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CHARTING THE DIVINE AND THE WORLDLY

Bilkent University 2024

CHARTING THE DIVINE AND THE WORLDLY: A
COMPARATIVE ANALYSIS OF REPRESENTATION
OF RELIGIOUS SYMBOLISM IN MAPS ACROSS
THE MEDIEVAL MEDITERRANEAN

A Master's Thesis

by
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Ankara
September 2024



To my muse, Aybüke

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The Graduate School of Economics and Social Sciences

of

İhsan Doğramacı Bilkent University

by

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By Onuralp akır

I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of History.

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ABSTRACT

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This thesis explores the use of religious symbolism in medieval Mediterranean cartography, comparing Islamic, Christian, and Jewish mapping traditions. By focusing on key works such as the Tabula Rogeriana, Catalan Atlas, and Book of Curiosities, it demonstrates how maps reflected both geographic knowledge and religious expression, culminating in sacred spatial representations. The study reveals how cross-cultural exchanges in the Mediterranean shaped symbolic depictions of sacred geography, leading to the development of distinct cartographic traditions. This comparative analysis underscores the role of maps in conveying religious and cultural identity during the Middle Ages, highlighting the interconnectedness of the Mediterranean.

Keywords: Cultural Exchange, Medieval Maps, Mediterranean, Religious Symbolism, Spatial Representation

ÖZET

İLAHİ VE DÜNYEVİ HARİTACILIK: ORTAÇAĞ AKDENİZ’İNDE HARİTALARDA DİNİ SEMBOLİZM TEMSİLLERİNİN KARŞILAŞTIRMALI BİR ANALİZİ

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Bu tez, Ortaçağ Akdeniz haritacılığında dini sembolizmin kullanımını, İslami Hristiyan ve Yahudi haritacılık geleneklerini karşılaştırarak incelemektedir. Tabula Rogeriana, Katalan Atlası ve Harikalar Kitabı gibi önemli eserlere odaklanarak, haritaların nasıl yalnızca coğrafi bilgiyi değil, aynı zamanda dini ifadeleri de yansıttığını ve kutsal mekânların haritalarda temsilini göstermektedir. Çalışma, Akdeniz’deki kültürler arası etkileşimlerin coğrafi tasvirleri nasıl şekillendirdiğini ve kendine özgü haritacılık geleneklerinin gelişimine katkıda bulunduğunu ortaya koymaktadır. Bu karşılaştırmalı analiz, haritaların Ortaçağ boyunca dini ve kültürel kimliği aktarmadaki rolünü vurgularken, Akdeniz’in güçlü bağlantılılığını ön plana çıkarmaktadır.

Anahtar Kelimeler: Akdeniz, Dini Sembolizm, Kültürel Etkileşim, Mekansal Temsiller, Ortaçağ Haritaları

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CHAPTER I

INTRODUCTION

...In that Empire, the Art of Cartography attained such Perfection that the map of a single Province occupied the entirety of a City, and the map of the Empire, the entirety of a Province. In time, those Unconscionable Maps no longer satisfied, and the Cartographers Guilds struck a Map of the Empire whose size was that of the Empire, and which coincided point for point with it. The following Generations, who were not so fond of the Study of Cartography as their Forebears had been, saw that that vast Map was Useless, and not without some Pitilessness was it, that they delivered it up to the Inclemencies of Sun and Winters. In the Deserts of the West, still today, there are Tattered Ruins of that Map, inhabited by Animals and Beggars; in all the Land there is no other Relic of the Disciplines of Geography.

—Suarez Miranda, *Viajes de varones prudentes*, Libro IV, Cap. XLV, Lerida, 1658¹

¹ Jorge Luis Borges, *Collected Fictions*, trans. Andrew Hurley (Penguin Books, 2000), 325-26.

1.1. Maps in the Middle Ages

In a bustling medieval court, there was a king whose grandfather had moved to Southern Italy as a nobleman with conquest ambitions; he became not only a king but also a significant patron of knowledge, with a hunger for the knowledge coming from the furthest corners of the world. This was the scene in Palermo, the heart of the Norman Kingdom of Sicily, in the mid twelfth century. King Roger II had summoned the geographer al-Idrisi to his court and entrusted him with a great task: the mapping of the known world. The commissioning of Roger's map would be one of the glories within medieval cartography, born from the combination of Islamic geographical wisdom and the political ambitions of a Christian monarch. In this sense, it was more than a scientific endeavour; it represented the cultural and intellectual exchange between the Islamic civilization and medieval Europe. This was an example of the cosmopolitan aspirations of Roger's government.²

By summoning al-Idrisi to his court, Roger was able to tap into the vast knowledge of a scholar steeped in Arabic literature and geography. Idrisi's worldview was informed by Arabic sources that drew upon a vast literature giving Roger a unique perspective compared to the view of Latin speaking scholars. Geographical expertise, however, is not the only reason that Roger showed interest in Idrisi's advice. He was a king ruling over a largely Muslim

² Jeremy Francis Ledger, "Mapping Mediterranean Geographies: Geographic and Cartographic Encounters between the Islamic World and Europe, c. 1100-1600." (PhD Diss., University of Michigan, 2016), 29-36.

population, with close relations with North Africa, and therefore realized the strategic advantage of patronizing a scholar of noble Muslim lineage. Roger aimed to shape the story of his reign for its people and to gain legitimacy in his kingdom on the world stage, placing it alongside other major political powers of the time.³

Historically, maps have served not just as tools of navigation but as instruments of power, identity, and cultural expression. Traditionally, the study of cartography has been seen as a kind of linear progression leading toward a search for ever greater accuracy and culminating in today's sophisticated technologies such as satellite mapping and Geographic Information Systems.⁴ This viewpoint tends to regard older maps as crude or imprecise. However, these early maps were cleverly designed and had rich cultural and symbolic values of their time, signifying the worldview, political objectives, and religious beliefs of the creators. While discussing how cartography has evolved throughout time, one must recall how deeply historical maps convey cultural and symbolic implications, acting as a window into the communities that generated them.

Medieval maps served a crucial purpose beyond their use as practical navigation instruments; they were intricately intertwined with the religious, political, and cultural structures of the societies that created them. In an era

³ Ibid., 36-54.

⁴ J.B. Harley, "The Map and the Development of the History of Cartography", in *The History of Cartography: Cartography in Prehistoric, Ancient and Mediaeval Europe and the Mediterranean* v1, ed. by J.B. Harley and David Woodward (University of Chicago Press, 1987), 14-28.

where the divine and worldly realms were viewed inseparable from one another, maps often mirrored the spiritual world of their craftsmen.⁵ The depiction of sacred sites, symbolic orientation, and religious iconography were among the ways cartographers conveyed theological concepts, making these maps more than geographic representations.⁶ In this context, this thesis examines how maps in the medieval Mediterranean served as instruments of religious expression, political authority, and cultural identity.

Maps have immense political and cultural value in claiming power. Within the politically fragmented medieval landscape of the Mediterranean, cartography was used in projecting rulers' authority and marking territories and communicating dominance. Maps created in this time were not merely documents of geographical information but were active participants in political narratives. Perhaps because most of them were created for their royal patrons, they were created with political aims, just like most other manuscripts.⁷

The medieval Mediterranean is seen as a crossroads of cultural exchange through the interaction and great influence of interconnected Islamic, Jewish, Orthodox and Catholic societies.⁸ The cumulative transfer of cartographic knowledge between these cultures over time played a central role in the

⁵ Denis Cosgrove, *Apollo's Eye: A Cartographic Genealogy of the Earth in the Western Imagination*, (Johns Hopkins University Press, 2003), 54-60.

⁶ *Ibid.*, 60-72.

⁷ Rania Abdellatif, Yassir Benhima, Daniel Konig, and Elisabeth Ruchaud, *Acteurs des transferts culturels en Méditerranée médiévale*, (Walter de Gruyter, 2012), 9-20.

⁸ Peregrine Horden and Nicholas Purcell, *The Corrupting Sea: A Study of Mediterranean History*. (Blackwell, 2000), 124-43.

development of mapping techniques and traditions. Through trade, conquest and diplomacy, these societies exchanged trade goods as well as ideas that would create maps that became both products of cultural exchange and unique symbols of individual identities.

There are several challenges in historiography of medieval cartography. Medieval maps are extremely rare and usually their dating, authenticity and authorship are controversial. Their reach and reception is also usually hard to interpret, as references to maps are limited.⁹ With our current documents, it is very hard, if not impossible to create a genealogical tree for the medieval maps.

The history of cartography has traditionally been studied from a eurocentric lens with a significant emphasis on technical evolution of the maps, a progression towards modern accuracy. Perhaps because of the low number of documents available, there is a lack of studies in Islamic, Jewish and Byzantine cartographic traditions.¹⁰ Much of the existing studies tend to treat each tradition separately or without fully exploring the cross-cultural exchanges that influenced mapmaking in the Medieval Mediterranean. Scholars such as Emilie Savage-Smith¹¹ and Jerry Brotton¹² have addressed this gap by examining Islamic contributions to cartography, yet their work

⁹ Richard Talbert and Richard W. Unger, eds. *Cartography in Antiquity and the Middle Ages: Fresh Perspectives, New Methods*, (Brill Academic, 2008), 1-8.

¹⁰ Matthew H. Edney, *Cartography: The Ideal and Its History*. (University of Chicago Press, 2019), 1-9.

¹¹ Evelyn Edson, Emilie Savage-Smith, and Terry Jones, *Medieval Views of the Cosmos: Picturing the Universe in the Christian and Islamic Middle Ages*, (Bodleian Library, 2019).

¹² Jerry Brotton, *Trading Territories: Mapping the Early Modern World*, (Reaktion Books, 2018).

often focuses more on technical aspects rather than the symbolic and ideological uses.

Recent historical studies challenged the traditional narratives¹³ and unexamined ideologies¹⁴ in the history of cartography led to the emergence of a new map history. This shift in focus, while still often referred to as the history of cartography, highlighted that maps in all cultures carry meanings and purposes beyond just depicting spatial facts.¹⁵ These studies have emphasized the social and cultural significance of maps, exploring how access to these intellectual resources has varied by class, gender, and ethnicity. This new approach has encouraged more critical perspectives on the role and impact of cartography across different cultures and historical periods.

Maps are complex systems that interact with other texts and must be interpreted within broader social and cultural contexts. Map historians should focus on defining mapping discourses to better understand the contemporary meanings of early maps. This process involves examining diverse sources such as literature, inventories, and physical marks on the maps themselves. Considering why a map was made, who it was intended for, and how it was used. Key aspects to investigate include the map's date and place of production,

¹³ Daniel Z. Sui, "GIS, Cartography, and the 'Third Culture': Geographic Imaginations in the Computer Age." *The Professional Geographer: The Journal of the Association of American Geographers* 56 (2004): 62-72.

¹⁴ Michael Brown and Larry Knopp, "Queering the Map: The Productive Tensions of Colliding Epistemologies." *Annals of the Association of American Geographers. Association of American Geographers* 98 (2008): 40-58.

¹⁵ Jon R. Stone, "The Medieval Mappaemundi: Toward an Archaeology of Sacred Cartography." *Religion* 23 (2003): 197-216.

social context, method of reproduction, and annotations, all of which contribute to understanding the map's broader context.¹⁶

A significant portion of research on medieval cartography has been influenced by the work of Konrad Miller, an independent historian active in the late 19th century. Miller's extensive study, culminating in his work *Mappaemundi. Die ältesten Weltkarten*, aimed to reconstruct lost ancient maps by applying the stemmatic method commonly used in philology.¹⁷ Miller believed that medieval maps were corruptions of original Roman maps. However, despite his efforts to reconstruct these ancient maps, he viewed medieval maps as inherently inferior to their ancient predecessors. Scholars of the 19th century often indulged in reconstructing supposed ancient maps, sometimes attributing medieval maps to ancient authors like Herodotus or Strabo, even though there is little evidence to support these connections. This practice extended to attributing medieval maps to figures like Martianus Capella or Isidore of Seville.

The maps from the period before the age of discoveries were initially regarded as oddities, primarily studied for how they misrepresented the world compared to our modern understanding. Early map historians saw cartography as one of the distinctions of modernity, separating Westerners and non-Westerners by their advances in charting, or to distinguish “the colonizer” and

¹⁶ Matthew H. Edney, “Map history: discourse and process”, in *The Routledge Handbook of Mapping and Cartography*, ed. Alexander Kent and Peter Vujakovic, (Routledge, 2018) 77-78.

¹⁷ Konrad Miller, *Mappaemundi; Die Altesten Weltkarten*, (United States Congress House, 2013).

“the colonized.”¹⁸ Scholars like Raymond Beazley, George Kimble, and John Wright mocked medieval maps for their simplicity and religious content.¹⁹

The way we perceive the world around us is shaped by spatial representations, our understanding of space, the world we navigate, and how we depict it across various mediums is rooted in mental constructs.²⁰ While these constructs can be shared by groups, they are fundamentally unique to each individual. Today, most people use flat or spherical maps to represent the world, but this was not always the case. In the contemporary world, the representation of space is subject to a variety of cartographic realities influenced by different factors. Therefore, it is essential to step back from our current spatial concepts to study the spatial representations of the Middle Ages. Jean-Claude Schmitt notes that places or spaces exist before they are inhabited, they are like a roadmap that exists before the actual journey; but in the Middle Ages, there were barely any maps in this sense, and therefore no space as we understand it today.²¹ This observation encapsulates the approach needed to study medieval world maps. We should not search for a precise cartographic reality but rather aim to understand what these representations intended to convey to the readers of their time.

¹⁸ Detlev Quintern, “How to Conquer the World? Cartographical Knowledge in an Early Colonialist Context.” *Postcolonial Interventions*, Vol. VI, no. 1 (2021): 144-94.

¹⁹ Edney, *Cartography*, 10-21.

²⁰ David Stea, *Image and Environment: Cognitive Mapping and Spatial Behavior*, (Routledge, 1973), 63-78.

²¹ Jean-Claude Schmitt, *Les Rythmes Au Moyen Âge*, (Gallimard, 2016), 361.

Around 1,100 maps from the medieval period are surviving today, parallel with the limited number of preserved manuscripts from the Middle Ages. Maps were produced by the need for manual copying, the use of costly materials like parchment and vellum, and the limited availability of privately owned books and maps, as well as the lack of significant markets for these items until at least the thirteenth century.²² This creates one of the problems in premodern history of cartography. Another problem is that the medium of representation of geography may not always be a visual map, thus we cannot say that on instances without any physical maps, there were no other ways of representation of geography.

Spatial representations first appeared as written texts in the form of itineraries, descriptions, or cosmographies, inherited from thinkers of the ancient and late antique periods. For example, the descriptions of the world found in the works of Paul Orosius and Isidore of Seville had a significant influence on the creators of mappae mundi. These late antique texts represent an evolution, as they incorporated Christian references into the writings of ancient pagan authors. While these texts influenced the creators of medieval mappae mundi, they also shaped the analysis of these representations by historians of cartography.

²² Victoria Morse, “The Role of Maps in Later Medieval Society: Twelfth to Fourteenth Century” *The History of Cartography, Volume 3: Cartography in the European Renaissance, Part 1* ed. David Woodward, (University of Chicago Press, 2007), 25-52.

For a long time, studies on medieval spatial representations were dominated by monographic and typographic approaches. Early major works on medieval mappae mundi were often compilations of known maps, sometimes accompanied by transcriptions. Along with Konrad Miller's six-volume work *Mappaemundi*, Frederic Caspar Wieder's five-volume *Monumenta Cartographica Africae et Aegypti*²³ are examples of these compilations that continue to be useful for researchers.²⁴ These early compilations were accompanied by classification efforts. One of the earliest classifications, proposed by Michael Andrews in 1926 and later refined by Marcel Destombes in 1964, categorized maps into four types, representing different kinds of maps.²⁵ Jörg-Geerd Arentzen simplified this into two broad categories in 1984, and David Woodward later expanded it into four categories in 1987: tripartite maps, zonal maps, quadripartite maps, and transitional maps.²⁶ The sources central to my study fall into the transitional maps category

²³ An historical atlas of Egypt, Africa and the Middle East prepared and financed by the Egyptian prince Yusuf Kamal (1882-1965).

²⁴ "Prince Yusuf Kamal of Egypt (1882-1965) - Monumenta Cartographica Africae et Aegypti / Par Youssouf Kamel. Tome Deuxième, Fascicule IV, Atlas Antiquus et Index." 2024. *Rct.uk*. Accessed September 13 2024. <https://www.rct.uk/collection/1017831/monumenta-cartographica-africae-et-aegypti-par-youssouf-kamel-tome-deuxieme>.

²⁵ Marcel Destombes, *Marcel Destombes (1905-1983): Contributions sélectionnées à l'histoire de la cartographie et des instruments scientifiques / Selected Contributions to the History of Cartography and Scientific Instruments*. ed. Gunter Schilder, Peter C. J. van der Krogt and S. Clercq, (Hes & de Graaf Publishers bv., 1987).

²⁶ David Woodward, "Medieval *Mappaemundi*", in *The History of Cartography: Cartography in Prehistoric, Ancient and Mediaeval Europe and the Mediterranean Volume 1*, ed. by J.B. Harley and David Woodward (University of Chicago Press, 1987), 286-343

of David Woodward. These classifications continue to be discussed and serve as foundations for contemporary research.

Historians offer varied interpretations on the origins of portolan charts. Tony Campbell and Evelyn Edson propose that these charts were based on practical "mental maps" used by sailors, focusing on coastal navigation rather than relying on prior maps.²⁷ Jerry Brotton and Patrick Gautier Dalché argue for influences from Byzantine or Islamic cartography, but there is little direct evidence. Tarek Kahlaoui contends that Arabic contributions were minimal, aligning with the view that these maps developed independently in the Mediterranean, around the thirteenth century, to meet navigational needs.

The thesis discusses the transfer of knowledge concerning cartographic representation and the symbolic depiction of sanctity-usually attributed to medieval maps-across multiple cultural boundaries, as well as the mutual exchange between manifold mapping practices and traditions. By means of a comparative consideration at the primary cartographic sources from the Mediterranean areas, this study shows how these maps both mirrored and contributed to the spiritual and political topography of their respective times. These main primary maps looked into in this thesis are the *Tabula Rogeriana*, the *Book of Curiosities* and the Catalan Atlas. By exploring the exchange and adaptation of mapping traditions across these diverse cultures, the thesis

²⁷ Evelyn Edson. *The World Map, 1300-1492: The Persistence of Tradition and Transformation*. (Johns Hopkins University Press, 2007), 33-44.

highlights the dynamic interplay of ideas that gave rise to unique cartographic expressions in the medieval Mediterranean world.

This thesis aims to further contribute to the notion of interconnectedness in Mediterranean history by providing a cross-cultural survey of religious representation and knowledge in Medieval maps from the region. It also furthers the research on cultural and social studies of maps by looking at religious and exagetical uses of pre-modern maps and Islamic and Jewish contributions to cartography. Maps are inherently cross-cultural, as the knowledge contained in them is the result of merging different sources in a region with no cultural or religious borders. They are visual containers, vectors and transmitters of knowledge, reflecting commercial religious and political networks of the Mediterranean.

Religion was chosen as a subject to investigate in this thesis, because it is central in understanding intellectual products of the region. Maps are also central, not only in representation, but also in practice, religious tools, used for teaching psalms and biblical stories, spiritual nourishment, information regarding pilgrimage and crusades. They are essential visual tools to represent space and spaces were filled with sanctity, pilgrimage sites, birth and death places of saints, temples and more. The Abrahamic religions can be seen as a common point of religious representation across the Medieval Mediterranean. While this thesis focuses on these religions, a comparative look is worthy of a look with other regions and non-Abrahamic religions.

This thesis particularly focuses on some maps which are especially produced in political, commercial and intellectual centres that are reflecting the interconnectedness in the Medieval Mediterranean, such as *Tabula Rogeriana* in Sicily, the Book of Curiosities in Cairo and the Catalan Atlas in Majorca. These maps reflect their centres in integration of sources in their availability. The rich and connected worlds of these centres enabled the production of such culturally enriched manuscripts. These examples are visual documentations of the intercultural integration of the Medieval Mediterranean.

The religious iconography contained within medieval Mediterranean cartography is more than the representation of isolated cultural or theological traditions but is instead complex and dynamic intercultural exchange. This study posits that the Islamic, Byzantine, Jewish and Catholic cultures' cartographic methods were deeply influenced by each other and is evident in the ways these maps depicted sacred symbols and spaces. The consequence of such forces at play was that unique evolution in mapping the representation of sacred space, cosmological principles, and religious history took place in various traditions.

The interaction between Islamic, Jewish, Byzantine, and Latin cultures made possible the spread of cartographic information and thus gave birth to a composite of different traditions. The cosmographies of these three cultures, like the geographic territories they were accustomed to inhabiting, were never really independent from one another. Later Christian maps followed suit by

representing the world with increased geographical accuracy but still conveying symbolic interpretations of holy places.

The religious symbolism within medieval mapping evolved as cartographers adapted and transformed earlier ideas to suit changing religious and political imperatives. While much has been written on medieval cartography within individual traditions, this study contributes to the literature by offering a comparative examination of the cross-cultural exchanges that shaped religious iconography across Islamic, Byzantine, Jewish, and Christian maps in the Mediterranean. Additionally, this thesis identifies a shared symbolic language that emerges from the interaction of these traditions, an aspect underexplored in existing scholarship. This study argues that a nuanced understanding of such symbolism requires consideration of the broader context of cross-cultural exchange within the Mediterranean region.

Cross-cultural exchange played an active role in shaping and solidifying unique cartographic traditions. This process was one in which religious, political, and cultural identities were furthered through and within the various societies producing these respective traditions. This research attempts to show through a comparative analysis of such traditions how medieval maps functioned as powerful symbols of religious faith and cultural representation to connect the spiritual realm with the geographic landscape in the medieval Mediterranean.

This thesis is bound by the similar limitations in the field, such as the limited number of surviving pre-modern maps and difficulties in authorship

and dating when available. Because there are limited examples to look at, it is harder to pinpoint the exact sources of the maps we have. Most available maps, found in royal and city archives, were commissioned by the elites and it is possible that we are missing important numbers of sources that were used in navigation, trade and teaching. If there are a few numbers of maps, there are even less textual resources on their usage and reception by their users. Interdisciplinary research, combining studies of manuscripts, art, religion, geography, astronomy and navigation, is needed to bring more of the resources we have.

1.2. Thesis Plan

This thesis is organized into six chapters, each contributing to a comprehensive understanding of the role of cartography in the medieval Mediterranean. The first chapter sets the stage by presenting the historical context of medieval cartography, especially in the Mediterranean area. The discussion revolves around the cultural and intellectual climate of the time, underlining the intrinsic interactions of the Mediterranean cartographic practices. The chapter then talks about the previous research on medieval maps in the region. Further, the chapter delineates the research questions and objectives of this study and provides a background for the subsequent analysis.

Chapter Two provides an overview of the representation of holy landscapes and religious iconography in medieval mapping. It starts with the

history of maps before the Middle Ages. Then, it considers the varied ways in which sacred geography was conceptualized across the Mediterranean, with particular reference to the mapping of religious sites, cosmographic relations, and theological concerns that underpin cartographic practice.

Chapter Three examines the textual basis of Islamic mapping, tracing the discipline's roots in the translation movement of Greek, Persian, and Indian texts. This chapter discusses various important examples of Islamic cartography, among them the *Tabula Rogeriana* of Al-Idrisi and *Book of Curiosities*, to show how Islamic scholars used religiously symbolic imagery while portraying the world. In addition, it is concerned with how Islamic mapping traditions affected Europe's.

Chapter Four deals with the Eastern and the Western Christian cartographic traditions: starting with the fate of Ptolemaic geography, its reception, and further development within the Byzantine Empire. Attention is given to the way Byzantine cartographers combined religious symbolism with geographic representation, with a particular view to the representations of Jerusalem and other holy sites. The chapter continues with the analyses of the cartography techniques used in Western Europe, specifically highlighting the biblical stories that influenced the themes and information included on medieval maps. This examination examines the relationship between pilgrimage routes and geographic imagination, assesses important cartographic literature such as the *Hereford Mappa Mundi* and *Ebstorf Mappa*

Mundi, and investigates the impact of Jewish, Islamic, and Byzantine cartography on the mapping practices of Latin Christians.

Chapter Five explores the Catalan Atlas and the Majorcan School of Cartography as an interconnected tradition emerging at the crossroads of Mediterranean cultures. It begins by examining Jewish mapping traditions and moves on to discuss the Balearic Islands and the Kingdom of Majorca. The chapter provides an in-depth analysis of the Catalan Atlas and its creator, Abraham Cresques, its place in the Mediterranean cartography and its descriptions of Abrahamic religious imagery.

