall enumerate the preeminent men born in former times in her cities and regions severally, as well as those who are living still, especially those who have distinguished themselves with a reputation for letters or for any great virtue; and I shall briefly set forth the noteworthy historical events of her individual regions. So this work will not just be a description of Italy, but also a catalogue of her famous and outstanding men, as well as a summary of no small part of Italian history.)[2]

As far as I know, no author in the field of historical geography after Biondo used these connected categories, “descriptio”, “catalogus”, and “breviarium historiarum”, to characterize his work. The term *illustrata* nonetheless appeared countless times in treatises all over Europe and seems at first sight to denote scholarly endeavors similar to the one Biondo pursued for Italy. On a closer inspection though, it emerges that, first, Biondo’s *Italia Illustrata* was never comprehensively and faithfully imitated in all its facets and, second, the concept behind the term ‘illustrata’ was interpreted by different authors in varying ways and consequently represents various types of scholarly treatises. The reception of Biondo’s *Italia Illustrata* is therefore less straightforward than one may initially think. In all these works *illustrata* logically presupposes an act of *illustratio*. What exactly such an *illustratio* means, however, has to date hardly ever been assessed in detail. In any case, the term *illustratio* needs to be understood on several levels, all of which help the reader to understand the nature and scope of the treatises concerned. Unfortunately, the authors themselves usually have little to say about the methodology of their scholarship. Biondo, too, never explained the theoretical principles of his investigations at length. Instead they need to be culled from a few scattered statements about his

1 Laureys 2019; Laureys 2020, and the literature quoted there. In this paper, I draw substantially on those two earlier studies. The most extensive analysis of Biondo’s *Italia Illustrata* remains Clavuot 1990. For a more recent general assessment of the work, see also Paolo Pontari’s very rich introduction in Biondo 2014, pp. 25–241.

2 Biondo 2014, pp. 18–19; Biondo 2005b, p. 18; Biondo (1531) 1559, 295C. All translations from the *Italia Illustrata* are drawn from Biondo 2005b. Translations of other source texts are my own.

research[3] and above all deduced from his works themselves – a concern that lies at the heart of the project from which the present volume of proceedings emanates.

In this paper, I would like to explore Biondo's understanding of *illustratio* and I want to argue that Biondo's use of the term spans nearly the entire semantic range it can cover in Latin. All possible facets of the word in classical antiquity consistently derive from the basic meaning of the verb *illustrare*: to shed light (*lux*) on a person or object that was previously indistinct or unknown. This general notion can be made more specific in three ways. *Illustratio* can mean: (1) vivid description or visualization; (2) explanation or elucidation; and (3) celebration or glorification.[4] The natural opposite of *illustrare* is *obscurare*: to cast darkness (*obscuritas*) over someone or something that was previously distinctly perceptible or well-known. The words sometimes appear as a contrasting pair, for instance in Pliny the Younger's *Panegyricus* (69.5): "Tandem ergo nobilitas non obscuratur, sed illustratur a principe" (In the end, then, nobility is not obscured but rendered illustrious by the ruler). Biondo, too, employs this contrast in an important passage of the introduction to his *Italia Illustrata*, where he explains the main goal of his treatise:

> Itaque, postquam propitiore nobis Deo nostro meliora habet aetas nostra et cum ceterarum artium tum maxime eloquentiae studia revixerunt ac per ea historiarum diligentius noscendarum amor nostros cepit homines, tentare volui si per eam, quam sum nactus Italiae rerum peritiam, vetustioribus locis eius et populis nominum novitatem, novis auctoritatem, deletis vitam memoriae dare, denique rerum Italiae obscuritatem illustrare potero.
>
> (And so, seeing that the times have changed for the better, our God being more gracious to us now; and seeing that the cultivation of the rest of the arts and of eloquence, especially, has come alive again; and seeing that, because of these developments, a passion to study history in greater depth has caught up the men of our time, I wanted to discover if, through the practical experience of the history of Italy I have gained, I shall be able to apply the names of current coinage to the appropriate places and peoples of Italian antiquity, to settle the authenticity of the new nomenclature, to revive and record the names that have been obliterated, and in a word to bring some light to bear upon the murkiness of Italian history.[5]

The second and the third meaning of *illustrare* can immediately be sensed in this passage. On the one hand, Biondo emphasizes his expertise (*peritia*), which enables him to take on the task he has set himself. The *Italia Illustrata* is, in other words, a scholarly project for which he feels well-prepared thanks to his previous work. His objective is an explanation of Italy's history, which takes as its point of departure an analysis of old and new names of its places and peoples. On the other hand, Biondo points out that he is lucky to live in an age of cultural renewal, favorable to intellectual and literary pursuits, not least historical projects, since they make people eager to familiarize themselves with the history of their country. This passionate longing for a more careful knowledge of this history ("historiarum diligentius noscendarum amor") is what drives Biondo himself and what he expects his readers to share with him.[6] His *Italia Illustrata* is, therefore, evidently also a celebration of Italy's 'illustrious' past. Accordingly, Biondo feels he cannot start his description of Italy but by singing its praises: "Italiam describere exorsi, provinciarum orbis primariam, a laudibus suis incipere debuimus" (Having undertaken to write a description of Italy, the foremost of the provinces of the world, I ought to begin with her praises.)[7]

3 The most important statement about his method occurs at the beginning of the third decade of his *Decades*, where he reflects on the concept of *mutatio* and its implications for his historiographical writing: Biondo (1531) 1559, 393A–395A.

4 A further, more specific meaning is also well attested: enlightenment, in the sense of an initiation, used in the context of pagan mystery cults (Apuleius, *Metamorphoses*, 11.27.2 and 28.5), and also in a Christian context for baptism (compare the Greek term φωτισμός). Here *illustratio* comes close to *illuminatio*. This meaning, however, does not seem to be of any relevance for Biondo; the cultural renewal or "renascence", in which he contextualized his work, is different from the idea of baptism as a spiritual renewal, a purification.

5 Biondo 2014, p. 4; Biondo 2005b, p. 4; Biondo (1531) 1559, 293B-C). Biondo tacitly alludes in this statement to Pliny the Elder's Naturalis historia, Praefatio, 15; Pliny adopts a similar wording and also uses the metaphor of light ("obsoletis nitorem, obscuris lucem dare").

6 One is reminded of the logo of the *Monumenta Germaniae Historica*, which still appears on the frontispiece of all its publications and its website: *Sanctus amor patriae dat animum!*

7 Biondo 2014, 5; Biondo 2005b, p. 10;

Two further passages in which Biondo alludes to the title of his treatise convey the same picture. In a famous section of the *Italia Illustrata*, Biondo locates the origins of the revival of literature and culture in his native Romagna (called "Romandiola" in the *Italia Illustrata*) and presents himself, alongside Giovanni Malpaghini[8] and Alberico da Barbiano, as an exponent of this felicitous development:

> At postquam Dei munere eloquentia per viri Romandioli Ravennae geniti virtutem reviviscere coepit et nova tutiorque rei militaris forma in Italia, externis eiectis, per Albricum item Romandiolum est reddita, eandem quoque Romandiolam per nostras manus tertiam in rebus maximis gloriam Italiae speramus dedisse, qui latentem supra mille annos historiam tanta attigimus diligentia, ut omnem nedum Italiae, sed totius etiam olim Romani imperii provinciarum regionumque statum, ad quorum vel regum vel principum vel nationum manus pervenerit, clare magis et quam fieri posse videretur diffuse ostenderimus, cum, Roma interim instaurata, Italiam quoque, abstersa errorum obscuritatumque multa rubigine, noverimus illustrare.
>
> (But now, by God's grace, eloquence has begun to revive thanks to the talent of a Romagnolo born at Ravenna, and following the expulsion of the foreigners, a new and safer form of warfare has been introduced in Italy by Alberigo, another man of the Romagna. Following these, I hope that the same Romagna has given Italy a third glory in a great enterprise through this work of mine. I am putting my hand to a history that has been hidden for more than a thousand years with such care that I have revealed the whole situation, not just of Italy, but of all the provinces and regions of the former Roman empire as it passed into the control of the various kings, princes or nations; and this with greater clarity and detail than seemed possible, since by Restoring Rome in the meantime, I have been able to Illustrate Italy by scraping away the rusty accretions of errors and obscurities.)[9]

In this long sentence Biondo again refers to his earlier work, the *Decades* and the *Roma instaurata* in particular, suggesting once more that the *Italia Illustrata* is the logical continuation of his scholarship, now devoted to "scraping away the rusty accretions of errors and obscurities". Just as in the preface, the general climate of cultural reinvigoration serves as a stimulating backdrop to his own undertaking.

The fact that 'illustrating' Italy is especially appropriate at this time of cultural rejuvenation is also evoked somewhat earlier in that same section, when Biondo first mentions Giovanni Malpaghini as one of the famous scions of Ravenna:

> Genuit etiam eodem tempore Iohannem grammaticum rhetoremque doctissimum, quem solitus dicere fuit Leonardus Aretinus, omni in re sed potissime in hac una gravissimus locupletissimusque testis, fuisse primum, a quo eloquentiae studia tantopere nunc florentia longe postliminio in Italiam fuerint reducta – digna certe cognitio, quae a nobis nunc illustranda Italia in medium adducatur.
>
> (At the same time she bore the learned grammarian and rhetorician Giovanni Malpaghini, who was the first to bring back to Italy the study of eloquence, now so flourishing here after its long exile, as Leonardo Bruni used to say – a most solid and reliable authority on all matters, but especially on this one. It is a subject that certainly merits discussion here in my illustration of Italy.)[10]

A tribute to the actors of the flourishing of letters and learning, into whose number Biondo proudly reckons himself, is clearly an integral part of the *illustratio* of Italy. It is one of the features that make the *Italia Illustrata* a genuinely humanistic project.

These two dimensions of the notion of '*illustratio*' (i.e., explanation and celebration) are manifest throughout the entire treatise. The first meaning of the term however (i.e., visualization) is also relevant for Biondo's understanding of the 'illustration' of Italy. In

Biondo (1531) 1559, 294E.

8 Or perhaps Giovanni Conversini, as Pontari seems to think, see Biondo 2017, pp. 144–145, n. 40. These two Giovannis, both from Ravenna and belonging to Petrarch's circle, have often been confused with one another.

9 Biondo 2017, p. 183; Biondo 2005b, pp. 326–328; Biondo (1531) 1559, 350H.

10 Biondo 2017, pp. 142–144; Biondo 2005b, p. 300; Biondo (1531) 1559, 346E.

what follows, I illustrate (*sit venia verbo*!) the three modes of his practice of '*illustratio*' with examples taken from Book II, devoted to the Regio tertia: Latina (Latium).[11]

I will add some thoughts on how a precise assessment of the *illustratio* in the *Italia Illustrata* may help to grasp the scope and nature of the treatise more accurately.

1. Rhetorical *Illustratio*

The most efficient way to visualize topographical or geographical evidence in studies of historical geography has always been to produce visual documentation that accompanies the text. In the course of the sixteenth century this documentation, in the form of maps, city views, or images of individual buildings and monuments, became ever more important and sophisticated, both in scholarly treatises and in publications that served an epideictic purpose above all and were meant to glorify a particular city or region. The advent of the printing press made possible new production techniques for and a wider range of such illustrative material.

The precepts of ancient rhetoric, however, offered another means of 'illustrating' a text. As Quintilian mentions (*Institutio oratoria*, VI.2.32), *illustratio* is another word for what is also known as *evidentia* (in Greek: ἐνάργεια), a quality of style that consists in vivid description, evoking the unseen as if the listener or reader would see it with his own eyes; *sub oculos subiectio*[12] is another term for this concept. In this sense, *illustratio* is an essential quality of a *descriptio* (in Greek: ἔκφρασις), a description of persons, places, or events. In the theory of rhetoric, a *descriptio* is, in the truest sense, a means of enhancing persuasiveness by arousing the emotions of the audience, namely by suggesting that the listener or reader is actually witnessing and living through what is being described. As a written composition, the *descriptio* was one of the standard exercises (*praeexercitamina* or προγυμνάσματα) taught in schools and conveniently presented in a manual by Aphthonius (circa 350–400 A.D.). The description of a place was of course a very common variant; the example chosen by Aphthonius[13] is a description of the citadel of Alexandria. For this category of *descriptio* the term τοπογραφία is attested in Roman rhetoric by Quintilian (in Institutio oratoria, IX.2.44, where it is explained as a "locorum dilucida et significans descriptio") and continued to be used beyond antiquity.[14]

I do not want to suggest that Biondo was familiar with Aphthonius's handbook of *Progymnasmata*. The reception of this text in Western Europe only occurred on a grand scale once it had been translated into Latin and been made available in printed editions;[15] Biondo's knowledge of Greek, moreover, was very limited. However, Biondo was surely familiar with the rhetorical dimension of the work he was doing, since these insights could be gained from the standard treatises on rhetoric in classical Latin literature. He no doubt understood the crucial significance of rhetorical *illustratio* for any author of historical writing (not to mention for an orator): a vivid depiction strengthened both the credibility of what was being reported and, importantly, the reliability of the narrator – in Quintilian's words:

> Multum confert adiecta veris credibilis rerum imago, quae velut in rem praesentem perducere audientes videtur.
>
> (It is particularly useful to add to the authentic facts a plausible picture of the events, which seems to turn the audience into live witnesses of the scene.)[16]

In the writing of history, this rhetorical rule went hand in hand with the requirement of autopsy, introduced by Herodotus (*Historiae*, 1.1) and inherent in the very term ἱστορία or historia, i.e., knowledge derived from empirical observation; this idea was codified most succinctly by Isidore of Seville in his *Etymologiae* (1.41.1).

11 This section of the *Italia Illustrata* was at the center of our attention during the workshop at the Bibliotheca Hertziana. I keep references to modern studies to a strict minimum and prefer a close reading of the texts themselves. All the concepts discussed below are of course well known, but in my view they have not been applied systematically enough to Biondo's *Italia Illustrata*.

12 Quintilian, *Institutio oratoria,* IX.2.40; compare Cicero, *De oratore*, III.202, *Partitiones oratoriae*, 20, and *Orator*, 139.

13 Aphthonius 1926, pp. 36–41.

14 The meaning and use of *descriptio* in early modern antiquarianism is explored, for example, Stenhouse 2012.

15 Czapla 2005.

16 Quintilian, *Institutio oratoria*, IV.2.123.

In his *Italia Illustrata*, Biondo practices rhetorical *illustratio* essentially in two ways, namely 1) by using visual (i.e., vivid in the sense of the ancient rhetoricians) language, which makes his readers feel like spectators,[17] and 2) by creating a mental map[18] with which the reader can orient himself while perusing the text.

1) Biondo repeatedly suggests that he is watching (and that his readers can watch with him) the remains of ancient buildings, thus effectively creating a "rerum imago" (Quintilian, *Institutio oratoria*, IV.2.123 and VIII.3.63). Here are the examples from Book II:

nihil sit reliquiarum praeter turrim (Biondo 2014, 169; Biondo 2005b, 122; Biondo (1531) 1559, 314E);

exstare ruinas vidimus (Biondo 2014, 172; Biondo 2005b, 124; Biondo (1531) 1559, 314F);

miraculum (Biondo 2014, 188; Biondo 2005b, 136; Biondo (1531) 1559, 316F);

in conspectu speluncarum (Biondo 2014, 201; Biondo 2005b, 146; Biondo (1531) 1559, 318E);

ut ruinae indicant (Biondo 2014, 205; Biondo 2005b, 148; Biondo (1531) 1559, 318G);

cernuntur vestigia (Biondo 2014, 216; Biondo 2005b, 156; Biondo (1531) 1559, 320E);

admirandae ruinae (Biondo 2014, 230; Biondo 2005b, 166; Biondo (1531) 1559, 321D);

quos viderimus (Biondo 2014, 232; Biondo 2005b, 168; Biondo (1531) 1559, 322E);

cernitur (Biondo 2014, 244; Biondo 2005b, 176; Biondo (1531) 1559, 323C);

vidimus (Biondo 2014, 250; Biondo 2005b, 182; Biondo (1531) 1559, 324G);

videmus (twice: Biondo 2014, 255; Biondo 2005b, 184; Biondo (1531) 1559, 325A);

videmus (Biondo 2014, 258; Biondo 2005b, 186; Biondo (1531) 1559, 325C);

nullus mirabitur, qui […] inspexerit (Biondo 2014, 261; Biondo 2005b, 188; Biondo (1531) 1559, 325D);

spectaculo (Biondo 2014, 263; Biondo 2005b, 190; (Biondo (1531) 1559, 326E);

mirum est videre (Biondo 2014, 265; Biondo 2005b, 192; Biondo (1531) 1559, 326G).

The most conspicuous instance in Book II is the detailed report of the attempted rescue of the ancient Roman ships from the Lago di Nemi in 1446 (Biondo 2014, 261–265; Biondo 2005b, 188–192; Biondo (1531) 1559, 325D–326G).[19] Biondo was among those who watched this delicate operation, planned and supervised by his friend Leon Battista Alberti, and recounts it in such great detail that the reader can witness the spectacle (*spectaculo*: see the references above), as if he assisted in it himself.

2) Biondo enables the reader to picture a mental map, designed for the mind's eyes (*oculi mentis*: Quintilian, *Institutio oratoria*, VIII.3.62; compare Cicero, *De oratore*, III.163). With this map the reader can orient himself while perusing the text. Biondo creates this map by (a) adopting specific landmarks in the landscape (helping to structure spatial relationships between places) as a basic principle of organizing the information, and (b) providing geographical specifications to the (real or imaginary) traveler through this region.

(a) In Book II, Biondo makes an important statement on the method by which he structures his account and guides the reader through the text:

> Hac autem describenda mediterranea regione modum hactenus in aliis servatum a fluviorum ostiis fontibusque et discursu servare nequibimus, sed alium certius facturum satis, qui in nulla reperiatur alia Italiae regione, tenebimus, viis incedendo tribus, Appia, Latina et Tiburtina, quae inter se diversae ad Lirim amnem et Sinuessam Caietamque perducunt.
>
> (In describing this inland region, we shall not be able to adhere to the plan used in other regions, orienting ourselves by the mouths, sources and course of rivers. We shall adopt

17 Frances Muecke has analyzed Biondo's visual language in two digressions, which occur in the section on ancient Roman festivals in Book II of the Roma triumphans, and has convincingly shown how Biondo's focus on visuality is an essential facet of his writing through which he connects reader and writer as well as ancient and contemporary Rome. See Muecke 2011.

18 On the notion of a mental map, see Thiering 2015. This concept has been applied to Biondo's *Italia Illustrata* by Tanja Michalsky, Michalsky 2019 and Görz/Seidl/Thiering 2022 in this volume.

19 On this operation and Biondo's report of it, see most recently Schwab 2019.

> another method (one suited to this region alone) which will meet our needs better, by proceeding along three roads, the Appian, Latin, and Tiburtine, which lead in different ways to the river Liri and to Sinuessa and Gaeta.)[20]

The lack of suitable rivers in Latium leads Biondo to change his strategy of surveying the territory along hydrographic lines. Instead, he chooses the three major Roman roads that run through the province, the Via Appia, Latina, and Tiburtina. Biondo seems to have borrowed this idea from Strabo (*Geographica*, V.3.9). The basic principle, however, remains the same: the framework within which all the geographical and historical information is arranged is marked by visual tracks in the landscape. The road system thus becomes a set of coordinates on a mental map orienting the reader.

(b) Very often, Biondo suggests that he is taking his reader by the hand and guiding him as a traveler through the region. Besides the numerous indications of distance, he uses expressions such as:

> *venientes* (Biondo 2014, 193; Biondo 2005b, 140; Biondo (1531) 1559, 317B);
> *euntibusque sinistrorsum* (Biondo 2014, 198; Biondo 2005b, 144; Biondo (1531) 1559, 317D);
> *limites attingimus* (Biondo 2014, 203; Biondo 2005b, 146; Biondo (1531) 1559, 318F);
> *iter petentibus* (Biondo 2014, 204; Biondo 2005b, 148; Biondo (1531) 1559, 318G);
> *per quam itur* (Biondo 2014, 228; Biondo 2005b, 166; Biondo (1531) 1559, 321C);
> *est descensus* (Biondo 2014, 234; Biondo 2005b, 170; Biondo (1531) 1559, 322F);
> *est perventum* (Biondo 2014, 235; Biondo 2005b, 170; Biondo (1531) 1559, 322F);
> *unde digressi fuimus revertamur* (Biondo 2014, 266; Biondo 2005b, 194; Biondo (1531) 1559, 326H).

Thanks to such terms, the reader relives the "peragratio" of the region, which Biondo announced as one of the three tasks he defined for the composition of his *Italia Illustrata*: *peragrare* (geography), *enumerare* (prosopography), *narrare* (historiography).[21] The term *peragrare* should not necessarily be taken literally: even though we may safely assume that Biondo visited at least some of the areas he described, the 'surveying' of the territory seems to a significant extent to be a mental, rather than a practical voyage, a process of *intellectual* discovery, vividly depicted as a journey, not unlike Epicurus's journey, in this case of cosmic proportions, described by Lucretius at the beginning of *De rerum natura* (1.74): "[…] omne immensum peragravit mente animoque" (in mind and spirit he traversed the unbounded universe).[22]

2. Philological and Historical *Illustratio*

However one may measure the importance of autopsy and empirical evidence in Biondo's chorographical scholarship, his work remains fundamentally grounded in the analysis of literary (and perhaps archival) sources, in the *Italia Illustrata* as well as in his other major treatises.[23] Throughout the *Italia Illustrata*, Biondo quotes and assembles various kinds of information on the localities he discusses from a wide range of literary, mostly classical Latin authors. In many portions of the work, these quotations seem almost to take over the narrative and turn the text into a patchwork of excerpts.

Biondo is quite an attentive reader, well aware of the pitfalls and hazards ancient literary sources may present. In Book II, he tries to make sense of Pliny's description of the Lago del Fucino and its subterranean canals through which water flows at certain times (*Naturalis Historia*, 2.224), but he concedes that his text of Pliny is too corrupted or damaged to interpret the passage beyond all doubt:

> Scribit Plinius Fucinum lacum, qui Marsorum appellatur, subterraneos habere cuniculos,

20 Biondo 2014, p. 204; Biondo 2005b, p. 148; Biondo (1531) 1559, 318F-G.

21 See note 2.

22 The phrase was picked up by Cicero, in *De finibus bonorum et malorum*, II.102. In a letter to Cardinal Prospero Colonna, in which Biondo expresses his wish to obtain from the King of Naples, Alfonso d'Aragón, a map and a list, with accompanying historical information of the contemporary toponyms of the Regno di Napoli, he plays on the similar double meaning of *perlustrare*, see (Biondo 1927, p. 163): "[…] sed huius temporis locorum nomina situmque nec satis perlustravi nec alias plene novi" (but I have neither surveyed the names and position of the localities of our own time nor do I know them fully in any other way).

23 Catherine Castner provides a good case study on this topic, see Castner 1998. On Biondo's working method, Clavuot 1990, pp. 182–200; and Paolo Pontari in Biondo 2014, 155–178; as well as Görz/Seidl/Thiering 2022 in this volume.

> quibus aqua certo effluens tempore amnem faciat, et sive Plinii textus, ut saepe alibi, eo in loco corruptus sive aliter vitiatus et mutilatus est, non satis potuimus intelligere, quo in loco fluvium ille oriri affirmet.
>
> (Pliny writes that the Fucine Lake, also known as the Lake of the Marsians, has subterranean cavities through which water flows at regular intervals and creates a river. It may be that Pliny's text has been corrupted at this point[,] as is often the case[,] or is otherwise faulty or mutilated, but I was not able to determine where he maintains that this river rises.)[24]

Biondo subsequently claims to know the origin of the river that Pliny mentions, and locates it in the district of Tufano, which is a part of Anagni. Here, then, we can observe how Biondo attempts to solve with the help of field knowledge a question not adequately addressed or explained in his classical sources. Just as in the *Roma instaurata*, however, the instances where Biondo explicitly and unambiguously states that he is relying on empirical observation are few and far between. Likewise, Biondo refers throughout his *Italia Illustrata* a few times to "picturae", by which he surely means maps, not only those that accompanied the text of Ptolemaeus's *Geographia*,[25] but (probably) also those conceived along the lines of Fra Paolino Minorita's map of Italy. The evidence concerning Biondo's (possible) use of maps, however, remains on the whole tenuous, vague, and difficult to pin down.[26] Also, in early modern Latin usage, a map was far more commonly termed *tabula*, so that it cannot be excluded that Biondo's "picturae" refer to another kind of graphic depiction of a landscape.[27] In any case, the literary sources always remain the predominant frame of reference, not least because Biondo considers his *Italia Illustrata* first and foremost a piece of historical writing. Significantly, the author who is most frequently quoted in this work is not any geographical writer, but the historian Livy.[28] In addition, Biondo devotes the preface of his *Italia Illustrata* almost entirely to a praise of history.[29]

As Biondo repeatedly explains, his *Italia Illustrata* is fundamentally based on an analysis of toponyms: he systematically compares old and current place names,[30] tries to establish which ancient Roman localities live on in places and sites in the Italy of his own time, and thus wants to reveal comprehensively the traces of Romanness (the "Romana dignitas", as Biondo calls it: *Historiae, Decadis primae liber tertius*)[31] in the 'Italia' he (re)constructs. In his earlier reconstruction of ancient Rome, laid down in his *Roma instaurata*, he takes exactly the same approach, as he indicates in a letter to Ermolao Barbaro:

> Quid, quod urbem Romam, qualis olim fuerit, eiusque ruinas, quae nunc visuntur, singulas, cuius sint aedificii reliquiae, et quisque celebris olim locus ubi fuerit, additis ubique Varronis, Livii, Vergilii, Ovidii, Plinii et quorundam aliorum vetustorum scriptorum testimoniis, tribus paene libris absolvi, numquid non tibi salivam moveo?
>
> (What to say about the fact that I have almost completed in three books my treatise on the city of Rome, her appearance long ago, her single ruins still visible now, the buildings these remains belong to and the location of every place once famous – everywhere accompanied by the testimonies of Varro, Livy, Virgil, Ovid, Pliny, and some other ancient authors? Am I not whetting your appetite?)[32]

The visible remains of ancient Rome – serving often as landmarks for spatial orientation – are identified and localized, and their discussion is underpinned by references to classical and medieval (predominantly literary) sources that are meant to testify (as *testimonia*) to the buildings and monuments of ancient Roman history. This information is structured according to a combination of topographical and thematic criteria,

24 Biondo 2014, p. 221; Biondo 2005b, p. 160; Biondo (1531) 1559, 320G-H. See Clavuot 1990, p. 222.

25 Biondo speaks twice of a "Ptolemaei pictura". See Biondo 2011, p. 171.

26 For a summary of the evidence, see Pontari's introduction, Biondo 2011, pp. 169–176.

27 Hardly a graphic representation of individual monuments, though, *pace* Biondo 1927, XCIII, n. 114.

28 Clavuot 1990, pp. 201–221.

29 Clavuot 1990, pp. 23–30.

30 See, for example, the letter to Cardinal Prospero Colonna, quoted in note 22, Biondo 1927, p. 16: "[…] ut, quod nunc facio, describendae Italiae et conferendis priscorum cum praesentibus locorum nominibus manum apponerem" (to embark, as I now do, on the project of describing Italy and comparing old and present place names). On toponyms specifically, see Görz/Seidl/Thiering in this volume; Thiering/Berthele in this volume; and Richter, also in this volume.

