

Kâtip Çelebi's Maps and the Visualization of Space in Ottoman Culture

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Kâtip Çelebi'nin Haritaları ve Osmanlı Kültürü'nde Mekanın Görselleştirilmesi

Öz ■ Büyük Osmanlı aydını ve coğrafyacısı Kâtip Çelebi (1609-57) sık sık bir haritacı olarak anılsa da, bu makale, onun kendi elyazısıyla yazılmış eserlerinde bulunan ve Avrupa haritalarının kopyaları olarak tanımlanamayacak haritalara eleştirel bir gözle bakıyor. Kâtip Çelebi'nin harita çizmek için matematiksel bir metodu olmadığını, sabit bir gözlemciye dayanan Batlamyus'un bir kuşbakışı perspektifinden ziyade, mekan içinde hareketi esas alan ve yol ya da şebeke haritalarından müteşekkil bir ağ yaratarak mekanı temsil eden bir tür zihni haritacılığı sıklıkla yeniden ürettiğini ileri sürüyorum.

Anahtar kelimeler: Kâtip Çelebi, *Cihānnümā*, haritalar, perspektif

Twenty years ago, in a seminal article on maps and art Samuel Edgerton has argued that the rediscovery of Ptolemy in the renaissance in Europe was not only

* This article is based on a presentation I gave at the international symposium in commemoration of the 350th year of the death of Kâtip Çelebi, prominent historian, intellectual, and possibly cartographer of the seventeenth century, in Istanbul in 2007. A Turkish version appeared as "Osmanlı Kültürü ve Kâtip Çelebi'nin Haritalarında Mekânın Görüntülenmesi," in *Vefatının 350. Yılında Kâtip Çelebi*, edited by Said Öztürk (Istanbul: Istanbul Büyükşehir Belediyesi Kültür A. Ş., 2007), 33-40. It was Kâtip Çelebi's scribbles in his various books, including *Târîh-i Hind-i Garbî*, which first brought me in contact with Tom Goodrich, who shared his knowledge (and his xeroxes) in the most generous way with a foreign graduate student. Here I am publishing a slightly updated English version, as an attempt to take the hypothesis to the anglophone community of map students, and as an acknowledgement of the prominent role Tom Goodrich has played among them.

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based on the coincidental availability of new manuscripts, but on a deeper affinity in ways of seeing and visualizing, across the historical gap separating fifteenth-century Italy from second-century Hellenist Egypt. Two central elements stand out which Ptolemy has bequeathed to modern mapmaking, and which at the same time resonated strongly with other concerns in European art.¹

The first is the rectangular grid. It may be argued that the rectangular grid is actually hardwired in the human brain, as a fundamental of human orientation along visible structures or imagined lines like the cardinal directions. Urban structures in places as distant from one another as the Roman Empire and China have been based on such grids. Although the division of the entire surface of the globe with the help of latitudinal circles and meridians, all intersecting at right angles, was not Ptolemy's own invention, it has come down to the renaissance first and foremost through his work. His is the geographical table that locates every city in an absolute sense with the help of the grid stretching half-way around the globe; this is the bulk of his *Geographike Hyphegesis*. The second element is perspective. Ptolemy's geographical work also includes a detailed instruction of drawing up world maps, i.e. maps that show the inhabited section of the globe. His crucial innovation is that he does not simply try to flatten the globe in order to reproduce at a global scale what the impression of a person walking on the earth's surface would be. There, for instance, meridians would always be parallel, just like latitudinal circles, and intersect with the latter at right angles. To reproduce this impression in a two-dimensional plane, however, leads to extreme distortions, yet this was the kind of projection that Ptolemy's predecessor Marinus of Tyre used. Ptolemy instead imagined an observer placed outside of the globe, viewing the world at a particular angle, so that the grid would appear to him in a particular perspectival distortion. An important result of this projection is the preservations of proportion across the map.