Finally, Chapter Six synthesizes the approaches of the preceding chapters in a broad, comparative discussion of Islamic, Jewish, Byzantine, and Catholic traditions. It reflects how each of these traditions reflected religious symbolism and how cartographic knowledge was transmitted across cultures. It also provides implications for further study, focusing on gaps in the literature.

CHAPTER II

RELIGIOUS SYMBOLISM IN MEDIEVAL MAPS

STUDENT (shows a large map): This is a map of the entire world. Look, here is Athens.

STREPSIADES: Don't be stupid, that can't be Athens! Where are all the jurors and the law courts?

STUDENT: I'm telling you, this area is clearly the region of Attica.

STREPSIADES: So where's my deme then? Where's Cicynna?

STUDENT: I don't know! Over there somewhere. You see here, that is Euboea, the long island lying off the coast.

STREPSIADES: Yeah, me and Pericles really laid those revolting bastards out! Where's Sparta then?

STUDENT: Right here.

STREPSIADES: That's far too close! You need to move it immediately! You had better reponder that one, mate!

STUDENT: But it's simply not possible just to...

STREPSIADES: Then you'll get a beating, by Zeus...

-Aristophanes, *The Clouds*, 205-217²⁸

²⁸ Aristophanes, *Clouds, Wasps, Birds*, trans. Peter Meineck, (Hackett Publishing, 1998), 23-24.

2.1. Evolution of Mapmaking Before the Middle Ages

Maps are intermediary tools between the human mind and the outside world. As a cognitive practice, maps help people perceive the space around them at various scales. This practice predates the physical objects we now know as maps and stems from the drive to communicate information about space using metaphors as effective communication tools. The history of cartography examines both physical objects, maps, and general communication about space.²⁹

Although maps did not come into widespread use until the European Renaissance, they have been an important tool in almost all societies throughout history. Studies show that children from different cultures can read³⁰ and draw³¹ maps from an early age. The importance of maps is largely due to their effectiveness as a means of communicating spatial relationships and geographic information. A comprehensive understanding of cartography requires an examination of the relationships among the physical world, the explorers who navigate it, the maps that depict it, the cartographers who create those maps, and the audiences they are intended to serve.³²

²⁹ Harley, "The Map and the Development of the History of Cartography", 1.

³⁰ Lynn S. Liben and Roger M. Downs, "Understanding Maps as Symbols: The Development of Map Concepts in Children." *Advances in Child Development and Behavior* 22 (1989): 145-201.

³¹ Mark Blades and C. Spencer, "The Development of Children's Ability to Use Spatial Representations." *Advances in Child Development and Behavior* 25 (1994): 157-99.

³² Harley, "The Map and the Development of the History of Cartography", 2.

Foundational exploration into pre-medieval mapping is thereby a precondition for understanding the complex role that maps played throughout human history. Understanding these early impulses to communicate spatial knowledge—how cartographic practices evolved—provides a critical framework for what follows in the analysis of medieval maps. This setting provides the framework within which to understand the way through which the later cartographic traditions built on and diverged from these early practices, reflecting their unique cultural and religious landscapes. This chapter sets up the thesis by underlining the continuity and transformation of cartographic concepts, providing an introduction to a deeper understanding of the way in which maps within the medieval Mediterranean were conceived, and giving form to the societies that produced them.

In the ancient world, maps served many purposes. They were used in the planning and navigation of land and sea routes, in estimating distances, and in delineating spatial relationships that were vital to many endeavors including engineering, agriculture, land use and management, and taxation. Maps can also function as significant instruments in scientific and theological domains where spatial correlations are of utmost importance.³³

Ultimately, maps can be valued primarily for their precision and regarded as reliable depictions. All these objectives could be accomplished using alternative methods if needed, albeit they may be less efficient. Thus we

³³ J. H. Andrews, *Maps in Those Days: Cartographic Methods before 1850* (Dublin, Ireland: Four Courts Press, 2009), 2.

can not be sure if cartography is as widespread as other methods of cultural representation. However, it is practised more widely than writing.³⁴ Maps from illiterate societies are harder to decrypt without any oral commentary as there is no signage for the historian to examine.

Most of the earliest maps are either representations of landscape drawings on rocks or coins and they do not have regular recognizable features and these are often not identified as cartographic. Many of these maps also perished due to the perishable nature of the drawing materials such as sand, wood, bark, ashes and other non-durable materials.³⁵ While many of them perished, there is some evidence of early maps in the ancient Mediterranean region, such as in Çatalhöyük,³⁶ Babylon,³⁷ Egypt³⁸ and Santorini.³⁹ In Babylon, a Babylon-centered map of the world was a spatial representation of their lands and the lands of the other. The map can only be deciphered by understanding the central element, Babylon, and its relation to other places, transforming it into more of a political representation than a geographic one.⁴⁰

³⁴ Ibid., 4.

³⁵ Ibid., 6.

³⁶ Stephanie Meece, "A Bird's Eye View - of a Leopard's Spots The Çatalhöyük 'Map' and the Development of Cartographic Representation in Prehistory," *Anatolian Studies* 56 (2006): 1-16.

³⁷ Wayne Horowitz, "The Babylonian Map of the World," *Iraq* 50 (1988): 147-65.

³⁸ Samuel Birch, "Upon an Historical Tablet of Rameses II, 19th Dynasty, Relating to the Gold Mines of Æthiopia." *Archaeologia* 34 (1852): 357-91.

³⁹ Peter Warren. "The Miniature Fresco from the West House at Akrotiri, Thera, and Its Aegean Setting." *The Journal of Hellenic Studies* 99 (1979): 115-29.

⁴⁰ Paul Delnero, "A Land with No Borders: A New Interpretation of the Babylonian 'Map of the World.'" *Journal of Ancient Near Eastern History* 4 (2018): 19-37.



Figure 1: The Babylonian Map of the World, about 700-500 BCE, probably from Sippar, Iraq⁴¹

In Egypt, there is subtle evidence of usage of maps from the Old Kingdom as representations of city geographies from bird's eye view were found in excavations in Hierakonpolis and Sakkara. Apart from the imagery of reality, there are also mythological representations of the maps of the Netherworld. While these were primarily artistic in nature, the finding of architectural plans elsewhere suggest that there is possibility of real-life geographical usage for similar maps that shows real spatial areas. We have more information regarding the maps in Egypt from the New Kingdom (1539–

⁴¹ Trustees of the British Museum. 2012. "Babylonian Map of the World." *World History Encyclopedia*. April 26. <https://www.worldhistory.org/image/526/babylonian-map-of-the-world/>. Accessed September 13 2024.

1075 BC), like in any aspect of Egyptian history. Apart from more mythological maps and architectural plans, the first maps used for geographical imagery are also evident from this period. One map depicts the infamous battle between Ramesses II and Hittites in Qadesh, and another one shows the locations of stone quarries and mines in a topographical context.⁴²

In the Ptolemaic Kingdom, Alexandria became a hub for the exchange of knowledge around its region and one of the most active places where the astronomical and geographical (amongst other scientific) studies were done, and became home to a great collection of geographic writings. These would prove beneficial for figures like Erastheneas and Claudius Ptolemy to flourish.⁴³

⁴² James A. Harrel and V. Max Brown, “The Oldest Surviving Topographical Map from Ancient Egypt: (Turin Papyri 1879, 1899, and 1969).” *Journal of the American Research Center in Egypt* 29 (1993): 81.

⁴³ Hans Barnard, “Maps and Mapmaking in Ancient Egypt.” *Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures*, (Springer, 2016), 2629–33.



Figure 2: Fragments of Turin papyrus - an ancient Egyptian mining map for Ramesses IV's quarrying expedition, 12th century BC⁴⁴

Ancient Greek maps were created on such perishable materials like papyrus, thus what we know about them depends solely on the preserved writings which reference them. These maps were usually used by the rulers and state officials, by the commanders in analysing the geography in their manouvers and by seafarers.⁴⁵ Some historians think that Homer knew about maps extensively and the images on Achilles' shield which represent earth and

⁴⁴ "Turin Papyrus 1." Wikimedia Commons. Accessed September 15, 2024.
<https://commons.wikimedia.org/wiki/File:TurinPapyrus1.jpg>.

⁴⁵ Oswald A.W. Dilke, *Greek and Roman Maps*, (Johns Hopkins University Press, 1998), 11-38.

its relation to other celestial bodies represent his knowledge on spatial imagery.⁴⁶

Our first knowledge of the use of maps in Ancient Greece goes back to Anaximander of Miletus in circa 611-546 BC.⁴⁷ As a hub for sailors and traders, Miletus was a hotspot for the exchange of cartographic knowledge, largely due to the natural transmission of information between these groups, especially through the advanced scientific knowledge from Babylon. The purpose of these maps was not so much to present the geographical realities of the region accurately as it was to present the human order and design existing within those geographical boundaries. Essentially, they provided a framework through which we could understand the world, the seas, and the cities that the Greek people inhabited. This methodology started with Anaximander's first map and was then improved by Hecataeus, also from Miletus.⁴⁸ Herodotos describes the bronze tablet map that the Milesian tyrant Aristagoras brought to the Spartan king in order to rally them against Darius I as a tablet on which the entire world was engraved, including all the rivers and the seas of the world. He describes how the map shows the places the other peoples between the Greeks and the Persians live, like Lydians, Phrygians and Cappadocians. While there is no direct evidence Herodotos used maps in his writings, his

⁴⁶ Geoffrey E.R. Lloyd, *Ideas in Context: The Ambitions of Curiosity: Understanding the World in Ancient Greece and China*, (Cambridge University Press, 2002).

⁴⁷ Dilke, *Greek and Roman Maps*, 22-26.

⁴⁸ *Ibid.*, 27-30.

concepts had a significant influence on Greek cartography, such as the circular world divided into three parts (Europe, Asia and Africa).⁴⁹

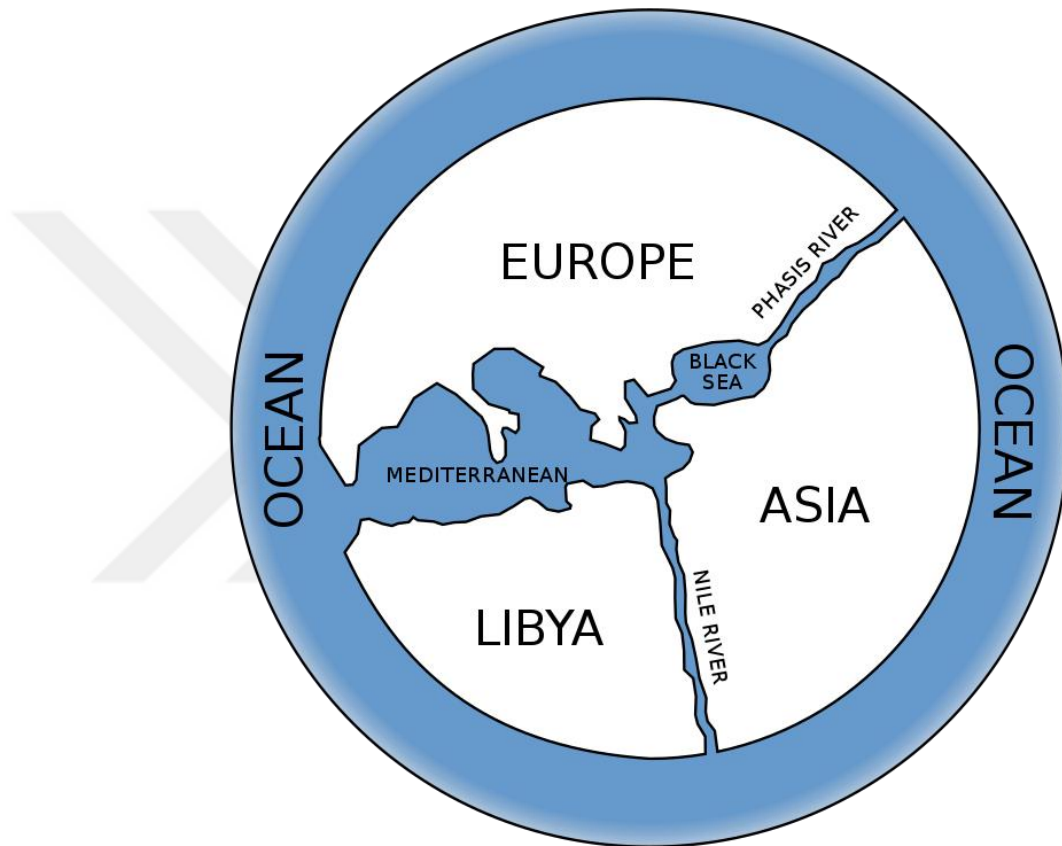


Figure 3: Reconstruction of Anaximander's Map⁵⁰

Contributions to theoretical cartography in Ancient Greece continued with Eratosthenes and Hipparchus in third and second century BC. Eratosthenes calculated the Earth's circumference and developed his map of

⁴⁹ Georgia L. Irby, "Greek and Roman Cartography" in *A Companion to Science, Technology, and Medicine in Ancient Greece and Rome*, (John Wiley & Sons, Inc., 2016), 817-35,

⁵⁰ "Digital Maps of the Ancient World," *Digital Maps of the Ancient World*, accessed September 13, 2024, <https://digitalmapsoftheancientworld.com/ancient-maps/anaximanders-map/>.

the world, which we can only infer from Strabo's and other successors' works.⁵¹ Hipparchus made use of geometry to invent a theoretical framework for making world maps. He developed a mathematical system of map projections using parallels and meridians using Eratosthenes' theories about the world. These helped Greeks build a framework of spatial understanding of places in their world. These maps were flat, circular and Hellenocentric. Strabo significantly contributed to ancient cartography by emphasizing a descriptive approach in his *Geographica*, which detailed the regions of the known world and included maps that visually complemented his extensive narrative. His work bridged the gap between scientific geography and practical understanding, making it a crucial resource for understanding the ancient world.⁵²

Claudius Ptolemy's work tackled the issue of drawing a world map by charting a list of coordinates of more than 8000 known places in antiquity. He devised his own system of curved meridians and parallels to show more accurate coordinates for the world.⁵³ Being the royal librarian at Alexandria, he probably had unrestricted access to a plethora of maps pertaining to the nearby area. Armed with such vast knowledge, he compiled one of the most comprehensive atlases in the known globe. Despite the absence of any documented maps directly linked to this treatise, Byzantine and Renaissance

⁵¹ Daniela Dueck and Hugh Lindsay, *Strabo's Cultural Geography: The Making of a Kolossourgia*, (Cambridge University Press, 2011), 31-33.

⁵² Ibid., 34-41.

⁵³ Irby, *Greek and Roman Cartography*, 823-828.

geographers would subsequently employ Ptolemy's coordinates to construct maps.

Less theoretical and more practical media for cartography were chorographies and their nautical counterpart *periploi*. The *periploi* included a list of cities (on the coast or territory) with details on sailing conditions, tariffs, remarkable landmarks, and other information such as imports and exports. Chorographies were land-based counterparts of *periploi*, providing descriptive accounts of geographical regions and following the routes taken during journeys. These were later adapted by Romans as itineraries that detailed routes and landmarks across the empire.⁵⁴ Julius Caesar ordered a survey of the whole world to create a map, but it was completed only during Augustus' reign. This map depicted a unified world under Roman hegemony. With the fall of Rome and the demolition of Ptolemy's library at Alexandria, map-making in the West experienced a decline, while Greek cartographic knowledge was transmitted to Byzantine and Islamic lands.⁵⁵

As seen in various accounts, *periploi* were often intertwined with religious practices and mythological narratives, reflecting the sacred importance of certain routes and places. For instance, Polemon's contributions to periegetic literature highlight how religious anecdotes were woven into descriptions of significant sites.⁵⁶ Furthermore, certain pilgrimage routes

⁵⁴ Ibid., 829.

⁵⁵ Andrews, *Maps in Those Days*, 8.

⁵⁶ Mariachiara Angelucci, "Polemon's Contribution to the Periegetic Literature of the II Century BC." *Hormos-Ricerche Di Storia Antica* 3 (2011): 279-94.

described in *periploi* were aimed at religious use, demonstrating the sacred paths used for religious festivals, holy sites and objects.⁵⁷ Herodotus, in his *Libyan Logos*, illustrates how Greek *periploi* combined geographical knowledge with religious understandings and rites of foreign lands, using familiar spiritual frameworks to make sense of new territories, in this case Libyans. Furthermore, Herodotus depicts the Mediterranean coastline as a vibrant and fertile area where diverse ethnic groups continuously interact, portraying it as a bustling network of cultural exchanges and mutual influences.⁵⁸ Similarly, Roman military strategies during the Principate era employed *periploi* not just for logistical purposes but also to account for religious sensitivities and the manipulation of local beliefs.⁵⁹

2.2. The Conceptualization of Sacred Space

In medieval cartography (as in art in general), there was great attention paid to the depiction of sacred places and religious symbols. Sacred places and religious symbolism were two of the leading factors in the formation of geographical imagination, reflecting the significant influence of religious beliefs among world cultures. This chapter explores the portrayal of sacred

⁵⁷ Peter Campbell and Krešimir Vuković, "Routes" in *Transnational Modern Languages*, ed. Jennifer Burns and Derek Duncan, (Liverpool University Press, 2022), 251-60.

⁵⁸ Rachel Gottesman, "Peripulous Thinking: Herodotus' *Libyan Logos* and the Greek Mediterranean." *Mediterranean Historical Review* 30 (2015): 81-105.

⁵⁹ Susan P. Mattern, *Rome and the Enemy: Imperial Strategy in the Principate*, (University of California Press, 1999), 53-79.

sites, pilgrimage routes, and cosmological views in the cartographic tradition of various traditions. Catherine Delano Smith asserts that early maps of the Holy Land crafted prior to AD 1000, functioned primarily as religious and exegetical instruments. These maps blended geographic details with Christian symbolism, reflecting a primary focus on reinforcing religious teachings and worldview rather than providing cartographic information.⁶⁰

Medieval Mappaemundi, the world maps drawn by monks and scholars in the European Middle Ages, are relics that provide us with a unique window into the religious and cultural view of their time. Besides representing basic geography, Mappaemundi also presented a sacred cosmology, where physical features like mountains and rivers were imbued with religious meaning.⁶¹ Based on sources like classical itineraries, pilgrim accounts, folk legends, and most importantly the Bible, the Mappaemundi depicted Jerusalem as the symbolic center of the world around which all important biblical sites clustered. They were often hung up in churches or monasteries to animate and continuously reinforce the Christian worldview. The Mappaemundi thus became key fortifications for maintaining the social and religious integrity of medieval society, presenting through a vivid picture a divinely ordered

⁶⁰ Catherine Delano Smith, "Geography or Christianity? Maps of the Holy Land before AD 1000" *The Journal of Theological Studies* 42 (1991): 143-52.

⁶¹ Jon R. Stone, "The Medieval Mappaemundi: Toward an Archaeology of Sacred Cartography," *Religion* 23 (1993): 197-216.

universe; they manifested a world in which all knowledge and meaning had its Christian doctrinal underpinning.⁶²

Furthermore, in studies of medieval mapping new technologies in visualization⁶³ and digitalization have been opened up for scholars working toward understanding and analysis of these cartographic representations.⁶⁴ With the aid of these tools and interdisciplinary approaches, historians can increasingly effectively explore such problems of the political, religious, and toponymic order hidden in medieval maps and cartographically uncover hidden meanings and symbolism that are constructed in these products.⁶⁵ This intersection of technology with historical cartography can uncover a lot about subtle perceptions and interpretations of religious sites and cosmological views depicted by medieval maps.

The religious sites and cosmological views in Christian medieval mapping sometimes served as powerful visual aids within religious practices rather than a geographic description for a travel.⁶⁶ The Psalter World map was a thirteenth century mappamundi used in Christian devotional practices

⁶² Cinzia Podda, Paolo Secchi, and Milena Bertacchini, "Cartography and Pilgrimage Trails. Tradition, Modernity, and Tourism," *Proceedings of the ICA 4* (2021): 1-8.

⁶³ Heather Wacha and Jacob Levernier, "Cartography and Code: Incorporating Automation in the Exploration of Medieval Mappaemundi," *Digital Medievalist* 12, no. 1 (2019): 4.

⁶⁴ Paul Vetch, Catherine Clarke and Keith Lilley, "Between Text and Image: Digital Renderings of a Late Medieval City," in *New Technologies in Medieval and Renaissance Studies*, ed. Brent Nelson and Melissa Terras (Arizona Center for Medieval and Renaissance Studies, Arizona State University, 2012).

⁶⁵ Bernhard Enny, "MapAnalyst-A Digital Tool for the Analysis of the Planimetric Accuracy of Historical Maps," *E-Perimetron* 1 (2006): 239-45.

⁶⁶ Marcia Kupfer, "Medieval World Maps: Embedded Images, Interpretive Frames," *Word & Image* 10, no. 3 (1994): 262-88.

primarily as tools for spiritual contemplation and mnemonic aids.⁶⁷ This map and its possible peers were included in Psalters (books of psalms) and taught biblical stories through visual means. They were designed to help the beholder reflect on biblical and theological teachings, offering a visual representation of the divine order. The maps served as meditation guides, helped in the memorization of religious texts, and enabled the viewer to envision a spiritual journey, or mirrored pilgrimage, without physical travel.⁶⁸

⁶⁷ Mirko Grčić, “Geographical Image of the World in the London Psalter Maps from the 13th Century,” *Zbornik Radova - Geografski Fakultet Univerziteta u Beogradu* no. 69 (2021): 25-61.

⁶⁸ Adrienne M. Muir, “The Psalter Mappaemundi: Medieval Maps Enabling Ascension of the Soul within Christian Devotional Practices” (PhD diss., University of Edinburgh, 2011).



Figure 4: Psalter World Map⁶⁹

⁶⁹ "Psalter World Map, c. 1265," *Wikimedia Commons*, accessed September 13, 2024, https://commons.wikimedia.org/wiki/File:Psalter_World_Map,_c.1265.jpg.

Medieval cartography portrayed not just religious locations but also mirrored, at least to a degree, the socio-political dynamics and power relations of the time.⁷⁰ Maps became tools for the surveillance and categorization of places of worship, worshippers (and infidels), with their inherent religious and cultural emblems linked to their origins and the political context in which they were set.⁷¹ Of course, religious spaces were highly linked with the political context of that time, as an expression of authority and domination that many religious organizations enjoyed within politics and life.⁷² In this respect, the cartographic depictions were also a kind of visual representation of power struggles and religious interactions within medieval European societies.⁷³

Although the Byzantine tradition exhibited numerous similar traits at once, its cartographic methodologies frequently mirrored the empire's amalgamation of Roman legacy and Eastern Christian theology.⁷⁴ Byzantine maps, akin to those produced in Western Europe, incorporated both religious and urban environments; however, they also embodied the unique imprint of the empire's persistent relationship with classical antiquity, alongside its

⁷⁰ Julie Nichols, *Maps and Meanings: Urban Cartography and Urban Design* (PhD diss., The University of Adelaide, 2013).

⁷¹ Victoria Morse, "The Role of Maps in Later Medieval Society: Twelfth to Fourteenth Century", 28-36.

⁷² Jordan Branch, "Mapping the Sovereign State: Technology, Authority, and Systemic Change," *International Organization* 65, no. 1 (2011): 1-36.

⁷³ Mar Grier, Tobias Müller, and Julia Martínez-Ariño, "The Politics of Mapping Religion: Locating, Counting, and Categorizing Places of Worship in European Cities," *Space and Culture: The Journal* 26, no. 2 (2023): 167-79.

⁷⁴ J.B. Harley, *The History of Cartography* v.1, 258-63.

specific religious and political objectives. This topic will be explored in greater detail in the Byzantine sections of Chapter IV.

In a parallel but distinct tradition, medieval Islamic cartography, particularly in cities like Damascus, reflected the mystical and spiritual dimensions of Sufi practices. Medieval Sufi masters and holy men carried out practices that contributed to the religious landscapes of cities like Damascus. They developed, within their respective milieus, precincts that reached beyond merely religious functions and did so with the purpose of leaving a lasting imprint on the religious and sacralized landscape of such urban centers.⁷⁵ The mapping of Sufi spaces signaled the mystic and spiritual realizations that such a place came to express within larger cosmological understandings of the medieval Islamic world. Islamic cartography will be explored in greater detail in the Chapter III.