31 Biondo (1531) 1559, 30G.

32 Biondo 1927, p. 161.

but always connected with the individual sites and objects they are intended to 'illustrate'.[3]

The setup and format of the *Italia Illustrata* are essentially the same: the structure of the work and the organization of its content are determined by the towns and sites, selected for discussion and arranged according to the geographical framework of ancient Italy and along specific natural landmarks, especially rivers. Literary sources are adduced – very often in literal quotations – to elucidate the name, history, special qualities, and famous people of the localities mentioned. The discussion of individual places thus automatically lends a modular structure to the *Italia Illustrata*: the historical-geographical survey is broken down into many small units or sections, for which the toponyms serve the reader as signposts.[34] Accordingly, the most important ones appear as key terms in the margins of the early modern editions of this text. We know that Biondo himself considered such key words an important means of facilitating the consultation of his works. In the preface to the first edition of the *Italia Illustrata*, his son Gaspare Biondo emphasized that he saw a better accessibility of the contents of the work as his primary task and main tribute to his father:

> Mihi satis fuerit voluisse vobis eam commoditatem veluti ex parentis mei testamento quaqua possem praebere.
>
> (For me, it may have sufficed to have wanted to offer you this convenience from my father's testament, so to speak, in whatever way I could).

For this reason, Gaspare was disappointed about the inability of the printers to insert relevant keywords at the appropriate places in the margins of the text.[35]

From this perspective, the *Italia Illustrata* offers an interconnected network of places and sites, each of which is accompanied by individual explanations and comments, drawn mostly from classical authors. Those extracts from ancient literary sources amount to a commentary on these places and sites, they 'illustrate' them, just as a classical author was 'illustrated' by means of annotations, glosses, commentaries, or any other type of explanatory material. The verb *illustrare* has been used countless times in title pages of text editions to point to the exegetical support in the form of clarifications of individual words and phrases, singled out as lemmata; the traditional formula is *commentariis/annotationibus/scholiis illustratus*. The lemmata in Biondo's case are not individual units of a (classical) text, but individual localities in a geographical space. "Italia Illustrata" thus also means: "a (historical-geographical) commentary on Italy".[36] Compared to editions of the classics, one could add that the relationship between text and commentary has been reversed: whereas in a text edition, the commentary supports the text and is positioned alongside or underneath it, in the *Italia Illustrata* the text is itself a commentary on the toponyms that are placed as key terms in the margin for the orientation of the reader.

In Renaissance humanism, any kind of historical investigation and writing was always closely connected with reading and interpreting the classical authors. Accordingly, classical authors, and especially the ancient historians, were read in such as manner as to distil useful information from them in a systematic fashion. In the humanistic school curriculum, students had always been trained to collect and store information by excerpting texts according to specific thematic categories and compiling this material in so-called commonplace books.[37] These categories included historical facts and events, antiquarian concepts such as rites, institutions, monuments, and artifacts, but also names of (historical or mythological) persons and places. All these rubrics guided the humanistic reader in his scrutiny of the texts and helped him to absorb ancient history and civilization from all available literary sources.

The underlying assumption was the idea that ancient texts represented a storehouse of encyclopedic learning, ready to yield their treasures to any scholar who probed them, armed

33 See Spring 1972, pp. 304–311.

34 See Defilippis 2012, p. 45.

35 See Laureys 2016, pp. 142–144.

36 Felix Mundt independently arrived at the same idea: Mundt 2017, p. 367. For a similar intuition, see also Biondo 2011, pp. 358–376. In an earlier article Mundt briefly addressed the connection between illustratio and the rhetorical tradition of the laus urbis: Mundt 2015, pp. 200–201.

37 For a detailed study of the large impact of the commonplace method on several areas of

with the right questions. The most eloquent example from the fifteenth century is surely Niccolò Perotti's *Cornu copiae*, conceived of as a commentary on Martial's Liber de spectaculis and the first book of his *Epigrams*. In his *Cornu copiae*, Perotti makes clear to what extent this approach could be stretched; he expands, *for instance*, his interpretation of *Liber de spectaculis*, I (on the Colosseum) into a presentation, entitled *De amphitheatro*, of all possible details of ancient theater buildings (pp. 3–36 in the editio princeps of 1489). Thus we see that by systematically elucidating the various facets of classical culture which ancient authors mentioned or touched upon in their work, a commentator could extract and explicate, sometimes to encyclopedic proportions, the historical and antiquarian knowledge enclosed in these authors, and at the same time contribute – or at least be convinced he was contributing – to a better understanding of these authors.

In Renaissance humanism, philological, historical, and antiquarian scholarship is marked by a fundamental complementarity and cannot be strictly subdivided into separate areas. The humanists' understanding of the nature, sources, and uses of history and its relevance for their own times informed their philological and antiquarian scholarship, grounded in the critical evaluation and interpretation of literary and non-literary sources of the ancient world. Conversely, this combined scholarship served to facilitate the understanding of literary texts. It is in this spirit that Biondo sent to Leonello d'Este, marquis of Ferrara and staunch promotor of Renaissance humanism, a number of ancient coins depicting *bigae* and *quadrigae*, so that "by seeing the relief, even though worn by old age, [he] might better understand the meaning of the words of Ovid and Pliny" (*ut sculpturam videns, licet vetustate obliteratam, quid velint Ovidii et Plinii verba, melius intelligas*).[38] It is in this sense, too, that the title of Hieronymus Froben's edition of Biondo's *Roma triumphans* needs to be understood: *De Roma triumphante libri decem, priscorum scriptorum lectoribus utilissimi ad totiusque Romanae antiquitatis cognitionem pernecessarii* (Ten Books on Rome Triumphant, most useful for the readers of the ancient authors and utterly indispensable for the knowledge of all of Roman antiquity).

Geography, too, perfectly fitted into that conception. This discipline was always closely linked with the study of history. In a well-attested metaphor whose origin is uncertain, geography was called the "eye of history". Elaborating on that notion in the preface of his pioneering T*heatrum orbis terrarum* (1570), Abraham Ortelius, the map engraver and antiquities dealer-turned-geographer, whose "Theater of the World" set new standards for cartography, underlined "how much more pleasing it seems and it is to read ancient history, when we have maps before our eyes that allow us to watch the historical events unfold, as if we were present on the spot where they happened" (*multo iucundiorem videri et esse historiarum lectionem, si tabulis ob oculos propositis liceat quasi praesentem res gestas aut loco in quibus gestae sunt intueri*).[39] Maps visualize history, and Ortelius, just as any early modern scholar, understood and described this principle as an application of the rhetorical technique of ἐνάργεια or *evidentia*, in other words *illustratio*. But besides the construction of a historical space in a combination of visual and textual media, geography was also associated with history on a philological level. The task of the geographer here was to collect, identify, and interpret the toponyms scattered in ancient historiography and other classical literary texts, and confront this evidence with contemporary place names.[40]

The first edition of Ortelius's atlas of the world already contained a section entitled "Antiqua regionum, insularum, urbium, oppidorum, montium, promontoriorum, silvarum, pontium, marium, sinuum, lacuum, paludum, fluviorum et fontium nomina, recentibus eorundem nominibus explicata, auctoribus quibus sic vocantur adiectis", a separately foliated (aiiiir–evir) alphabetical list of geographical names, along with the classical sources in which they are attested. It is subdivided into two indices, based on the ancient and modern toponyms, respectively. This list was compiled by Ortelius's friend Arnoldus Mylius at Ortelius's request and on the basis of Ortelius's own notes and

Renaissance learning, see Moss 1996.

38 Biondo 1927, p. 160.

39 Ortelius 1570, fol. AIIIIr.

40 On the connections between cartography, toponomastics, and historical research in Ortelius's work, and especially in his *Parergon*, a supplement that appeared in the editions of the *Theatrum orbis terrarum* from 1579 onwards: Besse 2009.

excerpts, for the benefit of students of ancient and contemporary history, as Mylius himself declares in a short letter, prefixed to the list (aiiiir). Ortelius gradually expanded this work in several companion volumes of his *Theatrum orbis terrarum*, namely his *Synonymia geographica* (1578), *Nomenclator Ptolemaicus* (1579),[41] and *Thesaurus geographicus* (1587). These are real geographical dictionaries, meant to be used along with both maps and classical texts. On the title page of the *Synonymia geographica*, for example, Ortelius specifies that this is an "Opus non tantum geographis, sed etiam historiae et poëseos studiosis utile ac necessarium" (a work useful and necessary not only for geographers, but also for students of history and poetry).

The philological basis of this lexicographical variant of geographical scholarship is evinced most clearly on the title page of the crowning achievement of Ortelius's toponomastic research, his *Thesaurus geographicus*. In its subtitle, Ortelius points out that in the course of his work he has been able to solve many textual corruptions and inconsistencies in the classical authors: "Obiter multi in hoc opere auctorum veterum loci corrupti, falsi, dubii et discrepantes emendantur, arguuntur, enodantur et conciliantur" (In passing, many corrupt, inauthentic, dubious and discordant passages from ancient authors are emended, censured, unraveled, and harmonized in this work). Once again, the intimate interrelation between textual analysis and exegesis on the one hand and historical scholarship in the widest possible sense on the other is explicitly and prominently underlined.

This philological type of geographical scholarship corresponds exactly to the central objective of Biondo's *Italia Illustrata* and was later pursued in various kinds of independent publications, always closely associated with the classical sources themselves. Long before Ortelius, such toponomastical reference works emerged in the form of an index to one specific classical author. An early example that appeared in print is the *Index commentariorum G. Iulii Caesaris*, an index of the place names in Caesar's *De bello Gallico*, composed in 1469–1470 by Raimondo Marliano at the University of Leuven, where he had been appointed professor of canon law.[42] His index was first published in the edition of Julius Caesar's *De bello Gallico* that appeared in Milan in 1477, and was reprinted many times. In it he tried to establish exact correspondences between toponyms in Caesar and modern equivalents, thus attempting to identify and delineate in contemporary terms the historical space in which Caesar's campaigns in the Low Countries took place.[43] It was by all means a product of humanistic scholarship, evincing both a renewed interest in Julius Caesar, as well as other classical authors, as an ancient source for Marliano's adopted homeland and an ambition to document a Roman presence and therefore eminent historical roots in the Low Countries.

Ortelius quotes Biondo several times in his various repertories of place names, albeit often to criticize and correct him. In any case, even in the later sixteenth century Biondo remained one of the early modern scholars who were consulted in matters of historical toponomastics. His philological and historical *illustratio* of Italy through its ancient and modern toponyms was not forgotten. Generally speaking, geographical lexica have been investigated far less than the maps or editions they were meant to accompany. They reveal, nonetheless, a specific path in the reception of Biondo's scholarship that seems well worth pursuing in greater depth.

3. Political and Ideological *Illustratio*

The exemplary dimension of 'Roma' and 'Italia' in Biondo's humanistic mindset obviously implies a claim of superiority over the rest of Europe.[44] However, only in a few passages, discussed above, of his *Italia Illustrata* does Biondo address the political dimension and ideological potential of his scholarship. In these passages Biondo underlines the present *kairos* for writing a work such as the *Italia Illustrata* in the light of

41 This 1579 edition, the first of the *Nomenclator Ptolemaicus*, forms part of the Theatrum orbis terrarum. Later it was also published separately.

42 See Dalché 2012, pp. 184–189; Laureys 2020.

43 A longer version, including place names from Tacitus's writings (Veterum Galliae locorum, populorum, urbium, montium ac fluviorum alphabetica descriptio, eorum maxime quae apud Caesarem in Commentariis sunt et apud Cornelium Tacitum), appeared much later, from the Paris 1543 edition of Julius Caesar onwards.

44 I draw this last section largely from Laureys 2020.

the ongoing restoration of culture and learning, inspired by Renaissance humanism and supported by Italy's princely and republican rulers. These connections with contemporary culture and politics are expressed far more emphatically in his *Roma instaurata*, especially in its prologue and concluding passage, and his *Roma triumphans*, again particularly in its conclusion. Biondo does not associate his *Italia Illustrata* equally clearly with the politics of his time or, more precisely, the role and duty of the papacy in restoring Rome and confronting the threat of the Ottoman Empire.

The political use of historical geography was elaborated far more clearly by the first and most important disseminator of Biondo's learning to transalpine Europe, Enea Silvio Piccolomini (Pope Pius II). Piccolomini wrote a series of texts, ranging from his descriptions of the city of Basel, his *Germania*, as well as his *Historia Austrialis* and *Historia Bohemica* (regional histories of Austria and Bohemia), to his *Asia* and *Europa*, planned as a part of an all-embracing *Cosmographia*. These writings were preceded by an oration at the Frankfurt Diet of 1454, in which he spoke appreciatively of an ancient Germanic past. Piccolomini conceived all these works in the context of the political geography of his time and his own diplomatic activity, which he pursued alongside his humanistic interests in literature and scholarship. Before becoming pope, Piccolomini served as an envoy to several prelates, Pope Eugenius IV and Emperor Frederick III between 1432 and 1455. For much of that time he stayed in the German lands, and therefore acquired first-hand knowledge of their culture and history. Conrad Celtis's project of a *Germania Illustrata* as well as other early sixteenth-century chorographies of Germany probably need to be seen in relationship to Piccolomini's *Germania* (and its main idea that the Germans had become a civilized nation only thanks to the beneficial influence of ancient and contemporary Rome, and especially its Christian Church), rather than to Biondo's *Italia Illustrata*.

Of similar importance is the oration, composed by Giannantonio Campano, another humanist in diplomatic service, and intended for delivery (but probably not actually delivered) at the Regensburg Diet of 1471; this *Oratio in conventu Ratisponensi ad exhortandos principes Germanorum contra Turcos et de laudibus eorum* evokes a Germanic warrior past, documented with the help of Tacitus.[45]

Campano explicitly links a praise of the German rulers with an exhortation to taking military action against the Turks. On account of their glorious (military) past, Campano argues, the German princes are entitled to or indeed should consider it their duty to ward off the Turkish menace. In his *Italia Illustrata* Biondo does not draw that political conclusion, but the epideictic quality of this work is all the more evident. An essential component of his *illustratio* of Italy is the praise of its assets and merits. As mentioned above, Biondo insists on starting his description of Italy by duly praising its qualities: "Italiam describere exorsi, provinciarum orbis primariam, a laudibus suis incipere debuimus".[46] The key argument that legitimizes this praise is precisely the special status of Italy as "provinciarum orbis primaria", the foremost of the provinces of the world, that is to say the only province of the Roman Empire that had retained any traces of the ancient Roman grandeur. In no other part of the world, therefore – Biondo implicitly suggests – is the search for vestiges of Romanness more justified and leads to more convincing results than on the Italian peninsula.

Throughout the *Italia Illustrata*, description remains intimately connected with praise, and this connection relates Biondo's treatise to the tradition of the *laus urbis*. Biondo was no doubt familiar with the theoretical precepts of this tradition, most readily available in Latin from Quintilian (*Institutio oratoria*, III.7.26–27), as well as with specific earlier examples from antiquity onwards, be they independent texts or small essays incorporated in chronicles or biographies.

Early on in the humanist movement, the praise of a city was revitalized by Leonardo Bruni, who in his *Laudatio Florentinae* urbis explicitly imitated Aelius Aristides's Panathenaikos (second century A.D.), a eulogy of Athens, clearly

45 On Piccolomini's and Campano's political speeches from 1454 and 1471: Blusch 1979; and Blusch 1983.

46 See note 7.

structured according to the rules of rhetorical epideixis. These rules were most extensively codified in two treatises, written most likely in the late third or early fourth century A.D. and attributed to Menander Rhetor. The theory, outlined by Menander Rhetor, is clearly recognizable already in Aelius Aristides's *Panathenaikos*, but it remains uncertain whether Bruni used Menander Rhetor directly. For Biondo, Bruni's *Laudatio Florentinae* urbis was certainly a relevant reference text, not least on account of the way in which Bruni claimed the glory of ancient republican Rome for contemporary Florence and its citizens. However, since Biondo (unlike Bruni) hardly knew any Greek, it is very unlikely that he had first-hand knowledge of Menander Rhetor. In any case, the reception of Menander Rhetor spread more widely only after the publication of the editio princeps in 1508.[47]

The format of the *laus urbis* allows Biondo not only to celebrate the splendor of the towns and cities of Italy and retrace their prestige to their classical origins, but also to extol their famous citizens. In all, Biondo pays tribute to about 400 persons, including political and ecclesiastical leaders as well as literati, artists, jurists, philosophers, and physicians. Significantly, around three quarters of these luminaries are contemporary personalities, and most of these humanists, whom Biondo considered the prime actors of the "renascence" he witnessed and felt he was part of. This prosopographical constituent of the *Italia Illustrata* is, therefore, an essential ingredient of the treatise: the *illustratio* of Italy is at the same time also a eulogy of its "viri illustres". [48]

4. Conclusion

By way of conclusion, I would like to submit that various characteristics of Biondo's understanding and (re)construction of space in his *Italia Illustrata* are directly related to his notion of *illustratio*. Biondo's conception of space is: () determined by an ancient, not a contemporary (political or ecclesiastical) geographical framework; (2) structured into modular units on various geographical (national, regional, and local) levels that constantly interact; (3) inspired by cultural and historical rather than political or diplomatic claims; (4) visualized by rhetorical means rather than empirical evidence; (5) underpinned by references to classical and medieval – predominantly literary – sources that serve as a commentary on the localities mentioned and described; and (6) is filled with historical rather than with topographical or ethnographical details.

Adopting specific parts or aspects of Biondo's method of investigation, northern European chorographers transformed Biondo's theoretical framework in order to construct or invent the 'antiquitas' of a northern European region or locality by elucidating its links with a real or imagined classical past and/or by valorizing autochthonous regional or local traditions. In that process, they re-defined the very notion of 'antiquitas' and not seldom exploited it for political claims and purposes. A far more visible strand in the reception of Biondo's historical geography, though, is his analysis of toponyms, which continued to attract attention from geographers and cartographers throughout the early modern age.

47 I would hesitate, therefore – *pace* Robert 2003, 415, n. 314 – to link, let alone equate Menander's "τόπος τῶν μεταβολῶν" (Spengel 1856, 355; and Menandros 1981, 50), with Biondo's "mutatio". Menander Rhetor's "topos of changes" is one of the many categories in his very refined taxonomy of the praise of cities and thus remains an entirely formal notion, whereas Biondo's concept of change implies a historical development and is at the heart of his understanding of historical scholarship.

48 Clavuot 2002.

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Abstract

Nathalie Bouloux
The use of maps in Biondo Flavio's *Italia illustrata*

keywords – *Antique geography, Maps, Measurements, Biondo*

Biondo Flavio's Italia illustrata *is a remarkable work from the 15th century that exemplifies the geographical culture of humanism. Commissioned by Alphonse of Aragon, it aims to catalog illustrious figures in Italy but goes beyond by meticulously describing the Italian landscape and celebrating its connection to ancient Rome. This article examines three aspects of the text's composition, the types of maps mentioned, and their significance in Biondo's work. By analyzing his sources and methods, we gain insights into the humanist's approach to portraying Italy's past and present.*

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L'usage des cartes dans l'*Italia illustrata* de Biondo Flavio

Nathalie Bouloux

Introduction

L'*Italia illustrata* de Biondo Flavio est certainement une de ses œuvres les plus originales et les plus nouvelles.[1] Écrite dans les années 1448–1453, alors qu'il a quitté provisoirement ses fonctions à la curie pontificale à la suite de tensions avec le nouveau pape Nicolas V, l'*Italia illustrata* est typique de la culture géographique de l'humanisme. A l'origine, l'humaniste répond à une commande d'Alphonse d'Aragon, désireux d'avoir un catalogue des hommes illustres d'Italie. Il dépasse le cadre du projet en décrivant l'espace de l'Italie à partir de recherches de topographie minutieuses, avant tout fondées sur une enquête dans les textes de géographes et d'historiens antiques, et dans des cartes de nature diverse. Le but ultime est de célébrer l'Italie moderne, héritière de la Rome ancienne, divisée politiquement mais unie par une culture commune, l'humanisme, qui trouve son espace d'origine et de diffusion dans la péninsule. L'*Italia illustrata* vise à mettre l'Italie en lumière en faisant rejaillir sur elle la gloire du passé romain :

> Puisque la situation est meilleure, Dieu étant plus favorable à notre époque et que revivent les autres arts et surtout l'éloquence, ce qui a entraîné les hommes de notre temps à s'engager avec plus d'empressement dans l'étude de l'histoire, j'ai voulu voir, moi qui suis devenu expert dans la connaissance de l'Italie, si je pourrais accorder aux plus anciens lieux et peuples de nouveaux noms, aux nouveaux lieux le prestige, rappeler à la mémoire les lieux disparus et ramener de l'obscurité à la lumière l'histoire de l'Italie.[2]

L'originalité de cette description de l'Italie est d'être conduite à l'échelle topographique, ce qui invite à s'interroger sur les instruments et les méthodes de travail de l'humaniste. Biondo mentionne dans sa préface les principaux textes géographiques et historiques antiques qu'il a utilisés. L'étude des sources permet en général d'avoir une assez bonne idée de leur rôle dans la construction du texte. La place des cartes est plus complexe à mettre en évidence, même si Biondo indique parfois lorsqu'il les utilise.[3] En vue d'éclairer la méthode de travail de Biondo et la fonction qu'il accorde aux représentations cartographiques, j'aborderai trois aspects de l'*Italia illustrata* : les modes de composition du texte, la nature des cartes qu'il mentionne et les modalités de leur usage.

Nature et mode de composition de l'*Italia illustrata*

Commençons par considérer un passage de l'*Italia illustrata* afin de comprendre le mode de construction du traité :

> Prima post Auxerim sunt Arni ostia, a quibus paululum recedit Liburnium, Pisani Portus munitissima arx, apud quam in scopulo passus

1 Sur Biondo Flavio et le caractère innovant de l'*Italia illustrata*, voir Fubini 1968, 548-551; Riccardo Fubini, « La geografia storica dell'*Italia illustrata* di Biondo Flavio e le tradizioni dell'etnografia », dans Fubini 2003, 53-76. Pour une présentation de Biondo et des caractéristiques de l'*Italia illustrata*, Clavuot 1990 et Paolo Pontari dans le premier volume de l'édition critique de l'*Italia illustrata* : Biondo 2011, pp. 26-250 avec une bibliographie.

2 « Itaque, postquam propitiore nobis Deo nostro meliora habet aetas nostra et cum ceterarum artium tum maxime eloquentiae studia revixerunt ac per ea historiarum diligentius noscendarum amor nostros cepit homines, tentare volui si per eam quam sum nactus Italiae rerum peritiam vetustioribus locis eius et populis nominum novitatem, novis auctoritatem, deletis vitam memoriae dare, denique rerum Italiae obscuritatem illustrare potero » (Biondo 2014, p. 4 *Praefatio*, 6). Même programme énoncé dans la lettre de dédicace envoyée à Alphonse d'Aragon, écrite par l'humaniste vénitien Francesco Barbaro en collaboration avec Biondo : « ut tuis, ut ita loquar, auspiciis vetustis Italiae, locis populis novitas detur, novis auctoritas, deletis vita memoriae, denique ut obscuritas illustretur a nobis », cité par Fubini 2003, p. 58.