1 Samuel Y. Edgerton, Jr., "From Mental Matrix to Mappamundi to Christian Empire: the Heritage of Ptolemaic Cartography in the Renaissance," in *Art and Cartography. Six Historical Essays*, ed. by David Woodward (Chicago and London: Chicago University Press, 1987). The further-reaching assertion, that renaissance representation of space was owed to Ptolemy, has been rejected by Patrick Gautier Dalché: "Ptolemy played no part in inspiring the new organization of pictorial space that emerged in the fifteenth century." (Patrick Gautier Dalché, "The Reception of Ptolemy's Geography (End of the Fourteenth to Beginning of the Sixteenth Century)," In *History of Cartography*, edited by David Woodward (Chicago: University of Chicago Press, 2007), 285-364, at 336). This does not exclude, of course, the possibility of a renaissance affinity for Ptolemy because of a correspondence, as posited here.

Unified perspective appeared as the essential characteristic of renaissance painting, and has shaped the notion of representation in a way that every other representation tends to be spontaneously dismissed as insufficient. As Edgerton suggested, Albrecht Dürer's woodcuts of a painter using a grid to control perspective are among the most emblematic pictures of the time. Perspective in painting was accompanied by another change: it integrated time into the picture. Just as the observer was taking on a stable position vis-à-vis his object, the object itself was depicted in a particular "frozen" moment. I will come back to this aspect.

The grid and the perspective from a single stable position also shaped the future of the map, to the degree that we have become used to considering everything else 'not a real map' or 'a bad map', meaning 'an insufficient map' with the unspoken criticism: 'this is not what the place looks like'. This is how the Islamic tradition of the *Atlas al-Islam* could be derided by a map historian as an "abyss of cartographic barbarity."² Indeed, these maps have neither grid and scale, nor a consistent orientation, as orientation is usually indicated in the corners, rather than the sides of a page.

What does all of this mean for Kâtip Çelebi, arguably the most important geographer of the Middle East in the seventeenth century, and the maps in his magisterial world geography, *Çihânnümâ*? In this article, I want to reassess Kâtip Çelebi's cartographic efforts, which have not received sufficient attention until now.³ Where Kâtip Çelebi is praised as a cartographer, reference is usually made to the maps of the printed edition by İbrahim Müteferrika (Istanbul, 1732), which are not made by himself, and thus have little value for our purposes. Instead, we have to turn to the multiple sketches and partly rough and primitive drawings in the different autographs, which usually do not appear as products of cartographic excellence. On the other hand, I argue, they will provide insight into the trade of the self-taught mapmaker. I argue that the Ptolemaic map with its grid and projection is only one of several ways of visual representation, and the assumed superiority over others in fact depends on the function and the context.

2 Hans von Mžik, "Ptolemaeus und die Karten der arabischen Geographen," *Mitteilungen der geographischen Gesellschaft Wien* 58 (1915), 152-76, 168.

3 For illustrations showing maps drawn by Kâtip Çelebi himself, the reader is referred to Gottfried Hagen, *Ein osmanischer Geograph bei der Arbeit. Entstehung und Gedankenwelt von Kâtip Çelebis Çihânnümâ* (Berlin: Klaus Schwarz Verlag, 2003), and id., "Kâtip Çelebi and Siphazade," *Essays in Honour of Ekmeleddin İhsanoğlu, Vol. I: Societies, Cultures, Sciences: A Collection of Articles*, ed. Mustafa Kaçar, Zeynep Durukal (Istanbul: IRCICA, 2006), 525-542.

I will base my arguments on the three full or partial autographs available for the *Cihânnümâ*:

- The “Michigan Sipahizade”, a copy of a late 16th-century text in Arabic, Sipahizade’s *Evzahu’l-mesalik ila mar’ifat al-buldan wa’l-mamalik*, University of Michigan, ISL MS 215. Its margins have countless notes by Kâtip Çelebi’s hand; as I have demonstrated elsewhere, this precedes the known versions of the *Cihânnümâ* and should be considered a preliminary stage of *Cihânnümâ*;⁴
- The so-called “Vienna Draft” (the term is taken from Franz Taeschner’s “Wiener Konzept”), Vienna, Austrian National Library, mxt. 389, a fine copy of the unfinished first version of *Cihânnümâ*, completed and supplement with an introduction, a partly full, partly fragmentary continuation, and multiple additions in the margin;⁵
- and the autograph of the second version, Topkapı, ms. Revan 1624, which I would like to call the “Istanbul Draft” in analogy to the Vienna Draft, although it is closer to a finished version than the Vienna Draft.⁶