Medieval European mapping was in essence a form of religious mysticism, biblical dogma given material content in the mapping of the world. Quite often, Jerusalem was placed at the center to symbolize the spiritual heart of Christianity. This centrality was balanced by the concept of paradise, influenced not only by Christians but also by Islamic and Jewish traditions. Paradise, depicted as an inaccessible sacred space in the distant east, further emphasized the role of maps as visual expressions of religious doctrine. More

⁷⁵ Daphna Ephrat and Hatim Mahamid, “The Creation of Sufi Spheres in Medieval Damascus (Mid-6th/12th to Mid-8th/14th Centuries),” *Journal of the Royal Asiatic Society of Great Britain & Ireland* 25, no. 2 (2015): 189-208.

details on medieval catholic and Abrahamic understandings and symbolizations on maps will be further discussed in the related sections of Chapter IV.

T-O maps are a common type of medieval world map. They visually embodied this religious perspective by dividing the world into three parts with a T shape, where paradise was consistently indicated at the top. Prominent examples, such as the maps by Isidore of Seville, depicted paradise in Asia. It was surrounded by protective elements like flaming swords and angels which symbolizes its sacred and forbidden nature.⁷⁶ Similarly, the Hereford Mappa Mundi and the Ebstorf Map not only placed paradise in the east but also integrated biblical scenes, such as Adam and Eve, the Tree of Knowledge, and the serpent, into their cartographic designs.⁷⁷ These were visual maps of Christian doctrine, aimed to enforce religious teachings and provide a meditative guide for believers. Cartographers of these maps derived much from the theories and works of such Greek and Roman luminaries as Aristotle and Ptolemy, yet they adapted the ideas to coincide with the beliefs of Christianity, especially in their depictions of paradise and the basic structure of the world.

⁷⁶ John Henderson, *The Medieval World of Isidore of Seville: Truth from Words* (Cambridge University Press, 2010).

⁷⁷ Murat Tanrikulu, "Orta Çağ Avrupa Kartografyasında Cennet Tasvirlerinin Yeri ve Önemi," *Dicle Üniversitesi Sosyal Bilimler Enstitüsü Dergisi* no. 33 (2023): 14-39.

The T shape in T-O maps is associated with Isidore of Seville. It is generally viewed as a tau cross, an ancient Christian sign of life and protection from God. This cross was well known during the Middle Ages and acted as one of the signs of Christianity. Medieval Christians understood the T on such maps as a symbolic picture of the spread of Christianity throughout the known world. The maps themselves, instead of striving for geographical accuracy, had been designed to illustrate Christian teachings, placing Jerusalem in the center. The correspondence of the design of the T-O map with ideas of Christian theology underlines how much these maps could be deeply imbued with religious meaning within medieval thought.⁷⁸

⁷⁸ Jonathan T. Lanman, "The Religious Symbolism of the T in T-O Map," *Cartographica: The International Journal for Geographic Information and Geovisualization* 18, no. 4 (1981): 18-22.



Figure 5: T-O map, from the first printed version of Isidore's *Etymologiae*⁷⁹

Tsafra Siew's research focuses on how Jerusalem was depicted in Christian-European maps from the 6th to the 16th centuries. The maps often prioritized conveying Christian ideology over geographical accuracy, using idealized forms like a perfect circle to symbolize Heavenly Jerusalem.⁸⁰

⁷⁹ "T and O Map, Guntherus Ziner, 1472," *Wikimedia Commons*, accessed September 13, 2024, https://commons.wikimedia.org/wiki/File:T_and_O_map_Guntherus_Ziner_1472.jpg.

⁸⁰ Tsafra Siew, *Representations of Jerusalem in Christian-European Maps from the 6th to the 16th Centuries: A Comparative Tool for Reading the Message of a Map in its Cultural Context* (The Hebrew University of Jerusalem, The European Forum, 2008).

Various types of maps were created to give a spiritual and narrative journey through the sacred sites of Jerusalem. Orientation, viewpoint, and iconography were consciously selected so as to emphasize religious landmarks, often reconfiguring the city's layout in conformation with Christian belief. The Madaba Map, a 6th-century mosaic, is just one example of this: it represents the topography of Jerusalem in a very distorted way in order to center the Church of the Holy Sepulchre and extends places important to Christians at the expense of most major non-Christian landmarks.⁸¹ What is quite noteworthy is that omissions on these maps were intentional to reinforce a Christian-centered vision of Jerusalem. These "silences" in the maps served to promote a narrative that spoke to a Christian doctrine, integrating the city's physical and spiritual nature in such a way as to further the religious worldview at that time.

During the Crusades, depictions of Jerusalem began to transform; maps of the city depicted it as a square, fortified structure. This represented at once both earthly and heavenly Jerusalem, reflecting both the religious and political aims of crusaders. Most representations of the Siege of Jerusalem in various manuscripts were greatly stylized and idealized, with more emphasis on religious and political discourses than topography. These visual images gave full vent to the divine justification of the actions and priorities of Crusaders

⁸¹ Beatrice Leal, "A Reconsideration of the Madaba Map," *Gesta* 57, no. 2 (2018): 123-43.

from that age, presenting Jerusalem as both physical city and ideographic representation of Christian ideology.⁸²

Historical, cultural and religious beliefs made various societies give spiritual importance to some cardinal directions; hence the placement of east at the top of maps for Christians. Muslims, on the other hand, had their maps with the south at the top to face Mecca.⁸³ The tradition of placing north at the top in Western maps later emerged, partly under the influence of the navigation tools of that time, like the compass, and other deeper philosophical ideas enshrined particularly within Gnostic traditions. Early Greek maps, like those from Ptolemy, often had a north-up orientation, but this was not universally adopted in ancient times.⁸⁴ In some ancient Egyptian maps, like the Turin Papyrus Map, west was placed at the top.⁸⁵ This may have been because the west was associated with the land of the dead in Egyptian cosmology. This shows that the orientation of maps is deeply ingrained with the cultural and religious values of the societies from which they come.

In medieval pilgrimage, maps were a medium of spiritual preparation. Many pilgrims embarking on Holy Land expeditions, such as Felix Fabri, commonly found that early experiences signaled the necessity for deeper

⁸² Martine Meuwese, "Representations of Jerusalem on Medieval Maps and Miniatures," *Eastern Christian Art* 2 (2005): 139-48.

⁸³ B. L. Gordon, "Sacred Directions, Orientation, and the Top of the Map," *History of Religions* 10, no. 3 (1971): 211-27.

⁸⁴ Irby, *Greek and Roman Cartography*, 816-30.

⁸⁵ James A. Harrell and V. Max Brown, "The Oldest Surviving Geological Map: The 1150 BC Turin Papyrus from Egypt," *The Journal of Geology* 100, no. 1 (1992): 18.

preparation. They used maps, itineraries and other tools offering something more than route directions.⁸⁶ These maps had a deep religious connotation to them and facilitated pilgrims in relating to the sites much more spiritually much before their physical arrival.

Various theological texts from the period often included exegetical maps, which were made for the purpose of providing spiritual and biblical visualizations of the Holy Land. These maps commonly depicted the division of the land among the twelve tribes of Israel, emphasizing its religious heritage.⁸⁷ For instance, maps accompanying biblical commentaries illustrated Canaan's division and Jerusalem's Temple layout, offering pilgrims a visual reflection on the sacred history of the regions they would encounter.

Mappaemundi have always placed Jerusalem at the center. The medieval maps depicted a landscape of spiritual persuasion with Jerusalem as the “navel of the world.” The concept of centrality in ancient cultures, especially the societies in the Mediterranean, such as the Greeks, Romans, and Hebrews, perceived certain locations as the “center” or “navel” of the world. These centers, like Delphi, Rome, and Jerusalem, were more than worldly, they were also cosmologically important, and were depicted as centers of the world in religious rites and representations. These imagined centers emerged as a response to intense cultural interactions and competition, with each society

⁸⁶ Kathryn Beebe, *Pilgrim & Preacher: The Audiences and Observant Spirituality of Friar Felix Fabri (1437/8-1502)* (Oxford University Press, 2014), 38-46.

⁸⁷ Yoram Tsafrir, “The Maps Used by Theodosius: On the Pilgrim Maps of the Holy Land and Jerusalem in the Sixth Century C. E.,” *Dumbarton Oaks Papers* 40 (1986): 129.

claiming centrality to assert dominance and legitimacy. Maps were powerful tools that ancient societies used to visually assert their claims of centrality, with locations like Delphi, Jerusalem, and Rome often positioned as the symbolic “navel” of the earth, reflecting each civilization's ideological, religious, and political worldview.⁸⁸

Given its centrality in Christian pilgrimage, Jerusalem had often been the center of medieval maps, with greater detail following the First Crusade. Plans of the city, as in these twelfth-century Crusader manuscripts, highlighted all of the key religious landmarks such as the Church of the Holy Sepulchre and the Temple Mount.⁸⁹ These plans were practical guides for pilgrims and visual representations of Jerusalem’s profound spiritual significance, allowing travelers to orient themselves within the holy city’s sacred geography. These maps, whether symbolic or practical, were essential to the medieval pilgrim’s journey, offering both direction and spiritual insight. By integrating biblical narratives with geographic detail, medieval maps of the Holy Land provided a comprehensive framework that guided pilgrims through the physical and spiritual landscapes of their faith.⁹⁰

⁸⁸ Jennifer Finn, “The Center of the Earth in Ancient Thought,” *Journal of Ancient Near Eastern History* 4, nos. 1–2 (2018): 177-209.

⁸⁹ Siew, *Representations of Jerusalem*, 12.

⁹⁰ Catherine Delano-Smith, “The Intelligent Pilgrim: Maps and Medieval Pilgrimage to the Holy Land,” in *Eastward Bound: Travel and Travellers, 1050-1550*, ed. Rosamund Allen (Manchester University Press, 2004), 107-30.

This chapter provided the necessary background for wider arguments on the rest of the thesis through the elaboration of the necessary relationship between early cartography and religious symbolism within the medieval period. It introduces central ideas, such as the depiction of sacred spaces, cosmological views, and the merging of geography with theological belief that underpin the thesis. First, the chapter demonstrates how the Mappaemundi, T-O maps, and the Psalter World Map represented Christian doctrine visually. In so doing, it examines how cartography built religious and cultural identities. While doing so, this chapter serves as a thematic bridge that connects the Christian-European tradition of mapping with those of Jewish, Byzantine and Islamic to be discussed in subsequent chapters. The debates regarding the centrality of Jerusalem, as well as the use of maps as spiritual devices, for example, represent points of comparison which will add profound depth to the ways religious spaces across cultures were perceived and represented. Thus providing a critical framework for the discussion of power dynamics, religious interactions, and ideological assertions across other medieval mapping traditions.

CHAPTER III

RELIGIOUS SYMBOLISM IN ISLAMIC CARTOGRAPHY

The cultural heritage of pre-modern Islamic cartography was extremely heterogenic not only due to the extent of interaction in such a vast geographical sphere, but also due to the multifaceted foundations of the Islamic civilizations in the Middle East.⁹¹ Muslim civilizations established a tradition by assimilating and providing commentary on Roman and Greek science and philosophy, on top of their Semitic, Babylonian and Persian roots.⁹²

The rich heritage of Islamic knowledge originates from the translation movement that commenced during the late Umayyad Caliphate era. This movement, which prospered under the reign of the Abbasid Caliphate with the backing of monarchs such as Caliph Harun al-Rashid (r. 786-809) and his son

⁹¹ Karen C. Pinto, *Medieval Islamic Maps: An Exploration* (University of Chicago Press, 2016), 1-8.

⁹² Ahmet T. Karamustafa, "Introduction to Islamic Maps," in *The History of Cartography: Cartography in the Traditional Islamic and South Asian Societies*, vol. 2 (University of Chicago Press, 1992), 3-9.

al-Ma'mun (r. 813-833), endured until the eleventh century, resulting in notable progress in diverse domains. Although its main focus was on Greek and Byzantine literary works, it also encompassed Persian, Chinese, Indian, Egyptian, and other literary traditions.⁹³ The translation centres were spread across the Umayyad and Abbasid Caliphates. The Alexandria school was especially important in the transmission from the Greek philosophical and scientific heritage into Islamic scholarship, and it spread across the routes in the Caliphate to centres in Antioch, Harran, Edessa, Toledo, Jundishapur and Baghdad.⁹⁴

The translation movement was pivotal in enriching Islamic scholarship. Early Abbasid caliphs like al-Mansur (r. 754-775) actively promoted the translation of classic non-Arabic works, including Kalilah and Dimna, Zij as-Sindhind, Aristotle's *Organon*, and Ptolemy's *Almagest*.⁹⁵ These efforts significantly broadened the intellectual horizons of the Islamic world. These efforts continued and remained prevalent under the support and patronage of each Abbasid Caliph following al-Mansur, with institutions such as House of Wisdom or *Bayt al-Hikma* in Baghdad which contained extensive libraries and rare scientific manuscripts.⁹⁶ The diverse circles of backgrounds and expertises

⁹³ Ekmeleddin İhsanoğlu, "Institutions of Learning in Islam during the Classical Period (Eighth to Sixteenth Centuries)," *Journal of Turkish Studies* (2021), 153-213.

⁹⁴ Dimitri Gutas, *Greek Thought, Arabic Culture: The Graeco-Arabic Translation Movement in Baghdad and Early Abbasid Society (2nd-4th/8th-10th c.)* (Routledge, 2012), 11-27.

⁹⁵ *Ibid.*, 28-60.

⁹⁶ *Ibid.*, 122-127.

in the House of Wisdom, with its translators, copyists, directors of translations, experts and scientists, who took charge of different aspects of production of knowledge such as translating, organising, binding, copying and preserving, had contributed to this accumulation of culture.⁹⁷

3.1. Islamic Cartography and Geographical Imagination

The translation of Ptolemy's works into Arabic formed the backbone of Islamic cartography. This was not a necessity, not all the work of Ptolemy was translated or adopted by the Muslim scientists.⁹⁸ Ptolemy's *Almagest* was an important part of the whole translation movement that has been Islamic understanding of Greek philosophical and scientific literature and has been commented together with the existing knowledge.

While there are accounts of free standing maps from the Islamic world, many of our current resources are from the manuscripts with maps.⁹⁹ These are usually from the imperially commissioned works or from those intended for high office. These maps are highly crafted in the same manner as illuminated manuscripts, in the sense that they were done with the same production labor as other types of Islamic books, including work done by calligraphers, painters,

⁹⁷ Labeeb Ahmed Bsoul, *Translation Movement and Acculturation in the Medieval Islamic World* (Springer Nature, 2020).

⁹⁸ Ledger, "Mapping Mediterranean Geographies", 42-65.

⁹⁹ Pinto, *Medieval Islamic Maps*, 23-58.

illuminators, gilders, marginators, binders and others. Mapmaking, just like astrolabe-making for the brass and metal artists, situated between the work of an artisan and the work of a scholar, as an illustrator would work on different parts of the book. These maps, like calligraphy, were as much artistic as they were oversimplified and stylized, not accurately depicting geographical information like those of the Balkhi school that we will see in detail later in this chapter. As maps were a formal part of the manuscripts, the size of a map was limited to the size of two pages of the manuscript.¹⁰⁰

Islamic cartography not only depicted geographical information but was also intertwined with cosmological views. Many Islamic texts in Arabic, Persian, and Turkish include illustrative diagrams that serve as both graphic aids and representations of cosmological ideas or of complete cosmographies. These diagrams span diverse fields such as astronomy, astrology, alchemy, geomancy, geography, philosophy, theology, and mysticism. Islam lacked a single, continuous tradition of cosmological diagrams; instead, various schools of thought with different, interrelated cosmological doctrines used graphic representations to varying degrees.¹⁰¹

¹⁰⁰ Ahmet T. Karamustafa, "Introduction to Islamic Maps," 5-7.

¹⁰¹ Robert G. Morrison, "Cosmology and Cosmic Order in Islamic Astronomy," *Early Science and Medicine* 24, no. 4 (2019): 340–66.

3.1.1 Islamic Geographical Literature

Arab geographical literature began similarly to other Arab literature, blending folk traditions with Islamic religious writings. The Qur'an and hadith provided a cosmological foundation and factual geographical elements, which were enriched by storytelling and poetry about desert life.¹⁰² Early in Islamic history, a body of geographical knowledge was formed, based on *akhbar* (historical narratives) and *aja'ib* (tales of marvels), both written down early on. Surviving texts like *Aja'ib al-Hind* (Wonders of India), which is written by the Persian captain al-Ramhormuzi in the tenth century and *Akhbar al-Sin wa-al-Hind* (Traditions about China and India) which is written by Suleiman al-Tajir are among the earliest examples, though other early manuscripts have likely been lost.¹⁰³

An example of early lore relevant to cartography is the concept of the world landmass shaped like a bird. This idea, reported by Ibn Abd al-Ḥakam (d. 871), possibly originates from early Islamic times and mentions a tradition from a prominent Arab of the late seventh century. According to Ibn Abd al-Ḥakam, the bird's head represented China, the right wing India, the left wing *al-Khazar* (North Caucasus), and the tail North Africa.¹⁰⁴ Early sources

¹⁰² Adam J. Silverstein, "The Medieval Islamic Worldview: Arabic Geography in Its Historical Context," in *Geography and Ethnography*, ed. Kurt A. Raaflaub and Richard J. Talbert (Wiley-Blackwell, 2009), 273–90.

¹⁰³ Mushtaqur Rahman, "A History of Arab-Islamic Geography (9th-16th Century AD)" *American Journal of Islam and Society* 14, no. 4 (1997): 102–3.

¹⁰⁴ M. J. de Goeje, ed., *Ibn Khurradadhib's Kitab al-Masalik wa al-Mamalik and Part of the Kitab al-Kharaj by Qudama ibn Ja'far* (Brill, 2013).

consisted of catalogs of pilgrimage and post stations, accompanied by their respective distances, just like periploi. These catalogs were originally prepared for administrative purposes but later came to be used by geographical writers and were embodied in belletristic works. The contents of early Islamic geographical works were ultimately based upon this material, which was often given the generic title *Kitab al-masalik wa al-mamalik* (Book of Routes and Provinces).¹⁰⁵ An extant sample dating back to 846, authored by Ibn Khurradadhbih, mostly comprises routes and distances inside the Islamic realm.¹⁰⁶

With the formation of the Abbasid court in Iraq, particularly under Caliph al-Mansur, literature and science were encouraged, and the knowledge of conquered peoples like the Syriac, Sassanid and Byzantine was highly valued. Through Iranic scholars and texts, it was discovered that the Hindu and Sanskrit cultures to the east had a wealth of knowledge.¹⁰⁷ Efforts were made to understand Indian astronomical texts, invite Indian scholars to Baghdad, and translate texts from the siddhanta literature into Arabic, which influenced several Arabic works mainly in astronomy.¹⁰⁸ Some geographical concepts from India also entered Arabic literature, notably the concept of the Cupola of

¹⁰⁵ Pinto, *Medieval Islamic Maps*, 55-57.

¹⁰⁶ *Ibid.*, 41.

¹⁰⁷ Scott L. Montgomery, "Mobilities of Science: The Era of Translation into Arabic," *Isis: An International Review Devoted to the History of Science and Its Cultural Influences* 109, no. 2 (2018): 313–19.

¹⁰⁸ Nataraja Sarma, "Diffusion of Astronomy in the Ancient World," *Endeavour* 24, no. 4 (2000): 157–64.

the Earth and the prime meridian of Ujjain, which later influenced medieval European literature. A prime meridian in the east, based on a locality called Jamagird or Kangdiz, appears in early Arab longitude tables, believed to be of Indian or Chinese origin.¹⁰⁹

The impact of Persian culture on Arab geographical writing was limited, with the exception of broad descriptions of the physical features of the land and the categorization of the inhabited world into kishvars. The Persian kishvars, or regions, were seven, the same number as the Ptolemaic theory that the earth was divided into seven climata which was integral to Islamic scholarship. This led Arabs to use the term iqlim for both, causing some confusion. These kishvars consisted of six regions encircling a central region, representing the central Iranian area, often called Babil in Islamic times. Many scientific and nonscientific works illustrated the seven-climata system with simple diagrams of eight straight parallel lines or concentric circles within a circle representing the earth.¹¹⁰ The renowned scholar al-Biruni, who first illustrated this view with a diagram, highlighted this perspective.

It is believed that primitive Arabs did not have a systematic way of representing landscapes, and the use of maps was not common until the arrival of Islam in the seventh century A.D. The use of mapping was taught to them

¹⁰⁹ Stephen Blake, *Astronomy and Astrology in the Islamic World* (Edinburgh University Press, 2016), 1–20.

¹¹⁰ Gerald R. Tibbetts, “The Beginnings of a Cartographic Tradition,” in *The History of Cartography: Cartography in the Traditional Islamic and South Asian Societies*, vol. 2 (University of Chicago Press, 1992), 93–95.

as they acquired the cultures of the conquered people.¹¹¹ By the late first century of Islam, there is evidence of military maps like a map of Daylam for al-Hajjaj ibn Yusuf and the plan of Bukhara for its siege. Maps of al-Babbah's swamps and the round city of Baghdad for caliph al-Mansur are also noted, although none have survived, and details are unclear. Practical maps from this period have left no direct link to later Muslim cartography, as mapping mainly appeared as illustrations in geographical texts.¹¹²

It was under Caliph al-Ma'mun that science generally thrived and scholars were tasked with making a world map, much like the maps created by previous rulers such as the Sassanids, Fatimids, and the Sicilian Normans to showcase their dominion. Of this map, only textual descriptions remain, and those are inharmonious. The first detailed reference is from al-Mas'udi, who lauded its superior quality and detail, even suggesting it superseded the works of Ptolemy and Marinus.¹¹³ The map was called “surah”, meaning in Arabic “representation” or “picture”. This term became the standard in classical geographical literature for a map. It is unclear if al-Ma'mun's scholars employed mathematical geography. al-Khwarazmi, a scholar at al-Ma'mun's court, created longitude and latitude tables, and Suhrab, a later scholar,

¹¹¹ Ibid., 90.

¹¹² Sonja Brentjes, “Cartography in Islamic Societies,” in *International Encyclopedia of Human Geography*, ed. Nigel Thrift and Rob Kitchin (Elsevier, 2009), 77–88.

¹¹³ Gerald R. Tibbetts, “The Beginnings of a Cartographic Tradition,” 95.

provided instructions for making a map on a rectangular grid derived from al-Khwarazmi's tables.¹¹⁴

3.1.2 Geographical Tables

In the early Islamic period, tables of longitude and latitude were more significant than maps themselves. This reflects the practical and scientific focus of Islamic scholars on precise astronomical and geographical calculations. These tables were crucial for a variety of applications, including navigation, determining the qibla (the direction of prayer toward Mecca), and establishing accurate times for prayer and fasting, all of which required exact knowledge of locations.¹¹⁵

These tables laid the foundation for further development in cartography in the Islamic world, given that they provided all the necessary data to create more precise maps once that requirement for visual tools had emerged. This also may imply that the emphasis on tables rather than maps in these times had to do with the fact that during the early Islamic period, its approach to cartographic expressions was more functional and precise, somewhat detached from those aesthetic or symbolic concerns of cartography which would surface

¹¹⁴ Ibid., 97-101

¹¹⁵ David A. King, *Islamic Astronomical Instruments* (Variorum, 1987), 1-11.

in later periods, where eventually maps began serving broad cultural, religious, and political purposes.¹¹⁶

Arabic literature contains many lists of geographical place-names, some covering the entire known world, specific regions, or just a selection of names. These lists appear either in original works or as extracts in others' writings and are generally of two types: those listing places within climates with no longitudes and only climate boundary latitudes, and those providing individual longitude and latitude values for each place.¹¹⁷

The first type often appears in the works of astronomers, typically as a separate chapter. A notable early example is the work of Abu al-Abbas Ahmad ibn Muhammad al-Farghani, whose text details geographical features within each climate, indicating only a latitude range for each feature. The tables of Al-Khwarazmi were just simple lists of names, arranged in categories like towns, mountains, seas, islands, springs, and rivers. These names are listed under climates, starting with those south of the equator and then moving north, ordered by longitude, from west to east, with the entries giving the longitude and latitude in degrees and minutes.¹¹⁸

In contrast, al-Battani's tables, which are part of his astronomical textbook, are less systematically arranged. His work includes coordinates for

¹¹⁶ Gerald R. Tibbetts, "The Beginnings of a Cartographic Tradition," 99-103.

¹¹⁷ Ibid., 103-7.

¹¹⁸ King, *Islamic Astronomical Instruments*, 12-19.

important places alongside coordinates for important stars. Al-Battani lists 94 "center points" of geographical regions from Ptolemy's Geography and then 180 towns and miscellaneous features, drifting from west to east but lacking a strict order. A final section lists towns in Spain and North Africa. Subsequent astronomers followed al-Battani's less systematic approach rather than the more geographical listings of al-Farghani.¹¹⁹

al-Khwarazmi independently reworked Ptolemy's tables, with scholars like Nallino and Reinaud describing his work as an "imitation," though the Arabic term used is "istikhrāj" meaning "extraction." His coordinate values were followed by Suhrah and later geographers like Abu al-Fida. The purpose of these tables remains debated: they might have been a way to preserve or reproduce al-Ma'mun's map, especially since maps were harder to preserve than tables. Al-Khwarazmi's work shows a cartographic approach, including coordinates for places without names and colored mountain ranges, suggesting they were abstracted from a map.¹²⁰

3.1.3 Balkhi School, Ibn Hawqal and al-Biruni

The earliest surviving maps from Islamic cartography accompany the text *Kitab Surat al-Ard* by Abu al-Qasim Muhammad ibn Hawqal in a

¹¹⁹ Gerald R. Tibbetts, "The Beginnings of a Cartographic Tradition," 104.