3 Sur l'utilisation des cartes par Biondo, voir Clavuot 1990, pp. 196-200 ; Paolo Pontari dans Biondo 2011, 196-200. Tanja Michalsky propose d'analyser le texte à partir du concept de carte mentale guidant la perception des espaces décrits, voir Michalsky 2019.

> mille a continenti recedente fundata est turris pharea, nocturnum Tyrrheno mari navigantibus lumen quam remotissime praebens et Pisanum a longe ostendens Portum. Arnumque, recedentes tertio a mari milliario, Pisae pontibus iungunt superbisque aedificiis ornant. Eam urbem, vetustam et gestarum rerum gloria claram, ab Alpheis originem habuisse dicit Virgilius, et Plinius Pisas inter Auxerim et Arnum amnes a Pelope et Territanis graeca gente ortas asserit. Iustinus vero dicit Pisas in Liguribus graecos auctores habere ; et Lucanus in primo « Hinc Tyrrhena vado frangentes aequora Pisae » ; Livius XXI : « Ea [...] causa consuli fuit, cum Pisas navibus venisset, [...] ad Padum festinandi ». Pisae tertio Eugenio pontifice romano ornatae fuerunt. Eam urbem, florentibus Romanorum rebus, nullum habuisse potentatum videmus. Postquam vero maritimae urbes Etruscae hinc Luna inde Populonia deletae fuerunt, quiescentibus per Caroli Magni et filiorum tempora Italiae rebus, Pisae multos habuerunt praestantissimos maritimo bello viros, quorum gesta in nostris Historiis celebrantur. Sed ab annis quadraginta postquam ea civitas Florentinis subiecta fuit, infrequens populo opibusque exinanita penitus est reddita.[4]

Cet extrait est représentatif de l'histoire des lieux que promeut Biondo Flavio. La plupart du temps, dans le cas d'une région côtière, il construit sa description en commençant par le littoral puis poursuit par l'intérieur des terres, selon un ordre fréquemment utilisé par les géographes antiques. Pise est caractérisée par sa situation près de l'embouchure de l'Arno. Le texte donne l'impression d'un parcours (« Prima post Auxerim, paululum »), trait distinctif de l'*Italia illustrata* qui lui confère son caractère de description géographique. Puis viennent des données qui établissent la singularité du lieu (ici le phare), accompagnées de références historiques et littéraires issues de sources antiques courantes (Tite-Live, Virgile, Pline, Lucain ...), complétées par des renseignements relatifs à l'histoire moderne de la ville. Biondo fait preuve, selon son habitude, d'une grande attention portée aux modifications advenues entre les temps romains (époque où la ville est très secondaire), les temps « médiévaux » (la ville devient une des principales cités maritimes de l'Italie), et sa propre époque où la conquête par Florence entraîne la décadence de Pise. Biondo élabore de la sorte une histoire des lieux fondée sur la localisation géographique, le nom moderne associé au nom ancien, l'histoire locale particulière faite de réminiscences antiques et de considérations sur l'état actuel, auxquelles s'ajoutent parfois l'évocation des propriétés naturelles, et pour les cités les plus importantes, le catalogue des hommes illustres qui en sont issus. Cette histoire des lieux, que l'on pourrait aussi qualifier de géo-histoire, a pour cadre une description géographique à l'échelle topographique, où l'auteur s'applique à mentionner des centres mineurs souvent dénués d'histoire mais indispensables pour donner une vue précise des réalités italiennes. La « géographie » de Biondo est de nature historique dans la mesure où il est conscient des changements qui se sont opérés dans l'espace depuis l'empire romain, mais l'étude de l'espace du passé vise à comprendre et à célébrer le présent.[5] De ce point de vue, l'expression courante de « géographie antiquaire » pour qualifier l'œuvre n'est peut-être pas la plus adaptée, ni celle de géographie historique (si l'on entend par là une géographie qui considérerait le passé pour expliquer le passé).[6]

Le programme de Biondo, qui implique un va-et-vient continuel entre l'espace du passé et celui du présent, se heurte à des obstacles

4 Biondo 2014, pp. 73-75, 16–18 : « Après le Serchio, vient d'abord l'embouchure de l'Arno, et un peu plus loin Livourne, Porto Pisano, le port fortifié des Pisans où un phare a été installé sur un rocher, à un mille du continent. Il est visible à une grande distance pour ceux qui naviguent la nuit sur la mer Tyrrhénienne, et montre au loin Porto Pisano. A trois milles vers l'intérieur, Pise enjambe l'Arno avec ses ponts et l'orne de ses somptueux édifices. Virgile écrit que cette ancienne cité, célèbre pour son histoire glorieuse, trouve son origine chez les *Alphaei*. Pline rapporte que Pise fut fondée entre le Serchio et l'Arno par les Pélopides et les *Territani* [Teutanes], un peuple grec. Justin quant à lui dit que Pise en Ligurie fut fondée par des Grecs. Et Lucain, au livre I : ‹ De ce côté Pise qui brise dans ses bas-fonds les eaux tyrrhéniennes › et Tite-Live ‹ C'est la raison pour laquelle le consul a pressé sa marche vers le Pô lorsqu'il eut débarqué à Pise. › Pise eut l'honneur d'avoir donné naissance au pontife romain Eugène III. Tant que les Romains fleurissaient, la ville n'avait pas de grands pouvoirs. Mais par la suite, après la destruction des villes côtières étrusques (Luni d'un côté, Populonia de l'autre), et alors que la paix régnait en Italie du temps de Charlemagne et de ses fils, Pise fournit un grand nombre d'hommes habiles à la guerre maritime, dont les exploits sont célébrés dans mes *Histoires*. Mais après être tombée sous le contrôle de Florence il y a quarante ans, elle s'est en partie vidée de sa population et presque entièrement de ses richesses. »

5 Sur l'attention aux *mutationes* entre antiquité et Italie moderne, voir Gambi 1977, p. 262.

6 Pour une appréciation de cet aspect de l'*Italia illustrata,* voir Fubini 2003. Sur la géographie historique à l'âge de l'humanisme, voir Milanesi 2003; Dalché 2012.

considérables qui sont de deux ordres : les problèmes posés par la « mutatio nominum » (c'est-à-dire les changements des noms de lieux entre l'Antiquité et l'époque moderne) et les difficultés à suivre un schéma descriptif cohérent, afin de rendre compte avec exactitude des réalités toponymiques. Dans les deux cas, les cartes jouent un rôle notable.

La conscience du changement des noms depuis les temps romains n'est pas une nouveauté. Dès le XIIe siècle, certains savants latins en avaient noté les effets quant aux difficultés à lire les descriptions du monde, toujours fondées sur les textes antiques. Pétrarque est le premier à affronter le problème en lui donnant un sens nouveau et en proposant une méthode pour le résoudre.[7] A ses yeux, les changements de noms, associés aux contradictions des auteurs et à la méconnaissance des lieux, engendraient des difficultés pour l'intelligence des textes antiques de toute nature. Pour les lever, il recommandait de confronter les textes, les cartes et l'inspection des lieux. C'est ce programme et cette méthode qui forment l'essentiel du travail des géographes humanistes du XVe siècle. A cet égard, l'*Italia illustrata* a certainement joué un rôle considérable de diffusion de la méthode en constituant un modèle de référence.[8]

Dans la préface du livre consacré à la première région, la Ligurie, Biondo lie les deux obstacles, « mutatio nominum » et difficulté à choisir un ordre descriptif cohérent :

> Est vero perdifficile in tanta mutatione
> rerum regionumque, quantam vident factam
> qui romanas historias attente legunt,
> modum adinvenire dividendis regionibus
> recensendisque ordine civitatum, oppidorum,
> montium fluminumque vocabulis.[9]

Dans une lettre adressée au cardinal Prospero Colonna en décembre 1450, Biondo associe description de l'Italie et travail de comparaison entre les noms anciens et les noms modernes (« describendae Italiae et conferendis priscorum cum praesentibus locorum nominibus »).[10] De fait, l'*Italia illustrata* est ponctuée de noms antiques associés à leur forme moderne (« olim [...] nunc »), de constats qu'un toponyme ancien s'est conservé ou qu'il s'est au contraire considérablement transformé.[11]

Parmi les remarques de méthode qui jalonnent l'*Italia illustrata*, l'une exprime au mieux les difficultés inextricables rencontrées par Biondo :

> Igitur a Velino lacu repetentes omnem ex veteri Umbria nobis reliquam regionem, ea quae ipsum Velinum et Reatinam urbem, Tiberim, Anienem flumina ac lacum Marsorum interiacent explicemus. Maximus autem is est montium et camporum globus et quem nec incolae satis norunt, in quo multa fuerunt prisci vocabuli loca quae praesentibus conferri nequeunt, tum quia interierunt quaedam, tum quia incomprehensibilis mutatio in aliis est facta.[12]

L'humaniste met en application la méthode de Pétrarque, une méthode « philologique » fondée sur la confrontation entre textes anciens et modernes, entre textes et cartes, afin de résoudre la « mutatio nominum » et créer des liens entre l'espace du passé et celui du présent. Le procédé mis en œuvre, qui reste implicite, consiste à associer, lorsque c'est possible, proximité phonétique entre noms anciens et modernes et localisation topographique.[13] Un autre obstacle (lui aussi relevé par Pétrarque) réside dans les contradictions entre les auteurs anciens, ce qui a pour effet de brouiller l'effet de continuité entre espace antique et moderne.

7 Bouloux à paraître (a).

8 Sur la réception de l'*Italia illustrata*, voir Castner 2016.

9 Biondo 2014, p. 10 Liber primus, 7 : « Il est extrêmement difficile de déterminer une manière correcte de diviser les régions et de situer en ordre les noms des cités, des villes fortes, des montagnes et des fleuves, en raison de tant de changements dans les choses et les régions, ce que les lecteurs attentifs des histoires romaines savent bien. »

10 Lettre au cardinal Prospero Colonna (1450), éditée dans Biondo 1927, pp. 163-64.

11 Parmi les innombrables exemples : « Post Frusinatem, Ferentinatem et Anagninum, quae loca nunc, parva nominis mutatione facta, sunt notissima, ex Anagnino autem in Lavicanum venit, quem locum, maxima nominis mutatione facta, diximus Valmontonem nunc appellari » (Biondo 2014, p. 271, Regio tertia, Latina, 143) ; « Bagnacavallum, novi nominis oppidum, prius Tiberiacum, et aliquando 'Ad Caballos' appellatum » (Biondo 2017, p. 168, Regio sexta, Romandiola, 71).

12 Biondo 2017, p. 42, Regio quarta, Umbria, 60 : « Ainsi, pour revenir du lac Velino à tout le reste de l'ancienne Ombrie, rendons compte de ces terres situées entre ce lac Velino et la ville de Rieti, le Tibre et l'Aniene, jusqu'au lac des Marsiens. C'est un vaste ensemble de montages et de plaines dont même les habitants n'ont pas une connaissance suffisante. Il y avait là de nombreux lieux munis d'un nom ancien qui ne peuvent être identifiés aux lieux actuels, soit parce que certains n'existent plus, soit parce que dans certains cas, le nom s'est transformé de façon incompréhensible. »

13 Je l'ai étudié en détail à propos de la *Geographia* de Sebastiano Compagni, un Ferrarais actif à Venise à la charnière du XVe et du XVIe siècle, dans Bouloux à paraître (b).

Parfois l'enquête débouche sur des apories. C'est alors Biondo indique qu'il a comparé les textes aux cartes et expose le problème qu'il tente de résoudre, en formulant des hypothèses et des conjectures qu'il soumet à la sagacité du lecteur.

Types de cartes

Quels types de cartes Biondo utilise-t-il ? La question est plus complexe qu'il n'y paraît à première vue.

Cartes anciennes

Biondo mentionne quelquefois des cartes anciennes :

> In sinuque Lunensis sive Veneris portus intimo Spedia est, novum oppidum citra annos LX muro circumdatum, secus quam, inspecta Italiae descriptione ac pictura a maioribus facta, Tiguliam fuisse coniector.[14]
>
> Apud Ocelini turrem Padusae finem olim fuisse et Rhenum Bononiensem eo loco aut propinquo Padum influxisse indicant pervetusti utriusque amnis alvei, indicantque pariter Ptolemaei ac aliorum geographorum descriptio ac pictura.[15]

La deuxième citation montre sans aucun doute et sans surprise le recours aux cartes qui accompagnent la *Géographie* de Ptolémée, traité en passe de devenir au milieu du siècle un modèle nécessaire (mais, pour Biondo, critiquable, comme il sera rappelé plus loin).[16] La première citation est plus ambiguë. On pense immédiatement que Biondo a utilisé la carte de l'Italie de Ptolémée, qui porte en effet Tigulia. Mais comme l'a noté Paolo Pontari, l'identification entre la Spezia et Tigulia est une déduction personnelle de Biondo, qui s'oppose à celle de l'auteur de la source de ce passage, Giacomo Bracelli.[17] Celui-ci, ami de Biondo, avait composé en 1442 une description du rivage de la Ligurie, qu'il lui a envoyée en 1448 à sa demande, alors que Biondo commençait l'*Italia illustrata*. Giacomo Bracelli, lui aussi lecteur de Ptolémée, avait conjecturé que Tigulia était Sestri Levante.[18] De son côté, Biondo identifie Sestri Levante à Segesta Tigulliorum en prenant appui sur le texte de Pline (et peut-être aussi sur celui de Pomponius Mela, II, 72, en tout cas pas sur celui de Ptolémée). La *pictura a maioribus facta* est ici probablement la carte dessinée par Agrippa en collaboration avec Auguste, exposée sur le portique Vipsania, que Pline (III, 17) dit avoir utilisée pour sa description du monde. C'est donc bien en reprenant un passage de Pline (qui concorde avec celui d'un autre auteur, Pomponius Mela), dans lequel l'encyclopédiste antique dit s'être servi d'une carte, que Biondo conjecture la position de Tigulia. Dès lors, il convient d'être prudent dans l'interprétation : la mention d'une carte peut provenir d'une source textuelle sans signifier pour autant que Biondo en a fait lui-même usage.

Cartes marines

Les cartes marines sont au milieu du XVe siècle des objets usuels dans le monde méditerranéen, tant chez les gens de mer que chez les savants. Un humaniste de la stature de Biondo, qui a été au service de Venise dans la première partie de sa carrière, ne peut manquer d'en avoir vu. De fait, certaines parties de son *Italia illustrata* suggèrent qu'il en a utilisé :

> Insulam, quae illum ab Austro Africoque tutum reddat, natura obiecit, secus quam vastae se pandunt fauces, multis reflexibus tortuosae, in longum amplumque sinum qui passus quinque milia longitudine ac latitudine protenditur, navigia admittentes. Portusque ipse, omnium capacissimus navigiorum, Macra augetur [...].[19]

La description du golfe, la mention des vents (*auster*, *africus*), et la référence à la navigation constituent des indices de l'utilisation d'une

14 Biondo 2014, p. 55, Regio prima, Liguria, 48 : « Au fond du golfe de Luni ou de Portovenere, se trouve La Spezia, une localité récente, munie d'une enceinte il y a moins de soixante ans, près de laquelle, d'après l'examen de la description de l'Italie et d'une carte faite par les Anciens, je pense que se trouvait Tigulia. »

15 Biondo 2017, p. 190, Regio sexta, Romandiola, 112 : « L'ancien cours des deux rivières montre que la Padusa s'arrêtait autrefois à la tour d'Uccellino et que la rivière bolonaise Reno se jetait dans le Pô à cet endroit ou non loin, ce qu'indiquent également la carte et le texte de Ptolémée et d'autres géographes. »

16 Dalché 2009.

17 Biondo 2014, p. 55.

18 « Ab ostio Entellae vix quatuor passuum milia Segestum aspicimus, quam in Ptolemaei dimensiones sequuntur Tiguliam putant », Giacomo Bracelli, « Descriptio orae ligusticae », dans Andriani 1924, p. 236.

19 « La nature a placé en face [du port de Luna] une île qui le met à l'abri de l'*auster* et de l'*africus,* le long de laquelle se déploie un long goulet, renfermant de nombreuses et tortueuses petites criques. Il s'ouvre sur un immense golfe de cinq milles pas en longueur et en largeur, permettant le passage des navires. Le port lui-même, capable d'accueillir toutes sortes de bateaux, est baigné par le Macra. » Biondo 2014, pp. 52-53, Regio prima, Liguria, 44–45.

telle carte (et peut-être d'un portulan, description des routes maritimes). En réalité, ce passage est entièrement inspiré de Giacomo Bracelli.[20]

En outre, l'expression « omnium capacissimus navigiorium » est le signe probable de la lecture de l'*Itinerarium* de Pétrarque, qui décrit d'une manière analogue cette région et a fourni un modèle d'écriture, aussi bien à Bracelli qu'à Biondo, du moins pour le littoral de la mer Tyrrhénienne.[21] Le reste de l'*Italia illustrata* ne paraît pas présenter de preuves formelles de l'utilisation de cartes marines. En fait, Biondo n'en avait pas nécessairement besoin, car il travaillait sur une ou plusieurs cartes modernes de l'Italie, qui reprennent souvent les toponymes littoraux des cartes marines et présentent l'avantage de fournir les informations indispensables pour conduire la description de l'intérieur des terres.

Carte(s) moderne(s) de l'Italie

De fait, Biondo mentionne à deux reprises l'utilisation d'une carte de l'Italie moderne selon lui dessinée par Pétrarque et le roi Robert d'Anjou, ce qui intrigue depuis longtemps les spécialistes :

> Ad eamque villam rectus et primarius Padi cursus qui praeterlabitur anno nunc centesimo tortuosiore veniebat alveo, quem nunc a vici incolis 'Codeream' corrupte pro Capite Eridani dictum, secus villam Belreguardam desiccatum videmus. Nam pictura Italiae quam in primis sequimur, Roberti regis Siciliae et Francisci Petrarchae eius amici opus, Vicuentiam Vicueriamque et Conam vicos profluenti Pado appositos habet. Quare partes ipsas Padi a Ferraria Cosandalum et a Coderea in mare nunc defluentes a centesimo anno initium habuisse non dubito.[22]
>
> Hunc vero Ficaroli ramum inter annos centum proximos inchoasse ideo non dubitamus, quia Roberti regis Neapolitani et Francisci Petrarchae pictura Italiae, quam nos sequi supra diximus, ipsum non habet ramum.[23]

Si la plupart des historiens considèrent aujourd'hui que la carte dont se servait Biondo n'a pas été dessinée par Pétrarque et Robert d'Anjou,[24] il reste que cette attribution lui confère prestige et autorité, ce qui justifie sans doute aux yeux de Biondo de l'indiquer comme l'une de ses sources. Il est d'ailleurs possible que cette carte, mentionnée seulement dans la partie consacrée à la Romagne, n'ait pas représenté toute l'Italie. Dans une lettre envoyée au cardinal Prospero Colonna le 21 décembre 1450, Biondo l'empresse de solliciter de sa part auprès du roi de Naples une carte du sud de l'Italie, indispensable pour décrire ces régions. Cette requête suggère qu'il ne disposait sans doute que d'une représentation du Nord de la péninsule :

> Quare, si tibi videbitur, non ingratum mihi fuerit, si tu Latinam regionem eleganti exaratam volumine ad eum miseris et munere verbis ornato tuis meum illi aperueris desiderium, ut et picturam et praesentis temporis nominum declarationem longiusculamque narrationem a suis, quos habet multos, peritioribus factam ad me mittat.[25]

La nécessité de recourir à des représentations cartographiques modernes pour conduire une description géographique ou une narration historique est déjà exprimée en 1443 dans une lettre

20 « […] vastis faucibus sese pandenti, multisque reflexibus tortuoso insulam natura obiecit : quae illum ex Haustro et Africo tutum praestet […] Fugiunt introrsus terrae quinque passuum millia : quam longitudinem portus latitudo quoque adaequat », Andriani 1924, p. 237. Un autre exemple trouve aussi sa source chez Bracelli: « Pelagusque adiacens, quod Ligusticum appellari diximus, tres habet insulas, scopulis tamen quam insulis similiores : unam Albingauno oppositam, […] aliam Naulo ; tertiam Lunensis portus promontorio occidentali adeo propinquam ut continens videatur […].» (Biondo 2014, p. 56, Regio prima, Liguria, 50, Andriani 1924, p. 237).

21 « et nomine Veneris insignem portum, securum ventorum omnium et omnium que sub celo sunt classium capacem […] », Petrarca 1990, cap. 18, p. 46.

22 Biondo 2017, p. 203, Regio sexta, Romandiola, 132–133 : « Le Pô de Primaro, qui coule droit jusqu'à ce village [Consandalo], prenait un cours plus sinueux il y a un siècle entre Codrea (comme elle est appelée aujourd'hui par les habitants du lieu, corruption pour Caput Eridani), et le village de Belriguardo, que nous voyons aujourd'hui asséché. La carte d'Italie que je suis principalement, dessinée par le roi Robert de Sicile et son ami Pétrarque, porte les villages de Voghenza, Voghiera et Cona le long du cours du Pô. Si bien que je peux dire que les bras du Pô qui coulent de Ferrare à Consandalo et de Codrea à la mer se sont créés ces cent dernières années. »

23 Biondo 2017, p. 216, Regio sexta, Romandiola, 155 :« Je suis sûr que ce bras de Ficarolo s'est mis en place dans la dernière centaine d'années parce que la carte d'Italie de Robert de Naples et François Pétrarque que nous suivons, comme nous l'avons dit plus haut, ne dessine pas ce bras. »

24 Mise au point sur cette question dans Paolo Pontari (Pontari 2009).

25 Biondo 1927, p. 163-64 : « Aussi, si tu le veux bien, ce ne serait pas ingrat envers moi si tu lui remettais le beau volume contenant la région du Latium et si à l'aide d'un discours orné tu l'ouvrais à mon désir qu'il me fasse envoyer et une carte, et des renseignements sur les noms modernes ainsi qu'une description assez longue, faite par ceux de son entourage –ils sont nombreux– qui sont experts en ces matières. »

à Alphonse d'Aragon, où Biondo se propose d'écrire une histoire de l'Espagne à son intention.[26]

Les cartes de l'Italie moderne constituent un ensemble remarquable, encore assez peu étudié en dehors d'un article de Marica Milanesi.[27] Toutes différentes, elles ont néanmoins des caractéristiques communes : le trait de côte de la péninsule est proche de celui des cartes marines, la nomenclature est moderne, et le relief (principalement le cours des fleuves), sert à structurer l'ensemble. Elles sont d'une remarquable exactitude.[28] La plupart dessinent la péninsule dans son entier et donnent ainsi une représentation concrète de son unité géographique. Dans certains cas pourtant, la carte ne concerne qu'une partie de l'Italie. C'est le cas de celle conservée à Strasbourg.[29] L'étude de Kurt Guckelsberger, dans le présent volume, montre que celle conservée à Londres (British Library, Cotton roll. XIII. 44) est constituée de deux espaces dessinés à une échelle différente, la limite passant par la frontière entre le royaume de Naples et les États pontificaux, ce qui suggère que deux ensembles cartographiques distincts (vraisemblablement d'origine différente) ont été assemblés pour la fabriquer. Il n'est enfin pas impossible que Biondo ait eu aussi à sa disposition l'une ou l'autre des cartes régionales, nombreuses et précoces, notamment en Italie padane. En tout état de cause, il faudrait conduire des études détaillées sur les toponymes mentionnés par Biondo et les cartes que nous avons conservées.[30]

Usage de la carte : rapport avec les textes et construction d'une géographie critique

On peut distinguer plusieurs modalités d'utilisation des cartes : construire le texte en les lisant; s'en servir pour localiser un nom de lieu et confronter l'espace antique et l'espace moderne ; les critiquer en les comparant aux textes et à d'autres cartes.

Avant d'examiner ces aspects en détail, il convient de considérer les rapports entre texte et carte. A lire les extraits cités ci-dessus, il saute aux yeux qu'elles sont presque toujours associées à des textes (« Italiae descriptione ac pictura a maioribus facta » ; « indicantque pariter Ptolemaei ac aliorum geographorum descriptio ac pictura » ; « picturam et praesentis temporis nominum declarationem longiusculamque narrationem »), ce qui est confirmé par une remarque de méthode :

> Difficilis vero est montium huiusmodi et sitorum in ipsis locorum descriptio quod saltuosissima sunt et rivis altisque rupibus quandoque ita dividuntur, ut ne pictura sit nec elocutio quae plenam illorum notitiam dare possit.[31]

Le travail du « géographe » dépend des instruments dont il dispose. Lorsque ceux-ci sont défectueux, il rencontre des difficultés parfois insurmontables. Ces instruments sont la *pictura* et l'*elocutio*. Le premier terme désigne clairement une carte. Celui d'*elocutio* renvoie à une notion plus complexe. C'est un terme technique qui désigne la production d'un discours, selon les principes de la rhétorique.[32] Pour parler des textes géographiques savants, Biondo utilise de manière préférentielle le terme de *descriptio*. Il est donc assez probable qu'elocutio désigne les connaissances qui transitent par le langage, écrit ou oral, ce qui les distingue des images (*pictura*). Comme les descriptions géographiques des Anciens ne peuvent suffire, Biondo a recours à des données modernes de nature variée, écrits documentaires et renseignements fournis par ceux qui connaissent la région. La description des lieux repose aussi sur ce savoir local.