Maps in the Istanbul Draft often conform to the Ptolemaic ideal, as they are copied from those in Kâtip Çelebi’s main European source, Gerhard Mercator’s *Atlas Minor*. In an approach to the history of science based on a notion of universal progress towards exactitude, these were signifying success. Upon closer inspection, however, it becomes clear that Kâtip Çelebi was not much concerned with projection and the mathematical basis of maps. He often simplified maps found in his sources. To name only the most obvious indication, while the maps in the *Atlas Minor* have curved meridians, these are usually drawn straight in the copies in the *Cihânnümâ*. Among the various technical instructions in the introduction to the second *Cihânnümâ* there is nothing said about projection, and although in his descriptive chapters Kâtip Çelebi often gives coordinates for cities these cannot be used to draw a map, since they come from different sources and diverge widely.⁷

4 Hagen, “Kâtip Çelebi and Sipahizade.”

5 First described in Franz Taeschner, “Die Vorlage von Hammers ‘Rumeli und Bosna’”, *Mitteilungen zur osmanischen Geschichte* 2 (1923-26), 308-310; see also Hagen, *Ein Osmanischer Geograph*, chapter IV.

6 I did not have an opportunity to consult Kâtip Çelebi’s excerpts from Bahriye, which apparently also includes maps; see Fikret Sarıcaoğlu, “Pîri Reis’in Kitâb-ı Bahriyye’sinin İzinde Kâtip Çelebi’nin Yeni Bulunan Eseri: Müntehab-ı Bahriyye,” *Türklük Araştırmaları Dergisi* 15 (2004), 7-57.

7 Hagen, *Ein osmanischer Geograph*, 347-353.

Smaller maps based on the Ptolemaic principle of the extreme bird's eye view have their firm place in Ottoman culture as maritime charts in the works of Ali Macar, Piri Reis, and others, even though the grid is usually replaced by loxodromes.⁸ Maps which were obviously inspired by Piri Reis are found in the margins of the Vienna Draft. Leaving aside the city views on these maps, these are regional maps based on the Ptolemaic model inasmuch as they seem to assume a unified stable perspective from above. A sketch of the Mediterranean in the Michigan Sipahizade, also is clearly copied from a maritime chart (although possibly not directly but through a copy in a book).⁹ Maritime maps like portolans and *isolarii* are a distinctly Mediterranean phenomenon, and probably identified as such by the Ottomans, who knew that nautical techniques in the Indian Ocean operated without visual aids, but relied on textual tradition and memorization.¹⁰ The portolan charts and the *isolario* on the other hand were adopted by the Ottomans in the Mediterranean, culminating in the great atlases of the 16th century. The only other tradition of regional maps Kâtip Çelebi was familiar with was the so-called *Atlas al-Islam*, which he deemed insufficient, not unlike modern cartographers. None of the maps attributable to him shows any direct influence of the Atlas al-Islam tradition.

Other instances in his autographs indicate that Kâtip Çelebi was very much on his own, and had to reinvent some of them fundamental principles and solutions in mapmaking. Sketches of maps in the Michigan manuscript indicate that Kâtip Çelebi was struggling with the problem of proportion and relative position, that can only be resolved when a unified perspective is taken. A smaller marginal sketch and a double-page sketch both show world maps in circles, in which individual countries are indicated as rough and non-contiguous rectangles, while no outlines of continents and no rivers are shown. Interestingly, both maps represent only the Old World in one single hemisphere, but not the Americas.