¹²⁰ Ibid., 105-6.

manuscript dated 1086, located in the Topkapi Palace Museum Library in Istanbul. Similar maps are found in other Istanbul manuscripts and several European libraries. Another 1173 manuscript Forschungsbibliothek in Gotha, contains the *Kitab al-Masalik wa al-Mamalik* by Abu Ishaq Ibrahim ibn Muhammad al-Farisi al-Istakhri. It appears that Abu Zayd Ahmad ibn Sahl al-Balkhi (d. 934), an earlier scholar, originated this cartographic style. Recognized by later authors, this group of geographers is referred to as the Balkhi school.¹²¹

The maps are geometric, with straight or arched lines, wide parallel lines for rivers, and regular shapes for towns and mountains, indicating a lack of formal scale or projection. The maps primarily represent caravan routes within provinces, showcasing an Iranian bias, possibly due to the patronage of Persian rulers.¹²²

¹²¹ Ibid., 108-15.

¹²² David A. King, *World-Maps for Finding the Direction and Distance to Mecca: Innovation and Tradition in Islamic Science* (Brill, 2021), 47–60.

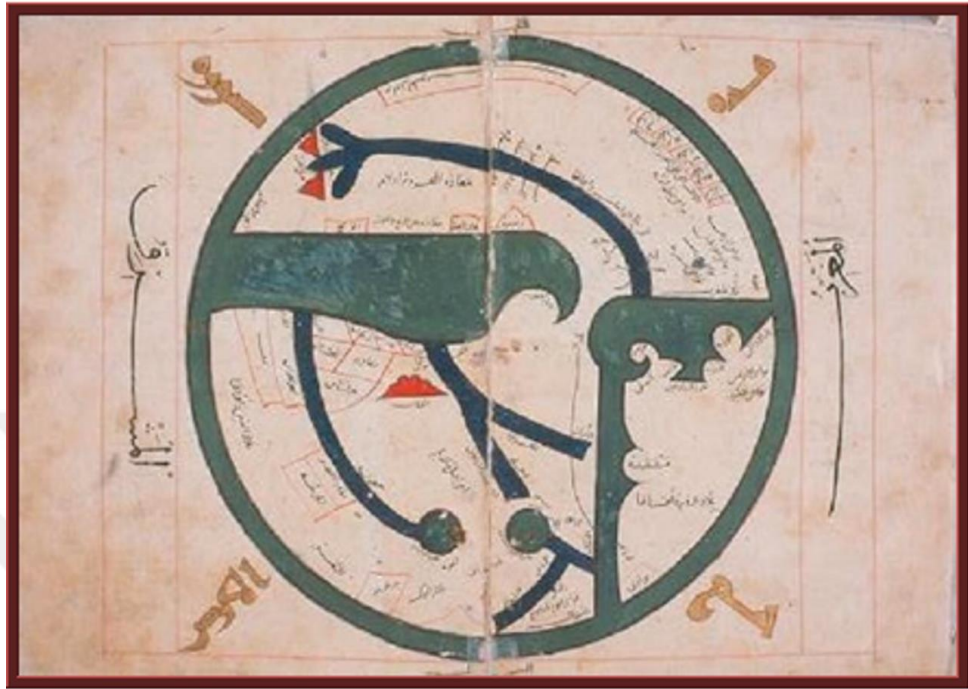


Figure 6: A World Map Abu Zayd Ahmad ibn Sahl al-Balkhi, 10th – 11th century¹²³

The roots of the maps associated with the Balkhi school lie in the innovative work of early Arab geographers who moved beyond Ptolemaic data and traditional travel writings. Before the Balkhi school, studying Ptolemaic geography, collecting travel narratives, and listing postal routes were the main activities that most Arab geographers had engaged in. The latter type includes the work of Ibn Khurradadhbih, whose descriptions of routes were detailed and served as an influence on later geographers, even though the Balkhi school maps did not copy from him.¹²⁴ This approach was very different from earlier

¹²³ “Balkhi World Maps,” *Myoldmaps.com*, accessed September 13, 2024, <https://www.myoldmaps.com/early-medieval-monographs/2142-balkhi-world-maps/>.

¹²⁴ Gerald R. Tibbetts, “The Balkhi School of Geographers” in *The History of Cartography: Cartography in the Traditional Islamic and South Asian Societies*, vol. 2 (University of Chicago Press, 1992), 116-120.

methods and had much in common with medieval European mappaemundi; perhaps the inspiration from the Byzantine cartography had been inherited. This basic style continued to appear even in much later maps with totally different contents, like those based on Ptolemaic geography, which reflects the lasting impact of the Balkhi school's innovations in mapmaking.

Around AD 1000, Islamic cartographers had two main cartographic systems at their disposal. The first system, of Greek origin, traced back to Marinus and Ptolemy, is referenced in many texts, though the only known Islamic description is by Suhrah. This system likely involved maps that are now lost, yet the tradition of mapmaking based on Ptolemy persisted in early Muslim geographical works. The second system was developed by the Balkhi school. Despite its unclear origins, it was evidently popular in subsequent centuries, as indicated by the numerous surviving manuscripts. This system appears to have been created possibly as a reaction against reliance on Greek and other foreign sources.¹²⁵

In the eleventh century AD, scientific research started to have an influence on Islamic cartography, mainly through Abu al-Rayhan Muhammad ibn Ahmad al-Biruni, 973-1050. Long before the latter half of the tenth century, geographers soon reconciled these two cartographic systems and incorporated several materials; one of the most famous representatives of the

¹²⁵ Ibid., 137-40.

Balkhi school was Ibn Hawqal.¹²⁶ Interest in the area of the Mediterranean proved that he knew the sources of Europe, probably through Arabic translations.

Geographical coordinates, linked to stellar observations, were compiled in tables during the first decades of the eleventh century AD by Islamic astronomers and the most important set of geographical tables from this period was composed by al-Biruni. Al-Biruni worked first in Khwarazm and then in Ghazna, at the court of Mahmud, patron of both astronomy and geography. His main work, the *Kitab al-Qanun al-Mas'udi* which he completed about 1036, contained a long table of geographical coordinates with more than six hundred entries.¹²⁷ Al-Biruni was famous for his vast knowledge and critical scholarship. He learned from Greek and Indian scientific concepts and combined and contrasted them to further the development of Islamic scholarship in the sciences.

By the 13th century, Islamic cartography had established three main types of world maps that continued to influence the field in the following centuries. The first type is exemplified by Ibn al-Wardi's world map, which appears mainly in his *Kharfdat al-'Ajā'ib wa-Faridat al-Gharā'ib* and occasionally in works by al-Qazwini and al-Harrani. This map is characterized by rather unique geometry: the East African extension, the unusual form of the

¹²⁶ Ibid., 137.

¹²⁷ Ibid., 141-43.

Nile's flow, and the semi-circular Arabian Peninsula. The coasts of the Mediterranean and the Indian Ocean are drawn parallel to each other, while the Bosphorus is shown prominently.¹²⁸

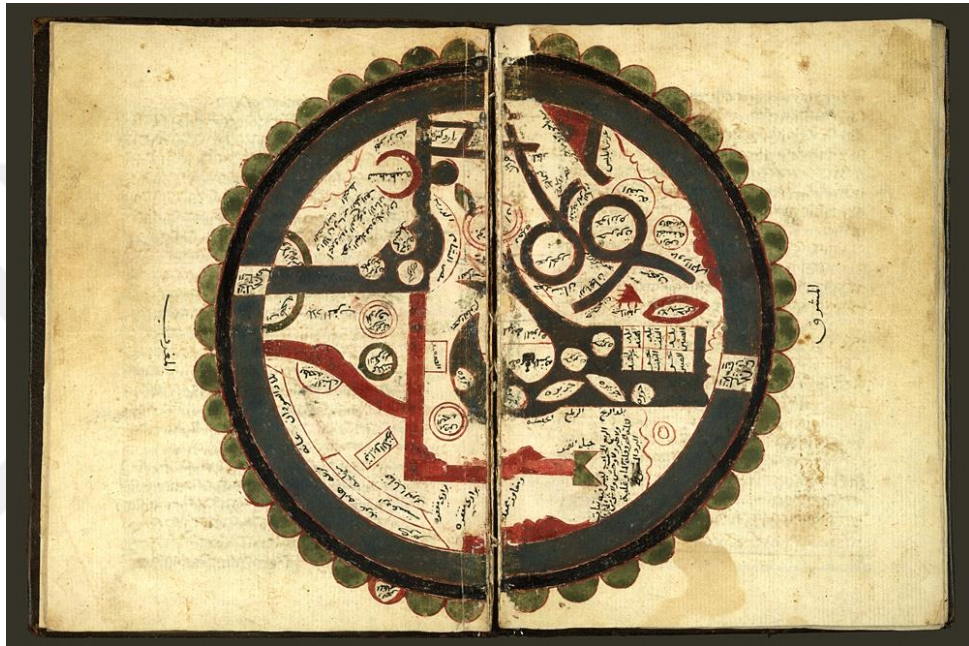


Figure 7: World Map of al-Wardi, 933¹²⁹

The second type is a map based on al-Biruni's sketch map showing the distribution of land and water. This version, as it survives in al-Qazwini and was embellished or repeated by later authors, reduces the complexities of the world's representation to a series of peninsulas, with the Nile represented as a broad channel and Caspian and Aral Seas reduced to "bubbles." The third type includes Ptolemaic influences and has two principal varieties. One is the

¹²⁸ Ibid., 147-55.

¹²⁹ "Ibn al-Wardi World Maps," *Myoldmaps.com*, accessed September 13, 2024, <https://www.myoldmaps.com/early-medieval-monographs/2141-ibn-al-wardi-world/>.

circular world map of al-Idrisi, which maintains many Ptolemaic features, while refining the presentation through detailed climatic boundaries and more accurate geographic information.¹³⁰

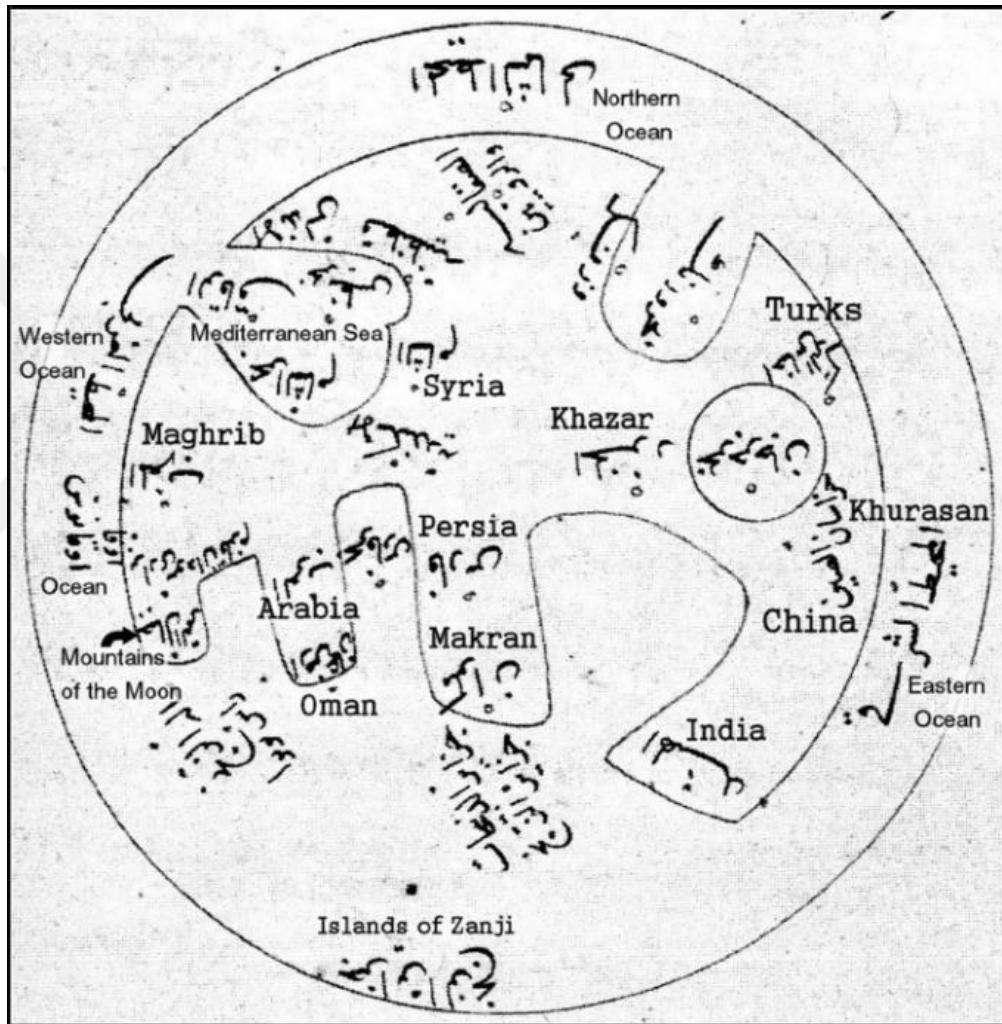


Figure 8: Al-Biruni's sketch of the World, translated and reoriented with north on top¹³¹

¹³⁰ Gerald R. Tibbetts, "Later Cartographic Developments" in *The History of Cartography: Cartography in the Traditional Islamic and South Asian Societies*, vol. 2 (University of Chicago Press, 1992), 151-62.

¹³¹ "al-Biruni World Map," *Myoldmaps.com*, accessed September 13, 2024, <https://www.myoldmaps.com/early-medieval-monographs/2143-al-biruni-world-map/>.

3.2. Al Idrisi and Tabula Rogeriana

Al-Idrisi was born in Ceuta, Morocco, in 1100, into the noble house of the Alawi Idrisids, who ruled the region from 789 to 985 AD. His family migrated to Ceuta in the eleventh century after losing their authority in Malaga. Al-Idrisi received his education in Cordoba and began his great voyages when he was sixteen years old, visiting such places as Asia Minor, southern France, England, Spain, and Morocco. In 1138, he was invited to the court of the Norman King Roger II of Sicily in Palermo. The invitation was ostensibly to protect al-Idrisi, but given the latter's noble ancestry, which could be useful in Roger's ambitions of conquests over Islamic Spain for dominance of the western Mediterranean, some would argue it could be for political means.¹³²

At Roger's court, al-Idrisi utilized his extensive knowledge of North Africa and Western Europe to construct a world map and write a commentary, despite initially not being well-versed in geography or cartography. He admired Roger's expertise in the mathematical and practical sciences. Collaborating with other scholars, al-Idrisi completed a world map engraved on silver and the geographical compendium *Nuzhat al-Mushtaq fi'khtiraq al-Afaq* or The Book of Pleasant Journeys into Faraway Lands, also known as the *Tabula Rogeriana*, which includes a small world map and seventy sectional maps. These works represented the pinnacle of Islamic-Norman geographical

¹³² Ledger, "Mapping Mediterranean Geographies", 29-54.

collaboration. After Roger's death in 1154, al-Idrisi continued his work under Roger's son, William I, but eventually returned to North Africa, where he died in 1165, probably in Ceuta.¹³³

Al-Idrisi followed the Ptolemaic cartographic tradition, which dates back to the time of the caliph al-Ma'mun and is based on the classical geographical work of Ptolemy. While al-Idrisi was aware of the Balkhi school of cartography, which focused on regional maps of the Islamic empire, he primarily built on the Ptolemaic tradition in his sectional maps. These maps are considered an improvement over earlier Ptolemaic maps, such as the one attributed to al-Ma'mun.¹³⁴

¹³³ Ibid., 55-64.

¹³⁴ Ibid., 65-82.



Figure 9: *Tabula Rogeriana*, al-Idrisi¹³⁵

¹³⁵ “Carte générale du globe tirée de la géographie d'El-Edrisi, milieu du XIIe s. de l'ère vulgaire,” *Wikimedia Commons*, accessed September 13, 2024, [https://commons.wikimedia.org/wiki/File:Carte_g%C3%A9n%C3%A9rale_du_globe_tir%C3%](https://commons.wikimedia.org/wiki/File:Carte_g%C3%A9n%C3%A9rale_du_globe_tir%C3%92)

One of the striking features of Al-Idrisi's *Tabula Rogeriana* is the full, systematic geographical treatment it brings to the subject, with minute division of the world into seven climates, which are then divided into ten sections. No similar Islamic geographical work survives in this format. It relates quite meticulously to the physical, cultural, political, and socioeconomic conditions of each region; sectional maps correspond with each of the seventy text sections, although the content on the maps and text do not always correspond exactly. Some extant manuscripts also feature a small round world map.¹³⁶

Al-Idrisi's work in the court of Roger II also brought him into contact with a wide range of sources and allowed him to combine the best of the Balkhi and Ptolemaic cartographic traditions. He drew on the work of Ibn Hawqal, but whereas Ibn Hawqal dealt only with the world of Islam, al-Idrisi covered the entire known world, as in the Ptolemaic tradition. He also used non-Arabic sources, information provided by European travelers at Roger's court, and probably maritime data from Roger's navy, especially concerning North Africa's coastal regions.¹³⁷

In al-Idrisi's geographical work religion is represented as a peripheral, rather than central, aspect of human societies. His descriptions of populations

A9e_de_la_g%C3%A9ographie_d%27El-

Edrisi_milieu_du_XIIe_s._de_l%27%C3%A8re_vulgaire_-_btv1b100601717.jpg.

¹³⁶ S. Maqbul Ahmad, "Cartography of al-Sharif al-Idrisi" in *The History of Cartography: Cartography in the Traditional Islamic and South Asian Societies*, vol. 2 (University of Chicago Press, 1992), 151-62.

¹³⁷ *Ibid.*, 163-66.

often include mentions of local religious practices presented without moral judgment or religious bias. Al-Idrīsī avoids delineating strict religious boundaries, including for the Muslim world, and his maps do not prioritize religious sites or symbolism. Even significant religious locations, such as Mecca, Medina, and Jerusalem, are depicted with the same neutral cartographic symbols as other towns. While religious elements, such as the Muraille des Gog et Magog, appear in his geographical commentary, they are not the organizing principles of his work. Instead, al-Idrisi focuses on human geography, cities, trade routes, and physical spaces, where religion is acknowledged when relevant, but not elevated as a defining feature of his representation of the world.¹³⁸

Al-Idrisi's preface to the *Tabula Rogeriana* mentions several sources, but detailed analysis is needed to identify these precisely. He relied on traveler accounts for Europe and the Mediterranean and written Arabic sources for Asia and Africa.¹³⁹ The *Tabula Rogeriana* reflects significant influences from the Far East, particularly in its depiction of regions such as China and India. These influences are evident in the detailed descriptions and geographical knowledge that went beyond what was typically available in Islamic and European sources of the time. The map's representation of the Far East was shaped by the

¹³⁸ Jean-Charles Ducène, "Al-Idrīsī, La Géographie et Les Religions," in *Geography and Religious Knowledge in the Medieval World* (De Gruyter, 2021), 141–60.

¹³⁹ S. Maqbul Ahmad, "Cartography of al-Sharif al-Idrisi" in *The History of Cartography: Cartography in the Traditional Islamic and South Asian Societies*, vol. 2 (University of Chicago Press, 1992), 167.

exchange of knowledge facilitated through the extensive trade networks of the Islamic world which connected it with distant regions in Asia. The integration of information from Chinese sources, such as the concept of the Cupola of the Earth and the prime meridian of Ujjain from Indian astronomy, highlights the cross-cultural interactions that enriched al-Idrisi's work.¹⁴⁰

Some of the historians who utilized al-Idrisi's work include Ibn Khaldun and Hafiz-i Abru. Ibn Khaldun's world history contained a world map that was a modification of al-Idrisi's round world map. Works of al-Idrisi were preserved and used in maps by the family al-Sharafi al-Sifaqsi in Tunisia from the 16th century. Basically, they were maps of the Mediterranean and the Black Sea, combining al-Idrisi's information with Catalan sources.¹⁴¹

Al-Idrisi's work was eventually introduced to Renaissance Europe. A 1592 Arabic abridgment of *Tabula Rogeriana* was published in Rome, possibly influencing European cartographers. An engraved map by Petrus Bertius incorporated al-Idrisi's sectional maps. While Miller suggested that al-Idrisi influenced maps like Marino Sanudo and Catalan maps, this is debated. Al-Idrisi's synthesis of diverse cartographic traditions and his comprehensive approach made his work a pivotal reference in both Islamic and later European

¹⁴⁰ Muhammad Ashraf Sarip, "Al-Idrīsī and a Translation and Commentary About the Far East from His *Nuzhat al-Mushtāq*," in *The 1st International Prof. Dr. Fuat Sezgin Symposium on History of Science in Islam Proceedings Book* (2019).

¹⁴¹ S. Maqbul Ahmad, "Cartography of al-Sharif al-Idrisi" in *The History of Cartography: Cartography in the Traditional Islamic and South Asian Societies*, vol. 2 (University of Chicago Press, 1992), 170-72.

geography. His integration of different sources and traditions showcased the rich cartographic knowledge of the Islamic world and its impact on subsequent geographical scholarship.

3.3. Cultural Transmission of Medieval Navigational Maps

Sea charts, ship design, and even navigational practices show enormous cross-fertilization between the maritime traditions of the Islamic and Christian kingdoms surrounding the Mediterranean. In the latter contexts, the word “portolan” was often used to describe the written piloting directions, while either “portolan chart” or “portolan atlas” is used to describe maps set down from these directions.¹⁴² These western charts will be described in detail in the next chapter.

Some Arabic maritime charts resemble Italian and Catalan portolan charts in content, format, and style, though they include significant Arabic place names. These charts from the Maghreb predate 1500, representing the oldest surviving examples of Islamic marine cartography. The so-called “Maghreb chart,” which can be dated to about 1330, is probably some years earlier than the Angelino Dulcert chart from the Majorcan cartographic school. It shows all the usual early Western portolan characteristics: rhumb lines, scales without numerical markings, perpendicular place names. Its origin is

¹⁴² Richard W. Unger, *Ships on Maps*, (Palgrave Macmillan UK, 2010), 37–61.

evidenced by the Maghribi script; the place names reflect Arabic, Catalan, Italian, and Spanish languages.¹⁴³

The history of Islamic cartography is interesting in showing historical practice that helped shape the medieval conception of the Mediterranean and the global view. Filled with intellectual diversity, the tradition took from the Greek, Persian, Indian, and Byzantine influences in order to come up with maps that served both practical functions and were beautiful in form. Islamic maps had a close relationship with cosmological ideas, depicting concretely a worldview which integrates physical and metaphysical reality. The amount of artwork in minute detail involved in the preparation of them, as in the case of illuminated manuscripts, testifies to their importance as a cultural artifact.

These Arabic cartographic works held real influence which went much beyond the medieval period. Al-Idrisi and people like him played an important role in linking Islamic and European cartography; in essence, they laid the foundation for later exploration and understanding. Islamic cartography is very critical and forms a major part of the history of mapmaking. Notably, it incorporates science, art, and cosmology, hence vastly improving the medieval understanding of the world and creating a long-standing influence in the field of mapping.

¹⁴³ Gerald R. Tibbets, “The Role of Charts in Islamic Navigation in the Indian Ocean” in *The History of Cartography: Cartography in the Traditional Islamic and South Asian Societies*, vol. 2 (University of Chicago Press, 1992), 263-65.

3.4. Sacred Places in Islam

In early Islamic culture, this transformation and conceptualization of sacred spaces created the foundation for establishing the religious and cultural identity of the Muslim community. The Ka'ba in Mecca, originally a pre-Islamic site, was repurposed as the central religious focus of Islam, marking its prominence within the new faith.¹⁴⁴ This transformation was not merely physical but symbolized the unification of the Muslim ummah under a single religious and cultural identity. Similarly, the Prophet's Mosque in Medina was constructed as a new holy site, one directly associated with the life and practices of Muhammad. In contrast to the Ka'ba, which was borrowed from pre-Islamic times, the Prophet's Mosque was a thoroughly new creation that articulated in its establishment a new religious order in Islam.¹⁴⁵ It became an important symbol of the Islamic religion and reflected the expanded influence and authority of the growing Islamic community.