26 « Est tamen haec ipsa, quam polliceor, historia maior quam quae a me uno et occupatissimo homine, decem filiolos ex manuum laboribus nutriente, absolvi possit, nisi omni ferme in orbis christiani provincia aliquos variis nactus essem artibus, qui regionum suarum chronica et quaecumque aliter vel scriptis vel pictura dari possit, notitiam impartiti essent » Biondo 1927, p. 149.

27 Milanesi 2003.

28 Guckelsberger 2022 dans ce volume.

29 Strasbourg, Bibliothèque nationale et universitaire, 1816, URL: https://bvmm.irht.cnrs.fr/iiif/17008/canvas/canvas-1420797/view.

30 Un exemple de cette méthode dans Milanesi 2022. Elle montre en particulier que les cours de l'Adige/Noce, de l'Adda et de l'Oglio, tels qu'ils sont décrits dans l'*Italia illustrata* correspondent parfaitement à la carte d'Italie de la British Libray *Italie provincie modernus situs*, BL Cotton roll XIII 44.

31 Biondo 2017, p. 104, Regio quinta, Picenum, 69 : « Mais il est difficile de décrire les régions montagneuses de ce genre avec leurs localités, parce qu'elles sont couvertes de forêts et divisées par d'innombrables cours d'eau et par des escarpements rocheux, si bien que ni carte ni discours ne peuvent en donner une pleine connaissance. »

32 *Cic*. 1. *Invent*. 7. 9. « Elocutio est idoneorum verborum et sententiarum ad inventionem accommodatio. » Voir aussi *Quintil*. 8. 1. 1. Voir Kirchner 2008. Le terme concerne la formulation d'un discours (oral principalement) qui doit avoir les qualités de la correction linguistique, de la clarté et de l'ornementation.

Revenons un instant sur la lettre envoyée au cardinal Prosper Colonna, dans laquelle Biondo réclame des documents en vue de pallier ses connaissances incomplètes des réalités modernes, alors qu'il dit disposer en suffisance de données antiques –par quoi il faut évidemment entendre les textes géographiques et cosmographiques de l'Antiquité.[33] Ces documents sont de trois ordres, une carte, une *declaratio* fournissant les noms modernes et une *longiuscula narratio*. *Declaratio* paraît renvoyer ici à un texte court, possiblement sous la forme d'une liste de noms ; *narratio* évoque une description plus circonstanciée du royaume, peut-être de nature historique ou administrative.[34] Ceux qui doivent lui fournir ces documents sont des « experts en la matière », capables, par leur connaissance des lieux, de pallier son ignorance puisqu'il n'a pu ni les explorer, ni les connaître par un autre moyen (« nec satis perlustravi nec alias plene novi »). Cette exigence de la connaissance des lieux rappelle le prologue de l'*Italia illustrata* où Biondo légitime son projet par sa qualité d'expert de l'Italie.[35] Il importe de retenir qu'il travaille en associant et en comparant les données fournies par les cartes, les textes, et les informations orales ou écrites données par ses interlocuteurs.

Examinons maintenant la façon dont Biondo utilise les cartes. D'après le passage qui vient d'être analysé, elles lui servent de canevas pour l'organisation topographique de sa description, c'est-à-dire pour en donner une structure claire. A propos de la carte d'Italie moderne dont il se sert pour la *Romandiola*, il emploie à deux reprises le verbe « sequor », qui désigne ici la lecture de la carte en vue d'en tirer l'ordonnance topographique nécessaire à la description écrite. De là viennent les difficultés, lorsque ni les cartes, ni les textes dont il dispose ne permettent d'exposer avec clarté la conformation des lieux. La lecture de la carte explique certainement aussi la méthode descriptive d'ensemble de l'*Italia illustrata*. Comme les cartographes, Biondo s'appuie sur les éléments du relief pour structurer sa description. Pour les parties proches du littoral, le trait de côte est un point de repère naturel et facile à suivre.[36] Pour l'intérieur des terres, ce sont les fleuves décrits de l'embouchure à la source qui jouent ce rôle, selon un sens inverse de celui que nous suivons de nos jours. Biondo se place en effet du point de vue d'un observateur qui regarde le fleuve depuis la mer, ce qui explique que la « gauche » soit pour lui ce que nous qualifions de rive droite. C'est un indice de la lecture de la carte. Étant donné le grand nombre de lieux modernes qu'il signale et la précision de ses informations, il faut supposer que la (ou les) carte qu'il utilisait constituait un instrument de travail indispensable et que certaines parties de l'*Italia illustrata* en sont la description.[37]

Mais dès qu'il dispose d'informations écrites, la culture du texte prime. La composition du traité relève dès lors d'un subtil équilibre entre ces différents instruments de travail. Leur confrontation devient la pierre angulaire de la méthode. L'usage de la carte se limite alors à préciser un élément ponctuel. C'est le cas du passage relatif à de la rivière Reno, où Biondo décrit un détail visible sur les cartes et mentionné dans les textes anciens (comme le montre l'emploi du terme « indicant »).

La carte peut donc toujours servir à fournir une information sur un problème particulier et participe ainsi à la mise en œuvre d'une géographie

33 « Est ultra Latinam regionem ea Italiae pars, quam regnum Siciliae appellamus, in aliquot divisa regiones, Campaniam scilicet veterem, Samnium sive Aprutium Apuliam Lucaniam Calabros Bruttios et Salentinos ; quarum regionum vetustates notissimas habeo, sed huius temporis locorum nomina situmque nec satis perlustravi nec alias plene novi. Quare auxilio mihi hae in parte maximo opus erit, quod video intelligoque a nemine alio quam ab Alphonso illustrissimo rege praestari posse » (Biondo 1927, p. 163, Lettre à Prospero Colonna).

34 Ces instruments ne sont cependant pas forcément de nature ‹ littéraire › ; en latin féodal, *narratio* peut signifier aussi la déclaration de l'étendue d'un fief ou le dénombrement d'un état.

35 A quoi il faut ajouter les envois faits par Biondo de certains passages de l'*Italia illustrata* aux princes et aux rois, en vue de les faire corriger par leur entourage. Dans une lettre, adressée cette fois à Bartolomeo Fazio, il lui demande de faire circuler la partie de l'*Italia illustrata* destinée à Alphonse d'Aragon pour la faire vérifier par lui et ses amis (Biondo 1927, pp. 165-66, Lettre à Bartolomeo Fazio). Il a procédé de même pour la Romandiola, à Malatesta Novello, seigneur de Césène et l'Étrurie, à Piero de' Medici. Voir Lucarini/Pontari 2001; Pontari 2003.

36 « Libet vero, priusquam mediterranea et ad dexteram Auxeris ripam sita attingam, ad certiorem locorum indaginem oram Etruriae maritimam usque ad Tiberim describere », Biondo 2014, p. 7, Regio secunda, Etruria, 15.

37 En voici un exemple : « Potentia amnis sequitur, ad cuius ostium vetusta interiit eiusdem nominis urbs inter primas Picentum aliquando numerata. Is amnis, in Apennino supra Matelicam et quasi e regione Nuceriae Alphateniae oriundus, habet intus ad dexteram et sub primis Apennini collibus ad duos mille passus distans Monticulum oppidum. Ad sinistram vero inferius Montem Sanctum, egregium in Picentibus oppidum. Superius vero, et ad primos Apennini colles, Potentia praeterlabitur Sanctum Severinum,

critique. Le cas évoqué ci-dessus à propos de Tigulia en est un exemple. Un autre, plus développé, est fourni par l'exemple des Frentans, un peuple antique d'Italie centrale :

> Marique contigua, vetustissima urbs Ortona, quam Ptolomaeus simul cum Aterni amnis ostio in Pelignis enumerat ; sed Plinius, cui in rebus Italiae magis credimus, quicquid est ab Aterni amnis ostio in Larinates Frentanorum orae attribuit. Quin ipse etiam Ptolomaeus, sicut et Plinius, Frentanam urbem Aterno sinistram, ubi nunc est Villafrancha, ponit, ut aut Ptolomaei picturam esse depravatam, quae contraria habeat, aut eos qui retulerunt sibi errasse non dubitemus.[38]

Ce passage, complexe mais d'un grand intérêt, a été étudié en détail dans un article de Paolo Pontari, que je résume ici.[39] Le problème est de localiser le territoire où se trouve l'ancienne cité d'Ortona, celui des Frentans ou de celui des Péligniens. D'après Ptolémée, Ortona est située à proximité de l'embouchure de l'Aterno dans le territoire des Péligniens (Ptolémée, III, 1, 18-19) alors que Pline l'attribue à celui des Frentans.[40] Le point de départ du problème soulevé par Biondo est une contradiction entre deux auteurs antiques. Biondo donne raison à Pline, en partant du principe qu'il est le plus crédible sur les choses italiennes. L'argument en soi est digne d'intérêt : l'encyclopédiste est plus crédible parce qu'il connaît mieux l'Italie, où il vit, que Ptolémée –on retrouve ici l'argument de l' « expertise » évoqué ci-dessus. Si l'on suit Pline, Ortona relève des Frentans dont le territoire est compris entre l'embouchure de l'Aterno et celui des Larinates. Biondo confirme cette première conclusion par l'ajout d'une autre donnée, l'existence d'une ville côtière *Frentana* (son nom indique qu'elle relevait des Frentans). Le problème est que cette *Frentana* antique est une « invention » philologique, due à la corruption des textes de Tite-Live et de Pline, à partir desquels l'humaniste conjecture son existence.[41] Pour Biondo, la présence de la *Frentana* antique est aussi confirmée parce qu'elle est identifiable à l'actuelle Francavilla a Mare. Ce rapprochement vient vraisemblablement de la consultation d'une carte moderne de l'Italie où est mentionné le toponyme Francavilla .[42] C'est un exemple d'identification par l'association de la proximité phonétique et de la localisation topographique. D'après Biondo, Ptolémée mentionnerait lui aussi cette *Frentana* sur la rive gauche de l'Aterno.[43] L'humaniste ne précise pas s'il s'agit de la carte ou du texte, mais comme il utilise le verbe *pono*, Paolo Pontari suggère que la ville se trouve sur la carte consultée par Biondo.[44] La carte, qui porte *Frentana*, diffère donc du texte, qui ne la mentionne pas ; elle est donc corrompue (*depravata*) par rapport au texte.[45] Elle donne une information vraie en soi (car confirmée par d'autres auteurs antiques) mais *depravata* selon le texte de Ptolémée.

L'enquête critique et philologique menée par Biondo l'amène à mettre en doute la conformité de la carte d'Italie par rapport au texte de Ptolémée. Si une carte joue légitimement un rôle dans l'établissement des faits géographiques dans un cadre philologique, elle doit cependant être évaluée. Ce principe fait évidemment émerger l'auteur comme ultime ordonnateur de l'ordre géographique, celui qui « conjecture » et fait

nobile sed novum oppidum, ad ruinas aedificatum Septempedae oppidi vetustissimi, a Longobardis solo aequati », Biondo 2017, p. 92, Regio quinta Picenum, 50. On pourrait multiplier les exemples de ce type.

38 Citation extraite de Pontari 2009b, p. 110 : « La très ancienne cité d'Ortona se trouve sur le littoral ; Ptolémée la mentionne avec l'embouchure de l'Aterno dans le territoire des Péligniens. Mais Pline, qui est à mon avis plus crédible sur les questions italiennes, assigne à la terre des Frentans toute la portion qui s'étend depuis l'embouchure de l'Aterno aux Larinates. Bien plus, Ptolémée lui-même, comme Pline, place la ville de Frentana à gauche de l'Aterno, où se trouve aujourd'hui Francavilla, si bien que je pense que soit la carte de Ptolémée, puisqu'elle montre le contraire, est corrompue, soit ceux qui ont transmis <le texte> se sont trompés. »

39 Pontari 2009.

40 *Pline*, III, 106 : « Sur la côte des Frentans, en partant du Tiferne, il y a le fleuve Trinius qui offre un bon mouillage, les villes d'Histonium, Buca, Ortona, le fleuve Aternus. Dans l'intérieur, les habitants d'Anxanum avec le surnom des Frentans (*Anxani cognomine Frentani*), les Carécini supérieurs et inférieurs […]. » Plinius Secundus 1998, 88.

41 Pour les détails de la démonstration, voir Pontari 2009a, pp. 110-20.

42 Francavilla est en général mentionnée sur les cartes marines. Elle l'est aussi parfois sur les cartes de l'Italie moderne. En voici deux exemples : la carte d'Italie conservée à Florence ASFi CN10 ; un manuscrit de la *Géographie* de Ptolémée, daté de la seconde moitié du XVe siècle, le Vatican Urb. lat. 277, f. 125r contient une carte de l'Italie moderne portant Francavilla (mais évidemment nulle Frentana sur la carte antique, pas plus que dans le texte).

43 C'est en contradiction avec le passage de Ptolémée mentionné ci-dessus. Il n'y pas de trace de Frentana dans la tradition manuscrite du géographie antique.

44 Dans le passage précédent, Biondo utilise *enumero*, ce qui renverrait cette fois au texte.

45 Ou bien c'est le texte qui est fautif parce que les copistes qui l'ont transmis se sont trompés.

parfois part au lecteur de son raisonnement. De ce point de vue, on ne peut qu'être frappé de l'occurrence régulière des termes *confero* et *conjecto* tout au long de l'*Italia illustrata*.[46] *Conjecto* est employé lorsque le géographe, ayant identifié un problème (qui émerge le plus souvent d'une contradiction des sources), et après avoir comparé ses instruments de travail, décide et choisit, en tenant le lecteur au courant (ou non) de sa démarche critique. Dans ce dispositif, les cartes ont leur place.

Aux yeux de Biondo, elles ont en outre la qualité de représenter l'espace à un moment donné. L'utilisation qu'il fait de la carte qu'il attribue à Pétrarque et à René d'Anjou est à cet égard éclairante. Constatant que sur la carte du XIVe siècle, deux bras du Pô seulement sont dessinés alors qu'à son époque il en existe trois, il conclut que la rupture des digues du Pô (événement majeur dans l'histoire du delta qui modifia durablement le cours du fleuve et eut des répercussions tout aussi importantes sur la vie des hommes) avait eu lieu moins d'un siècle avant le moment où il écrit. On sait aujourd'hui que la rupture des digues date de 1152. Biondo commet une erreur, confirmée parce qu'il lit dans des actes conservés par des monastères de la région.[47] Plutôt que l'erreur, c'est sa démarche critique qui est remarquable et le rôle qu'y joue la carte, considérée comme un enregistrement graphique d'une réalité topographique à un moment donné. Cela est nouveau, du moins dans une description géographique et témoigne une fois encore de la sensibilité historique de Biondo face à l'espace géographique.[48]

Cependant, il faut se garder de prêter à l'humaniste un usage systématique des cartes, ni même penser qu'il leur accorde une quelconque supériorité sur les textes. Tout autant qu'une carte, un texte permet de donner une structure « géographique » à la description. La région du Latium est un bon exemple de ce procédé. Après avoir décrit le littoral, Biondo annonce un changement de méthode et dit abandonner celle qui consiste à remonter le cours des fleuves de l'embouchure à la source pour en adopter une spécifique au Latium, suivre les itinéraires des voies antiques :

> Hac autem describenda mediterranea regione modum hactenus in aliis servatum a fluviorum ostiis fontibusque et discursu servare nequibimus, sed alium certius facturum satis qui in nulla reperiatur alia Italiae regione tenebimus, viis incedendo tribus : Appia, Latina et Tiburtina, quae, inter se diversae, ad Lirim amnem et Sinuessam Caietamque perducunt.[49]

Ce nouveau procédé descriptif correspond en fait à la source principale de Biondo pour le Latium, la *Géographie* de Strabon :

> En ce qui concerne les autres villes du Latium, des points de repère permettent de déterminer la position de certaines d'entre elles, mais dans la plupart des cas on peut les situer au moyen des routes les plus fameuses qui sillonnent le territoire latin. En effet, elles sont toujours bâties ou sur ces routes, ou dans leurs abords ou entre deux d'entre elles. Les routes les plus célèbres sont la Via Appia, la Via Latina et la Via Valeria.[50]

Biondo est un lecteur précoce de la traduction de la *Géographie* de Strabon par Garin de Vérone et Gregorio Tifernate.[51] S'il mentionne Strabon dans sa préface comme une de ses sources, c'est seulement dans la description du Latium qu'il l'utilise préférentiellement, comme il l'indique lui-même.[52] Dans la description du Latium, l'organisation géographique adoptée donne parfois l'impression d'un recours à la carte (antique ou médiévale) et la méthode mise en

46 *Conjecto* dans le vocabulaire des humanistes du XVe siècle signifie « supposition, hypothèse, déduction logique ». Voir Rizzo 1973, p. 287.

47 Sur ce point, voir le commentaire de Paolo Pontari dans Biondo 2017, p. 216, n. 127.

48 La notion qu'une carte dessine une réalité à un moment donné se retrouve dans la cartographie locale qui se développe particulièrement dans les deux derniers siècles du Moyen Age. Sur les rapports entre cartes locales et temporalité, voir Fermon 2018, 320.

49 Biondo 2014, p. 204, Regio latina, 57 : Dans la description de l'intérieur de la région, nous ne pourrons pas emprunter la méthode que nous avons utilisée dans d'autres régions, commencer par les embouchures des rivières jusqu'à leur source. Mais nous en adopterons une autre, qui répondra mieux à nos besoins et qui ne pourra pas être appliquée à d'autres régions d'Italie, en suivant les trois voies, Appienne, Latine et Tiburtine, qui par des chemins différents mèneront au fleuve Liris, à Sinuessa et à Gaète. Pour une analyse du mode descriptif de la région du Latium, voir Michalsky 2019, pp. 54-56.

50 Strabon 1967, p. 92.

51 Sur la réception de Strabon aux XVe et XVIe siècles, voir Dalché 2017.

52 « Unde peritissimum hunc vetustatis scriptorem et simul Plinium, qui ab eo sumpsit, secutari, eam Latinorum regionem nostrae nunc Campaniae et Maritimae cogimur applicare » (Biondo 2014, p. 165, Regio tertia, Latina, 6). A la suite de ce passage, il reconnaît les difficultés qu'il a

œuvre paraît résulter d'un choix mûrement réfléchi, alors qu'il se contente de suivre l'ordre descriptif du texte de Strabon.

Conclusion

Des incertitudes persistent au sujet des cartes que Biondo a utilisées. La carte moderne de l'Italie ne représentait peut-être que la partie nord et centrale de la péninsule, ce qui expliquerait que Biondo demande une carte de l'Italie du Sud à Alphonse d'Aragon. Mais on pourrait tout aussi bien objecter qu'il fait cette demande parce que celle qu'il utilise est incomplète… Par ailleurs, a-t-il utilisé une seule carte, celle qu'il attribue à Robert d'Anjou et à Pétrarque, ou a-t-il aussi eu accès à une ou d'autres cartes modernes ? La comparaison systématique des toponymes mentionnés par Biondo avec ceux des cartes d'Italie fabriquées au xve siècle, apporterait certainement des éléments nouveaux permettant une juste évaluation du rôle de(s) la carte(s) moderne(s) dans l'*Italia illustrata*. Toutefois, la conformité totale entre une carte particulière et le texte de Biondo risque d'être difficile à mettre en évidence, en raison de sa méthode de travail qui associe des sources diverses, parfois mêlées à des informations orales, parfois fondées sur son expérience en tant qu'administrateur. De plus, la lecture d'une carte et sa transposition sous une forme descriptive sont des opérations complexes et d'autant plus difficile à repérer avec certitude que la manière de lire la carte n'est pas forcément identique à la nôtre. Biondo commence par décrire le littoral, puis remonte le long des fleuves et de ce fait inverse les repères « droite » et « gauche » par rapport aux nôtres. Le cas du Latium montre qu'un texte où s'exprime une réflexion d'ordre méthodologique sur le meilleur procédé pour décrire une région peut n'être que la reprise d'une source écrite, qui fournit la structure topographique. De ce fait, il n'est pas impossible que les parties de l'*Italia illustrata* donnant le plus le sentiment d'être entièrement fondées sur une carte moderne soient en réalité le produit d'une description écrite –par exemple sous la forme d'un itinéraire. Il faut donc se garder d'exagérer le rôle des cartes dans l'écriture de l'*Italia illustrata* et conserver à l'esprit qu'elles sont le plus souvent utilisées en association avec des sources écrites, preuve de la complexité des rapports entre carte et texte à l'âge de l'humanisme.

Il convient enfin de pondérer l'originalité de Biondo. Il n'est ni le premier ni le seul à utiliser des cartes pour décrire l'espace, que ce soit en « lisant » la carte, en y cherchant un détail ou en l'associant avec un texte.[53] Cette pratique est en réalité très ancienne dans la culture médiévale et certainement plus répandue qu'on ne le croit habituellement.[54] Ajoutons à cela qu'aux yeux d'un humaniste comme Biondo penser que Pline s'est servi de la mappemonde élaborée par Agrippa et Auguste pour décrire le monde apporte une légitimation absolue de ce procédé intellectuel « médiéval ». Ce constat ne doit pas pour autant conduire à sous-estimer les nouveautés apportées par Biondo. Il applique aux cartes anciennes les méthodes de la philologique naissante, comme en témoigne l'enquête sur les Frentans où la carte est jugée *depravata*. C'est en la soumettant à la critique ou plus précisément parce qu'elle est critiquable, qu'elle peut être utilisée comme un instrument fiable de connaissance de l'espace. L'apport principal de Biondo vient cependant de sa conscience de l'historicité de la carte. Il la considère comme un témoin de la réalité topographique à un moment donné, réalité qui se modifie constamment, ce qui lui permet de comparer la carte attribuée à Pétrarque et Robert d'Anjou avec l'organisation du delta du Pô à son époque, comme il le fait entre celles de Ptolémée et l'espace moderne. C'est aussi à ce titre que la carte joue un rôle dans l'établissement d'une géographie critique, trait constitutif de la géographie humaniste.

rencontrées à faire coïncider la région des Anciens avec l'actuelle et s'interroge sur sa capacité à atteindre le but qu'il s'est donné.

53 Pétrarque est le premier à se servir de cartes « antiques » en vue de reconstituer l'espace antique : Bouloux 2006. Sur la réception de la méthode de Pétrarque : voir Bouloux à paraître (a).

54 Dalché 2016.

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Abstract

Martin Thiering, Raphael Berthele
Some Thoughts on a Spatial Language Analysis of Flavio Biondo's Illustrated Italy

keywords – *Cognitive linguistics, Toponyms, Cognitive maps, Historio-geographic analysis*

This paper presents insights from a spatial text annotation based on cognitive semantic analytical parameters. The focus is on the spatial language in Flavio Biondo's Latium chapter in his Italia Illustrata*. The analysis of spatial language is based on text annotations, semantically enriched by formal ontologies and based on cognitive semantic premises. The main assumption based in a cognitive linguistic background is that his textual elements are grounded in cognitive maps or mental models enabling the reader to mentally triangulate different spatial references and spatial relations that is, s/he is able to add missing information – cognitive contours – to form a coherent spatial gestalt. There are good reasons to believe that the analysis of historical texts spanning from antiquity to the early modern period and beyond improve the understanding of spatial cognition and its epistemological development. The present cognitive-semantic analysis discusses Biondo's spatial description of Latium based on fundamental cognitive parameters in the spatial arrangements. In contrast to previous research which mostly deals with textual criticism, biographical, literary and art-historical references, the goal here is to provide a cognitive linguistic analysis of what is referred to as 'construal', i.e., the linguistically triggered mental pathways and maps Biondo's readers reconstruct based on the text. The basis for the analyses presented here is a list of toponyms and of the geographical vocabulary used by Biondo. To this list spatial role labels are applied, based on the cognitive-linguistic framework. The goal of this contribution is to discuss a selection of linguistic constructions of spaces as examples of different worldviews from which insights about the spatial organization of cultural practices are gained.*

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Some Thoughts on a Spatial Language Analysis of Flavio Biondo's *Illustrated Italy*

Martin Thiering
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1. Introduction

This chapter presents insights from a spatial text annotation based on cognitive-semantic analytical parameters. The focus is on the spatial language in Flavio Biondo's Latium chapter in his *Italia Illustrata*. Our analysis of spatial language is based on text annotations, semantically enriched by formal ontologies and based on cognitive-semantic premises. Our main assumption rooted in a cognitive-linguistic background is that his textual elements are grounded in cognitive maps or mental models enabling the reader to mentally triangulate different spatial references and spatial relations, that is, s/he is able to add missing information – cognitive contours – to form a coherent gestalt.[1]

We have good reason to believe that the analysis of historical texts spanning from antiquity to the early modern period and beyond improve our understanding of spatial cognition and its epistemological development.[2] In our cognitive-semantic analysis we discuss Biondo's spatial description of Latium. By doing so we also show some of the fundamental cognitive parameters in the spatial arrangements described in Biondo's text. These fundamentals lead to the basic matrix of a cognitive map built upon semantic cues embedded in a skillfully organized spatio-historical description. Flavio Biondo's (1392–1463) work *Italia Illustrata* (composed in the years around 1448 but published posthumously) serves as the case study.[3] Our reason for working on the Biondo text is his groundbreaking description of contemporary Italy as the first prototypical detailed historical-topographic description.