8 Some versions of the *Bahriye* have additional world maps with a grid (Thomas D. Goodrich, "Supplemental Maps in the Kitab-ı bahriye of Piri Reis", *Archivum Ottomanicum* 13 (1993-94), 117-25). I will not concern myself here with the town views in many Ottoman maps that reflect a view from an elevated position (see J. M. Rogers, "Itineraries and Town Views in Ottoman Histories," in *The History of Cartography. Vol. 2, Book 1 Cartography in the Traditional Islamic and South Asian Societies*, ed. J. B. Harley, David Woodward et al. (Chicago: The University of Chicago Press, 1992), 228-55).

9 Hagen, "Kâtip Çelebi and Sipahizade," figure #6.

10 Gerald R. Tibbetts, "The Role of Charts in Islamic Navigation in the Indian Ocean." In *The History of Cartography. Vol. 2, Book 1: Cartography in the Traditional Islamic and South Asian Societies*, edited by J. B. Harley and David Woodward (Chicago: The University of Chicago Press, 1992), 256-62.

These maps and some of the previous point to a fundamental problem for Kâtip Çelebi: maps were obviously not easily available in Istanbul in Kâtip Çelebi's period, even for an avid collector and bibliophile like Kâtip Çelebi.¹¹ I have no doubt that these crude sketches were drawn by Kâtip Çelebi working from visual memory, possibly supported by textual evidence, but not with visual models at hand. Evliya Çelebi famously reports that in his (and Kâtip Çelebi's) time the mapmakers of Istanbul, numbering fifteen masters in eight workshops, were using western world maps and atlases as models. Seeing Kâtip Çelebi struggling to obtain maps suggests that this is probably not to be taken as a factual description of the situation. The triad of Atlas, Geographia, and Mappamundi mentioned in this context by Evliya is also found elsewhere in his work, and appears to be more rhetorical than factual.¹² On the other hand, later in the century, there is evidence that Europeans had conversations with cartographers in Istanbul, and found them very much up-to-date.¹³

Lack of material may of course be used as an explanation for numerous "insufficiencies" in other maps as well, such as several sketches in the first and second version. Such sketches attempt to depict a region along a river, but with little sense for the proportions perpendicular to the river, and for the orientation of sections of the river. Examples include a map of the Euphrates in the Michigan manuscript, a map of Serbia and Bosnia in the Vienna Draft, which is structured along the Danube, as well as a map of Hind in the Istanbul Draft.¹⁴ Another interesting example is a map of the Danube in the margins of the Vienna Draft, which is broken down into three sections.¹⁵ Working again primarily, if not exclusively from textual information, Kâtip Çelebi had little opportunity to adequately render proportion.

However, and this is my other, major argument in this article, there is more to these maps. I suggest that several of them should be taken as examples of a

11 This is illustrated by the fact that Kâtip Çelebi was able to acquire (and use) Abraham Ortelius' *Theatrum Orbis Terrarum* only after the death of its owner, Karaçelebizade Mahmud Efendi (Hagen, *Ein osmanischer Geograph*, 65f., 193).

12 See Gottfried Hagen, "Atlas and Papamonta as Sources of Knowledge and Power," in *Evliya Çelebi Seyahatnamesi'nin Yazılı Kaynakları*, edited by Hatice Aynur and Hakan Karateke (Ankara: Türk Tarih Kurumu, 2012), 104-129.

13 Heidrun Wurm, *Der osmanische Historiker Hüseyin b. Gafer, gen. Hezarfenn, und die Istanbul'ler Gesellschaft des 17. Jahrhunderts* (Freiburg i.Br.: Klaus Schwarz, 1971), 47.

14 Michigan Sipahizade, fol. 18a, see Hagen, "Kâtip Çelebi and Sipahizade," figure #4; Vienna Draft fol. 94b, see Hagen, *Ein osmanischer Geograph*, figure #20; Istanbul Draft fol. 87a, *ibid.*, figure #21.

15 Vienna Draft fol. 105a.

different kind of visual culture, distinct from the Ptolemaic unified perspective of the immovable observer outside of the globe. I argue that the mapmaker was structuring these maps along a main axis, usually rivers, imagining a person moving along this axis. Viewed in this way, these maps make a lot of sense. They register the main turns, as well as the smaller rivers emptying into it, in due course. They assume an observer in motion along the surface of the earth, and renders his dynamic and contextual perspective. Such a procedure facilitates visual representation based on limited information.