This is also executed in Jerusalem by the construction of the Dome of the Rock, the re-interpretation of a site considered important by Jews and Christians within an Islamic context.¹⁴⁶ Indeed, this was part of the Umayyad dynasty's desires to self-legitimize and link Islamic belief with the greater

¹⁴⁴ Ari M. Gordon, "The Qibla," in *Routledge Handbook of Islamic Ritual and Practice*, ed. Oliver Leaman (Routledge, 2022), 409–21.

¹⁴⁵ Fahad Alharigi, *The Relationship Between the Prophet's Mosque and Its Physical Environment* (PhD diss., University of Edinburgh, 1989).

¹⁴⁶ Nasser Rabbat, "The Meaning of the Umayyad Dome of the Rock," *Muqarnas Online* 6 (1989): 12.

monotheistic tradition. While it was a feat of religious re-appropriation, it also had deep political undertones, securing the Islamic presence in a region long steeped in other religious traditions.

Early Islamic architecture often incorporated preexisting sacred sites into the new faith. Early Islam adapted them to the new religious context. This, however, was not restricted to physical changes but also extended to formulate a new kind of religious narrative that would link those sites to Islamic theology and history.

The decoration of these sacred spaces avoided the use of figurative images because of the Islamic aniconism. The use of non-figurative decoration combined with monumental inscriptions and luxurious materials such as mosaics and marble forms one of the characteristic features of early Islamic sacred architecture, mentioned before, both the expression of religious principles and a means through which power and legitimacy of the new Islamic state could be expressed.¹⁴⁷

¹⁴⁷ Mattia Guidetti, “Sacred Spaces in Early Islam,” in *A Companion to Islamic Art and Architecture*, ed. Finbarr Barry Flood and Gülru Necipoğlu (John Wiley & Sons, Inc., 2017), 130–50.

3.4.1. Religious Symbolism in Islamic Cartography

The following will discuss how Islamic cartography has represented these holy places, the importance given to their description, and how it reflects the mainstream religious and cultural setting in the medieval Islamic world. For the early Muslim communities, the performance of these important rituals were assisted by the procedures of astronomy and mathematics. The organisation of the lunar calendar, astronomically-defined times of prayer and the determination of the sacred direction of the prayer were subjects early Islamic scientists considered. The intertwinedness of science and astronomy in Muslim rituals became an important part of the Muslim geographic traditions.¹⁴⁸

Like Christians, Muslims showed Mecca and Jerusalem, their sacred cities in special places, especially considering some maps were specifically designed to locate the Qibla.. There were some other religious representations, including the depiction of seas, in which a Quranic verse suggests that the throne of God rests. Some Islamic maps imbued the seas with religious significance, reflecting both cosmographic and sacred understandings within the Islamic mapping tradition.¹⁴⁹

¹⁴⁸ King, *World-Maps for Finding the Direction and Distance to Mecca*, 1-14.

¹⁴⁹ Karen Pinto, "In God's Eyes: The Sacrality of the Seas in the Islamic Cartographic Vision = A Través de Los Ojos de Dios: La Sacralidad de Los Mares En La Visión Cartográfica Islámica," *Espacio Tiempo y Forma Serie VII Historia Del Arte* 0, no. 5 (2017): 55.

According to Schröder, work on a more geographical-based approach started to emerge when Arabic-Islamic mapping traditions began to be used by European cartographers. This was in sharp contrast to the religious mappaemundi that had come earlier and was a precursor to more modern practices. However, as the maps from Sanudo's *Liber secretorum* indicate, although the geographical detail was prominent, religious symbolism - especially in regard to representing important cities, such as Mecca- was part of the meaning and purpose of these maps.¹⁵⁰

3.5. Egyptian Book of Curiosities

A unique manuscript made in early eleventh century Fatimid Cairo, *Kitāb Gharā'ib al-funūn wa-mulāḥ al- 'uyūn* (the Book of Curiosities of the Sciences and Marvels for the Eyes) is one of the most fascinating and enigmatic works to come out of the Islamic cartographic tradition. The treatise is remarkable for the collection of an unprecedented number of maps and diagrams, most without parallel in Greek, Latin, or any other Arabic sources. It opens a window toward the assembly of astronomical, geographical, and esoteric knowledge in the Islamic world and presents a sophisticated grasp of both macrocosm and microcosm. The Book of Curiosities is a manuscript that

¹⁵⁰ Stefan Schröder, "Religious Knowledge within Changing Cartographical Worldviews: Spatial Concepts and Functions of Maps in Marino Sanudo's *Liber Secretorum Fidelium Crucis* (c. 1321)," in *Geography and Religious Knowledge in the Medieval World* (De Gruyter, 2021), 189–220.

only came to the attention of modern scholarship in the year 2000, when a magnificently illustrated copy appeared in an auction house in London.¹⁵¹



Figure 10: The oldest rectangular world map, from the *Book of Curiosities*¹⁵²

This manuscript, probably created in Egypt about the year 1200, is a copy of an original work completed between 1020 and 1050 at the height of the Fatimid Caliphate. It was not until 2002, therefore, that a treatise which for centuries had lain hidden in private collections came into the possession of the Bodleian Library at the University of Oxford. This was no less than a historic moment, as all of a sudden here was this cache of previously unrecorded maps

¹⁵¹ Yossef Rapoport and Emilie Savage-Smith, *Lost Maps of the Caliphs* (Oxford, England: Bodleian Library, 2019), 7–15.

¹⁵² “Book of Curiosities,” *Wikimedia Commons*, accessed September 13, 2024, <https://commons.wikimedia.org/wiki/File:Book-of-Curiosities-Bodleian.jpg>.

and diagrams opening up and broadening our understanding of Islamic cartography.¹⁵³

Although the author of this book remains unknown, it is certain that he was deeply involved in the intellectual and cultural milieu of Fatimid Cairo. Presumably, the treatise was written for a prominent benefactor within the Fatimid government, maybe associated with the Isma'ili missionary network or the palace. The work thus reflects the peculiar position of the Fatimid dynasty as an Isma'ili Shi'a caliphate that nourished an active intellectual culture, taking advantage of a wide array of sources, Greek and Coptic beside Hindu traditions. It is structured into two key sections, one dedicated to the heavens and one to the earth, with the maps and diagrams not illustrating the text but being an integral part of its exposition of the universe.¹⁵⁴

¹⁵³ Ibid., 16-27.

¹⁵⁴ Ibid., 28-40.



Figure 11: Map of the Mediterranean Sea, from *Book of Curiosities*¹⁵⁵

While the circular world map found in the Book shares visual similarities with the *Tabula Rogeriana* yet the two serve different purposes within their respective texts. In contrast to the more geographical-driven maps of al-Idrisi, the Book of Curiosities employs a more symbolic and diagrammatic style, emphasizing conceptual representations of space rather than precise geographic coordinates.

Through the geography of the Nile and its tributaries in the Book of Curiosities, we see the works of Ptolemy, whose concepts had been digested and reinterpreted through an Islamic filter. The astrological and cosmological

¹⁵⁵ “The Book of Curiosities or a Medieval Islamic View of the Cosmos,” *Muslim Heritage*, accessed September 13, 2024, <https://muslimheritage.com/the-book-of-curiosities-or-a-medieval-islamic-view-of-the-cosmos/>.

elements of the maps are heavily indebted to the Hermetic traditions ascribed to Hermes Trismegistus, combining Hellenistic star lore with Islamic cosmology. This is evident in the manuscript depiction of the world's boundaries and in the adoption of the concept of the “Climes,” a geographical framework passed down from ancient Persian and Indian materials.¹⁵⁶ This cross-cultural synthesis speaks to nothing less than the interconnectedness of medieval scientific knowledge, while it underlines the position of the Islamic scholars as both preservers and innovators of this intellectual heritage. These various sources combined make the Book of Curiosities a witness to the worldliness of Fatimid Cairo and, for that matter, the greater Islamic world, where intellectuals were more than engaged in processing and further developing the knowledge of several civilizations.

The Fatimid Caliphs, who claimed descent from the Prophet Muhammad’s daughter Fatimah, saw themselves not only as political rulers but as spiritual leaders of the Muslim world.¹⁵⁷ The manuscript begins with a religious invocation, and starts with saying: “You have asked me to write a volume encompassing the principles of the raised-up roof and the laid-down bed, a book that will reveal to you their intricate and difficult aspects.”¹⁵⁸ This invocation and this introduction sets the tone for the entire work, framing it as

¹⁵⁶ Ibid., 50-55.

¹⁵⁷ Mercedes García-Arenal and Martin Beagles, “The Rise of the Fāṭimid Dynasty,” in *Messianism and Puritanical Reform* (BRILL, 2006), 62–76.

¹⁵⁸ Emilie Savage-Smith and Yossef Rapoport, eds., *An Eleventh-Century Egyptian Guide to the Universe: The Book of Curiosities, Edited with an Annotated Translation* (Brill, 2013), 325.

a religious order for the exploration of the universe. The manuscript's division of the world into "islands" rather than provinces is another reflection of the Isma'ili conception of space, which was also utilized in the organization of their da'wah (missionary) network. The world as islands in the network of Isma'ili da'wah had an organizational scheme serving administrative and spiritual purposes. The Qur'anic commentary of al-Qāḍī al-Nu'mān describes the world as comprising twelve islands, with different ethnic groups assigned to each island, including Arabs, Greeks, Slavs, Nubians, and others. Each island had a *naqīb* or a *ḥujjah* who oversaw the Isma'ili mission in that region. It was a manifestation of the wider policy of the Fatimids to inextricably link religious authority with political government and by doing so enhanced their influence in the Islamic world.¹⁵⁹

One of the central themes of the Book of Curiosities is the connection between the heavens and the earth, a reflection of the Isma'ili cosmology that views the universe as a macrocosm and the earth as its microcosmic reflection. This concept is vividly illustrated in the manuscript's depictions of the stars, constellations, and the celestial sphere. The manuscript highlights the belief that celestial knowledge was divinely revealed, further emphasizing the religious significance of cosmological phenomena. The use of Hermetic material, particularly in the context of astrology, further emphasizes the

¹⁵⁹ Farhad Daftary, *The Isma'ilis: Their History and Doctrines*, 2nd ed. (Cambridge, England: Cambridge University Press, 2009), 211–15.

esoteric nature of this knowledge, which was accessible only to those initiated into the higher levels of Isma'ili thought.

The Book of Curiosities basically epitomizes the Fatimids' approach to knowledge, which did not sharply divide religious inquiry from scientific.¹⁶⁰ Instead, it presents a unified view of the cosmos in which geography and astronomy are intertwined with religion. The inclusion of astronomical data in the manuscript concerning phases of the moon and the position of the planets serves not only to help with navigation and the keeping of time, but it also reflects the universe's divine order. This integration of religious and scientific knowledge testifies to the Fatimid belief that the study of the natural world is a means of praising the Creator.

Moreover, the Book places particular emphasis on religious sites and their symbolic significance. The book contains depictions of prominent Islamic cities and architectural sites, frequently highlighting their spiritual importance more than their geographical precision. The portrayal of Mecca and the Kaaba serves as both a geographical allusion and a representation of the core spiritual hub of the Islamic tradition.

In conclusion, the cultural and scientific achievements of pre-modern Islamic cartography demonstrate the rich synthesis of various intellectual

¹⁶⁰ Dehqan Masoumeh and Mohammad Ali Chelongar, "The Flowering of Islamic Medicine during the Fatimid Caliphate in Egypt," *Journal of Research on History of Medicine* 3, no. 2 (2014): 137–68.

traditions from the Mediterranean, Persian, Indian, and Byzantine worlds. Islamic scholars not only preserved the ancient knowledge of Ptolemy and other classical sources but also expanded on it with their own innovations in the fields of geography, astronomy, and cosmology. The religious symbolism, artistic expression, and cosmological views that reflected the spiritual and intellectual landscape of the Islamic world were intertwined. Through institutions like the House of Wisdom and the works of figures such as al-Biruni and al-Idrisi, Islamic cartography left a profound and lasting impact on the medieval understanding of the world, influencing both Islamic and European geographical scholarship for centuries to come.

CHAPTER IV

RELIGIOUS SYMBOLISM IN CHRISTIAN CARTOGRAPHY

Christian cartography in the medieval period was a unique blend of religious doctrine, classical heritage, and emerging geographical knowledge. The early maps were deeply symbolic such as Byzantine maps and Western European mappaemundi. The maps from this period reflected a worldview where geography and faith were inseparable, with sacred sites like Jerusalem occupying central roles. As the medieval period advanced, Christian cartography began to incorporate more practical elements, particularly in the form of portolan charts for navigation. However, even these more functional maps retained a deep connection to Christian cosmology, illustrating how the medieval mind viewed the world not just as a physical space but a spiritual one too.

4.1. Early Byzantine Cartography

Despite being one of the most established civilizations in the Middle Ages, the Byzantine Empire, with its rich Greek and Roman heritage, has left relatively few cartographic resources for historians. The Eastern Empire had similar capabilities in Roman times regarding land surveying and they had the same reasons for maps as their Roman predecessors for their administration, military, propaganda, public management and scientific needs.¹⁶¹ Just like with other classical cultural education astronomical and geographical works which included maps were available for educated classes.¹⁶² However in times of decline, so too did interest in geography. Maritime and commercial hubs like Alexandria, Antioch, Ephesus, and above all Constantinople served as vital links, connecting the empire to its classical roots as well as to other societies and cultural centers.

The influence of Roman cartography throughout the Byzantine Empire is reflected in deliberate imitations of earlier maps, especially those serving imperial purposes such as glorification of Byzantium during a period when the reconstitution of the Roman Empire seemed possible. An example is the map commissioned by Theodosius II, Eastern Roman Emperor from AD 408 to

¹⁶¹ Camilla M. MacKay, *The Road Networks and Postal Service of the Eastern Roman and Byzantine Empires (First-Fifteenth Centuries AD): Social Effects on the Provincial Population* (PhD diss., University of Michigan, 1999)

¹⁶² Alex G. Papadopoulos, "Exploring Byzantine Cartographies: Ancient Science, Christian Cosmology, and Geopolitics in Byzantine Imperial-Era Mapping," *Essays in Medieval Studies* 27, no. 1 (2011): 117–31.

450.¹⁶³ Although the map itself has not survived, its existence is known through a poem written in Latin. The poem, dated to A.D. 435 during Theodosius's fifteenth consulship, praises the map for encompassing the entire known world and attributes its creation to imperial staff who followed and improved upon the work of ancient mappers.¹⁶⁴ Irish geographer Dicuil noted that the map calculated the length of Syrian lands from Asia Minor to Arabia and Lower Egypt as 470 Roman miles, indicating the map's practical use in the empire.

However, Theodosius's map may be an exception, since the other manuscripts also attributed to him were not all accompanied by maps. An example is the anonymous treatise *Urbs Constantinopolitana nova Roma*, offered to Theodosius II, and Marcellinus' detailed account of Constantinople, enumerating districts and important buildings in the city. Even in legal matters, such as the organization and codification of lands within the empire, there is no evidence of cadastral surveys or mapping comparable to those recommended in the *Corpus Agrimensorum Romanorum*.¹⁶⁵ This may suggest that while maps continued to serve propaganda and religious purposes in the Byzantine Empire, the practical uses of mapping may have declined.

¹⁶³ O. A. W. Dilke with Additional Material Supplied by the Editors, "Cartography in the Byzantine Empire", in *The History of Cartography: Cartography in Prehistoric, Ancient and Mediaeval Europe and the Mediterranean Volume 1*, ed. by J.B. Harley and David Woodward (University of Chicago Press, 1987), 259.

¹⁶⁴ Ibid., 260.

¹⁶⁵ Ibid., 259.

Some of these practical uses were fulfilled by other means, such as the usage of periploi, books of sailing directions, for navigational purposes. Although several early Byzantine *periploi* have survived, none contain maps. There are also land itineraries although no graphic version exists similar to the Peutinger map.¹⁶⁶ The Ravenna Cosmography, the main surviving geographical listing from the period, is a document heavily influenced by earlier Roman models without using maps.¹⁶⁷ The cosmography is a list of around five thousand geographical names arranged in a rough topographical sequence, moving from west to east. Compiled by an unknown cleric, known as the Ravenna Cosmographer, likely around the year 700, the document was created for another cleric named Ado. Its sources included Castorius, Orosius and Jordanes. Compilation is less systematic than elsewhere. The Ravenna Cosmographer gives a list of the main places, supplemented by a selection of rivers and islands, according to his own uncertain criteria. He remarks that he could have included the harbors and promontories with mileages between the towns, implying that the source used might have been something like the Peutinger Map.¹⁶⁸

¹⁶⁶ O. A. W. Dilke, *Greek and Roman Maps*, 58.

¹⁶⁷ Keith Fitzpatrick-Matthews, *Britannia in the Ravenna Cosmography: A Reassessment*.

¹⁶⁸ O. A. W. Dilke with Additional Material Supplied by the Editors, "Cartography in the Byzantine Empire", in *The History of Cartography: Cartography in Prehistoric, Ancient and Mediaeval Europe and the Mediterranean Volume 1*, ed. by J.B. Harley and David Woodward (University of Chicago Press, 1987), 261.

Regardless of the sources, it is evident that a selection of Greek and Roman maps was available in Italy during this Byzantine period. The Ravenna Cosmography serves as important evidence of the continued use of maps, despite the declining priority given to creating new maps or updating older ones with new information in early eighth-century Ravenna.¹⁶⁹

In the fourth century, The Byzantine Empire adopted Christianity as the state religion and it also became its majority religion. By the sixth century, Christian modes of thought and the Christian imagery would seize the intellectual, political and artistic culture. Compared to other cultures, everything about the preserved Byzantine cartographic works was religiously rooted.¹⁷⁰ The surviving maps, such as the maps of Cosmas Indicopleustes and the Madaba Map had imposed Christian ideas on their classical background.

Already in the sixth century, the first beginnings of decline were beginning for traditional Byzantine education, but scholars such as Cassiodorus and Johannes Philoponus propagated geographical works like Ptolemy's Geography and teaching concepts regarding the shape of the earth as spherical within the celestial sphere.¹⁷¹ These Aristotelian or Hellenistic works started to become viewed as contradictory to the Scripture by some scholars such as Cosmas Indicopleustes, literally meaning "Cosmas who

¹⁶⁹ Ibid., 270.

¹⁷⁰ Papadopoulos, "Exploring Byzantine Cartographies", 120-125.

¹⁷¹ Filippomaria Pontani, "Scholarship in the Byzantine Empire (529–1453)," in *History of Ancient Greek Scholarship* (BRILL, 2020), 373–529.

travelled to India”. Cosmas was a well-travelled Alexandrian merchant who tried to propagate true Christian geographical teachings and to combat previous teachings by composing a Geography, an Astronomy, and a Christian Topography. Only three manuscripts of the Topography still survive.¹⁷²

Cosmas insisted the Earth was flat and believed the cosmos was a huge rectangular vaulted box. He harshly mocked those who held the belief in a spherical world and earlier representations of sky and earth. His Christian Topography was abundant with illustrations of his views, including diagrams probably drawn by Cosmas himself. They consider the universe to be a rectangular box, with a firmament between the visible world that harbours humans and angels, and God’s invisible sphere. In a few of Cosmas’s maps, we have the representation of the known world as a rectangle surrounded by an ocean and paradise beyond that ocean. In this kind of representation, we have the blend of classical and Hellenistic knowledge with biblical teachings in a manner typical of Cosmas’s effort at reconciliation.¹⁷³ On the other hand, despite detailed illustrations, Christian Topography appears to have had little or no influence over medieval thought. The spherical Earth model of the Greeks and Romans still dominated until well into the Middle Ages.¹⁷⁴

¹⁷² Dimitrios Rossikopoulos, “The Geodetic Sciences in Byzantium,” in *Measuring and Mapping the Earth: Special Issue for Professor Emeritus Christogeorgis Kaltsikis*, School of Rural and Surveying Engineers, AUTH (2015), 1-23.

¹⁷³ Ibid., 9-18.

¹⁷⁴ O. A. W. Dilke with Additional Material Supplied by the Editors, “Cartography in the Byzantine Empire”, in *The History of Cartography: Cartography in Prehistoric, Ancient and*



Figure 12: World Map, Cosmas Indicopleustes¹⁷⁵

Mediaeval Europe and the Mediterranean Volume 1, ed. by J.B. Harley and David Woodward (University of Chicago Press, 1987), 261-264.

¹⁷⁵ "World Map by Cosmas Indicopleustes," *Wikimedia Commons*, accessed September 13, 2024, <https://commons.wikimedia.org/wiki/File:WorldMapCosmasIndicopleustes.jpg>.



Figure 13: A theoretical model of universe, Cosmas Indicopleustes¹⁷⁶

In Christianity, the Holy Land was a topography or region filled with the presence of God in which physical placement and positioning had much to do with spiritual meanings. Early major Christian thinkers like Egeria and John of Damascus held that such places as Mount Sinai and Mount Zion are not mere topographical features but, as a matter of fact, holy places where the presence of the Lord was made manifest. These sites were regarded as "receptacles of divine energy," where the physical environment had directly

¹⁷⁶ "Cosmas Indicopleustes - Topographia Christiana," *Wikimedia Commons*, accessed September 13, 2024, https://commons.wikimedia.org/wiki/File:Cosmas_Indicopleustes_-_Topographia_Christiana_1.jpg.

observed the miraculous events in the life of Christ and the manifestation of divine grace. This conviction, by the fourth century, had already shaped these locations into central sites of Christian pilgrimage. For pilgrims, such journeys to these holy places were a chance to reach-both physically and spiritually-closer to the divine. The topography of the Holy Land thus became fundamental to Christian worship, not only serving as a memorial of biblical events but also as an arena for the faithful to come into contact with the astonishing power of God and to reaffirm faith through personal contact with such sacred places.¹⁷⁷

After Palestine was denoted as sacred land for Byzantine Christians, it found representation in various forms of religious art, including maps. One of the most significant examples is the fragment of a floor mosaic map found in Madaba, Jordan. The Madaba Map was uncovered at the end of the nineteenth century during the construction of a new church on the ruins of a Byzantine building, which was also identified as a church. The map, set into the ornamented walls of the church, represents one of the outstanding works of cartography to stem from the Late Antique period.¹⁷⁸ While other holy itineraries of the time often depend on verbal descriptions, the Madaba Map is an accurate pictorial expression of the Holy Land that includes Jerusalem and other major biblical locations.

¹⁷⁷ Pnina Arad, *Christian Maps of the Holy Land: Images and Meanings* (Brepols, 2020), 10–11.

¹⁷⁸ Beatrice Leal, “A Reconsideration of the Madaba Map,” *Gesta* 57, no. 2 (2018): 123–43.



Figure 14: The Madaba Map¹⁷⁹

Internal evidence from the represented landmarks and stylistic similarities with other contemporary mosaics, especially one found in the Church of Saints Lot and Procopius, set the date of the Madaba Map at circa 557 A.D.¹⁸⁰ It is possible that the peculiar format of this map, compared to its

¹⁷⁹ Ruben Montoya, "The Oldest Map of the Holy Land Is Actually a Magnificent Mosaic," *National Geographic*, March 26, 2021, <https://www.nationalgeographic.com/history/history-magazine/article/madaba-mosaic-oldest-map-jerusalem-holy-land>.

¹⁸⁰ Andrew M. Madden, "A New Form of Evidence to Date the Madaba Map Mosaic," *Liber Annuus* 62 (2012): 495–513.

manuscript counterparts, might stem from the religious importance of the sites represented and from this map's function either as a pilgrimage guide or as an illustration for biblical stories told to the faithful.

Measuring approximately at 10.5×5 meters the Madaba map is oriented with its east at the top and it shows from Charach-Moba (*al-Karak*) in the east to the Mediterranean coast in the west and from the Jordan River in the north to the Nile in the south. It is detailed with the depictions of geographical features such as mountain ranges, seas, rivers, streams, towns, villages, fortresses, and holy sites. Jerusalem is present prominently as an oval-shaped location, marked as 'The holy city Ierusa[lem].'¹⁸¹

The Madaba map features four distinct types of holy places: sites of divine presence, sites of miracles, locations that relate to some biblical figures, and tombs of saints. The inscriptions frequently mention terms such as "here" or "there," which indicate places where particular sacred events took place. The map also contains symbolical signs of major biblical events: twelve stones at Gilgal, the tree at Mamre, baptism of the Ethiopian eunuch, two huge boats on the Dead Sea, perhaps a reference to Ezekiel's prophecy concerning the dead sea transformed into fresh waters with fish, a symbol of eschatological fulfilment when Christ is present.¹⁸² These elements allow the Madaba map to

¹⁸¹ Arad, *Christian Maps of the Holy Land: Images and Meanings*, 15-20.