In this work, Biondo summarized nearly two thousand years of Italian history.[4] As Ottavio Clavuot argues, Biondo also had to reconstruct ancient, and not just contemporary, topographical descriptions based on the historio-geographic and topographical literature available. Clavuot also argues that Biondo's main aim was to combine past and present knowledge in his description of Italy.[5]

Biondo's main goal was to provide a description that was not just accurate from the contemporary point of view, but that at the same time reconstructs and integrates the historic landscapes evoked in the texts of the classical authors who had described the same stretches of land.[6] He draws on authors of Roman antiquity such as Livy, Virgil, Pliny the Elder, as well as Ptolemy, and, in the Latium chapter, a Latin translation of Strabo. Biondo also aimed at reconstructing toponyms and their changes throughout time.[7] Places, towns, even whole cities had emerged, grown, and been destroyed. Some places simply vanished, others originated as new settlements. The *Italia Illustrata* is on the one hand a description of places, but on the other it is also the history of these places and their names.[8]

In contrast to previous research which mostly deals with textual criticism, biographical, literary, and art-historical references, our goal is to provide a linguistic analysis of what we refer to as 'construal', i.e., the linguistically triggered mental pathways and maps Biondo's readers reconstruct based on the text. The basis for the analyses presented in this chapter is a list of toponyms and the geographical vocabulary used by Biondo. To this list we applied spatial role

1 On mental triangulation, see Thiering 2015.
2 See Görz/Seidl/Thiering 2022, and also Richter 2022 in this volume.
3 On Flavio Biondo's work, see Clavuot 1990, p. 46.
4 Clavuot 1990, p. 21.
5 Clavuot 1990, pp. 23, 30, 33.
6 Clavuot 1990, p. 26.
7 Clavuot 1990, p. 41.
8 Clavuot 1990, p. 43.

labels, based on a cognitive-linguistic framework, as briefly laid out below. In our analysis we included both the expression of static spatial relationships as well as dynamic pathways. The goal of this contribution is to discuss a selection of linguistic constructions of spaces as examples of different 'worlds' or worldviews from which insights about the spatial organization of cultural practices are gained.

Biondo's text makes frequent reference to several different semiotic encoding systems such as texts and maps. Because many of the ancient places no longer existed at the time of his writing, Biondo had to reconstruct places in his narrative. And for this reason he refers to ancient authors and – arguably – maps.[9]

2. Cognitive Linguistics and Cognitive Semantics

This section briefly presents the methods of text analysis and, in somewhat more detail, the crucial meta-language applied from cognitive semantics onto historical texts. Two longer quotes from Ronald Langacker below provide insights into the general approach in the analysis of spatial language. The quotes also motivate the possibility of applying cognitive linguistics to historical text analysis.[10]

> In cognitive semantics, meaning is identified as the conceptualization associated with linguistic expressions. This may seem obvious, but in fact it runs counter to standard doctrine. A conceptual view of meaning is usually rejected either as being insular – entailing isolation from the world as well as from other minds – or else as being non-empirical and unscientific. These objections are unfounded. Though it is a mental phenomenon, conceptualization is grounded in physical reality: it consists in activity of the brain, which functions as an integral part of the body, which functions as an integral part of the world. Linguistic meanings are also grounded in social interaction, being negotiated by interlocutors based on mutual assessment of their knowledge, thoughts, and intentions. As a target of analysis, conceptualization is elusive and challenging, but it is not mysterious or beyond the scope of scientific inquiry. Cognitive semantics provides an array of tools allowing precise, explicit descriptions for essential aspects of conceptual structure. These descriptions are based on linguistic evidence and potentially subject to empirical verification.[11]

Langacker furthermore argues that:

> [A]nalyzing language from this perspective leads to remarkable conclusions about linguistic meaning and human cognition. Remarkable, first, is the extent to which an expression's meaning depends on factors other than the situation described. On the one hand, it presupposes an elaborate conceptual substrate, including such matters as background knowledge and apprehension of the physical, social, and linguistic context. On the other hand, an expression imposes a particular construal, reflecting just one of the countless ways of conceiving and portraying the situation in question.[12]

We argue that our text analysis indeed shows the potential of a cognitive-linguistic analysis for a better understanding of the text under investigation. The idea of construals enables the detailed analysis of the various cultural-specific "ways of conceiving and portraying", i.e., a spatial scenario as represented in Biondo's work.

3. Spatial Language and Its Spatial Parameters

The following example was chosen for its spatial richness. It illustrates how different spatial attributes in Biondo's text yield a map-like

9 Actually, we do argue that Biondo uses a number of different encoding systems rather than maps. In the whole of *Italia Illustrata* Biondo mentions maps only six times, i.e., Ptolemy, portolans, and the Petrarca (Petrarch) map. About the latter: scholars disagree whether it even existed at all (Pontari 2009a). We therefore believe that Biondo does indeed make use of other sources to (re)construct Italy, e.g., reports of travels, land registry offices, etc. See Guckelsberger 2022.

10 Note that cognitive science is, by definition, meant to be a synchronic science, that is, we as cognitive linguists do 'look' into peoples' minds by using different psycholinguistic or neurological test designs. The approach presented here indeed argues that the different approaches can also be applied to rather diachronic questions of spatial concepts. Different empirical sources such as texts and maps help to reveal the intricacies of spatial cognition in a long-term perspective.

11 Langacker 2008, p. 4.

12 Langacker 2008, p. 4.

construal. The parts in italics are our own highlights denoting spatial entities and relations. These attributes are then analyzed with respect to cognitive-semantic construals:

> *Four miles above Faenza is Oriolo dei Fichi a town of the church of Ravenna set on a delightful hill. Beneath it the stream Marzeno flows down into the Lamone [Anemo], brushing the flanks of the ancient town of Modigliana*, which Livy records (as Mutillum) at the beginning of the Macedonian War, as I mentioned in describing Ravenna. Five hundred years ago *Modigliana* belonged to the noble family of the Conti Guidi, who flourished in *Flaminia* and *Tuscany*. *Above Faenza on the course of the Lamone* is a well-populated *valley of the same name as the river*, where the *castles of Brisighella, Rontana, S. Martino in Gattara, Castellina*, and the villages of *Marradi*, Biforco, and (*under* the *Apennines*) Crespino are to be found.
>
> *After the Lamone, the river Senio flows into the marshes of Padusa. The town of Fusignano lies on the Senio, in the actual marshland and in a forest called the forest of Lugo. Five miles away* is the populous *town of Lugo* itself, so *named from a nearby wood*. *On the right bank of the Senio is the town of Cotignola*, from where originated the powerful Attendola clan, the family of Sforza, now so famous among Italians. *Hard by Lugo lies the castle of Zagonara*, celebrated in history for the Florentine defeat in the war with Filippo Maria Visconti and for the capture of Carlo Malatesta in the battle [...]. *Within two miles of Zagonara is the ruined town of Cunio on the banks of the Senio*.(Book IV: 317–319).[13]

We use the English translation (in the above case Jeffrey White's) at this point because our semi-automatic brat annotation tool and most, if not all, annotation programs are currently unable to sufficiently process classical Latin texts. The corresponding Latin is shown for reference below:

> Interius, quarto supra Faventiam miliario, Aureolum est oppidum Ecclesiae Ravennatis amoenissimo in colle situm, sub quo in Anomonem defluit Martianus torrens, qui latera abluit Mutillianae vetustissimi oppidi, cuius Mutilli tunc appellati Livius in principio belli Macedonici sicut in Ravenna ostendimus meminit, fuitque ante quingentos annos nobilis familiae comitum, qui Guido cognomine per Flaminiam et Etruriam floruerunt. (78) Supra Faventiam ad Anomonis fluenta convallis est, fluvii nomen retinens, populis frequentata, in qua Brasgella, Rontana, Gattaria, Castilionum castella, Marrate et Bifurcus vici et, sub Apennino, Crispinus. (79) Post Anomonem Padusam paludem influit Sennius amnis, cui ipsa in palude et in silva, quam Lugi dicunt, adiacet Fusiganum oppidum, et quinto inde miliario abest Lugum, a luco cui adiacet appellatum, frequens populo oppidum. Et ad dexteram Sennii ripa Cutignola est oppidum, unde Attendula gens Sfortiorum familia fluxit in Italis nunc clarissima. Adiacet Lugo Zagonaria castellum, acceptae a Florentino populo cladis in Philippensi bello et capti in eo, proelio Caroli Malatestae, quod in Historiis diffuse ostendimus, memoria celebratum. Et intra secundum inde miliarium ad Sennii ripam excisum est oppidum Cunium [...].[14]

Below we draw a list using some of the underscored spatial concepts from the passage to illustrate a taxonomy of spatial concepts, which form the first step of a cognitive-semantic analysis (see Table 3 for more examples and details).[15]

Individualizable Entities

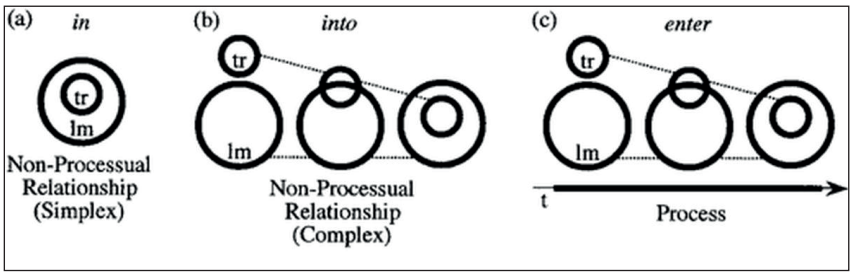
- figure: the entity construed as being in motion (either self-propelled or caused motion);
- landmark, ground: hills, mountains, rivers, forests, place, city names, buildings, bridges, churches, fountains, walls, streets, squares, gates, memorial, region, sites, temples, etc.

13 Biondo 2005b, pp. 317–319.

14 Biondo 2017, pp. 70–80.

15 A more detailed version of this list can be found in Table 3. Further examples are discussed in section 6; our definitions of the concepts are adapted from Talmy 2003 and Thiering 2015. Note that it is not sufficient to single out lemmas only, that is, isolated lexical entries. For example, the motion event of "flowing into" always is a construction of something (e.g., an object) starting to move from a point of departure (source) to a goal via a trajectory (or path). That is, X (source) moves to Y (goal) in a specific manner of motion (direction) and during the unfolding of perceived time.

Figure 1
Conceptual processing.



Spatial Relations

- static association: geometric-dimensional or topological association;
- dynamic association (path): path (away from source, toward goal, related to a milestone (over), into, out of, along, etc.);
- frame of reference: relative/deictic, intrinsic/geometrical, absolute/allocentric, proximal vs. distance;
- distances: scale, scope, size.

Events

- basic locative construction: figure, static spatial relation, ground;
- self-propelled motion construction: figure, dynamic spatial relation, ground;
- caused motion construction: cause of motion (mover), moving object (figure), association function, ground;
- co-event: manner of motion, manner of position (posture), orientation of figure at end of event (caused motion).

The different parameters show the rich topographical and spatial density in the cited text passage. Although the English translation is used at this point of the spatial analysis, the richness of the spatial cues is adequately indicative of the Latin original. Distances, geometrical relations, trajectories, landmarks, spatial frames of reference, perspectives (to name but a few factors) indicate the degree of specificity or 'granularity' (see also Richter in this volume) in which the text encodes spatial relations on different levels, that is, at the micro and macro level (e.g., geometric vs. landmark knowledge).

Our cognitive-linguistic analysis makes use of Langacker's introduced diagrammatical schemas. English spatial locatives (and Latin case markers such as locative, ablative, allative), also known as prepositions, can be sketched in the way shown in figure 1.

From a cognitive-semantic point of view, an English verb like to enter or to flow into is conceived as a verbal process, but it encodes a change of location.[16] Arguably, these diagrams also represent the locative cases accusative and ablative in Latin. Hence, these are schematic depictions of spatial situations in which a trajector moves in a specific direction reaching or not reaching the goal. The main differences between a, b, and c are based on using +/– arrows (to indicate a process unfolding in time). The preposition into is semantically and schematically different from the verb to enter.

This cognitive-linguistic framework is our major theoretical fundament in analyzing the complexity of spatial cognition in texts (and to a lesser degree in maps). The English translational equivalents already reveal the degree of specificity of spatial cognition. There are a number of presumably universal spatial parameters underlying human spatial cognition. In very general terms, the fundamental spatial parameters given in the list above – constitutive also for cognitive maps – can be identified in spatial language data. These spatial parameters specify different spatial and topological relations, but also different perspectives and different levels of granularity (individual spatial referents or whole event construals involving several referents and at least one association function). They also indicate the complexity of different spatial encoding systems in a text, that is, geometric or rather topological relations, coordinate systems designated by the different spatial frames of reference, the variability of perspectives, trajectories in motion events, etc.

16 Langacker 2008, p. 117.

1.a	determiner	figure	existential verb	spatial preposition	determiner	ground
	the	horse-carriage	is	near	the	house

Table 1: Analysis of the sentence: The horse carriage is near the house.

1.b	determiner	figure	existential verb	spatial preposition	determiner	ground
	the	house	is	near	the	horse-carriage

Table 2: Analysis of the sentence: The house is near the horse-carriage.

The very general categorization pattern of spatial relations in visual perception is based on the gestalt theoretic figure-ground asymmetry adapted from cognitive linguistics, as suggested by Ronald Langacker and Leonard Talmy.[17] This asymmetry is not only constitutive in visual perception, but also in components of linguistic meaning, hence, instead of clausal phrases such as subject and object, the theory uses figure and ground (or trajector and landmark). In this,

> the figure is a moving or conceptually movable entity whose site, path, or orientation is conceived as a variable, the particular value of which is the relevant issue. The Ground is a reference entity, one that has a stationary setting relative to a reference frame, with respect to which the Figure's site, path, or orientation is characterized.[18]

The figure is construed based on visual perception processes as known from gestalt theory. Its qualities such as site, path, and orientation are related to a reference object, that is, the ground (see also Richter in this volume). These spatial parameters are fundamental in our text analysis since they directly link visual space and linguistic space.

For the time being, the conceptual parameters of figure and ground can be considered similar to the syntactic functions subject and object, but this is not always the case. Beginning with the two gestalt-psychological terms of figure and ground, Talmy's understanding of figure and ground is quite specific.[19] In comparison with gestalt psychology, where figure and ground are used to point to foregrounded versus backgrounded structures of perception, Talmy uses the terms to describe how components of linguistic meaning are distributed in a clause based on detailed geometrical qualities of the objects.

Talmy shows that arguably similar sentences such as the following examples Table 1–Table 2 are not semantically equivalent, despite having the same truth conditions (see above: instead of a horse-carriage, he uses a bike). These two sentences present two different (inverse) forms of a symmetric relation.[20]

In Table 1, "the horse-carriage" is the figure and "the house" is the ground, whereas their relation is reversed in Table 2. Even though it might be more natural to consider the smaller object as the figure and the relational object as the ground, the situation, as such, might make the speaker refer to the bike as the reference object.

1a. The horse-carriage is near the house.
1b. The house is near the horse-carriage.[21]

The example shows the constructive function of language and its construal possibilities. Every so often, these construals go against the visual

17 Langacker 1987, Talmy 1978, Talmy 2003.

18 Talmy 2003, p. 184; see also Talmy 1978; and Talmy 1983.

19 Talmy 1983; see especially chap. 1, "Relation from Grammar to Cognition", chap. 3, "How Language Structures Space", chap. 5, "Figure and Ground in Language"; Thiering 2015 gives an exhaustive definition of the different spatial qualities.

20 Talmy 2003, p. 314.

21 See Thiering 2015, p. 81.

prominent figure-ground ascription, that is, the physically larger object – the ground – is encoded as the figure.

Example Table 1 shows that an object is foregrounded – the horse-carriage – with respect to a reference object – the house.

This asymmetry can be described as being the prototypical relationship with respect to real objects in space. A house is an immobile reference point as opposed to the horse-carriage, which is movable. Example Table 2 reverses the spatial relationship depending on a different visual focus or anchorage. Now the movable object is the reference point and the immobile house is the figure. This example nicely shows the constructive function of language as a staged-meaning ascription. The above-introduced figure and ground asymmetry in a reference-framework adds the degree of specificity of the spatial relationships encoded by the constructions in the 'event' category in the list presented above.

In general terms, spatial ascriptions prototypically display an asymmetry between a profiled entity – the figure – in relation to a backgrounded entity – the ground. Talmy deploys a similar analysis by stating that a physical object is either located or moves with respect to another object, which serves as a reference point for the former.[22] Similar to Langacker's analysis, this is an asymmetry embedded in the processes – prototypically encoded in verbs –where specific aspects of a reference point represent the whole gestalt, which could be described as schematization processes.[23]

The schematization mechanisms are based on a number of conceptual parameters as summarized above, that is, a spatial configuration is specified by scale, scope, distance, frames of reference, etc.

4. Method: Work Units and Counts of Phenomena

As a prerequisite for the analysis and interpretation of Biondo's text in the framework of cognitive semantics, we designed a workflow for text analysis which contains automatic and semi-automatic processing steps.[24] These steps were necessary to enable a large text-corpus analysis for textual comparison.

For the quantitative data presented in the next section, we primarily used AntConc for the English word list, concordance list, clusters, collocates, and frequencies, and Collatinus for Latin text analysis. The overall analysis is based on a Parts-of-Speech (Pos) description. We also used the Stanford Parser (548 sentences) producing dependency trees (the Ud pipe also does this for Latin). The dependencies based on the Stanford Parser will be paralleled with the graphical rapid annotation tool (brat) for comparative purposes. This work is currently still in progress.

For the Latium chapter we have 3041 word types and 15,102 tokens (AntConc). The example below is the most frequent spatial lemma, "to" (for the full list, see Table 4 below). The spatial preposition "to" encodes a direction in a motion event.

lemma: to
prototypical function: Pp[Direction: Source-Path/Trajectory-Goal=Lm]
examples: To (The)___Lm: Border(2), Land(1), Ground(5), River(4), Sea(3), Territory(3);[25]
To___top: Alba, Algidus, Anxur, Aricia, Bologna, Campania, Formia, Frosinone, Gabii, Gaeta, Genzano, Herculaneum,

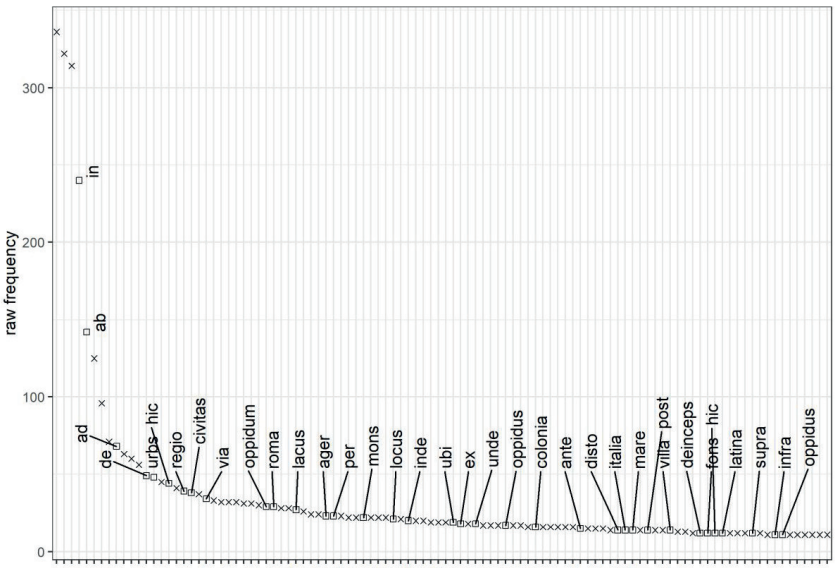
22 Talmy 1978, p. 627; see also Talmy 1983; and Talmy 2003.

23 Talmy 2003, p. 179; see also Johnson 1987; Sinha/Kuteva 1995, Langacker 1987.

24 Some remarks on the Latin text and the English translation. First of all, there are some fundamental issues regarding the available text sources. The textual transmission of Flavio Biondo's *Italia Illustrata* is rather complex due to different available editions. The reason is that modern editions are based either on the extant manuscripts (Biondo 2011, Biondo 2014, Biondo 2017) or the first printed edition (Biondo 1474), supervised by Gaspare Biondo and translated in this century by White (Biondo 2005b, Biondo 2016), or the "best-known, most-cited early printed edition" by Hieronymus Froben, Basel 1559: see Biondo 2005a. Our text aims at reconstructing Flavio Biondo's 'intended' text from both the manuscripts and the editio princeps – transmitted in two versions, which are, contrary to the common belief, not identical – thus harmonizing, as far as necessary and sensible, orthography and punctuation. The reasons for providing a translation of our own are grounded in textual deviations from White's and Castner's texts which already amount to more than one hundred just in the case of the Latium chapter. The second reason concerns our superordinate interest in Flavio Biondo's 'spatial language'. In order to analyze and evaluate it from a cognitive linguistic point of view, the English translation has had to be as uniform in diction and phraseology and as close to Biondo's Latin as possible. In other words: we have aimed more for a literal interpretation rather than an elegant one.

25 Abbreviations: Grammatical Functions:

Figure 2
Lemmas in the Latium chapter. Squares represent spatial words.



Labici, Mentana, Monte Catillo, Palestrina, Rome, Sezze, Sinuessa, Terracina, Torre Astura, Valleria, Valomontone, Vesta.

The analysis shows that the most frequent instances for both English and Latin are prepositions. This is not surprising, given that the text input is a topographical description.

A direction "to [a place]" or "to [a landmark]" prototypically has a starting point (source), a path, and a goal. In addition, when applicable, we added subdomains like lemma + ___. The "to" entries add several toponyms specifically, beside the general parameters, like ___border, ___land, ___ground, ___river, ___sea, and ___territory. We hence analyzed the different constructions regarding the actual parameters encoded. The third column of Table 4 presents the actual English lemma in singular and plural. The fourth column shows the Latin translation based on the Collatinus tool and the related semantic field, where applicable.

In Table 4 we count the frequency for the Latin corpus and the different meanings or rather semantic networks associated with the lemma. Grammatical functions are also given, that is, preposition, case marking, adverbial, etc. The final column presents the frequency of the lemmas in their singular and plural distribution. The general ranking follows top–down, from the most frequent to the least frequent lemmas. The Latin text has been searched for its various encoding patterns, that is, the English "from" (03/11/148) is distributed in the Latin corpus as a (or ab),de, ex, unde. This shows the polysemy of the preposition in Latin. In Latin, the preposition is followed by the ablative case, and hence the motion event away from the source is specified.

We performed an extended analysis of Biondo's spatial references in the Latium chapter. In the following, we present a very coarse statistical analysis and a few selected language examples.

5. General Assessment of the Importance of Spatial Vocabulary in the Latium Chapter

We first present a simple Collatinus statistical account on the Latin original text. This gives us the ranking visualized in fig. 2.

Fig. 2 shows the typical Zipfian distribution with a long right tail, i.e., a relationship between frequency and rank involving very few lemmata with high frequency and many lemmata with lower frequencies. Unsurprisingly, the most frequent entries are sum and et, an existential verb and a conjunction. The third

Acc = Accusative, Adj = adjective, Adv = adverbial, Det = determiner (a, the), Np = noun phrase, Pl = plural, Pp = preposition; Cognitive Semantic Concepts/Spatial Role Labeling: Dir = directional, Dis = distance, For = frames of reference [Intr = intrinsic, Abs = absolute, rel = relative], Lm = landmark (ground object), Loc= locative, Man = manner, Reg = region, Top = toponym; Tr = trajector (moving figure object)[…] = Order Kwic/Antconc; Technical Terms = [Capitalized], Language Examples = (language examples).

most frequent usage (255 occurrences) is the spatial preposition ĭn plus accusative or ablative construction (English equivalents: into, about, in the midst of, according to, after (manner), for, to, among), the tenth (106 occurrences) is the preposition ăd plus accusative construction (to, up to, toward, near, at, until, on, by, almost, according to). Both prepositions are typically used in the basic locative construction for static construals and in motion constructions when encoding a direction in space, fictive or real (see below for more details). They encode the spatial relation binding the figure and the ground together. The figure's trajectory is profiled from its source (starting point of motion event) via a specific path to a ground and goal.[26] The preposition dē + ablative (sixty-one occurrences) encodes down/away from, from, off. We will discuss some typical examples in more detail below.

6. Narrating Space: Biondo's Method

Biondo's text follows certain patterns that deploy the linguistic and conceptual tools described above. Reading and parsing his text leads to the construal of a complex spatial representation. In general, Biondo's method is a systematic staging of figure and landmarks/ground.

At the very beginning of the chapter, the city of Rome (reference point throughout the remainder of the chapter) is located in a region (topological relationship of containment); the region is labelled Latium. Thus, regio Latina is the ground in which the figure (Rome) is located. But in the remainder of the chapter, Rome is typically the ground relative to which the surroundings are associated. In the chapter analyzed, Biondo explicitly explains his default method of describing spatial configurations (numbers at the end of each quoted passage refer to the sentences in the chapter):

> Hac autem describenda mediterranea regione modum hactenus in aliis servatum a fluviorum ostiis fontibusque et discursu servare nequibimus.
>
> (In describing this inland region, we shall not be able to adhere to the method which we have used in other regions – starting with the mouths, sources, and courses of the rivers.) (175)

After having set the figure and the ground relationships for the general setup, Biondo thus uses mouths, sources, and courses of rivers as the ground, then locates the figure in specific parts of the landscape:

> Reliqua ad fontem Liris proximius accedentia
>
> (The remaining places which approach closer to the source of the Liris …). (173)

Sometimes the rivers themselves need to be located in relation to another ground first:

> Fluvium, qui proxime illabitur, Storacem Strabo, Plinius Nymphaeum vocat, super quo hi Formium fuisse dicunt oppidum.
>
> (The river that flows by closely Strabo calls Storax and Pliny Nymphaeus; above this river they say was the town of Formium.) (93)

Not only is the river located in the proximity of the previously introduced ground (here: the town of Santa Felicitas), it is also metaphorically located in the historiographical discourse by reference to the historical alternative names used in the reference works by Strabo and Pliny. The example illustrates Biondo's pervasive method of locating places and events spatially and historically at the same time.

When rivers are not available, roads are used as ground elements or literally as paths, as here:

> Sed alium certius facturum satis, qui in nulla reperiatur alia Italiae regione, tenebimus, viis incedendo tribus: Appia, Latina, Tiburtina,

26 38 cīvĭtās, atis, f.: community/city/town/state; citizens; citizen rights/citizenship; 37 mons, montis, m.: mountain; huge rock; towering heap;there, to/toward that place; in that direction; to that object/point/stage; 34 vĭa, ae, f.: way, road, street; journey; 33 ex, preposition + ablative: out of, from; by reason of; according to; because of, as a result of; 31 lăcus, us, m.: basin/tank/tub; lake/pond; reservoir/cistern/basin, trough; lime-hole; bin; 30 rĕgĭo, onis, f.: area, region; neighborhood; district, country; direction; 27 ăqua, ae, f.: water; sea, lake; river, stream; rain, rainfall (pl.), rainwater; spa; urine; 27 prīmus, a, um: first, foremost/best, chief, principal; nearest/next; 26 ăgĕr, agri, m.: field, ground; farm, land, estate, park; territory, country; terrain; soil; 24 per, preposition + accusative: through (space); during (time); by, by means of; 21 ĕtĭam, adv.: – and also, besides/furthermore, in addition/as well; even, actually; yes/ – now too, as yet, still, even now; yet again; likewise; (particle); (etiam); 20 prŏpinquus, a, um: near, neighboring; 20 annus, i, m.: year (astronomical/civil); age, time of life; year's produce; circuit, course.

quae inter se diversae ad Lirim amnem
et Sinuessam Caietamque perducunt.

(But we shall adopt another (method),
which will meet our needs better and
which cannot be applied to other regions of
Italy: by proceeding along the three roads
– Appia, Latina, and Tibertina – which
by different routes will lead to the river
Liris, and to Sinuessa, and Caieta.) (176)

The text takes the reader to different places as a route direction. The spatial arrangements of places and (past) events are described though a sequence of spatial clauses that locate the figure with respect to a ground. The connection between these clauses, in the chapter we analyze here, is made twelve times using the adverb deinceps (in the sense of "after which"), as here:

[D]einceps Antium est, Romana colonia

(… after which comes Antium,
a Roman colony). (23)

[D]einceps est Circeius mons

(… after which comes Mons Circeius). (82)

In the following paragraphs, we discuss several prototypical spatial constructions which are related to the relations, entities, and events listed above and in Table 3.

Basic Locative Construction

The core of spatial expressions is the spatial relation that is construed between the figure and the ground entities. Both motion and static configurations require such an association function in order to convey spatial meaning. The linguistic locus of the association function varies across languages, and it need not be merely expressed in one single linguistic item (morpheme). In Latin, as in other inflected languages such as German, spatial relations are expressed in particles (verbal prefixes, prepositions, adverbs) in combination with nominal case inflection. As shown in fig. 2, the most frequently used spatial word in our chapter is the preposition "in":

[R]egionem in qua est Latinam

(… the region of Latium, in which it lies). (2)

At the very beginning of the chapter, the city of Rome (figure and also reference point throughout the chapter) is located in a region (topological relationship of containment), and the region is labelled Latium. Then several theories regarding the geographical and mythical origin of the Latins are summarized, as here:

Et quidem Campaniam scimus dictam fuisse
a priscis regionem quae est circa Capuam

(We know, of course, that Campania
was named by the ancients for the
region around Capua …). (9)

Again, a region and a reference point are given: Capua as the ground and Campania as the figure. An important linguistic feature of the Latin basic locative construction is the preposition that indicates the spatial association of the figure and the ground. The example just cited features the preposition circa. Circa is also used to denote the surroundings of a known place, as here:

[E]t alibi romanos accepisse lapides ad structuram ex fidenati agro circa urbem optimos (…
and elsewhere he says that the Romans took
the best stones for building from the territory
of Fidenae near the city of Rome.) (412)

Using concordance software, all instances of specific word forms or lemmata can be displayed conveniently. Table 4 gives all instances where the preposition circa is used.

Concordance tables as the one shown below allow us to get a grasp of the meaning potential and the typical uses of a word form or lemma in the corpus. A glance at the table shows, for example, that the preposition circa can also construe a relatively vague area within a greater space, as in:

[C]irca hunc tractum campaniae colebatur
puer iuppiter (… around this area of Campania
Iuppiter was worshipped as a boy …). (116)

Obviously, the root "circ" is also used for prefixing verbs, as in:

[M]ari circumdata (surrounded by the sea). (77)

This participial construction (see Table 6 for a full list of occurrences) allows us to provide two spatial relationships in one clause, one referring to the itinerary (with the adverb deinceps, see above), and an additional locative construction

in a noun phrase, locating the figure in its surroundings (typically water), as here:

> Deinceps est Circeius mons, magna parte mari circumdatus, in quo Circen fabulae perhibent habitasse.
>
> (Then comes Mons Circeius, largely surrounded by sea, where, in myths, Circe is supposed to have lived.) (82)

The basic locative constructions profile the inherent relation between objects, as in:

> [D]extrorsumque est lacus Fundanus
>
> (on the right is Lacus Fundanus). (149)

Posture verbs can enrich the basic locative construction by adding reference to the human body, as in: "Each man sits in his own place", whereby "to sit" is based on the bodily posture.

Self-Propelled Motion (Actual and Fictive)

Given the focus on pathways, Biondo's text is not only full of basic (static) locative constructions, but also features motion verb constructions, such as:

> Deinceps Antium est, Romana colonia, de qua Livius […]. (Then comes Antium, a Roman colony of which Livy writes). (23)
>
> Deinceps a Velitris recto itinere instituto distat XIV oppidum Sarmineta.
>
> (Fourteen miles away comes the town of Sarmineta). (185)

This is a rather typical construction in the English translation of the chapter we have analyzed. It is rather consistently used to translate descriptions containing deinceps (see above) in the original text. In these examples, the figure and the ground are reversed, i.e., the moving entity is the deictic center of the verb to come and the immobile ground element is construed as the figure.[27] It allows rendering the traveler's experience as a constant observer, in front of whom the landscape passes by. Interestingly, at first sight, the Latin original does not seem to use an analogous construction. The verb venire is used for actual motion without a figure–ground reversal, as here:

> Postea, ubi venerunt tribuni, oppidum vetere fortuna opulentum tres exercitus diripuere.
>
> (Afterwards, when the tribunes arrived, the three armies sacked the town which was wealthy as a result of its ancient good fortune.) (113)

Such motion verb constructions (intransitive) are frequent. Typical self-propelled motion verbs are obviously ire (often with prefixes ad-, ex-, and so on) or fluere. For example:

> [N]e Hannibal per viam Appiam in agrum Romanum iret praedatum
>
> (…so that Hannibal would not go along the Via Appia to plunder the Roman territory.) (124)

Fictive motion is used when the motion described actually renders a static configuration dynamically, often motivated by a metonymic relationship within the figure element, as in, for instance:

> [F]luvius Ufens […] inter valles serpens mare petat. (… the river […] creeps between the valleys toward the sea.) (118)

The river as a landmark or figure does not really move, but the water flowing down its bed obviously does, which then inspires the creeping motion event construal of the scene.

Caused Motion Verbs

Fictive motion can also be found in caused motion constructions, i.e., in constructions involving verbs denoting an agent causing a figure to move in space.[28] For example here:

> [F]inis Etruriae ad Tiberim nos perducens Romam (… the border of Etruria taking us to the Tiber …). (1)

The caused motion verb in the present participle (perducere) coerces a topographic landmark that would naturally represent the path to the motion event, whereby the writer is the figure and Rome the goal. A similar construal can be inferred from the next passage:

> Alia, quae nos ad latinorum limites ducit, via est Latina (Another road which takes us the borders of the Latins is the Latina …). (221)

27 See Thiering 2011.

28 For an analysis of caused motion events, see Berthele 2015, URL:https://www.tandfonline.com/doi/full/10.1080/13670050.2015.1027147 (accessed 20.07.2020).

In all cases, tokens can be attributed to constructions and then be counted, compared, and in many cases related to actual cartographic material.

7. Conclusion

Biondo presents a number of different spaces, as presented above by the list of cognitive parameters applied in his (re)construction of Italia and, in turn, our (re)construction of his *Italia Illustrata*. Our main aim was to analyze spatial language, but in particular the spatial encodings from a cognitive-semantic point of view. These are examples of collective versions of 'worlds' (Weltansichten). These examples represent concepts about the spatial organization of cultural practices such as using a map or a GPS system.[29] Recent literature of spatial cognition, cognitive maps, and mental models especially show that, although rather cultural-specific, such practices are based on fundamental if not universal cognitive parameters, such as the concepts introduced above.

Furthermore, we have shown that Biondo's text makes frequent reference to the naming of places, landmarks, toponyms, and spatial relations. The text also refers to a number of different semiotic encodings, such as other texts and maps.

Our systematic analysis of an exemplary chapter sheds light on the different forms of knowledge represented and activated by the text in terms of spatial relations and spatial perception. With respect to the interaction, we have shown that linguistic encoding patterns point to different cognitive parameters, which in turn motivate different cognitive maps.

Interestingly, the text corpus indicates a mixture of spatial frames of reference. That is, the relative frame of reference (as in right/left) does indeed occur, but the absolute frame of reference nevertheless occurs more often, depending on environmental landmarks such as rivers, lakes, shores, mountains, and ancient roads. To a lesser degree we also find the intrinsic frame of reference, that is, a house, doorway, gate, entrance serve as a spatial anchor, independent of the reader's perspective. This observation aligns nicely with current research on spatial frames of reference indicating the cultural-specific – and hence not universal – encoding mechanisms of spatial anchors.

Not surprisingly, Biondo refers to a number of towns and villages that are lined up along the three main roads he has used as a spatial grid. These roads indeed serve as the major spatial guiding points in the text. The data also indicate a number of geometric alignments such as vertical extension (e.g., from above), inclusion (in, inside), and region (territory).

To conclude, we come back to our main hypothesis stated above: Biondo's text is based on cognitive maps and mental models. We have applied such notions to a historical source. Hence, we take a rather synchronic research theme – cognitive psychology and cognitive linguistics dealing with synchronic data and speakers – to analyze a historical source text (in short, a panchronic approach). These cognitive maps enable the reader to mentally (re)construct different spatial references or rather a spatial grid. This should come as no surprise regarding the constructive function of cognitive maps.

29 Thiering 2018.
30 Slobin 1996.

Appendix: Tables
Basic Spatial Parameters

Granularity partial concept	Type	Referents and dimensions [] = optional concepts	Typical linguistic instantiation	Examples from Biondo's text
individualizable entity	landmark, ground	hills, mountains, rivers, forests toponyms: place and city names, buildings, bridges, churches, fountains, walls, streets, squares, gates, memorial, region, sites, temples, etc.	noun phrases (+ modifiers), toponyms	Oriolo dei Fichi, church of Ravenna, town of Modigliana, castle of Zagonara, town of Fusignano, Cotignola, lies on the Senio, Cunio, Brisighella, Rontana, S. Martino in Gattara, Castellina, (and the villages of) Marradi, Biforco, the Apennines, Crespino // *Aureolum, ecclesiae Ravennatis, Mutilianae vetustissimi oppidi, Zagonaria castellum, oppidum Cunium, Brasgella, Rontana, Gattaria, Castilionum castella, Marratae et Bifurcus vici, Crispinus* hydronyms: Marzeno, Lamone, Senio // *Martianus, Anemo, Sennius*
individualizable entity	figure	the entity construed as being in motion (either self-propelled or caused motion)	noun phrase	the river Senio, the town of Fusignano, travelers, Hannibal
spatial relation	static association	geometric-dimensional or topological association	adposition, prefix	above // *supra; in* // in; circa, in (*bis*), on (lies on = posture verb plus locative), under // in (bis), *adiecit, sub*
spatial relation	frame of reference	relative/deictic, intrinsic/ geometrical, absolute/ allocentric	adverbial	right bank (relative frame), nearby, brushing the flanks of // *ad dexteram, adiecit, latera abluit* beneath it (bird's eye view) // *sub quo* north of/south of in front of/behind
spatial relation	proximal vs. distance	distances: scale, scope, size; encoded in adjectives, adverbs, verbs but mostly in adpositions and case systems (especially relevant for Latin)	adverbial	four miles, five miles away, within two miles // quarto […] *miliario, quinto inde miliario, intra secundum* […] *miliarium*; near/far
spatial relation	dynamic association (path)	path (away from source, toward goal, related to a milestone [over], into, out of, along, etc.)	adposition	in, into // *in, in*
co-event	manner or posture	manner of motion, manner of position (posture), orientation of figure at end of event (caused motion)	verbs, gerunds	lies (bis) // *situm, est*; flow (down into) // *defluit*
event	basic locative construction	gestalt principles of figure (F)[trajector]-ground(G) [landmark] asymmetries (thema-rhema); trajectory/path of F and G	simple cause (NP figure + V static + relation + NP ground	*regionem in qua [urbem] est Latinam*; *Supra eam civitatem montes sunt [ardui et late diffusi]*
event	self-propelled motion construction	motion events: see also satellite-frame vs. verb-frame languages[30]	flow down into (Lamone, marshes) // paludem influit	
event	caused motion construction	cause of motion (mover), moving object (figure), [manner of position] association function, ground	NP Cause + V cause d.motion + Figure + Relation + NP ground	*Finis Etruriae ad Tiberim nos perducens Romam ordine describendam offerebat*
event	fictive motion construction	figure, [manner of] motion, association function, ground	NP Figure + Vmotion + Relation + NPGround	the river […] creeps between the valleys toward the sea

Table 3
Spatial Parameters. This table uses terms adapted from Levinson 2003, Talmy 2003, Thiering 2015, Thiering 2018, and Slobin 1996.

Parts-of-Speech Analysis

Rank	Prototypical function	Lemma	Latin (Collatinus frequency)	Frequency
01[4]	pp[direction: source-path/trajectory-goal=lm] to (the)__lm: border(2), land(1), ground(5), river(4), sea(3), territory(3); to__top: Alba, Algidus, Anxur, Aricia, Bologna, Campania, Formia, Frosinone, Gabii, Gaeta, Genzano, Herculaneum, Labici, Mentana, Monte Catillo, Palestrina, Rome, Sezze, Sinuessa, Terracina, Torre Astura, Valleria, Valomontone, Vesta	*to*		369
02[5]	pp[container-region]: source-trajectory[=loc]-goal[lm] in__container: book(61), the coastal region, __district[bounded region], __forests, __lake[bounded region], __marshes[unbounded region], __mountains, __place, __region, __sea[unbounded region], __territory, __tree[unbounded region]s, __vicinity, __woods [bounded region]	*in*	in (255) pp+acc: into, about, in the midst of, according to, after (manner), for, to, among [in pp+abl: in, on]	343
03[11]	pp[source[dis-dir]-goal[lm+top]] __from__region+trajectory flowing down__, come__ __distance extend__, stades(5)/miles(23)__	*from*	de (61) pp+abl: down/away from, from, off, about, of, concerning, according to, with regard to; ab (44) pp+abl: by (agent), from (departure, cause, remote origin/time), after (reference); unde (18) adv+interr: from where, whence, from what or which place, from which; from whom	148
04[13]	pp[+contact/horizontal/+support/contiguous] adv: on the other hand (2); further on(7); later on(1)/adj: depending on (1)	*on*		139
05[14]	pp(by + det (51)	*by*	apud (13) pp+acc: at, by, near, among, at the house of, before, in the presence/writings/ view of,	122
06[18]	pp[+contact, +vertical, + region] Rule system:[31] at (x,y) =a referent x is at a relatum y if and only if: (i) INCLUSION(x, REGION(y)) (ii) ≠ (INCLUSION(y, REGION(x)) __top[bounded region]: Anagni, Anzio, Astura, Formia, Fumone, Fregellae, Gaeta, Lavinium, Ostia, Rome, Sinuessa, Terracina	*at*	to ut (68) conj+ind+ind: to (+ subjunctive), in order that/to, how, as, when, while, even if	86

Table 4
Excerpt from Our Parts-of-Speech English-Latin Analysis.
The first column (ranking) presents in parentheses the table numbering; the square brackets are the actual rankings (AntConc). We have only included entries that encode spatial information, thereby disregarding several other more frequent entries. The second column presents prototypical functions of the relevant lemma. The spatial preposition to (01/4), for example, encodes a direction in a motion event.

31 FIG is near or in GND, with the constraint that FIG is portable relative to GND; FIG = contiguous to the place of GND, where the dimensionality of GND is not significant.

Abbreviations
Grammatical Functions:

Acc = accusative
Adj = adjective
Adv = adverbial
Det = determiner (a, the)
Np = noun phrase
Pl = plural
Pp = preposition

Cognitive Semantic Concepts/Spatial Role Labeling:

Dir = directional
Dis = distance
For = frames of reference [INTR = intrinsic, ABS = absolute, REL = relative]
Lm = landmark (ground object)
Loc= locative
Man = manner
Reg = region
Top = toponym
tr = trajector (moving figure object)[…] = Order Kwic/ Antconc
Technical Terms = [Capitalized], Language Examples = (language examples)

Collatinus Analysis

The list below is the result of a simple Collatinus statistical account on the Latin original text. It lists the first 25 entries bottom down; the numbers in parenthesis show: a) grammatical forms of this lemma in the corpus, b) polysemous meanings, c) probable number polysemous meanings related to the lemma.

- 356 (326, 33, 30) sŭm, es, esse, fui: to be, exist (also used to form verb perfect passive tenses with Nom Perf Ppl);
- 335 (335, 0, 0) ĕt, conj.: and, and even, also, even (et … et = both … and);
- 255 (255, 0, 0) ĭn (prep. acc. or abl.): into, about, in the mist of, according to, after (manner), for, to, among;
- 228 (0, 409, 228) quī, quae, quod: how?, how so?, in what way?, by what/which means?, whereby, at whatever price;
- 167 (0, 362, 167) quĭs, quae, quid: who?, which?, what?, what man?;
- 126 (106, 22, 20) dīco, is, ere, dixi, dictum: to say, declare, state, allege, declare positively, assert, plead (case), to mean;
- 124 (63, 87, 61) ĭs, ea, id: he/she/it/they (by Gender/ Number); Demonst: that, he/she/it, they/them;
- 122 (122, 0, 0) ā (preposition + ablative): Ah!, (distress/ regret/pity, appeal/entreaty, surprise/joy, objection/ contempt);
- 106 (106, 0, 0) ăd (preposition + accusative): to, up to, toward, near, at, until, on, by, almost, according to, about (w/Number);
- 82 (82, 0, 0) Rōmānus, a, um: Roman (Romanus, i, m.: Roman, a Roman);
- 74 (74, 0, 0) urbs, urbis, f.: city, City of Rome;
- 73 (72, 1, 1) hăbĕo, es, ere, -bui, -bitum: to have, hold, consider, think, reason, to manage, keep, spend/pass (time);
- 69 (64, 5, 5) oppĭdum, i, n.: town;
- 68 (68, 0, 0) ŭt (conj. + ind.: + ind.: to + subjunctive): in order that/to, how, as, when, while, even if;
- 62 (62, 0, 0) nunc (adverb): now, today, at present;
- 61 (61, 0, 0) dē (preposition + ablative): down/away from, from, off, about, of, concerning, according to, with regard to;
- 56 (56, 0, 0) cum (inv.): with, together/jointly/along/ simultaneous with, amid, supporting, attached;
- 55 (53, 2, 2) hīc, haec, hoc: this, these;
- 47 (47, 0, 0) Līvĭus, i, m.: Livy;
- 44 (44, 0, 0) ăb (preposition + ablative): by (agent), from (departure, cause, remote origin/time), after (reference);
- 43 (43, 0, 0) Străbo, onis, m.: a Greco-Roman surname;
- 42 (42, 0, 0) scrībo, is, ere, scripsi, scriptum: to write, compose;
- 41 (41, 0, 0) Rōma, ae, f.: Rome;
- 41 (31, 11, 10) magnus, a, um: large/great/big/vast/ huge, much, powerful, tall/long/broad, extensive/ – great (achievement), mighty, distinguished, skilled, bold/ confident, proud;
- 40 (40, 0, 0) nōn, neg.: not, by no means, no; (non modo … sed etiam => not only … but also).

Concordances

left context	circa	right context
quidem campaniam scimus dictam fuisse a priscis regionem quae est	circa	capuam scimusque latii appellationem a principio pauciora angustiora complexam fuisse
in vergilii vii dicit exitum tiberis naturalem non esse nisi	circa	ostiam ubi primum aeneas castra constituit cum postea in agro
116 et servius septimo vergilii super verbo circeiumque iugum dicit	circa	hunc tractum campaniae colebatur puer iuppiter qui anxurus dicebatur a
novacula interpretatur quia barbam numquam rasisset 117 est autem fons	circa	terracinam qui aliquando dictus est anxur 118 et infra servius
mare sic indicat nullam vare sacra vite prius severis arborem	circa	mite solum tiburis et moenia catili 269 sunt tiburi propinquae
colchis iasonem secuta est ad italiam pervenisse et populos quosdam	circa	fucinum ingentem lacum habitantes propter paludis magnitudinem docuisse remedia contra
superiori edito in colle rocha papae prosperi columnae cardinalis oppida	circa	quae duobus aut tribus a tusculo milibus distantia agri fertilitatem
et alibi romanos accepisse lapides ad structuram ex fidenati agro	circa	urbem optimos 413 et supra diximus tiberim dividere agrum veientem

Table 5
Table of Concordance for the Preposition 'Circa' in the Chapter Analyzed. The table always shows 10 words on the left and on the right of the preposition.

left context	circ-	right context
post antium est quinto miliario astura antonii columnae arx mari	circumdata	prope quam astures fuere vetustissimi de quibus vergilius astur equo
est percussus 82 deinceps est circeius mons magna parte mari	circumdatus	in quo circen fabulae perhibent habitasse 83 habuit vero is
post primam scaturiginem passu molas versat plurimas vico celebri pulcherrimoque	circumdatas	156 per quae loca scipionem laeliumque conchas et umbilicos legisse
q sulpitius priscus dictator captis direptisque illorum castris oppidum corona	circumdatum	scalis captum diripuit censuitque senatus frequentem coloniam labivos deducendam 253
vetustatis indagator curiosissimus quid magnae naves parvo et altissimis undique	circumdato	montibus in lacu ibi induissent nosse animum adiecit nosterque leo
hannibalis a capua tunc a romanis obsessa et triplici vallo	circumdata	ad urbis romae moenia quare libet ordine viam repetere qua

Table 6
Participial Constructions with the Prefixed Verb Circumdare. The table always shows 10 words on the left and on the right of the preposition.

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Abstract

Kai-Florian Richter
The Description of Places in Biondo's *Italia Illustrata*: Outlining a Quantitative Analysis of Their Granularity and Spatial Relationships

keywords – *Place descriptions, Hierarchical structures, Spatial relations, Spatial cognition*

This chapter outlines a quantitative method for analyzing location descriptions. Generally, such a quantitative analysis allows for identifying predominant features of these descriptions and, given a sufficiently large corpus, may allow for statistical inferences. Here, an English translation of Biondo's chapter on the region Latium is used as a small case study illustrating the method. The analyzed features include the frequency (distribution) of the level of granularity of those entities referred to in the descriptions, which spatial hierarchical structures emerge from referring to different entities on potentially different levels of granularity and the frequency of these structures, and which spatial relationships between entities dominate in the descriptions. The chapter presents results of this analysis and discusses them in detail, also pointing out limitations of the method. However, mainly the chapter is to be read as an introduction to this particular analysis approach, which may be used to complement other analyses and may offer insights not otherwise gained.

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The Description of Places in Biondo's *Italia Illustrata*: Outlining a Quantitative Analysis of Their Granularity and Spatial Relationships

Kai-Florian Richter

1. Introduction

Place descriptions[1] answer a 'where question' about a thing or event – they localize the thing or event in a larger space, such that the recipients of the description understand where it is relative to that larger space. Place descriptions are natural language expressions, in that they provide great flexibility in how they might be constructed, which to a large extent depends on the communication context. Generally, however, they take the following form to describe the location of some thing or event:

[[(opt) subject verb] (opt) preposition] NP[2]

Here, "NP" represents the noun phrase referring to a location (e.g., "Rome"). The location can be further specified using an (optional) preposition (e.g., "in Rome", "near Rome"), and might be (optionally) embedded in a complete sentence (e.g., "The Pantheon is in Rome" or "He lives near Rome").