¹⁸² *Ibid.*, 21-28.

transcend simple geographical documentation and create a deeply theological narrative that interlaces topography of the land with its spiritual significance.

The Madaba map gave the pilgrims a complete and idealised view of the sacred landscape. Concise inscriptions together with symbolic signs, which evoke complete biblical episodes, are used on the map to provoke mental visualisation of the land among the viewers based on their earlier biblical knowledge. Devised near Mount Nebo, this map expressed a comprehensive spiritual view, much like early Christian church decorations that emphasised the continuity of divine planning and the fulfilment of Old Testament prophecies in Christ. It placed Jerusalem at the centre of the map surrounded by a range of references to the Old Testament, underscoring its message of Christian fulfilment by depicting Jerusalem as a Christian city.

4.2. Western Christian Cartography

Mapping in mediaeval Europe was by no means a unified tradition. Rather, it comprised a series of distinct mapping practices which seldom converged. Among these are the mappaemundi, portolan charts, regional and local maps, and a smaller corpus of celestial maps. The points of cross-fertilization between these traditions are few and far between, as, for instance,

local Reichenau maps show up in the Ebstorf world map, or portolan charts made regional maps of Italy.¹⁸³

The formation of the mappaemundi depended on the transmission and adaptation of earlier knowledge concerning cartography. Most of these medieval maps were executed in manuscripts which transcribed sources from antiquity for the whole or part of their drawings. Maps were frequently structural and topographical inheritances of the ancient geographers;¹⁸⁴ for example, Eratosthenes has left his stamp on the alignment of the Persian Gulf and the Caspian Sea.¹⁸⁵ Moreover, the use of visual devices in a pedagogic context during late antiquity shows the role that maps played in the dissemination of geographical knowledge. Yet while engaging in such ancient sources, medieval scholars did not copy; rather, they interpreted and reworked the material to suit their contemporary needs.¹⁸⁶

During the Middle Ages, the spoken and written word took precedence over visuals, a viewpoint firmly grounded in the biblical story and the instructive teachings of early church fathers. Saint Gregory the Great famously stated that images provided the illiterate with the same valuable service as the

¹⁸³ P. D. A. Harvey, "Medieval Maps: An Introduction", in *The History of Cartography: Cartography in Prehistoric, Ancient and Mediaeval Europe and the Mediterranean Volume 1*, ed. by J.B. Harley and David Woodward (University of Chicago Press, 1987), 283.

¹⁸⁴ David Woodward, "Reality, Symbolism, Time, and Space in Medieval World Maps," *Annals of the Association of American Geographers* 75, no. 4 (1985): 510–21.

¹⁸⁵ Prepared by the Editors from Materials Supplied by Germaine Aujac "The Growth of an Empirical Cartography in Hellenistic Greece", in *The History of Cartography: Cartography in Prehistoric, Ancient and Mediaeval Europe and the Mediterranean Volume 1*, ed. by J.B. Harley and David Woodward (University of Chicago Press, 1987), 153-60.

¹⁸⁶ Richard Talbert and Richard W. Unger, eds. *Cartography in Antiquity and the Middle Ages: Fresh Perspectives, New Methods*, (Brill Academic, 2008), 29-40.

Scriptures did for those who were able to read.¹⁸⁷ This raises questions about the role and audience of the mappaemundi: were they merely illustrative, subordinate to the accompanying text. These maps primarily served as book illustrations, though in the later Middle Ages, there was a trend to place them at the beginning of codices, perhaps indicating an increasing recognition of their importance in providing readers with an overview of the text.

4.2.1 Mappaemundi

Mappaemundi thus represent a sequence of key periods that reflect the varied cultural and intellectual contexts in which they were created. Such periods range over more than a millennium, from the late Roman era through the Middle Ages up to the early Renaissance. The periods distinguish each other through unique characteristics in the production and employment of mappaemundi, with religious, philosophical, and scientific thought differing throughout each period. The following, therefore, bounds these major periods in a manner that defines the development of medieval cartography in depth.

The first period in the history of mappaemundi extends roughly from the fifth century to the seventh century. It is a period that sees the decline of the secular influence of Greco-Roman civilization, and the rise of the Christian

¹⁸⁷ Moshe Barasch, *Theories of Art: 1. From Plato to Winckelmann* (London: Routledge, 2013), 45–53.

Church as the dominating cultural force in Europe. Key figures like Macrobius and Isidore of Seville developed world maps incorporating both classical knowledge and Christian theology.¹⁸⁸

The Carolingian Renaissance, representing the period from the eighth to the ninth century, is a cultural revival of Western Europe, especially under the reign of Charlemagne. It is marked by the return to learning and the arts and a major revival in manuscript production have occurred.¹⁸⁹ This included mappaemundi, inserted in religious texts for the edification of both clergy and laymen. During this period, mappaemundi became more detailed, actually beginning to include increased use of geographical information, although remaining highly symbolic.¹⁹⁰ The maps continued to stress the Christian interpretation of the world and religious themes dominated their content. The revival of classical learning during the Carolingian Renaissance also meant the preservation and copying of earlier maps to ensure these symbolic representations continued to influence medieval thought.¹⁹¹ An interesting product from this period, although not a mappamundi, is the St. Gall Plan, created in the early 9th century. This was primarily an architectural drawing,

¹⁸⁸ P. D. A. Harvey, "Medieval Maps: An Introduction", in *The History of Cartography: Cartography in Prehistoric, Ancient and Mediaeval Europe and the Mediterranean Volume 1*, ed. by J.B. Harley and David Woodward (University of Chicago Press, 1987), 283.

¹⁸⁹ John J. Contreni, "The Carolingian Renaissance: Education and Literary Culture," in *The New Cambridge Medieval History*, ed. David Luscombe and Jonathan Riley-Smith (Cambridge University Press, 1995), 709–57.

¹⁹⁰ Erik Kwakkel and Frederik Kwakkel, *Manuscripts of the Latin Classics 800-1200* (Amsterdam University Press, 2015), 145–72.

¹⁹¹ Contreni, "The Carolingian Renaissance", 709–57.

this plan is a detailed representation of an ideal monastic community.¹⁹² The *Einsiedeln Manuscript*, a ninth-century Carolingian text, offers valuable information for about the city of Rome, acting as a pilgrimage guide and mental aid.¹⁹³

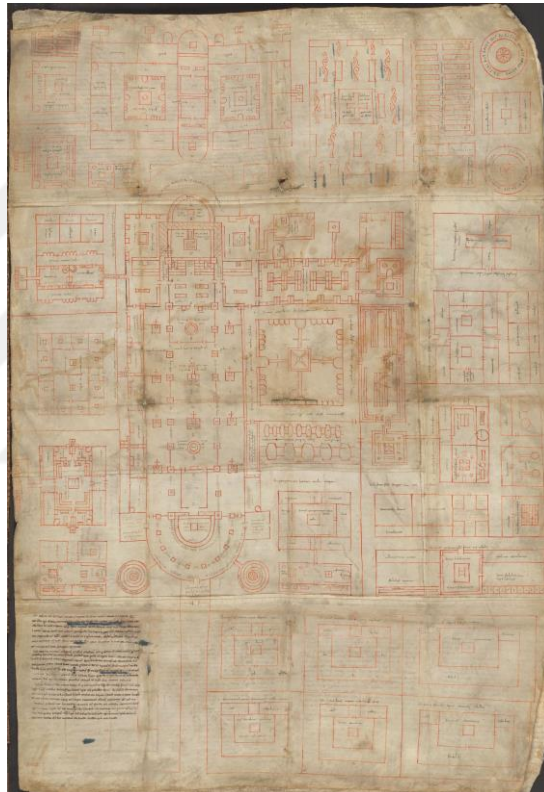


Figure 15: St. Gall Plan¹⁹⁴

The Twelfth-Century Renaissance saw Greek and Roman knowledge return to Western Europe through the translations of the various Muslim and

¹⁹² Lawrence Nees, “The Plan of St. Gall and the Theory of the Program of Carolingian Art,” *Gesta* 25, no. 1 (1986): 1–8.

¹⁹³ Oskar Lein, *The Einsiedeln Manuscript: A Historical Study of a Ninth-Century Carolingian Manuscript and East Frankish Scribal Culture* (Master’s thesis, University of Oslo, 2022)

¹⁹⁴ “Codex Sangallensis 1092, Recto.” Wikimedia Commons. Accessed September 13, 2024. https://commons.wikimedia.org/wiki/File:Codex_Sangallensis_1092_recto.jpg.

Jewish scholars of Spain.¹⁹⁵ Thus, this increase in classical texts being disseminated throughout the continent included Ptolemy's *Almagest*; this was a period of boom for medieval cartography. Whereas these maps retained the symbolic and religious themes, they also received more accurate geographical details, especially in the mapping of the Mediterranean and other known regions.

The last great period in the history of the mappaemundi is a period of transition: the fourteenth and fifteenth centuries. Mappaemundi began to take on some characteristics of the portolan charts, with better drawing of coastlines for navigational purposes. Another reason for the changes in mapping in the period was the spread of Ptolemaic geography. By the end of the fifteenth century, the symbolic mappaemundi had given place for the most part to more accurate and scientifically informed maps.¹⁹⁶

The two most important early medieval geographic works are the Anglo-Saxon Mappa Mundi and Cosmography by Aethicus Ister. The Anglo-Saxon or Cotton Mappa Mundi originated in the eleventh century, and depicts the worldview of Anglo-Saxon England. It is a symbolic and religious map, cartographically centred on Jerusalem and showing biblical images like

¹⁹⁵ Charles Burnett, "The Twelfth-Century Renaissance," in *The Cambridge History of Science*, ed. David C. Lindberg and Michael H. Shank (Cambridge University Press, 2013), 365–84.

¹⁹⁶ David Woodward, "Medieval *Mappaemundi*", in *The History of Cartography: Cartography in Prehistoric, Ancient and Mediaeval Europe and the Mediterranean Volume 1*, ed. by J.B. Harley and David Woodward, (University of Chicago Press, 1987), 308-16.

Noah's Ark atop Mt. Ararat.¹⁹⁷ On the other hand, the *Cosmography of Aethicus Ister* is a seventh century text written under an almost certainly fictional name that describes a strange, fabulous voyage across the world, mixing real geography with mythological and apocalyptic undertones.¹⁹⁸ Although no authentic maps from the text survive, the *Cosmography* represents that mix of Roman geographical knowledge and early medieval Christian eschatology. It encompasses lands known and unknown, with an almost fantastic vision of the world. Both works reflect the shift from Roman practical cartography to the more spiritual and symbolic approach to mapping in early medieval Europe.

¹⁹⁷ Alfred Hiatt, "An Anglo-Saxon World View? The Cotton Mappa Mundi Reassessed," *Viator* 51, no. 2 (2020): 93–129.

¹⁹⁸ Paola Marone, "Aethicus Ister," in *Oxford Research Encyclopedia of Classics*, ed. Oxford University Press (Oxford University Press, 2019).

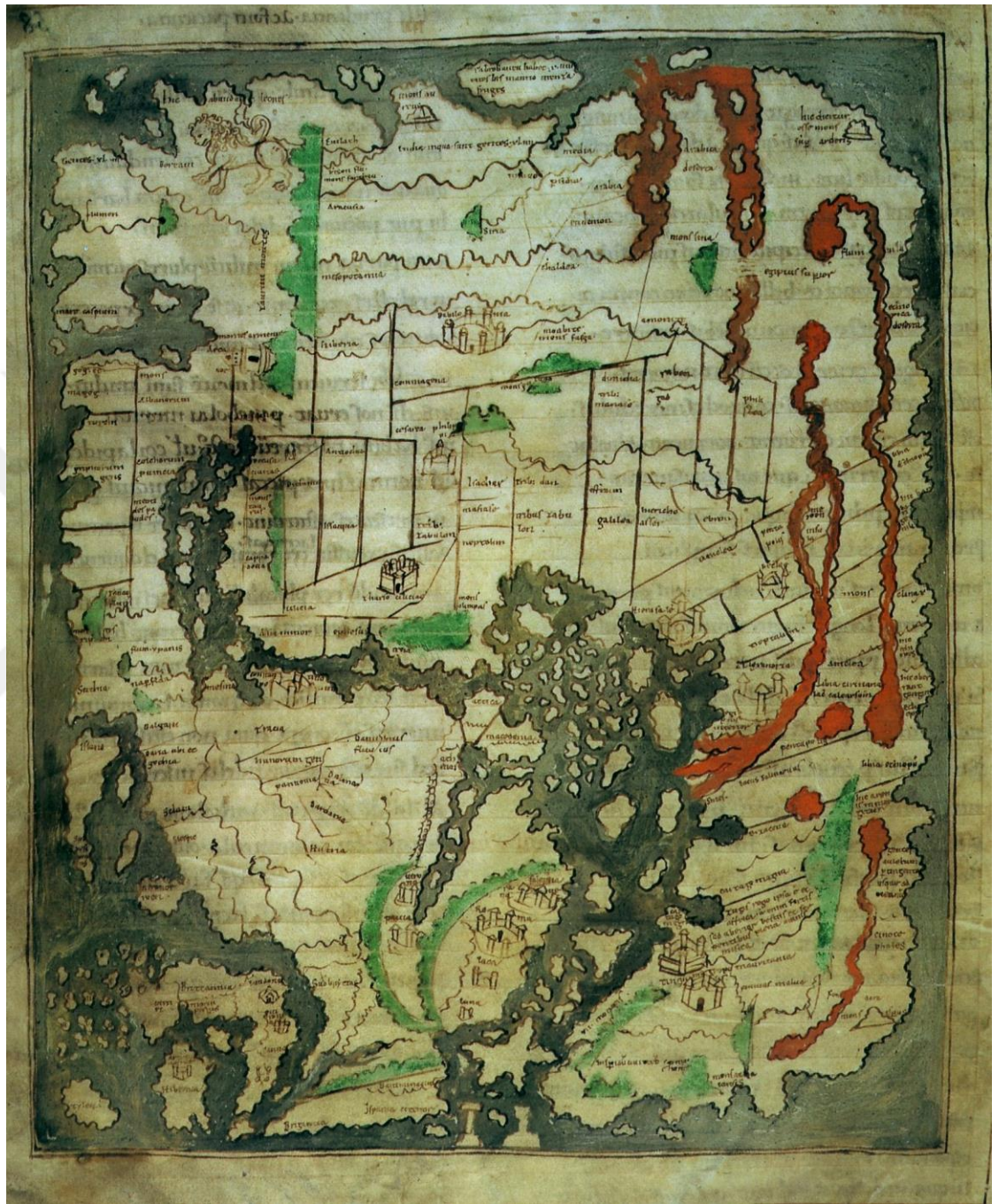


Figure 16: Cotton Mappamundi¹⁹⁹

¹⁹⁹ "The Cotton Mappa Mundi." October 23, 2023. NW Cartographic. Accessed September 14, 2024. <https://nwcartographic.com/blogs/essays-articles/cotton-mappa-mundi>.

The Peutinger map stands out as a unique medieval artifact that diverges from the Christian cartographic traditions of the time. Unusually wide, it portrays the documented globe, extending from southern Britain to the most distant eastern regions of Alexander's conquests, which include India and Sri Lanka.²⁰⁰ This map focuses on the ancient Roman road network, covering approximately 70,000 Roman miles, and featuring numerous icons that represent towns, baths, and stops for travelers, with distances marked in Roman numerals. Because the map is designed to show roads it sacrifices geographical and proximal accuracy in behalf of showing all stops, like a modern underground map.²⁰¹

²⁰⁰ Emily Albu, *The Medieval Peutinger Map: Imperial Roman Revival in a German Empire* (Cambridge University Press, 2014), 1–5.

²⁰¹ *Ibid.*, 19–24.



Figure 17: Part of the Peutinger Map, Dalmatian coast, Adriatic Sea, southern Italy, Sicily, and Africa²⁰²

²⁰² "Tabula Peutingeriana." Wikimedia Commons. Accessed September 14, 2024. <https://upload.wikimedia.org/wikipedia/commons/5/50/TabulaPeutingeriana.jpg>.

Unlike the religiously oriented medieval maps, the Peutinger map is distinctly secular and Roman in character, reflecting the geography and infrastructure of the ancient world rather than the Christian worldview that dominated other medieval cartography.²⁰³ Historians have long viewed the Peutinger map as a faithful copy of an unknown ancient Roman original, often considered the only world map to survive from Roman times. This would represent an opportunity to look at a lost Roman original. This is not entirely untrue as the places, routes, and distances on the map probably originally came from Roman sources, and there may well be a Roman map at the base, yet it is equally possible that a medieval cartographer, perhaps under the Carolingians, produced the map as it exists today, working from Roman texts and sire lists.²⁰⁴

²⁰³ Albu, *The Medieval Peutinger Map*, 31-41.

²⁰⁴ *Ibid.*, 42-58.



Figure 18: Hereford Mappamundi²⁰⁵

²⁰⁵ "Hereford Mappa Mundi." Wikimedia Commons. Accessed September 14, 2024.
<https://commons.wikimedia.org/wiki/File:Hereford-Karte.jpg>.

One of the most famous mappaemundi, known as the Hereford map, was created around the year 1300 in England and is now kept in Hereford Cathedral. This is an unusually large map for its time, at 1.58 by 1.33 metres, done on calfskin.²⁰⁶ On this map, we can see the dominance of the Christian world with the purpose of reflecting God's vision and judgement upon humanity. At the top of the map, Eden is depicted as a walled island where Adam and Eve are expelled by an angel. Above this scene, Christ sits in judgement over the saved and damned, while the Virgin Mary intercedes for sinners. The map is rich with details that anchor it in both the physical and spiritual world, drawing from late Roman and early medieval sources like Solinus, Isidore of Seville, and Orosius.²⁰⁷ It attempts to merge the world's physical reality with its spiritual destiny with images ranging from ethnographic depictions of mythical races and creatures to Old Testament stories, primarily from Genesis and Exodus, charts of the journeys of apostles and Christian pilgrims, monastic sites, and even feature portrayals of notable individuals such as St. Augustine. The Hereford map thus serves as a Christian encyclopaedia of historical geography, offering a visual, intellectual, and spiritual experience.

²⁰⁶ Jocelyn Wogan-Browne, "Reading the World: The Hereford Mappa Mundi," *Parergon* 9 (1991): 117–35.

²⁰⁷ Gabriel Alington, *The Hereford Mappa Mundi* (Gracewing, 1996).



Figure 19: The final section of an itinerary map of the route between London and the Holy Land, Matthew Paris' *Maps*²⁰⁸

²⁰⁸ *Map of the World*, The Metropolitan Museum of Art, accessed September 14, 2024, <https://www.metmuseum.org/art/collection/search/652546>.

Interesting for comparison is the collection of maps created by the thirteenth-century Benedictine monk Matthew Paris whose most famous work includes illustrations throughout his book *Chronica Majora* and *Historia Anglorum*. He produced a multitude of maps of Britain, Palestine and the oikoumene, and detailed itineraries tracing routes from London to Rome, and to the Holy Land. His itineraries graphically invite one to pilgrimage, combining spiritual invitation with physical voyage. All these maps represent most of the same features as the Peutinger map: vignettes representing cities, routes in roll format, and significant landmarks such as rivers and mountains. But at the same time, Matthew's maps are invested with Christian symbolism, culminating in the Heavenly Jerusalem.²⁰⁹

4.2.2 The Portolan Charts

Within the history of late medieval and early modern European mapping, Portolan maps have a pivotal position. These charts of enigmatic origins are extremely precise and their importance has been well acknowledged, with Charles Raymond Beazley famously proclaiming them as "The First True Maps" in 1904.²¹⁰ Monique de La Roncière observed that the Mediterranean coastlines portrayed by the earliest known practitioner, Pietro Vesconte,

²⁰⁹ Suzanne Lewis, *The Art of Matthew Paris in the Chronica Majora* (University of California Press, 1992).

²¹⁰ C. Raymond Beazley, "The First True Maps," *Nature* 71, no. 1833 (1904): 159–61.

maintained unparalleled precision until the 18th century. These techniques signify a highly radical shift in the function and accuracy of mapping.²¹¹

The genesis of portolan charts, which have their roots in the late thirteenth century, continues to be a subject of lively discussion and conjecture among map historians.²¹² Yet, no consensus has been reached despite all these theories moving from ancient to medieval origins. Some scholars have supported the theory of an ancient origin, as derivatives perhaps of Greek or Roman cartography, although others suggest a medieval origin born out of a very strong and urgent need during the height of Mediterranean trade.²¹³ The significance of the magnetic compass in their development is also a subject of debate, with some asserting its indispensability, while others contend that it served mostly as a tool for subsequent navigation.²¹⁴ Moreover, the projection technique used in these charts is another aspect of doubt. There are hypotheses spanning from deliberate complexity in the projections to the notion that the charts were generated without any official projection process.²¹⁵ Despite the uncertainty, the portolan charts are a notable accomplishment in mediaeval

²¹¹ Monique de La Roncière, *L'Art de la Carte: Cartographie et Cartographes de l'Antiquité à la Renaissance* (Paris: Presses Universitaires de France, 1983).

²¹² For an amazing collection of sources on the whole discussion, the possibilities and clues: Mediterranean Portolan Charts: Their Origin in the Mental Maps of Medieval Sailors, Their Function and Their Early Development.” 2021.

<https://www.maphistory.info/PortolanOriginsTEXT.html>.

²¹³ Roel Nicolai, *The Enigma of the Origin of Portolan Charts* (Brill, 2016), 285–323.

²¹⁴ H. C. Freiesleben, “The Still Undiscovered Origin of Portolan Charts,” *Journal of Navigation* 36, no. 1 (1983): 124–29.

²¹⁵ Roel Nicolai, “The Map Projection of Portolan Charts,” *Nieuw Archief voor Wiskunde* 5 (2021): 33–41.

mapping, demonstrating a profound knowledge of the Mediterranean and its environment.

The development of the sea charts was a new turn in the science of cartography from the more symbolically and religiously oriented mappaemundi into practical navigation. These sea charts were above all concerned with the coastal regions of the Mediterranean, the Black Sea, and parts of the Atlantic Ocean. Unlike the grand, visually intricate mappaemundi filled with religious and historical information, the sea charts were utilitarian.

One of the earliest surviving representatives of this type of marine map is probably from Genoa in the late thirteenth century, the Carta Pisane. It lacked any fixed top and none of the orientation associated with earlier world-maps, which were usually oriented to the east with Jerusalem at the centre. It included realistic data like toponyms of seaside towns, that were drawn well inside the land so they would not obstruct the coasts. Most interior details included mountains and political borders were missing since these maps were exclusively designed for the purposes of navigation and not to depict any territorial limits or historic information.²¹⁶

²¹⁶ Edson, *The World Map, 1300-1492*, 33-36.



Figure 20: *Carta Pisane*²¹⁷

Perhaps the most striking feature of the Carta Pisane, and indeed all later portolan charts, was the introduction of rhumb lines. These ran from central points, often drawn as circles, called wind roses, and it helped sailors plot courses out on the sea. The rhumb lines were of especial importance for navigation, since they aided the seafarers in fixing the direction they had to go from one point to another. While religious or cosmological symbolism might be used on earlier maps, the rhumb lines suggested a movement towards the practical and scientific in navigation. These were drawn first, before coastlines, indicating their centrality to the processes of mapping. Given the names of the eight principal winds, the wind roses on the charts presented essential

²¹⁷ “Carte Pisane.” Wikimedia Commons. Accessed September 14, 2024.
https://commons.wikimedia.org/wiki/File:Carte_Pisane_Portolan.jpg.

knowledge for those sailors who would plot their journeys according to the wind direction.²¹⁸

An additional significant innovation of the Carta Pisane was the inclusion of a mile scale, a line that indicated distances, often around 500 miles. The precise measurement of a “portolan mile” differed among maps across the Mediterranean, and experts have engaged in discussions about its actual extent. Presently, the consensus is that it equated to approximately 1.25 kilometres, but there were anomalies. The standardisation of distance was crucial for sailors, as they need precise measurements to plan their trips through frequently perilous waters.²¹⁹

Further charts from the same era, such as the Cortona chart and works by Giovanni de Carignan, whose chart was regrettably destroyed during World War II, provide evidence of the development of a strong tradition of maritime mapping in the Mediterranean region. These charts demonstrate a significant enhancement in the representation of geographical features, particularly coastlines.²²⁰ The Mediterranean Sea was shown to be far closer to its true longitudinal extent on these mappings. An inherent technical obstacle during that period was the need to maintain a uniform depiction of geographical

²¹⁸ Ibid., 37.

²¹⁹ Tome Marelić, “The Origin of Distance and Bearing Navigational Data Contained in Portolani for the Adriatic Sea Basin,” *International Journal of Cartography* (2022): 1–23.