The scale or granularity[3] of the spatial entities referred to in such place descriptions can vary greatly, ranging from objects on table-top spaces (e.g., "the book is on the left of the desk"), to locating countries (e.g., "Italy is in Europe"). Independent of the level of granularity, these descriptions typically exhibit a hierarchical structure in their granularity, i.e., the different entities mentioned in the description differ in their respective level of granularity.[4] Often, these structures can appear as zooming in (e.g., "in Rome, at the Colosseum") or as zooming out (e.g., "at the Colosseum in Rome"); whereby they move from a location on a coarser granularity level ("Rome") to one on a finer level ("the Colosseum") or vice versa.[5] These hierarchical structures reflect the hierarchical organization of spatial knowledge in our mind.[6] They also capture the relationship between figure and ground, i.e., the fact that these descriptions are referring expressions that relate some foregrounded entity (the figure) as relative to another (the ground). (The former is typically seen to be more movable, smaller, geometrically simpler, more salient, and/or more recent than the latter).[7] In other words, the ground entity acts as a reference object for the figure. In verbal communication, addressers usually choose reference objects of which they assume that their characteristics (e.g., name or location) are known to the recipients of the description and, thus, help to resolve ambiguity and uncertainty in locating the entity referred to.[8]

2. Aims

In a nutshell, the aim of this chapter is to illustrate an approach to analyzing location descriptions using quantitative measures. Such a quantitative analysis will allow for identifying predominant features of these descriptions and, given a sufficiently large corpus, may allow for statistical inferences. The analyzed features include the frequency (distribution) of the level of granularity of those entities referred to in the descriptions, which hierarchical structure appears most frequently, and which spatial

1 Place is a somewhat elusive concept that does not just capture 'objective' geographic reality, for example, topography. It is often defined as encompassing three aspects, respectively termed locale (its shaping through human activity), sense of place (its character, its meaning to people), and location (where it is on the earth's surface); see, for example, (Agnew 1987). In the present chapter, however, the focus is on the location aspect of place. Accordingly, we will mainly use location as a term in the remainder of this text.

2 Richter/Winter *et al.* 2013.

3 In other contexts, also sometimes called "degree of specificity"; Cf. Svorou 1994; Thiering 2015.

4 See Shanon 1979.

5 See Plumert/Spalding/Nichols-Whitehead 2001.

6 See Hirtle/Jonides 1985.

7 See Talmy 1983.

8 See Grice 1975.

relationships between entities dominate in the descriptions. Such quantitative data then in turn allows us to draw conclusions about stylistic preferences in describing locations. More interestingly, it also tells us something about the underlying spatial knowledge and conceptualization of space (the mental image) of those providing the descriptions, but also the assumed (background) knowledge and level of familiarity of the addressee.

The analysis approach will be demonstrated using a chapter of Biondo's *Italia Illustrata* as the sample corpus,[9] but it can, in principle, be applied to any collection of verbal or textual location descriptions.[10] The approach was originally developed for analyzing verbal descriptions collected through a location-based game that asked participants to respond to the prompt, "Tell me where you are."[11] Hence, using it on a different corpus may require some adaptations in practice, as explained in the Methods section below.

3. Methods

Generally, in performing the analysis outlined above, the corpus at hand is first divided into individual statements (expressions or parts of speech/text). These can be individual location descriptions if the corpus is a collection of descriptions made by multiple people, or individual sentences, or even parts of sentences if the corpus covers a text by a single author. In the next step, each statement is annotated with respect to levels of granularity, its hierarchical structure, and the spatial relationships between the entities mentioned. Counting these annotations results in some frequency distributions for each of the aspects, which can then be further analyzed.

For the case study presented here, an English translation of a chapter of Biondo's *Italia Illustrata*[12] was chosen to illustrate this kind of analysis. Biondo's chapter describes the region of Latium – the region Rome is located in. As stated above, the analysis is executed on the basis of individual units, i.e., statement by statement. Therefore, the text needs to be split into these statements first, which requires a mix of automated and manual processing of the document.[13] It is important to note that for the corpus at hand – Biondo's chapter – a statement is not the same as a sentence in a grammatical sense, but is rather a semantic unit (or construction) that forms a self-contained description. Accordingly, splitting the text is more elaborate than simply looking at each individual sentence, as is explained in the following.

The chosen chapter from Biondo's book contains 432 sentences overall, i.e., statements finished by a full stop. The full stop character (".") was used to automatically split the document into individual elements for further processing. From here, all following steps in the analysis were performed 'manually', i.e., via manual annotations and coding done by the researcher. This was deemed necessary as these steps require semantic decisions that are difficult to automatize – without however excluding the fact that automatization would, in principle, be possible for some of these steps (see the discussion below).

In a initial run-through of the separated sentences, it was first decided whether each sentence contained (elements of) a place description at all. This first run-through eliminated 201 sentences, leaving 231 for analysis. However, several of these 231 sentences *de facto* combine several statements conjoined by conjunctions, such as "and" or "although", or punctuation marks, such as a colon (":") or semicolon (";"). Accordingly, these sentences were in turn split into their respective sub-statements, resulting in a final sum of 271 statements culled for analysis.[14]

Next, in the annotation step every statement was categorized according to whether it was a 'proper place description' or rather designation, described some movement of people (individuals or groups), animals, or objects through space, or described an event located at some place. A proper place description describes a geographic location in the strict sense of 'place description' as explained in the introduction. Examples of

9 Biondo 2005b; Biondo 2016.

10 In fact, the approach seems to be applicable to both synchronic and diachronic data.

11 Winter *et al*. 2011, Richter/Winter *et al*. 2013, Richter/Vasardani *et al*. 2013.

12 Biondo 2005b, pp. 118–202, see also Biondo 2005a and Biondo 2010.

13 Görz *et al*. 2018.

14 Note that not every appearance of a conjunctive term or punctuation mark requires splitting a sentence. Often "and" is used as part of an enumeration, for example. Therefore, a naive automatic splitting using these terms and marks would not guarantee

such proper place descriptions or designations are sentences 28 and 170 of the Biondo chapter:

> 28: There was in the forum of the Antiates a temple of Castor and Pollux, whom they called their Saviours according to Strabo.
>
> 170: Above the town of Traiectum, three miles from the sea, beside the Liris, is the castle of Speninum.

The former locates a temple with respect to a forum, the latter locates the castle of Speninum with respect to the town of Traiectum, the sea, and the (river) Liris.

Some statements rather describe a trajectory, i.e., a physical or virtual motion event, of somebody or something moving through space, describing that space along the way. An example of such a 'movement statement' is sentence 110:

> Four cohorts were dispatched with C. Servilius Ahala by a circuitous route, and, having captured the hill overhanging the city, from their higher position where there was no defence, they invaded the walls with an enormous noise and shouting.

While these statements contain elements of place descriptions, for example, locating the hill with respect to the city, they do so 'implicitly' and in passing, i.e., at least from the outset their main aim is to describe some motion event.

Other statements describe (historical) events that happened at specific locations, thereby introducing or describing these locations. Again, these contain elements of place descriptions as defined above, but the purpose seems rather to provide some historical context for these locations. An example of such a statement is sentence 140:

> But although the gulf of Caieta and the citadel were of great and ancient fame, it was not a city until the Saracens (as we have shown above) destroyed Formiae.

Following the annotation step, each statement was analyzed with respect to the granularity – or scale – of each geographic entity referenced in the statement, following the approach by Richter *et al*.[15] The different levels of granularity employed and some example entities for each level are listed in Table 1 below. The original classification scheme of granularity levels as developed by Richter et al. has been extended for the analysis presented here. In their work, Richter/Winter *et al*. 2013 and Richter/Vasardani *et al*. 2013 looked at location descriptions that would localize a person relative to their environment (they asked people to "Tell us where you are").[16] As the geographic footprint of a person is rather small, differentiating geographic entities beyond city scale was not deemed relevant in their analysis. However, in the case of Biondo's description of Italy and its regions, it quickly turned out that towns and cities are the main geographic entities that are being localized. To account for this crucial difference, the original classification scheme was extended, introducing a finer differentiation on coarser levels of granularity, as is indicated in Table 1.

At the same time, hierarchical structures present in the descriptions were identified (e.g., 'zooming in', 'zooming out'). Following Richter/Vasardani *et al*.,[17] a location description can exhibit the following hierarchical structures:

- Strictly hierarchical: a location description shows a behavior of strictly monotonically increasing or decreasing granularity levels. The sequence of levels is either zooming in or zooming out. There are no duplicates on the same level of granularity.
- Partially hierarchical: a location description shows a monotonically increasing or decreasing behavior. Duplicates on the same level occur.
- Flat: all entities referred to in a location description are on the same level of granularity.
- Unordered: non-monotonic location descriptions, i.e., the description shows first (partial) zooming in and then (partial) zooming out behavior or vice versa.

Further, for the proper place descriptions, an analysis of the spatial relationships between the geographic entities mentioned in a statement was performed, using the categories detailed

results in a meaningful set of statements.

15 Richter/Winter *et al*. 2013, Richter/Vasardani *et al*. 2013.

16 The descriptions were specifically collected for the purpose of that analysis; thus, Richter/Winter *et al*. 2013 and Richter/Vasardani *et al*. 2013, took a synchronic point of view.

17 Richter/Vasardani *et al*. 2013, pp. 343–344.

level of granularity	description
furniture	location within a room (“at my desk”, “bed”), small vehicles (“bike”), or small natural features (“a stone”)
room	location within a building, or within parts belonging to it, medium-sized vehicle
building	location of a building, large vehicles
street	streets within a town, larger than building and/or vaguer boundaries than building, includes infrastructure and public spaces, natural features of medium size
district	suburb, rural district, post-code areas
city	town or city, metropolitan areas
geographic feature	major roads between towns, single mountains
region	named parts of a country, mountain ranges
country	countries, seas, oceans

Table 1
The different levels of granularity employed in the analysis.

spatial relation	indicators (prepositions)
topology	along, in, on, outside, through, up …
rrelative orientation	across, in front of, opposite, under …
qualitative distance	by, close to, just off, near, next to …
quantitative distance	t is *n* miles, *n* miles from …
correspondence	by the name, was then, which is now, changed to …

Table 2
Categories of spatial relationships used in the analysis.

in Table 2 and again following the approach by Richter *et al*.[18] Most often, prepositions indicate the kind of spatial relationship that exists between two entities.[19] Importantly, a statement can reflect several of these relationships at the same time as, for instance, a given entity can be localized using both qualitative and quantitative distances to other entities. For example, sentence 106 (“And Strabo reports that the land reclaimed from the marshes, from the Pontine Marshes to the territory of Terracina, stretched for a hundred stades, which our contemporaries calculate at eight miles”) says that “the land” stretches between some marshes and a territory (qualitative distance), which covers a distance of a hundred stades (quantitative distance). In addition to the categories used by Richter et al. a further category – “correspondence” – is introduced to capture occurrences when Biondo links historical (Roman or earlier) place names, which are no longer in use, to the (then)-current place name of an entity (e.g., sentence 11: “In order to follow the most knowledgeable author in antiquity and also Plinius […], we are compelled to attach the region of the Latins to our present-day region Campania and Maritima”).

Spatial relationships were not investigated for statements describing movement or events since, for one, their main purpose is not to localize entities with respect to each other as explained above, and, for another, an initial attempt at this analysis showed that many of these statements are not easily/unambiguously categorizable (if at all).[20] Once the annotation of the statements is finished, different quantitative indicators can be calculated, which are explained in the next section.

18 Richter/Winter *et al*. 2013.

19 The Latin text would use the locative, ablative, and allative case to encode spatial relations.

20 For more, see Thiering/Berthele 2022 in this volume.

	furniture	room	building	street	district	city	geographic features	region	country
all	9 (1.53%)	11 (1.87%)	57 (9.68%)	26 (4.41%)	48 (8.15%)	212 (36.00%)	137 (23.26%)	74 (12.56%)	15 (2.55%)
proper place description	5 (1.15%)	8 (1.84%)	46 (10.55%)	12 (2.75%)	33 (7.57%)	152 (34.86%)	114 (26.15%)	57 (13.07%)	9 (2.06%)
movement	0 (0.00%)	0 (0.00%)	3 (4.92%)	9 (14.75%)	8 (13.12%)	22 (36.07%)	11 (18.03%)	7 (11.48%)	1 (1.64%)
event	4 (4.35%)	3 (3.26%)	8 (8.70%)	5 (5.44%)	7 (7.61%)	38 (41.30%)	12 (13.04%)	10 (10.87%)	5 (5.44%)

Table 3
Frequency distribution of the levels of granularity.

	flat	strict zoom in	partial zoom in	partial zoom out	strict zoom out	unordered	total
all	63	42	24	23	38	81	271
proper place description	40	29	16	19	30	61	195
movement	1	3	2	4	1	13	24
event	22	10	6	0	7	7	52

Table 4
Frequency distribution of the hierarchical structure present in the location descriptions.

4. Results

From the small corpus of 271 analyzed statements (constructions or collocations), 195 were categorized as a proper place description, 24 as movement statements, and 52 as events. In other words, the purpose of the majority of statements (72 percent) is to localize geographic entities, while a smaller part (8.9 percent and 19.1 percent, respectively) refer to (motion) events – with the caveat that 201 sentences (46.5 percent) of the chapter's overall sentences had been excluded from analysis in the initial step, i.e., did not contain (useful) spatial references at all.

Overall, the 271 statements mention 589 geographic entities, or just over two entities per statement on average. These entities are not necessarily unique, since several (consecutive) statements may refer to the same entity; or an entity might be mentioned more than once in a single statement, for that matter.[21] It is interesting to note that while on average there are overall just over two entities mentioned in a statement (m = 2.17), for movement statements the average is slightly higher (m = 2.54), while for event statements it is on average less than two (m = 1.77).

Table 3 provides details on the levels of granularity these entities fall on, both overall and for the different types of statements. It can be observed that most references are made to entities on the city level (i.e., mentions of towns and cities), followed by entities on the geographic features level (e.g., rivers, major roads, or forests). Given the purpose of Biondo's text, namely describing the geography of Italy and its regions, this finding may not be surprising.

Table 4 lists which hierarchical structures are contained in the different statements. No clear image seems to emerge here, except that by looking at all statements, irrespective of their type, no clear hierarchical structure is observable. Descriptions are either 'flat' or 'unordered' (63 and 81 out of 271, respectively; or 23 percent and 30 percent of all descriptions respectively). The rest of the statements either (partially) zoom in or (partially) zoom out, with approximately equal distribution. The same holds true when only looking at proper place descriptions. A different image emerges when looking at movement and event statements respectively (albeit based on much smaller sample sizes): movement statements seem to be mostly 'unordered' (13

21 The uniqueness of entities, or their frequency of being mentioned, has not been further analyzed, but may provide a further interesting aspect to look at in the future.

Table 5
Frequency distribution of the spatial relationships expressed in the proper place descriptions.

Description	Frequency
topology	102
relative orientation	86
qualitative distance	69
quantitative distance	36
correspondence	10

out of 24, or 54 percent), while event statements seem mostly 'flat' (22 out of 52, or 42 percent).

Finally, Table 5 shows the frequency distribution of the spatial relationships expressed in the analyzed statements. Again, this analysis was only performed for the proper place descriptions; it is worth remembering that there might be more than one spatial relationship expressed in a single statement. Indeed, 302 spatial relationships are observed in the 195 proper place descriptions, a third of which describe a topological relationship (e.g., sentence 28: "There was in the forum of the Antiates a temple of Castor and Pollux [...]", or sentence 142: "Caieta has always had an excellent harbour on its bay [...]"). Often, Biondo also localizes entities by describing how they relate to other (possibly better known) entities in the surroundings. This may lead to rather elaborate descriptions, such as in sentence 85: "For it was separated from the mainland by swamps, which were cut off by the river flowing from the Mons Albinus [...]", or in sentence 107: "Even now part of the Pontine Marsh lies next to Terracina, where the swamp is formed by two rivers, the larger of which is called Aufens and at Terracina the Via Appia first touches the Mare Inferum."

5. Discussion

As already mentioned in the Methods section, the text's main aim (at least on the surface) seems to be to localize towns and settlements within the region of Latium. References to entities on this level of granularity are most frequent, with over one third of all references made. Adding to this, those references made on the level of geographic feature account for more than half of all references made. The latter are relevant here because towns are often localized relative to their surroundings, with, for example, towns being located along roads (e.g., sentence 144: "And the first city on the road is Fundana [...]"), or on a hill (e.g., sentence 194: "Five miles from here is the town of Somninum, set on a steep hill [...]"). Accordingly, there are only very few references to entities on the finest levels of granularity, namely furniture and room, since such entities are considerably smaller than towns. References on these levels only occur in parts of the text where Biondo digresses from a 'true' description of the region's geography, or where they otherwise provide some relevant information. For example, sentence 180 ("Recently, in the town which is corruptly called 'Civita Indivina' and is owned by cardinal Prospero Columna, a stone inscribed in capital letters was found, which shows that that town is Lanuvium") highlights the discovery of a stone (categorized on the furniture level), since that stone provides important evidence for its historic name (and Biondo's justification for using it).

Looking at hierarchical structures expressed in the descriptions, it is notable that in most descriptions no clear structure is apparent. Many are either 'flat', often because they simply localize towns with respect to each other (e.g., sentence 285: "Then there are Cellae, Sculcula and Peretum , from where one can descend to Taliacotium"), or they are 'unordered', i.e., go back and forth between granularity levels – effectively zooming in and out again or vice versa (e.g., sentence 320: "On the right bank of the Aniensis – from this Lake Sublacum to the Vicus Varronis – one sees an aqueduct cut into the rock of the mountain[...]"). The former can be interpreted as another indicator that Biondo's focus is on the towns of the region. The latter seems mostly attributable to his writing style, which tends to use a lot of insertions

and diversions (e.g., sentence 321: "[…]in fact Tibur, in the place where there is the temple of Hercules, has a waterfall, which is created by the Anio, as it falls from a very high point into a deep valley passing from the woods next to the city itself, where it starts to be navigable"). These insertions break up an ordered hierarchical structure, arguably often without necessarily supporting a better understanding of the locations described in the statement. Indeed, these 'disruptions' to an orderly hierarchical structure still occurred even after sentences were divided into individual statements (i.e., self-contained descriptions), before the analysis.

Movement and event statements[22] seem to fall at either end of this spectrum: more than half of all movement statements are unordered, while a good 40 percent of all event statements are flat.

In terms of spatial relationships (topology, orientation, distance, correspondence), results are largely as were to be expected. A third of them are topological relations, which might not be surprising given that Biondo's aim is to localize entities, mostly towns, which are in a region or on a hill. But there are a number of quantitative distance relations (about ten percent of all relations), which is interesting to note in what is essentially a qualitative description such as this text provides.

Looking more closely at the chapter, the description of the region Latium can be seen as being divided into three parts: the coastline, the inland, and the region around Rome. The description of the coastline follows (more or less) a linear course from north to south. On the other hand, the inland region is described following the course of three main roads – the Via Appia, Via Latina, and Via Tibertina (sentence 176: "But we shall adopt another, which will meet our needs better and which cannot be applied to other regions of Italy: by proceeding along the three roads – Appia, Latina and Tibertina – which by different routes will lead to the river Liris and to Sinuessa and Caieta"). Both ways of structuring the description of the coast and inland lead to a linear progression. But using main roads as a structuring principle may lend itself more naturally to using quantitative distances, since along these roads there were/are distance markers (milestones). However, looking at the data, no such differences can be found: for the coastline 17 out of 80 descriptions (21.25 percent) refer to quantitative distances; along the roads there are 19 out of 102 (18.63 percent). In fact, for none of the different types of spatial relationships are there any notable differences between the different parts of the chapter.

6. Caveats: Limitations of the Approach

The study presented in this chapter has several limitations. Some of them are specific to this particular case study, some apply rather to the general analytical approach.

First, the analysis has been performed on an English translation of the Latin original. No attempts have been made to cross-check it with the original text.[23] While this English translation was specifically produced with an eye to capturing spatial aspects and geographic entities and can thus be taken as true to the original in content and meaning, the exact spatial prepositions used and the exact order of spatial references in the statements nevertheless matter for the results of the quantitative analysis. Shifts in that order, which may be grammatically necessary in the translation (Latin, for example, uses a case system rather than prepositions to denote syntactical relationships) would lead to different hierarchical structures between the Latin original and English translation. It is difficult to judge whether and how often this may actually occur between the two texts.

Further, the analysis has only been performed by the present author of this article. In an analytical approach such as this, however, the annotations should be checked by someone other than the author. This is usually done by performing an interrater agreement test. Two or three 'naive raters' – persons unfamiliar with the particular text and research questions – are provided with instructions on how to annotate a given corpus (e.g., the Biondo chapter). After annotating (a sample of) the corpus, these 'naive' annotations

22 See the discussion of trajectories above.

23 See however, Görz/Seidl/Thiering 2022, Guckelsberger/Geus 2022 and Thiering/Berthele 2022 in this volume.

are analyzed. The extent to which they (dis) agree sheds light on the clarity and usefulness of the instructions, helps to identify difficult or ambiguous cases, and serves as a way of double-checking how consistently and correctly the annotations were in general – not only those of the naive raters, but also those of the 'experts' doing the actual analysis. Since the main purpose of this chapter is to introduce, motivate, and demonstrate this kind of cognitive-structural analysis to an audience probably largely unfamiliar with such quantitative approaches in the first place, such an interrater agreement analysis was not deemed crucial in this case, but would certainly be a topic for future research.

As a general limitation, the presented approach separates a text, or corpus more generally, into individual statements, which are then analyzed 'out of context', i.e., each statement is looked at individually without accounting for its embedding in the text. This has several consequences. Pronouns that may refer back to entities mentioned in a previous statement are ignored, i.e., there is no entity resolution, replacing a pronoun with what it refers to. Moreover, such a statement-by-statement analysis leads to a very literal reading of the text. As the statements are taken out of their local context, their content is taken at surface value for what it is; except in obvious cases, no interpretation is attempted of any metaphors or figures of speech. This can be seen as a general limitation of this kind of analysis. It may be furthermore worth noting that in this specific case, a number of cited ancient sources were also disregarded for closer analysis.

Finally, as it currently stands, the presented approach to analyzing location descriptions requires substantial manual processing. This is necessary because, despite the decontextualization that ensues through a statement-by-statement analysis, there nevertheless remain many decisions that depend on the semantics and context within a single statement. Correctly handling these poses challenges to machine intelligence as it requires a 'proper' understanding of the text. Having said this, there are parts of the analysis that could indeed be better supported by (semi-)automatic processing, for example, splitting sentences at punctuation marks (";", ":") and highlighting potential split points, i.e., conjunctions (e.g., "and"). Further, pre-annotations could be performed by automatically assigning spatial relations (e.g., topology or qualitative distance) whenever the relevant prepositions appear (see Table 2 above). A similar pre-annotation could even be performed for the different levels of granularity by matching entity names (e.g., names of towns, lakes, or regions) to relevant topographic data – so called gazetteers.[24] However, such matching will never be perfect due to ambiguity and other issues.[25] On the one hand, these steps would result in a significant part of the annotations being done automatically. On the other hand, all the automatic annotations would need to be carefully checked afterwards by the researchers to verify consistency and correctness. It remains to be seen which workflow is more productive.

24 There are tools and frameworks available that may allow for some of these steps to be done as outlined here, for example, Recogito (URL: https://recogito.pelagios.org). See, for example, Görz/Seidl /Thiering 2022 in this volume, who use the BRAT semi-automated annotation tool.

25 Derungs/Purves 2013; Vasardani/Winter/Richter K.F. 2013.

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Abstract

Francis Harvey
Challenges and Potentials in Connecting Historical Meaning and Memory in Maps: Considering Some (Un)certainties in the Reading of *Italia Illustrata*

keywords – *Cartography, Mapping, Representation, Communication, Semiotics*

Contemporary cartography faces numerous challenges to adequately account how a hodological description, here Biondo's Italia Illustrata *(1474) could be imagined in the form of a topographical map, based on consistent spatial dimensions, but some challenges call for our attention. After centuries of refinement the topographic map may now provide a cultural representation of geography ubiquitously deployed in the humanities and sciences. It has become even second nature for many fields of science and scholarship, although we should admit we lack full comprehension of maps influence on our understanding. This chapter takes up this matter from the perspective of semiotics and contemporary critical cartography studies related to the comprehending the construction and meaning of territory made through and with maps. Taking what we know from the sociology of science about the ambiguity of knowledge representations, it seems highly relevant to commence by broadening the scope of considerations through semiotics to examine maps' representations of geographical, cultural memory as institutionalized mnemonic devices that distill complex meanings into symbolic representations. Following Umberto Eco's model of communication, these stabilize cultural and political associations of places both explicitly and implicitly and sustain themselves through the performances of creating and reading their cartographic presentations. The chapter closes with broader considerations of these challenges and potentials regarding maps analyzed in humanities research that considers the cultural constitution of mappable knowledge.*

Doi | https://doi.org/10.48431/hsah.0109

Challenges and Potentials in Connecting Historical Meaning and Memory in Maps: Considering Some (Un)certainties in the Reading of *Italia Illustrata*

Francis Harvey

Introduction

This contribution to the workshop on Flavio Biondo's *Italia Illustrata* sets out to take up workshop themes – spatial knowledge, its contextualization, and spatial representation – and connect them to research in the fields of cartography and GIScience. Considering a work created during an early phase in the development of modern mapmaking opens fresh perspectives and allows us to reconsider assumptions about mapping. As we read the document of Biondo's geographical description, we find ourselves leaving the certitude and exactitude of contemporary geoscience representations behind and begin to reflect on explicit as well as implicit issues and ideological claims. We are made to consider modernity's so-called 'cartographic gaze', which has over the centuries become second nature for most makers and users of maps, including in the sciences and humanities. Following Kant's epistemological critique and its methods advanced by semioticians, a semiotic study of a geographical text or cartographic presentations is able to probe these issues more thoroughly. An ensuing synthesis can consider these issues dialectically, as well as the underlying hidden issues that a semiotic approach helps reveal.