²²⁰ Tome Marelić, “Traces of the Common Origin of Carte Pisane, Cortona Chart, and Pietro Vesconte’s Charts,” *KN - Journal of Cartography and Geographic Information* 74, no. 2 (2024): 137–56.

regions. The Black Sea was frequently depicted with a distinct scale set off from that of the Mediterranean. This discrepancy implies that these initial charts would have been compiled from several regional maps, which were subsequently merged into a unified entity, notwithstanding variations in size. Acknowledging the difficulty, early cartographers such as Albertin de Virga in 1411 incorporated distinct mile scales for various regions.²²¹



Figure 21: De Virga World Map, 1413, now lost²²²

²²¹ Edson, *The World Map, 1300-1492*, 86-88.

²²² "De Virga Detail." Wikimedia Commons. Accessed September 14, 2024.
<https://commons.wikimedia.org/wiki/File:DeVirgaDetail.jpg>.

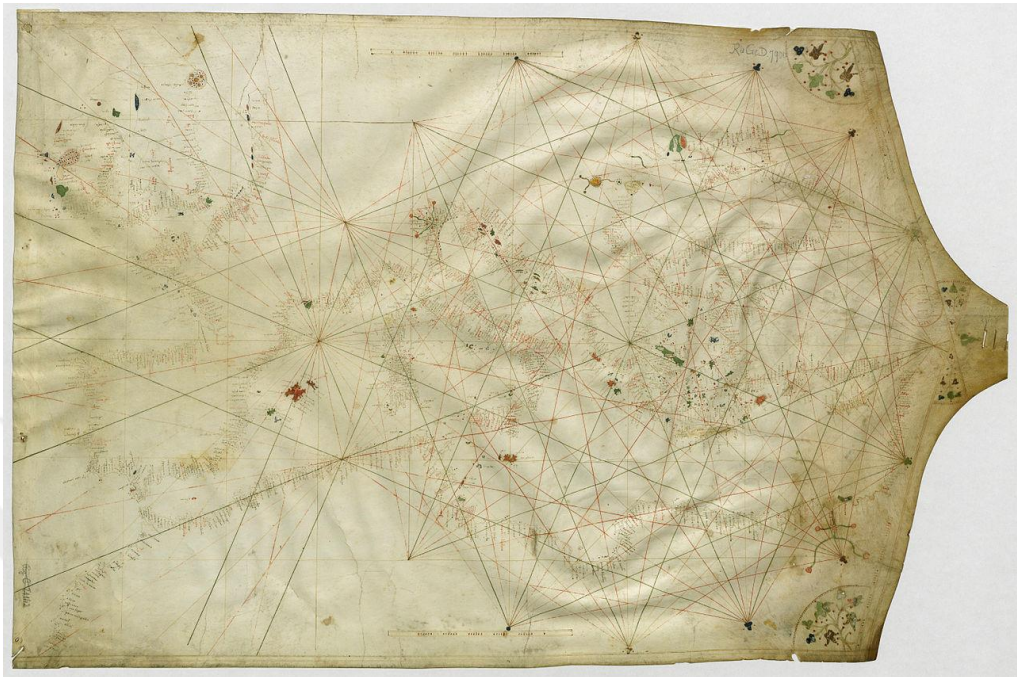


Figure 22: A portolan made by De Virga, 1409²²³

Another important characteristic of portolan charts was the absence of latitude and longitude lines, which would not appear on European maps until the sixteenth century with the introduction of the Mercator projection. Before then, sailors navigated using rhumb lines, and these charts were central to that process.²²⁴ By the thirteenth century, the magnetic compass, well on its way to becoming common in European navigation, probably played a part in their

²²³ “Virga Chart (1409).” Wikimedia Commons. Accessed September 14, 2024.
[https://commons.wikimedia.org/wiki/File:Virga_chart_\(1409\).jpg](https://commons.wikimedia.org/wiki/File:Virga_chart_(1409).jpg).

²²⁴ Mark S. Monmonier, *Rhumb Lines and Map Wars: A Social History of the Mercator Projection* (University of Chicago Press, 2004), 17–30.

construction, but it is not yet certain just how the maps could have been compiled so well without modern surveying.²²⁵

The charts of Marino Sanudo form part of his larger enterprise of restoring the crusading spirit and devising an elaborate, strategic plan for reconquering the Holy Land. In the early fourteenth century, following the fall of Acre and subsequent loss of all Christian-held territory in the East as a Venetian merchant and envoy, he was proponent of crusading an all-encompassing strategy involving economic war and military campaigns with which to reconquer lost territory. He gained excess knowledge on the East, concerning the threat of Turks and Mongols and was considered an expert by the Popes, the kings and princes of Europe.²²⁶ Central to his proposals was the creation of a set of maps designed to help the crusaders in their campaigns.²²⁷

²²⁵ Barbara M. Kreutz, "Mediterranean Contributions to the Medieval Mariner's Compass," *Technology and Culture* 14, no. 3 (1973): 367-383.

²²⁶ Angeliki Laiou, "Marino Sanudo Torsello, Byzantium and the Turks: The Background to the Anti-Turkish League of 1332-1334," *Speculum* 45, no. 3 (1970): 374-92.

²²⁷ Peter Lock, ed., *Marino Sanudo Torsello, the Book of the Secrets of the Faithful of the Cross: Liber Secretorum Fidelium Crucis* (Routledge, 2020).



Figure 23: Map of the Holy Land by Marino Sanudo, 1320²²⁸

These maps, prepared in collaboration with the Genoese cartographer Pietro Vesconte, were indeed a novelty in medieval cartography. The traditional mappaemundi was combined with more accurate marine charts to yield a detailed and practical guide for the planned military operations. Sanudo's maps concentrated on giving strategic details like distances between important places, dangers of navigation, and availability of resources. This integration of valid geographical data along with military strategy had never

²²⁸ "The Map of the Holy Land by Marino Sanudo (Drawn in 1320)." Wikipedia. Accessed September 14, 2024.
[https://en.wikipedia.org/wiki/File:The_map_of_the_Holy_Land_by_Marino_Sanudo_\(drawn_in_1320\).jpg](https://en.wikipedia.org/wiki/File:The_map_of_the_Holy_Land_by_Marino_Sanudo_(drawn_in_1320).jpg)

been attempted, and it is the first known usage in medieval Europe of maps in a direct attempt at strategic military design.²²⁹

The maps show Jerusalem featured with main Christian shrines such as the Mount of Olives and the Garden of Gethsemane, bringing into relief the religious motivations behind the crusades.²³⁰ Unlike the previously drawn maps, which had shown the Holy Land to be much larger than its actual area to represent its religious significance, Sanudo's maps are more accurate in this respect, trying to keep it balanced in order to preserve the practical needs of military planning.²³¹

One of the more intriguing aspects of Sanudo's maps involves possible Arabic influences. The question of a relation to Arabic sources has been argued by scholars in view of the striking developments within geography and cartography in the Islamic world over the preceding centuries. Joachim Lelewel, an early scholar of Sanudo's maps, first suggested a possible connection between these and Arabic cartography, speculating that Vesconte might have encountered one of al-Idrīsī's maps or other Arabic sources during his travels in Sicily and the eastern Mediterranean. This theory is supported by several elements of the world map, such as the depiction of Africa, the

²²⁹ Edson, *The World Map, 1300-1492*, 61-70.

²³⁰ Peter Lock, ed., *Marino Sanudo Torsello, the Book of the Secrets of the Faithful of the Cross: Liber Secretorum Fidelium Crucis* (Routledge, 2020).

²³¹ Evelyn Edson, "Reviving the Crusade: Sanudo's Schemes and Vesconte's Maps," in *Eastward Bound: Travel and Travellers, 1050-1550*, ed. Rosamund Allen (Manchester University Press, 2004), 131-55.

landlocked Caspian Sea, and the open Indian Ocean, all of which resemble features found in Arabic maps and unlike other European maps.²³² Tadeusz Lewicki suggests that it is possible that Sanudo may have come across Arabic manuscripts and maps during his journeys, particularly given the presence of Arabic-speaking merchants and academics across the Mediterranean region. Lewicki observed that certain geographical names appearing on Sanudo's map, including those along the Red Sea and the Indian Ocean, have similarities to Arabic names.²³³

Schröder claims that Sanudo and Vesconte maps do not wholly liberate themselves from religious elements and that religious knowledge, such as references to salvation history, in order to be presented to Popes and other religious authorities in propagandising a crusade. The maps focused on geographical features, among which Mecca was also prominent, served to underpin Sanudo's grand strategic plan for the crusade by fusing religious and geographic knowledge.²³⁴

In conclusion, Christian cartography during the medieval period reflects a profound synthesis of religious, philosophical, and geographical thought. From the Byzantine Empire's religiously infused maps to the mappaemundi,

²³² Joachim Lelewel, *Geographie Du Moyen Age* (Wentworth Press, 2019).

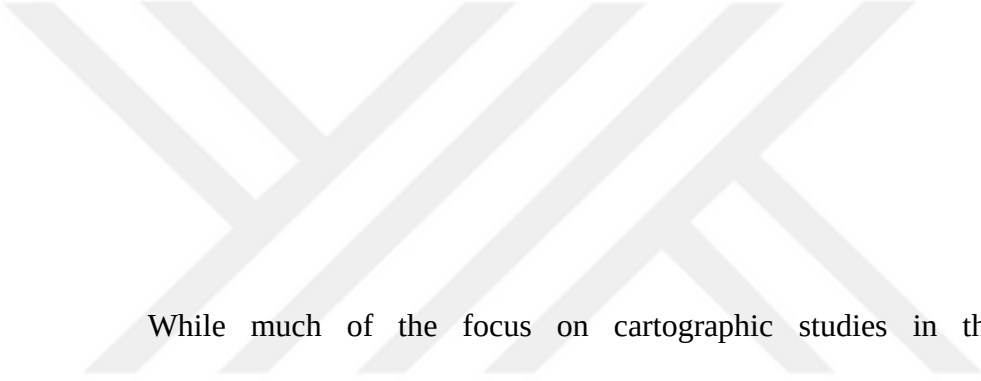
²³³ Tadeusz Lewicki, "Marino Sanudo's Mappa Mundi (1321) Und Die Runde Weltkarte von Idrīsī (1154)," *Rocznik Orientalistyczny* 38 (1976): 169–95.

²³⁴ Stefan Schröder, "Religious Knowledge within Changing Cartographical Worldviews: Spatial Concepts and Functions of Maps in Marino Sanudo's 'Liber Secretorum Fidelium Crucis' (c. 1321)," in *Geography and Religious Knowledge in the Medieval World*, ed. Stefan Schröder and others (De Gruyter, 2021), 189–220.

these cartographic representations hold spiritual and symbolic meaning over geographic accuracy. The Christian worldview shaped the creation of maps, especially on representations of sacred sites like Jerusalem and the Holy Land. The ancient Roman and Greek cartographic traditions blended with Christian theology, through their readings of Islamic scholars. As the Middle Ages progressed, more practical and precise maps, like portolan charts, began to emerge, marking a shift towards greater accuracy in navigation while still maintaining elements of religious symbolism. This evolution illustrates the dynamic relationship between faith, geography, and cartography in shaping the medieval Christian worldview.

CHAPTER V

THE CATALAN ATLAS



While much of the focus on cartographic studies in the medieval Mediterranean centres around Christian and Islamic works, Jewish cartographers played a significant role in the evolution of mapmaking. The surviving maps offer a unique perspective, fusing religious devotion with geographic knowledge and cultural exchange. The Jewish cartographers in Majorca stand as a pinnacle of this tradition, bridging Jewish, Christian, and Islamic worlds. This interconnectedness of representations in Jewish cartography brings forward a unique perspective for understanding the significance of both the Jewish and wider Mediterranean cartographic traditions.

5.1. Jewish Cartography

There has been little serious research on medieval Jewish cartographers or geographers, although there are some on later Jewish documents.²³⁵ Maps from medieval Hebrew manuscripts are singularly unique windows into Jewish cartography, fusing religious devotion with historical illustration. Thus, the Holy Land illustrated on maps such as those appearing within “Commentary of the Pentateuch” by the eleventh century French rabbi Rashi was a rare manuscript.²³⁶ These maps outline most of the important biblical locations, such as the routes of the Israelites during the Exodus, the division of the land by the Twelve Tribes as outlined in the Book of Joshua, and the site of the Temple in Jerusalem. The map orientates the viewer with the East at the top, showing the Mediterranean Sea, the Dead Sea, and the River Jordan, all key elements in biblical narratives. These maps included Arabic expressions written on them, which is a sign of cross-cultural trade as well.²³⁷

²³⁵ Édouard Roditi, “Sephardic Cartographers,” *European Judaism: A Journal for the New Europe* 4, no. 2 (1970): 35–37.

²³⁶ Rehav Rubin, *Portraying the Land: Hebrew Maps of the Land of Israel from Rashi to the Early 20th Century* (De Gruyter, 2019), 1–22.

²³⁷ E. Wajntraub and G. Wajntraub, “Medieval Hebrew Manuscript Maps,” *Imago Mundi* 44, no. 1 (1992): 99–105.

5.2. An Interconnected Island: Majorca

In the nineteenth century the Balearic Islands were largely overlooked by the rest of the world. Travellers found them to be quaint yet provincial remnants from the past, tucked away in a remote part of the Mediterranean.²³⁸ However, this was not their perception during the Middle Ages. Majorca's strategic location was key to its historical significance. The main port, near what is now Palma and formerly known as the City of Majorca until the eighteenth century, was almost equally distant from Catalonia, North Africa, and Corsica. In 534, Belisarius established Byzantine rule in the island from the Vandals who conquered it in their war with Rome. However the imperial control of the Mediterranean greatly diminished after the Umayyad conquest of Carthage and in 707 the islands agreed to the terms of an Umayyad fleet, which granted the inhabitants the ability to retain their customs, religion, and considerable autonomy. Although nominally under both Byzantine and Umayyad control, the islands effectively functioned independently, strategically positioning themselves in a lucrative middle ground between the competing religious and political powers of the western Mediterranean. Before the Christian conquest from the Moors in 1229-35, the Islands had been under sole Muslim control since 902. They were central to the trade routes in the Western Mediterranean and as Christian sea power grew, the Balearics became

²³⁸ Joan Carles Cirer-Costa, "The Beginnings of Tourism in Majorca, 1837-1914," *Annals of Tourism Research* 39, no. 4 (2012): 1779–96.

an attractive target for them. The 1114 invasion led by Count Ramon Berenguer III of Barcelona did not result in lasting annexation, partly due to the rivalry between Catalans and the trading powers of Genoa and Pisa. Genoese and Pisan merchants, who had established colonies in the island's capital, Madina Mayurqa, preserved their commercial privileges once the conquest was completed.²³⁹

After the conquest, Majorca's first Christian settlers represented a microcosm of Mediterranean society. The island was divided among its conquerors. Jaume I's forces included not only Catalans and a smaller number of Aragonese but also significant contingents from Marseille and Montpellier, who received large land grants in the City of Majorca. There were settlers including Catalans, men from Languedoc, Italians, Aragonese, Navarrese, and Jews. Documents from the decades following the conquest also mention settlers from various other regions.²⁴⁰

This new community of varied backgrounds coexisted with the conquered Muslims, most of whom were enslaved but continued to work the land and practice their traditional crafts. Some Muslims converted to Christianity, which sometimes led to their integration into Christian society, although not always to personal freedom. Some trade practices from before the

²³⁹ Jocelyn Nigel Hillgarth, *Readers and Books in Majorca, 1229-1550*, vol. 1 (Aubervilliers: Institut de Recherche et d'Histoire des Textes [IRHT], 1991), 1–4.

²⁴⁰ David Abulafia, "Commerce and the Kingdom of Majorca 1150–1450," in *Iberia and the Mediterranean World of the Middle Ages*, vol. 2 (Brill, 1996), 345–77.

Christian conquest persisted. For instance, in 1236, a year after the conquest of Ibiza, the authorities allowed trade with Bougie in North Africa. Majorcan merchants also engaged in trade with Algiers and other Islamic ports, sometimes even before receiving papal permission. These trade connections, documented in the early fourteenth century, likely existed from the time of the conquest, with Jewish and Muslim merchants playing significant roles. By 1331, over a hundred Muslim merchants resided in Majorca.²⁴¹

Majorcan traders often encountered their Italian counterparts in North African ports. Records show that by 1239, Majorcans were present in Oran, and later contracts document their interactions with Portuguese and Venetian merchants.²⁴² Majorca's importance as a staging point between the Mediterranean and the Atlantic grew as trade between Italy and Northern Europe developed. The island was also an important stopping point for the Catalan and Valencian ships headed to pick up supplies from Sardinia, Sicily, Egypt, and the Greek islands.²⁴³

As the Christian Conquest continued further down the coast of Iberia, Majorcan merchants began to extend their routes farther south and as far north as England by 1281. The restoration of the Majorcan dynasty in 1298 led to policies aimed at ensuring the Balearics' economic and political independence.

²⁴¹ Hillgarth, *Readers and Books in Majorca*, 5.

²⁴² *Ibid.*, 6.

²⁴³ Abulafia, "Commerce and the Kingdom of Majorca", 355-62.

Although these attempts were not entirely successful, they established a distinct monetary system in Mallorca and a consular network in other ports that was of great importance to Mallorcan merchants.²⁴⁴

The mid-fourteenth century, however, saw significant challenges, including population decline due to the Black Death and political changes that ended Majorcan independence in 1343. The population decreased drastically, with the entire island losing a third of its inhabitants between 1329 and 1427. Signs of economic decline included the abandonment of plans to expand royal docks and the protracted construction of the cathedral.²⁴⁵

The independent kingdom of Majorca, established in 1256, greatly contributed to the island's cultural vitality. The kings of Majorca were responsible for notable architectural achievements and supported intellectual figures like Ramon Lull. Despite the loss of independence in 1343, Majorca continued to be a cultural centre, especially valued by the ruling house of Aragon for its contributions to cartography and translations. However, the rise of the Trastámara dynasty in 1412 and the subsequent shift in court language and patronage towards Castilian diminished Majorca's cultural prominence.²⁴⁶

²⁴⁴ Ibid., 363-70.

²⁴⁵ Hillgarth, *Readers and Books in Majorca*, 6-8.

²⁴⁶ Ibid., 9.

5.2.1. Majorcan School of Cartography

The Majorcan cartographic tradition, particularly during the Middle Ages, played a significant role in the development of European cartography. The Majorcan cartographic school is not an institution but a network of Jewish and converted Christian cartographers and craftsmen working from the port of Palma.²⁴⁷ This group was important in bringing cartography into a whole different realm by producing navigation charts but also, and just as importantly, world maps representative of the wide range of geographical and political knowledge then known.

The knowledge of cartography was passed from generation to generation by family workshops and artisanal networks. Maps made in the Majorcan school were highly valued in Europe because of their precision and details, especially the Catalan Atlas. These maps showed not only geographical data but also the trade routes, cities, and even political borders.²⁴⁸ The contribution of Jewish cartographers in Majorca, at least that of the Cresques family, was permanent and left its mark on the medieval field and well into the Renaissance.

²⁴⁷ Gabriel Llompart i Moragues, “Los Judíos Mallorquines y la Cartografía Medieval.” *Mallorca Judaica* 5 (Palma, 2011): 113–31.

²⁴⁸ Vladimír Liščák, “Mapa Mundi (Catalan Atlas of 1375), Majorcan Cartographic School, and 14th Century Asia.” *Proceedings of the International Cartographic Association* 1 (2018): 69–76.

5.3. Catalan Atlas

One of the most renowned figures associated with this tradition is Elisha ben Abraham Cresques, a Jewish cartographer from Palma, Majorca. He was the creator of the famous Catalan Atlas, which was completed around 1375. It is often considered one of the finest examples of medieval cartography, blending geographical knowledge with artistic representation. Abraham Cresques' work reflects the multicultural environment of the Mediterranean during the fourteenth century, where Jewish, Christian, and Muslim cultures intersected, especially in the realms of science and art.²⁴⁹ Abraham's son, Jehuda Cresques, continued his father's work and contributed to the family's cartographic workshop, which became famous for producing navigational charts and instruments like compasses.²⁵⁰

²⁴⁹ Emmanuelle Vagnon, "Pluricultural Sources of the Catalan Atlas," in *Cartography between Christian Europe and the Arabic-Islamic World, 1100–1500*, ed. Chet Van Duzer (Leiden: Brill, 2021), 160–88.

²⁵⁰ Yoeli Pinhas, "Abraham and Yehuda Cresques and the Catalan Atlas," *The Cartographic Journal* 7, no. 1 (1970): 17–27.



Figure 24: The Catalan Atlas by Abraham Cresques, 1375²⁵¹

The Catalan Atlas was commissioned by Peter IV of Aragon. The map combined the functional navigational elements of portolan charts with the artistic features of the medieval mappamundi, thus being a very important transitional work leading into Renaissance cartography. The atlas contains more than 1,120 place names and shows several rulers, trade routes such as the Silk Road, and mythological and biblical references.²⁵²

The Atlas's geographical representation diverged from traditional medieval circular world maps. Unlike most mappaemundi, which symbolised the world's divinely ordered perfection through a circular form, Cresques's map adopted a rectangular layout. This unusual choice was likely influenced by the cartographic practices of the Islamic world, where Ptolemaic ideas about geography had been circulating since the ninth century. Ptolemy's *Geographia* described the ecumene—inhabited regions—spanning from Iberia in the west

²⁵¹ All surviving panels of the Atlas may be investigated in detail here:
<https://www.cresquesproject.net/catalan-atlas-legends>

²⁵² Katrin Kogman-Appel, *Catalan Maps and Jewish Books: The Intellectual Profile of Elisha Ben Abraham Cresques (1325-1387)* (Turnhout, Belgium: Brepols, 2020), 1-20.

to China in the east, and Cresques's rectangular projection reflects a deeper awareness of the global expanse, one that stretched beyond India to include East Asia. His decision to extend the map to include Asia and China contrasts with earlier Western maps that were often limited to the Iberian Peninsula and parts of India.²⁵³

Cresques's map depicted the Mediterranean and Black Sea coastlines with remarkable accuracy with portolan techniques used by mariners for trade and exploration. It was, however, different with regard to Asia, for which Cresques had to avail himself of other sources, there not being any sort of portolan tradition of the eastern world. The map's representation of Asia is indebted above all to the now-famous travel accounts by Marco Polo, John Mandeville, and Odoric of Pordenone, whose writings gave Europeans some of their first detailed views of the farthest reaches of the East. A large portion of the decorated text on the map describes, for instance, China in the Catalan Atlas with major cities, including Qanbaliq, today's Beijing, along with the Mongol ruler Kublai Khan.²⁵⁴

²⁵³ Katrin Kogman-Appel, "The Geographical Concept of the Catalan Mappamundi," in *Knowledge in Translation: Global Patterns of Scientific Exchange, 1000-1800 CE*, ed. Patrick Manning and Abigail Owen (University of Pittsburgh Press, 2018), 19-40.

²⁵⁴ Kogman-Appel, Katrin. *Catalan Maps and Jewish Books*. 278-96.



Figure 25: China in the Catalan Atlas²⁵⁵

Cresques chose to include in the map not only geographical features but also political and cultural symbols. Along with places, it is illustrated with pictures of rulers, trade routes, and landmarks. For example, on the Silk Road, the cities of Samarkand and Baghdad are depicted, underlining the meaning of the trade networks which connected Europe with Asia.²⁵⁶ This inclusion of the trade routes gives further evidence that Cresques was well-aware of the economic importance of Asia to Europe via overland routes.

²⁵⁵ Abraham Cresques, *Atlas catalan*, 1370–80, manuscript, Catalan, Bibliothèque nationale de France, Département des Manuscrits, Espagnol 30, accessed September 14, 2024, <http://archivesetmanuscrits.bnf.fr/ark:/12148/cc78545v>.

²⁵⁶ Sonja Brentjes, "Revisiting Catalan Portolan Charts: Do They Contain Elements of Asian Provenance?" in *The Journey of Maps and Images on the Silk Road*, ed. Julie R. Harris (Leiden: Brill, 2008), 181–202.



Figure 26: The Great Khan in Catalan Atlas²⁵⁷

²⁵⁷ Abraham Cresques, *Atlas catalan*, 1370–80, manuscript, Catalan, Bibliothèque nationale de France, Département des Manuscrits, Espagnol 30, accessed September 14, 2024, <http://archivesetmanuscrits.bnf.fr/ark:/12148/cc78545v>.

“The most powerful prince of the Tartars is named Holubeim, that means Great Khan [Kubilay Khan]. This emperor is richer than any other emperor in the world. This emperor is protected by twelve thousand horsemen with their four captains that stay at the court three months of the year. (Panel VI)”²⁵⁸

The knowledge Cresques brought to the Catalan Atlas was likely synthesized from both Islamic geographical learning and Jewish intellectual traditions. As we have seen, the ideas of Ptolemy had not yet completely been incorporated into Western cartography, yet they were certainly well-known in the Islamic world. Scholars like Al-Farghani and Al-Idrisi, whose works influenced both Islamic and Jewish intellectuals, had developed methods to represent the earth’s surface, dividing the inhabited world into different climatic zones or “climes,” an idea that may have influenced Cresques’s design. Apart from its form, the Catalan Atlas’ use of Arabic names of the cities and their placement suggests that he was able to reach these Islamic sources, especially the *Tabula Rogeriana*. Translated Greek, Arabic, and Latin works of geographical and astronomical texts were also accessible to Jewish scholars throughout the Iberian Peninsula, especially in Majorca. Such translations would have facilitated knowledge across cultures, positioning Cresques for easy access and use of this information.²⁵⁹

²⁵⁸ “Panel VI,” *The Catalan Atlas Legends*, Cresques Project, accessed September 14, 2024, <https://www.cresquesproject.net/catalan-atlas-legends/panel-vi>.

²⁵⁹ Vagnon, “Pluricultural Sources of the Catalan Atlas,” 170-78.

Another of his works, the Farhi Codex shows extensive interaction both with traditional Jewish study and with scientific and historical studies on a wider canvas. Cresques was more than a skilled craftsman or artisan; he was an educated man with immense knowledge of the rabbinic literature, biblical studies, and esoteric traditions of Jewish learning, such as the Masorah and gematria.²⁶⁰ His work shows appreciation for philology, the midrashic literature, and textual analysis-skills speaking directly to his deep-seated contact with Jewish intellectual traditions.

Cresques' intellectual interests spanned far beyond knowledge of Jewish texts into that of broader historical and scientific knowledge. He was cognizant of the Christian, Islamic, Roman, and Seleucid calendars, his work combined these systems in a way which showed a special fusion of Jewish and non-Jewish thought.²⁶¹ His expertise regarding the computation of calendars is only one example of how non-Jewish historical events found their way into his works as a function of his cosmopolitan intellectual profile. Furthermore, his fluency in several languages such as Hebrew, Aramaic, and Occitan stands out in his favour and underlines his intellectual versatility. His use of the above-mentioned languages both in his cartographic work and biblical studies, and

²⁶⁰ Katrin Kogman-Appel, "Calligraphy and Decoration in the Farhi Codex (Sassoon Coll)," in *Sephardic Book Art of the Fifteenth Century*, ed. Luis Afonso and Tiago Moita (Harvey Millers, 2020), 368:13–36.

²⁶¹ Katrin Kogman-Appel, "The Scholarly Interests of a Scribe and Mapmaker in Fourteenth-Century Majorca: Elisha Ben Abraham Bevenisti Cresques's Bookcase," in *The Late Medieval Hebrew Book in the Western Mediterranean*, ed. by Javier Del Barco (BRILL, 2015), 148–81.

his capacity to produce this dictionary-like compilation of vocabulary in the Farhi Codex, attests to his great linguistic knowledge. Recent lexical studies on the map also support the fact that Cresques borrowed heavily from Arabic, especially in the latter parts of the map.²⁶² The decision to represent the known world on a rectangular sheet instead of a circular one hints at his engagement with broader scientific concepts in the Islamic maps.

While most medieval mappaemundi included fantastical elements, such as mythical creatures, Cresques tried to depict the political and geographic domains as realistically as possible. His portrayal of East Asia was still mostly ignorant of the region. Because European sailors had not yet explored this region, Cresques were unable to depict it precisely on portolan charts. Nourished by travelogues such as Marco Polo and Mandeville, Cresques put most of his fantastical elements and monsters in the Eastern parts of the world, such as Far Asia and the Indian Ocean.²⁶³

²⁶² Cristina Dusio and Letizia Staccioli, “L’Atles Català Di Cresques: Primi Sondaggi Lessicali,” *SCRIPTA Revista Internacional de Literatura i Cultura Medieval i Moderna* 22, no. 22 (2023): 359–71.

²⁶³ Abraham Cresques, *Atlas catalan*, 1370–80, manuscript, Catalan, Bibliothèque nationale de France, Département des Manuscrits, Espagnol 30, accessed September 14, 2024, <http://archivesetmanuscrits.bnf.fr/ark:/12148/cc78545v>.



Figure 27: Gog and Magog in Catalan Atlas²⁶⁴

“These men are chosen to pick diamonds. However, because they cannot climb the mountains where these are found, they cleverly toss pieces of meat where the precious stones lay. The stones adhere to the meat and detach [from the rocks]. Later the stones fall from the meat hoisted by the birds. Thus told it, Alexander.”²⁶⁵

²⁶⁴ Abraham Cresques, *Atlas catalan*, 1370–80, manuscript, Catalan, Bibliothèque nationale de France, Département des Manuscrits, Espagnol 30, accessed September 14, 2024, <http://archivesetmanuscrits.bnf.fr/ark:/12148/cc78545v>.

²⁶⁵ “Panel VI,” *The Catalan Atlas Legends*, Cresques Project, accessed September 14, 2024, <https://www.cresquesproject.net/catalan-atlas-legends/panel-vi>.

In addition, Cresques included two mythological characters that are often seen on the easternmost limits of medieval mappaemundi: Gog and Magog, two nations that were crucial to the Christian interpretation of the end of the world and the end of time. One of these legends holds that Gog and Magog, two vicious and menacing man-eaters, were imprisoned by Alexander the Great behind mountains in anticipation of the Antichrist, who was supposed to emerge from their confinement shortly before Christ's Second Coming and bring death and ruin.²⁶⁶ By the eleventh century, Christian writings frequently linked these ferocious peoples to the Lost Tribes of Israel²⁶⁷ which is similar to their representation in the Atlas.

²⁶⁶ Ibid.

²⁶⁷ Scott D. Westrem, "Against Gog and Magog," in *Text and Territory: Geographical Imagination in the Early Middle Ages*, (University of Pennsylvania Press, 1998), 54–76.

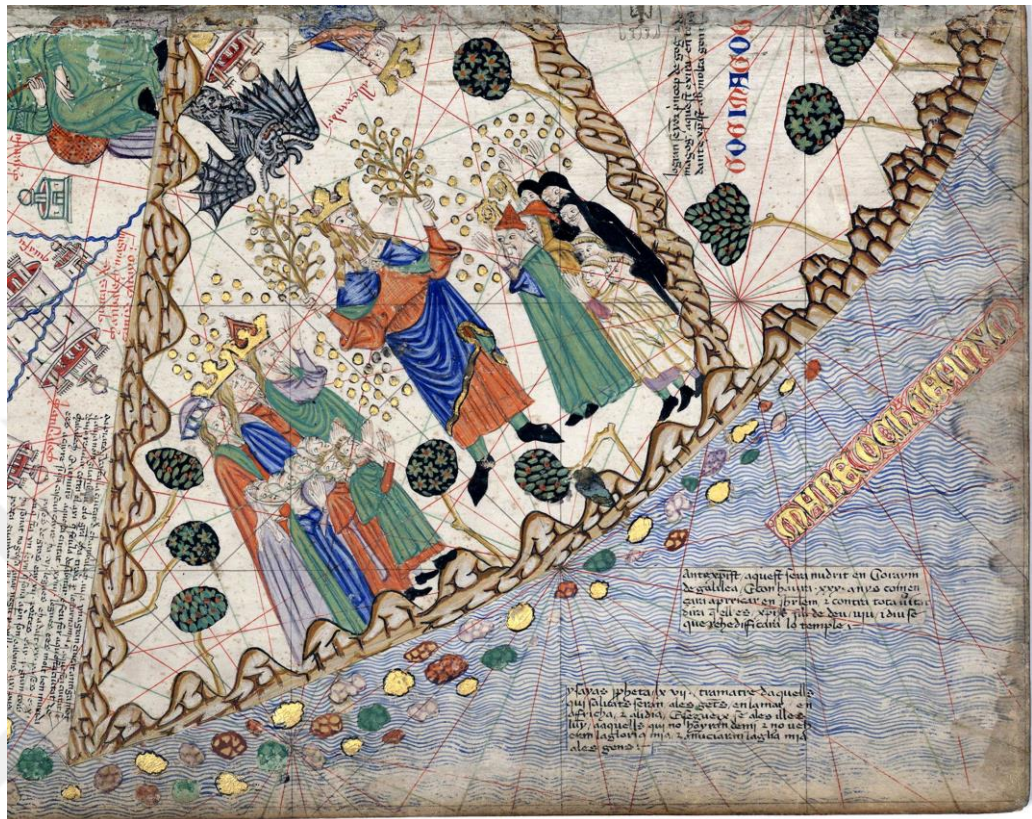


Figure 28: Depictions of Antichrist and Alexander in Catalan Atlas²⁶⁸

Alexander the Great is shown meeting Satan and gesturing toward a mountainous enclosure that will serve as the nation's boundary when he confines Gog and Magog. But under a broad blue canopy, they seem like a disciplined army under the command of a dignified monarch riding a horse, rather than untamed nations. In addition, the surrounding mountains stand out from all other mountains on the map because they have a wavy border on both

²⁶⁸ Abraham Cresques, *Atlas catalan*, 1370–80, manuscript, Catalan, Bibliothèque nationale de France, Département des Manuscrits, Espagnol 30, accessed September 14, 2024, <http://archivesetmanuscrits.bnf.fr/ark:/12148/cc78545v>.

sides rather than just one.²⁶⁹ This pattern more closely mimics how the rivers are depicted on the map. The wavy patterns of the mountain ranges might have been a subtle allusion to the mythical River Sambatyon,²⁷⁰ which is said to be the home of the ten lost tribes of Israel, shielded from the outside world until the coming of the Jewish messiah. It is possible that Cresques was acquainted with multiple Jewish works from the fourteenth century, which linked the myth of the lost tribes to the expectation of a messianic future free from Christian dominance over the Jewish people.²⁷¹ By mixing together Jewish and Christian mythological images, the map conveys diverse meanings to different viewers. The map depicted the well-known Gog and Magog apocalyptic motif for its patron, but it also highlighted a messianic hope for the lost tribes to cross the Sambatyon River and herald the arrival of a Jewish messiah and an independent Jewish future for the Cresques, who were living through a period of increased persecution at the hands of Christian rulers.²⁷²

The Jewish population of Majorca experienced a sharp rise in religious persecution in the centuries that followed Cresques' completion of The Catalan Atlas. Anti-Jewish riots broke out in Majorca within four years of his death in

²⁶⁹ “Panel VI,” *The Catalan Atlas Legends*, Cresques Project, accessed September 14, 2024, <https://www.cresquesproject.net/catalan-atlas-legends/panel-vi>.

²⁷⁰ Felicitas Schmieder, “Geographies of Salvation: How to Read Medieval Mappae Mundi,” *Peregrinations: Journal of Medieval Art and Architecture* 6, no. 3 (Spring 2018): 21–42.

²⁷¹ E. J. Van Donzel and A. B. Schmidt, “Chapter 1. Gog and Magog in Pre-Islamic, Jewish and Christian Sources,” in *Gog and Magog in Early Eastern Christian and Islamic Sources*, ed. E. J. Van Donzel and A. B. Schmidt (BRILL, 2009), 1–15.

²⁷² Paola Tartakoff, *Between Christian and Jew: Conversion and Inquisition in the Crown of Aragon, 1250-1391* (Philadelphia: University of Pennsylvania Press, 2012), 90-91.

1391,²⁷³ forcing Cresques's whole family to convert to Christianity under force. In light of Christian persecution, it is possible that he hoped for a better future for himself and his family based on the more positive depictions of the Islamic world and a Jewish messianic future included in the Catalan Atlas.

In the Catalan Atlas, at the northeastern edge of the Asian continent, near *Catayo* (medieval China) under the rule of Kublai Khan, are depicted the Caspian Mountains. These mountains serve as a significant part of the mythological narrative involving Gog and Magog, who were believed to be enclosed behind these mountains by Alexander the Great. Abraham Cresques included the following explanatory text in the Catalan Atlas:

"The Caspian Mountains where Alexander saw trees so tall that their canopies touch the clouds. This is where he almost died had it not been for Satan who took him out of there using his arts. And with his stratagem he locked here the Tartarians God and Magog; and for them, he ordered two metal images described above. Item he locked here many diverse races who do not hesitate to eat all kinds of raw meat, and from this group will come the Antichrist and their end will be caused by the fire that will fall from the sky and will confound them." (Panel VI, The Catalan Atlas)²⁷⁴

By the Late Middle Ages, Gog and Magog had become synonymous with the Mongols, whose invasions terrified Christian Europe.²⁷⁵ The Mongols

²⁷³ Ibid. 91-92.

²⁷⁴ "Panel VI - The Catalan Atlas."

²⁷⁵ John Andrew Boyle, "Alexander and the Mongols," *Journal of the Royal Asiatic Society of Great Britain & Ireland* 111, no. 2 (1979): 123–36.

had rapidly expanded their empire under Genghis Khan from the early thirteenth century, and their westward conquests were perceived as a direct existential threat. This fear reached its height in various events: the summoning of the Council of Lyon in 1245 by Pope Innocent IV, for example, where he determined to send missionaries such as Jean du Plan de Carpin and Guillaume de Rubrouck to the East with the idea of understanding or mitigating the Mongol threat.²⁷⁶

The location of Gog and Magog in the Catalan Atlas is notable. While earlier medieval maps such as the Hereford Mappamundi and Ebstorf Mappamundi placed the legend of Gog and Magog in the northeast of Europe, Cresques Abraham shifted them to the Far East. It allowed for a more fanciful representation of their location, given the little concrete knowledge of those far-off lands. This shift also reflects Islamic influences on European cartography. Kitab al-Bad' wa al-Ta'rikh, a descriptive work of geography about 977, and Al-Idrisi's mappamundi locate Yajuj and Majuj, each the Islamic versions of Gog and Magog, in the far northeast of Asia.²⁷⁷ This shared legend between Christian and Islamic traditions is indicative of the interconnectivity medieval cultures evinced in describing apocalyptic narratives in cartography.

²⁷⁶Alexander V. Maiorov, "The Rus Archbishop Peter at the First Council of Lyon," *The Journal of Ecclesiastical History* 71, no. 1 (2020): 20–39.

²⁷⁷Yossef Rapoport, *Islamic Maps*, 97–107.

The accompanying legend for the Antichrist reads:

“Antichrist. He will be raised in Goraym of Galilea, and at the age of thirty he will start to preach in Jerusalem; contrary to the truth, he will proclaim that he is Christ, the living son of God. It is said that he will rebuild the Temple.”

(Panel VI, The Catalan Atlas)²⁷⁸

This reference to Goraym of Galilee as the birthplace of the Antichrist draws from sources such as the *Book of Marvels of the World* by Jean de Mandeville, a popular medieval travel account that significantly influenced European cartography. Mandeville, along with other authors like Adso of Montier-en-Der, helped shape the medieval narrative of the Antichrist as a figure who would attempt to usurp Christ’s position and lead mankind astray with his false miracles ²⁷⁹.

The legend of Gog and Magog, and by extension, the Antichrist, continued to be represented in later medieval Majorcan maps. The Catalan Estense Map (ca. 1450) and the Chart of Juan de la Cosa (1500) both continued to depict the Caspian Mountains and enclosed spaces, though with slight variations. The Chart of Juan de la Cosa, for example, presents Gog and Magog as Got and Magot, likely derived from a confusion with the Goths.²⁸⁰

²⁷⁸ “Panel VI - The Catalan Atlas.”

²⁷⁹ Jamal S. Buresly and Khaled M. Shuqair, “Religious Hegemony and the Antichrist Rhetoric in John Mandeville’s *Travels*,” *Annals of the Faculty of Arts, Ain Shams University* 39 (2011): 445–63.

²⁸⁰ Sandra Sáenz-López Pérez, “La Representación de Gog y Magog y La Imagen Del Anticristo En Las Cartas Náuticas Bajomedievales,” *Archivo Español de Arte* 78, no. 311 (2005): 263–76.

In turn, Majorcan cartography significantly shaped the Muslim cartographic traditions, particularly in the Mediterranean, as, for instance, in the 1413-14 sea chart of Aḥmad al-Ṭanjī. Al-Ṭanjī used information taken from Majorcan charts, such as the Catalan Atlas, where precision of coastline and details of navigation are prominent. For example, al-Ṭanjī's chart follows the Majorcan convention of color coding the islands in the Mediterranean and their respective political allegiances characteristic of Catalan sea charts.²⁸¹ Majorcan charts were known to represent Scandinavian fauna; al-Ṭanjī followed suit by illustrating animals such as falcons, which showed the cross-pollination between cultures.

The Muslim maps avoided religious iconography since Islam forbids the representation of a human being. Thus the art of using decorative elements was adopted by the Muslim cartographers. Though not overtly religious, these elements had symbolic meanings. For example, Muslim cartographers would include geometric designs or calligraphic writings in and around the maps as manifestations of abstract Islamic artistic traditions. Even though Muslim maps did not include religious figures, they did include several place names and descriptions of a religious nature. In Aḥmad al-Ṭanjī's chart, for instance, the city of Tunis is demarcated by a castle icon, executed in gold ink—a trait

²⁸¹ Mónica Herrera-Casais, “The 1413-14 Sea Chart of Aḥmad al-Ṭanjī,” in *A Shared Legacy: Islamic Science East and West. Homage to Prof. JM Millàs Vallicrosa*, (Universitat de Barcelona, 2008) 283–300.

reflecting both Majorcan influence and the Islamic tradition of highlighting important cities.²⁸²



²⁸² Ibid., 301-307.

CHAPTER VI

CONCLUSION

6.1. Conclusion

Throughout this thesis, we have explored the complex relationship between religious symbolism and cartographic techniques in medieval cartography. How the three great traditions of Islamic, Jewish, Byzantine, and Christian maps intersected and diverged in their approaches to representing the world is examined. The comparative analysis has highlighted several key insights about the role of maps as not only geographic tools but also as artefacts of religious, political, and cultural power.

First, it is clear that religious symbolism in the cartographic traditions of each culture was deeply embedded. Thus, in many Christian maps, Jerusalem often took centre stage, becoming at once the spiritual and geographic navel of the world. This representation was not confined to Mappaemundi but flowed into pilgrimage maps, where sacred geography provided spiritual guidance for

those who could not physically travel to holy sites. It is in this way that the Byzantine cartographers incorporated Jerusalem and Constantinople into their cosmological patterns, reflecting thereby the understanding of the world, in the ideology of Orthodox Christianity, as divinely ordered space with these cities at its heart.

In Islamic cartography, Mecca represented the spiritual heart, positioned as the religious axis of the world in maps, whether for scientific purposes or for religious purposes. The Islamic tradition, influenced by Greek geography and astronomy, uniquely combined empirical data with religious cosmology. The work of cartographers such as al-Idrisi exemplifies the hybrid cultural nature of these maps, combining Eastern and Western knowledge on cartography and religion.

Despite cultural and theological differences, all traditions utilised cartography as a means to assert political and religious authority. Maps were not just spatial representations but also they were the tools of propaganda and legitimacy. Byzantine emperors, Christian monarchs, and Islamic caliphs alike used maps to project their divine right to rule.

One of the most outstanding examples of the use of religious symbolism with cartographic abilities was done in the Catalan Atlas by the Jewish cartographer Abraham Cresques. It is well-known for containing full topographical and navigational details and mirroring the religious and cultural

attitudes of mediaeval Europe. Great importance is given to the biblical accounts and Christian cosmology, with Jerusalem as a landmark, thereby reinforcing the city's spiritual significance to the pious Christian. Religious depictions of characters include Christian saints and Old Testament prophets, juxtaposed with geographical components to meld the sacred and the profane. The Atlas also utilises a recourse to religions other than Christianity through its inclusions of Islamic territories and other non-Christian ethnic groups, thus imagining the Mediterranean region for its diversity while at the same time reinforcing a Christian-based worldview. Typical of the multifunctionality of medieval maps as navigational instruments, the Catalan Atlas speaks to the pedagogical function of such maps as instructional devices in teaching viewers about the spiritual hierarchy of the universe besides its physical arrangement. The integration of geography and religious doctrine in the Catalan Atlas stands both as a strategic tool for navigation and as a manifestation of religious struggle and the sign of intercultural exchange typical for the period in the Mediterranean.

One of the central conclusions of this research is the cross-cultural exchange of geographic knowledge that took place across the Mediterranean served as a conduit for the transmission of religious and mythical knowledge between Islamic, Byzantine and Christian cultures. This also helps the transfer of knowledge from the sources of Greek, Roman, Babylonian and Persians between cultures and is one of the vectors for the revival of lost knowledge.

The exchange of cartographic techniques, through trade, conquest, and diplomacy, led to a hybridization of mapmaking traditions, with elements from each culture influencing the others.

The maps investigated in this thesis are either precursors or the first examples of portolan charts which may have originated as a direct response to the specific navigational needs of the Mediterranean. The Mediterranean's unique geography, with its dense coastal settlements, and complex trade networks, required highly accurate, practical maps for maritime navigation. The interconnectedness of the Mediterranean world, where merchants, explorers, and diplomats from Christian, Islamic, Byzantine, and Jewish cultures constantly interacted, meant that the portolan charts had to hybridise to serve the needs of this multicultural region. The fact that these maps are from the Mediterranean hubs of interculturality, like Sicily, Majorca and Cairo may show that this aspect of the Mediterranean compared to other places in the Medieval World, was needed for fruitful transmission of knowledge.

6.2. Implications for Further Research

The findings of this thesis suggest several critical avenues for further exploration within the study of medieval cartography, especially concerning the intersections of religion, politics, and cross-cultural exchange. Whereas this research has provided a comparative analysis of the Islamic, Byzantine,

and Christian traditions, it becomes clear that substantial scope remains for further development of such themes, especially those which have been peripheral with regard to subject matter and by means of new approaches.

One promising area for further research is the investigation of regional cartographic practices that fall outside the major cultural centres discussed here. Although the study has focused on medieval centres of mapping, there were other areas of other cultural interaction that developed their own cartographic techniques. While there are challenges in finding sources especially before the Late Medieval, it would be a curious investigation to see how these traditions developed and traded knowledge in Constantinople, Italian states, Alexandria, Acre and other cultural hubs of the Medieval Age.

As the maps investigated in this thesis are all crafted with sea in the centre, another aspect of Medieval navigation, travels through the land routes, would be another source of interest. Trade routes like the Silk Road, the Spice Road and Trans-saharan Trade Route were filled with other places of intercultural exchange of knowledge. It would be interesting to compare Mediterranean maps with possible land maps from centres like Timbuktu and Fez in Trans-Saharan Africa and Caffa, Samarkand and Damascus in Silk Road Euroasia. These centres were in close contact with the Mediterranean trade centres, connecting to a wider world system.

Similarly, other interesting avenues of further research would be on the political use of maps across religious conflicts, like the times of the Crusades, the Reconquista, and the rise of Islamic empires, which reconfigured the geopolitical religious landscape of the Mediterranean and can be studied for how maps were used as an instrument of propaganda or as a means to lay claims to territory in order to add more political depth to our understanding of cartography. For example, how did maps created for the Christian monarchs support both spiritual and military goals in depicting the Holy Land during the Crusades? How did Islamic rulers employ maps as a way to claim ownership of their newly acquired territories, which in turn helped them better assimilate those lands into the greater Islamic world? How did the religious “other” was described in these maps and in what way this was used for propaganda?

Another key area of further investigation is the development of cartography following the Middle Ages, in relation to both the Renaissance and the Age of Exploration. To what extent did the medieval combination of religious symbolism and empirical observation shape later centuries' advances in cartography? Further research might consider particular methods and practices that medieval mapmaking, such as that used in portolan charts, enables global navigation and the expansion of European empires.

Additionally, the rise of digital humanities offers exciting new opportunities that have never been considered in the study of medieval maps. With technologies such as 3D mapping, geospatial analysis, and virtual

reconstructions, scholars can reconsider medieval maps with a degree of precision unimaginable up to date. Such methods could be applied to geographical accuracy that medieval mapping developed concerning modern cartography or even to the analysis of the forms in which religious symbolism and political claims were visually represented. Digital methodologies also allow for the creation of interactive visualisations, enabling scholars to simulate how medieval audiences might have interpreted these maps and understood their place in the world. These tools also allow easier comparison and analysis of the textual, historical and visual data and could be used to create networks of trade of knowledge. It might bridge between visual and cognitive issues of mapmaking and give a richer view of how the maps functioned as both practical tools and as ideological statements.

In conclusion, the study of medieval cartography represents a very fertile field for further research. The deeper we delve into mapping the relationship between the sacred and the secular, the more new discoveries in this area will deepen our understanding not only of how medieval societies conceptualised the geography of the world but also their place within it.

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