The various matters of geographical description involve geographical representation and knowledge and cut to the core of epistemological issues of societal power related to maps and meaning. The connection of a narrative trope to a particular map also needs to take up scholarly discussions about uncertainty and ambiguity in the context of an ideological framing of mapping praxis. In this chapter, I will approach these three issues through materials from *Italia Illustrata* presented at the workshop. The grounding assertion is that the semiotic analysis that considers historical conditions can explain how Biondo's discourses constitute their validity and their value of truth for that era – through the creation of his textual geographic descriptions. Based on this critical assessment, we can reconstruct the reception of Biondo's text as a memory device. Finally, we can examine Biondo's constructions of meaning in light of our knowledge of their geographical relevance for his contemporary peers. Our own contemporary concerns with uncertainty in geocentric and egocentric mapping, especially regarding functionalist and ideological critique modes, can shed light Biondo's socio-political connotations, as well as those of his contemporaries, as grounded in ancient geographies, which form the foundation of his illustrations and are precursors of modern geography's striving for representational certitude.[1]

Given the breadth of the issues and reliance on concepts from multiple fields, some terms require preliminary definition.

Maps are resources for graphically communicating complex geographical relations. They can be used alone or with other media to develop a richer understanding of these relations in terms of regions, places, topography, settlements, or other geographically distributed phenomena and to support any intervention in the interactions between such phenomena. They are not merely images that illustrate, because they rely on specific cultural and institutionalized constellations of graphic elements, tropes, and narratives to support the communication of geographical relations.

The 'cartographic gaze' has many meanings. In terms of contemporary human geography, it

1 See Edney 2019.

applies to the study of spatial societal and environmental relations in the context of their cultural, political, economic, and social significance.[2] A concept arising in art historical scholarship of the 20th century,[3] the cartographic gaze relates to concepts of the scopic regime[4] and involves culturally manifest tropes of seeing and controlling the body and its use as metaphor for the political entity associated with territory.[5]

As far as the construction and reading of maps are concerned, "to illustrate" means (beyond the general definitions of the word) to explain, to clarify, and to add insight geographically (see also Laureys in this volume). The English word derives from the Latin *illustrare*, meaning to add light or brightness to something. Biondo's use of the adjective form in his title suggests the importance of selection and highlighting in contrast to a process of engaging with the subject, which modern cartographers would wholeheartedly embrace while struggling to explain precisely what and how the selection is used methodically to elucidate cartographic communication.

These difficulties go hand in hand with the uncertainty that arises from the epistemological separation of knowledge in our minds as distinct from our experience in the world. In contemporary science, especially in physical and environmental sciences, the concept of uncertainty narrowly articulates possible differences between an actual situation and the data recorded to describe that situation.[6] In interdisciplinary contexts, uncertainty provides emphasis for different professionally and scientifically sound approaches to mediate philosophical and scientific differences in specific cultural and institutional contexts involving a creator/writer and a reader.[7]

In the context of these definitions, the maps known to us can perhaps best be understood as the products of a graphic technology to reduce spatial ambiguity or provide geographical insights, which corresponds in significant ways – despite our visuality – to Biondo's hodological representations in *Italia Illustrata*. Institutions play a vital part in map production, not just by providing funds to support the complex work of creating maps, but also by co-developing and facilitating the frameworks required to understand these maps. As Alfred Korzybski puts it, the two important characteristics of maps are:

> A map is not the territory it represents, but if correct, it has a similar structure to the territory, which accounts for its usefulness.[8]

In other words, maps are not linear texts consisting of words and grammar or comparable graphic elements, nor, due to their graphic nature and cartographical fidelity, can they be reduced to the purely textual. Texts that describe geographical places and spaces and maps that visualize geographical places and spaces are fundamentally both models, finite constructions that can be inconsistent, but still useful when drawn or read with a specific purpose or purposes in mind.[9] In this sense, communication with geographical description in either map or textual form involves the creation of inferences in one context and the (often broad) interpretation of inferences in another context. Creator/author and reader require a level of competency to assure that ambiguity of signification in the communication is channeled or minimized. The creator generates a strategy, which, following Umberto Eco's pragmatic approach, calls for the reader's cooperation in making a series of interpretative choices from a set of multiple possibilities.[10] As such, generating and attempting communication involve activity on the part of both creator and reader.

In his work *A Theory of Semiotics*, Eco examines the limits of the widespread contemporary syntactical and linear model of communication and proposes a semantic-pragmatic process and hermeneutical approach to understanding text that accounts for the reader's interpretive abductions and potentially aberrant interpretations. The pragmatic focus of semiotic analysis following this theory lies in controlling, if not ultimately reducing, indeterminacy in communication. The author strives for an ensemble of

2 See D. Gregory 1979; see D. Gregory 1994.
3 See Bredekamp 2015.
4 See Jay 1988.
5 See Wood/Fels 1993; Hobbes (2008) 2016; Neocleous 2003; Olsson 2010.
6 See Bodenhamer/Harris/Corrigan 2013; see I.N. Gregory/Kemp/Mostern 2001.
7 See Harvey 2013.
8 Korzybski 1948, p. 58.
9 See Eide 2014.
10 See Eco 1984.

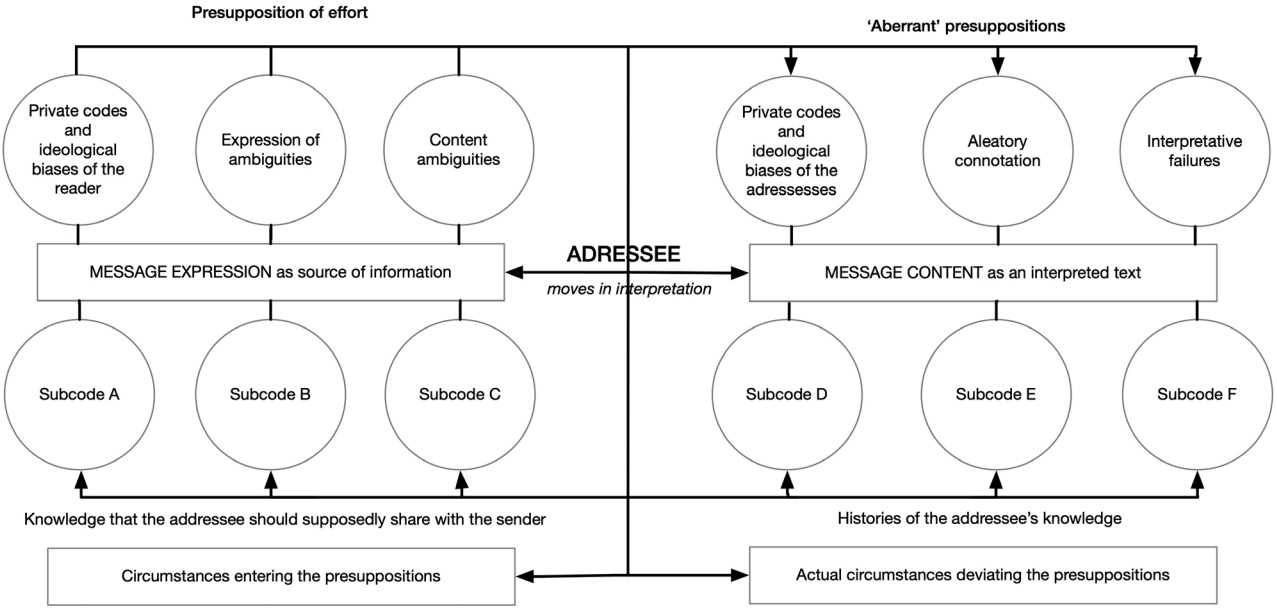

Figure 1
Umberto Eco's simplified picture of the semantico-pragmatic process. Redrawn from Eco 1984, p. 6.

codes that is the same as that of the possible reader, which assumes a particular competency on the reader's part that must come from outside the text itself. Eco develops this into a complex model (see fig. 1 for a graphic presentation) that considers the interpretation of a text and involves intensions and extensions, circumstances and content – an 'intertext' that refers to endless texts and semiotic encoding systems.

Drawing on this concept of intertext, I set out to explore how some of the intensions underlying Biondo's text and his rules of co-reference regarding the reader's actualization of the semiotic properties can be taken to identify special elements of the text as a means to disambiguate anaphoric and deictic expressions. This narrow focus removes some of Eco's better-known text analysis strategies from consideration, for example the narrative strategy, but even in this abbreviated form it permits an initial, if tentative, deepening of the interpretive process. For this I rely on workshop materials. This is, admittedly, a limitation, albeit one that future research working directly with Biondo's text and materials can overcome. I want to acknowledge both the limits and the great importance of scholarship for its analysis and synthesis, upon which this article rests. The aim of this paper is to be seen in terms of advancing semiotic approaches and related methodological concepts to aid researchers considering geographic representations in text or map form to distinguish different kinds of spatial information in Biondo's text and to identify the textual anchors in this narrative that construct his geographical mapping. A broader reading of semiotic approaches from Roland Barthes, Karl Bühler, Jacques Derrida, Algirdas Julien Greimas, Charles Sanders Peirce, and Roman Jakobson is also a matter for future research. With this special slant, my study of Biondo's *Italia Illustrata* is conceived as a contribution to the development of modern digital tools and approaches with a narrow, and limited, theoretical framework.

Making Territory and Making Geographical Sense

The matter of writing a textual narrative to describe a geography, or, in other words, the process of territory-making, involves a framework of beliefs that together constitute an ideology, which, whether as creator (author) or viewer (reader) relates us as subjects to these objects of communication. Both author and reader have to work to comprehend the objects and make sense of the communication. When maps were scarce (as was the case at the time Biondo wrote *Italia Illustrata* and was definitely no longer the case after technical advances in the modern period significantly decreased the cost of printing maps in large editions), the text itself had to provide – due to

Figure 2
Detail from Nicolaus Germanicus, Cosmographiam Claudii Ptolomaei Alexandrini, (c. 1467), v.2 tab. IX, Ms. Rps BOZ 2, Warszawa, Biblioteka Ordynacji Zamojskiej (Ptolemy 1467).

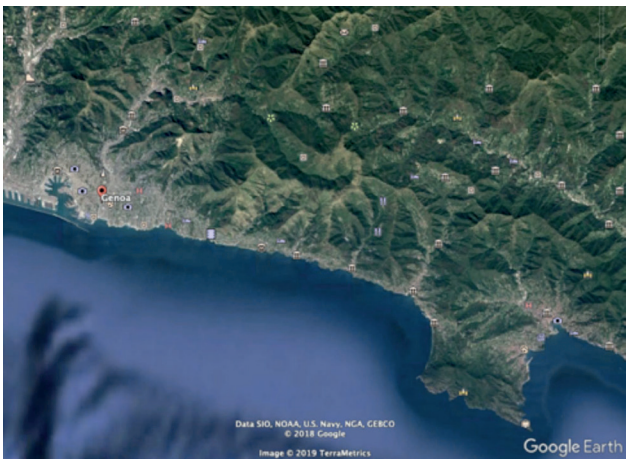

Figure 3
View of Genoa from Google Earth.

its unfamiliarity and uniqueness – much more to support a reader's interpretative abductions and avoid errant interpretations. As contemporary readers today, we struggle to gain the philological comprehension and historical contextual knowledge needed to make sense of the text's geographic illustrations. That said, however, the fact that the evolution of mapping over the last fifty years has coincided with the development of digital information technologies, as exemplified by Google Earth, and the rise of egocentric versus geocentric approaches to reading geographic representations[11] makes us acutely aware of the transformation of cultures of knowledge and their production. Going from institutionalized forms of knowledge and their representations to individual experiences and individual knowledge requires making sense of remote sensing images posted online and woven together in such a way that is capable of integrating various additional geographic representations, with the territory thereby depending on the actions of creator and viewer.

The distinction between egocentric and geocentric stems from media studies, research in cognitive psychology, and cognitive anthropology. As such, it refers to the emphasis on the function of a visual artifact emerging through its use by an individual. Egocentric reading extends the perspective of a viewer already submersed in the primacy of their subjectivity; its anchorage point is the human body itself, with locations, for example, being left/right of the body (as Kant highlighted as a universal paradigm). Geocentric reading, meanwhile, requires the acquisition of institutionalized and cultural knowledge to make sense of the representation, for instance, the conventions of topographic mapping (also known in cultures with non-written traditions in which natural landmarks serve as spatial anchorage, being, for example, either down- or upriver, up- or downhill). Egocentric geovisualization is best exemplified today by Google Earth (fig. 3), which gives the person controlling the cursor the unmediated ability to move virtually at different degrees of visual detail and connect these visuals to personal experience or imagined scenes derived from other media. A topographic map is a vibrant example of geocentric geovisualization (as is the case with GeoJSON). Before use, some nominal level of understanding of the graphical representations of the map type and scale is required for a person to move about virtually and connect what they see on the screen to their physical experience or imagination. (This is also possible in virtual and augmented realities, using a VR headset.)

In consideration of professional training (the ability to acquire – explicitly or implicitly – knowledge from maps), possessing the faculty to understand specific cartographic representations is the gateway to their use in academic or scientific expository work. Due to our Western

11 See Abend/Harvey 2017; Thiering 2015; Levinson/Wilkins 2006.

professional socialization and socio-cultural education and acculturation, we have different foci in our capacities to use contemporary maps or GPS systems, which often makes using traditional maps more difficult. Central to this is how a professional creates meaning through maps in a way that successfully communicates the institutional understanding of territory and significant geographical relations.

While the technologies available to mapmakers of the fifteenth and twenty-first century differ radically, the human processes of making sense of a geographic illustration through communication media continue to require socialization, education, and acculturation (and the technical prerequisites) for map communication to be successful. We need to first understand the creator and viewer to then understand how any map can communicate. Eco's writings, preceded by studies in semiology, provide an excellent theoretical framework for considering how to take on this challenging deconstruction.

The Name of the Territory

Since the modern era, the effort to understand territory from textual or graphical description has become second nature, but that is not to say that the effort and coordination involved should not be underestimated. An example from literature provides a relevant story. In the semiotician Umberto Eco's well-known fictional work *The Name of the Rose*, the semantic effort to create the text and make sense of it is presented as a medieval detective story (see Thiering 2015 for a fuller consideration of the novel). The effort of the protagonist illustrates a key aspect of Eco's theorization of the role of the reader and his/her mental models.[12] The reader, here William of Baskerville, must put considerable effort into distinguishing the author's presuppositions and messages from aberrant presuppositions and the actual circumstances to make sense of a text and the actions and situations it describes. The effort needed to transform an expression into content can be considerable. Reading is not merely the simple act of associating meaning correlated to expressions. Lexical meaning has to be interpreted in its contextual and circumstantial compositions. The reader transforms expressions into content through semantic analysis and detection of syntactical properties at the surface level in connection to underlying subtexts. Rules of co-reference are central to the interpretations. The disambiguation of these co-references requires textual operators, such as frames, that communicate the author's intensions. The reader must first get a grasp of tentative co-textual relations. As Øyvind Eide explains, at this level, the reader undertakes every transformation from surface to the underlying semiotic structure of the single sentences. In cases of ambiguities he waits for textual clues.[13]

Through a dialectical process of abduction, the reader develops a culturally specific framework through logical inference from observations and learns to separate aberrant presuppositions and guard against interpretative failures. S/he seeks the simplest and best fitting explanation for the observation without verification.

Dialectics of Creating Cartographic Meaning

In reflections on our experiences explaining maps in a didactical context, most of us could readily note the importance of relating subjective knowledge and comprehension of geography to its institutionalized representation. Crucial to developing this understanding, is an understanding of explicit and implicit beliefs, or ideology.[14]

The dialectal approach in this semantic methodology relies on contradictions to advance its analysis to new insights and the synthesis of relations and interactions camouflaged by ambiguous terms and authorial diversions. Today we face the challenge of (re)constructing readers' contextual knowledge and ideology arising from their respective socialization, education, and acculturation. Taking the example presented by Nathalie Bouloux (2022) in this volume that she uses to explain how *Italia Illustrata* was map-based, the following short excerpt provides a range of co-references that facilitate interpretative abductions:

12 See Hutchins 1996; Thiering 2015.
13 Eide 2014.
14 See Harley 1989; Pickles 2004; Turnbull 1989; Tversky 1993.

> In sinu Lunensis sive Veneris portus intimo Spedia est, novum oppidum ab annis sexaginta muro circumdatum, secus quod, inspecta Italiae descriptione ac pictura a maioribus facta, Tigulliam fuisse coniector.
>
> (And in the innermost portion of the bay of the harbor of Luni [or Portovenere] is La Spezia, a new town, walled for not quite sixty years now, near which I surmise, from examining a survey and map of Italy made by forebears, was Tigullia.)[15]

The co-references provide a set of spatial relationships (a portion of the bay/harbor of Luni) and position the contemporary town, La Spezia, on the site of Tigullia, based on a survey and map. The graphic representation in a map of that era (see fig. 2) corresponds to this text. The disambiguation of the geographic relationships is arguably neither concise nor precise in both text and map of circa 1467, but both are adequately capable of describing the geographic relationships. Without standardization of the story for modern readers, the dialectical abduction of the textual representation (in translation) is often more cumbersome than the graphic representation, as limited Latin knowledge can constitute a substantial challenge for many readers.

Another example drawn from Bouloux documents the rich geographical descriptions Biondo provides:

> After the Auser come first the mouths of the Arno, and a little further on Livorno, a well-fortified stronghold which is the port of Pisa. Here a lighthouse has been set on a reef a mile from the mainland. It provides a light at a great distance to those sailing the Tyrrhenian sea at night and points the way to the harbor of Pisa from afar. Three miles from the sea, Pisa spans the Arno with her bridges and embellishes it with fine buildings. Vergil says that this ancient city with its famous history took its origin from the Alphaei. Pliny tells us that Pisa was founded between the Auser and the Arno by Pelops and the Territani, a Greek people, and Justin that Pisa in Liguria had Greek founders. And Lucan [tells us] in Book I: "On this side, Pisa, interrupting the stretches of the Tyrrhenian sea with her shoal." Livy in Book XXI [tells us]: "This was why the consul rushed on to the Po after he arrived with his ships at Pisa."[16]

Describing the port of Pisa, Biondo offers numerous geographic co-references that the reader can dialectically disambiguate to gain a topological sense of the spatial relationships, of key phenomena that aided navigation, and of the classical information about the site's history, including documentation of its importance and pre-Roman origins. While a metric ("three miles") is provided, the disambiguation is limited by the lack of other metrics and an authorial ambiguity ("mouths of the Arno" and "a little further on Livorno").

These co-references also point to the challenge discussed earlier of understanding these texts with our contextual knowledge of today and lacking a more profound understanding of the connotations to guide an interpretation reflective of the audience Biondo was writing for. Without a more profound grasp of this rich understanding of the circumstances by which Biondo's readers approached his text, our current reading is prone to aberrant interpretations and failures.

Relationship between the Illustrator and Illustrated

Although the dialectical approach offers a means to gain a deeper understanding of the explicit and implicit textual elements through dialectical abduction of the co-references, consideration of philological scholarship can greatly help disambiguate contemporary circumstances and help us to gain insight into historical comprehension. In his contribution to this book, Marc Laureys provides a description of six concepts of space in Biondo and analyzes the textual strategies that allowed Biondo to connect and merge space and history:

> Biondo's conception of space is (1) determined by an ancient, not a contemporary (political or ecclesiastical) geographical framework, (2) structured into modular units on various geographical (national, regional, and local)

15 Biondo 2005, 42-43 (37).

16 Biondo 2005, 54.

> levels that constantly interact, (3) inspired by cultural and historical rather than political or diplomatic claims, (4) visualized by rhetorical means rather than empirical evidence, (5) underpinned by references to classical and medieval – predominantly literary – sources that serve as a commentary on the localities mentioned and described, and (6) are filled with history more than with topographical or ethnographical details.[17]

A more thorough philological engagement would provide a richer analysis, but in the context of this chapter's focus, the quoted passages from *Italia Illustrata* above indeed demonstrate these principles. They also point to the importance of a better comprehension of the ambiguities for modern readers, the complexities to understand the codes used by Biondo and his peers and the ideological biases that prelude contemporary knowledge with classical and medieval sources.[18] The ambiguity of the text may be iteratively lessened by careful philological scholarship.

(Un)certainties

The difficulties in matching classical places to contemporary places is a problem of localization and identification, but because of the multiple variations in name, location, and geographical relations, resolving the challenges can benefit from a dialectical approach, as described above. (Over the course of history and charting by different maps, places vanish or swell their borders; the Biondo research group at the Bibliotheca Hertziana in Rome use the Recogito annotation platform to resolve exactly this problem.) The ambiguities of the text can be constructively engaged by a semantic analysis drawing on the intertext concepts advanced by Eco and other semioticians. Many of the points regarding ambiguity in a text hold the cartographic ambiguity of representing territory today inherent in the cartographic gaze. Following David Turnbull's historiographic studies of cartography,[19] we can grasp some potential tensions between a proto-cartographic gaze and experiential knowledge crafted to align with classical geography rather than contemporary political or ecclesiastical perspectives.

In the context of the philological study, the dialectic approach can commence with matters of translation and transcription with can exist among various versions of the source text. The analysis of this discursive philology identifies the points which are synthesized and studied for their contradictions. Beyond the methodological issues of a dialectical approach focused on in this chapter, additional triangulation between different translations and the original passages and overarching rhetorical and ideological tendencies can help produce a synthesis that would advance the understanding of the text based on a richer comprehension of contemporary circumstances and ideology.

The matter remains of the text's or graphic image's relationship to knowledge and memory – both authorial and of the reader – not just the individual but institutional memory, as it relates to the localization of places. Today we tend to think of these matters in terms of uncertainties between description – or data – and the actual phenomena, but this is problematic in that it may reduce the relationships to the accuracy of syntactical elements and constrain or even expunge considerations of the cultural meanings and associations that guided creator and reader in their engagement with the text. Uncertainties today may indeed mask former certainties now lost on contemporary readers, but at least an analysis would sufficiently point them out and help clarify them.

Conclusion

If we take Eco's reflections (and related work by other semioticians such as Roman Jakobson, Roland Barthes, and Louis Hjelmslev), we find ways to engage with the text as a project that is only completed when the reader makes sense of it. While the author preparing the text centers on developing a strategy and means to communicate sense, for the reader 'reading' involves developing a strategy to interpret the author's intention, textual elements, and the author's strategy to make sense of the produced text. In the case of Eco, the reader's strategy involves a complex hermeneutic and dialectical approach to reading that focuses on the interpretation of

17 Laureys 2022 in this volume. 18 See Clavuot 1990. 19 Turnbull 1989.

the author's intentions. With the philological research into Biondo's text, we are in a unique position to engage with the historical relationships between text and maps as geographical representations that contemporary scholars have largely become blissfully ignorant of, thanks to the profusion of maps over the last five centuries. We can certainly better understand Biondo by taking up Eco's approach and engaging our prerogatives and assumptions of the cartographic gaze regarding, on the one hand, the relationship between geographical texts and graphics and, on the other, the reader's gaze, by considering rules of co-reference and the dialectical abduction from circumstances.

In reconstructing this geography in relationship to contemporary place names, a philological study of the original Latin text faces numerous challenges. In the scope of this contribution, the reconstruction of known places when clear classical, historical, and contemporary toponyms have been identified is relevant in considering a more dialectical approach that can connect places with toponyms reliably.

Approaching uncertainties that arise in Biondo's text for readers today, both due to polysemy and ambiguities, may be a basis for considering challenges researchers today face in understanding textual descriptions of locations, which remain quite common in the herbarium and other systematized classification resources. Here the literature on geocoding holds further relevance for the development of robust methods in the digital humanities.[20] A different geocentric approach to spatialization using egocentric elements of geocoding could be easily enhanced. These methods can also be implemented in a dashboard environment and readily used to complement and evaluate philological work in the digital humanities and help support other computation approaches.

In closing, I wish to express my gratitude to the other participants of the workshop for graciously sharing their workshop materials and their discussions to a very early version of this text presented at the workshop. I acknowledge a limitation in this contribution due to limited abilities to work directly with Biondo's text and materials. I would also like to acknowledge both the limits and great importance of scholarship for its analysis and synthesis upon which this contribution rests. The aim of this contribution is to help achieve theoretical advancements and methodological concepts to aid researchers. My emphasis here lies in helping develop modern digital tools and approaches to distinguish different kinds of spatial information in Biondo's text and to identify the textual anchors in this narrative that construct his geographical mapping. Connecting historical meaning and memory in maps comes with potential benefits and challenges and I feel honored to contribute to this field.

20 See Melo/Martins 2017.

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