Therefore, I suggest to compare these maps to other traditions of “strip maps” which are found in various contexts from antiquity onwards. The probably most radical example of a strip map are the pilgrimage maps of the medieval cleric Matthew Paris (c. 1200-1259). Besides several “conventional” two-dimensional maps of Britain, he created a unique itinerary map of the route from London to Rome, with only a few excursions into a second dimension with alternative routes in some places, and fold-out maps of Rome and Sicily.¹⁶ Probably related to this, and certainly based on the same principle, is John Ogilby’s *Britannia*, printed for the first time in 1675, although considerably more refined than Kâtip Çelebi’s maps regarding the amount of information included. It is a set of strip maps on a unified scale, which include intersections, landmarks and distances, and give consistent orientation for every section or strip, one itinerary including usually half a dozen sections. Again, as all the other maps of this type, they do not represent the expanses perpendicular to the road. Interesting in terms of visual representation is the way in which uphill roads are indicated by means of hills facing the direction of the road, explicitly defying unified perspective.¹⁷

Other maps of similar formats, like the famous Peutinger map, which is a 12th or 13th-century copy of a Roman road map, going back to the 4th century, include much more of a second dimension, and are therefore characterized as “network maps.” However, there, too, the dimension perpendicular to the main axis is not fully developed, and not to scale, and orientation is - except for the main axis - not consistent.¹⁸ Ahmet Karamustafa has drawn attention to a very

16 Catherine Delano-Smith and Roger Kain, *English Maps: A History* (London: British Library, 1999), 44-46, 150-153. I thank Mary Pedley for drawing my attention to those maps, and for more help than this article can reflect.

17 Delano-Smith and Kaine, *English Maps*, 168-172. Whereas the original was too unwieldy to serve the practical needs of the traveler, pocket-sized editions were addressing this aspect.

18 *Ibid.* 170. See also O. A. W. Dilke, “Itineraries and Geographical Maps in the Early and Late Roman Empires.” In *The History of Cartography. Vol. I. Cartography in Prehistoric,*

large seventeenth-century map of the Euphrates, which is also structured in the same way.¹⁹ Another, little researched river map is that of the Nile, today in the Vatican Library. Made shortly after 1685, and attributed to Evliya Çelebi, it is also based on the same principles.²⁰ All these maps deserve detailed investigations from a map-historical perspective before their value and meaning can be fully appreciated.²¹

Naturally, the same kind of representation is also found in other maps structured along a central axis, such as maps of waterways or aqueducts. Such maps were known among the Ottomans as well, as is attested by several examples in the Topkapı Palace Archive.²² Modern applications for this representation also come readily to mind, especially maps of bus lines or subway lines, which line up all the stations on one single straight line at equal distance, but indicate crossings and connections to other lines. Obviously, specific requirements and purposes make strip maps obvious choices for cartographic representation, and there is no need to assume interdependence between all these different appearances.

The result of such a visualization of space obviously is not the same as the fully two-dimensional representation based on unified perspective. I would tentatively, for lack of a better term, call these maps one-dimensional, or, in the case

Ancient, and Medieval Europe and the Mediterranean, edited by J. B. Harley and David Woodward, 234-57. Chicago: The University of Chicago Press, 1987, 238-242.

- 19 Ahmet T. Karamustafa, "Military, Administrative, and Scholarly Maps and Plans," *The History of Cartography. Vol. 2, Book 1, Cartography in the Traditional Islamic and South Asian Societies*, edited by J.B. Harley, David Woodward et al. (Chicago, London: Chicago University Press, 1992), 209-27, at 222-223; see now Zekeriya Kurşun, "Does the Qatar Map of the Tigris and Euphrates belong to Evliya Çelebi?" *Osmanlı Araştırmaları* 39 (Other Places: Ottomans traveling, seeing, writing, drawing the world. Essays in honor of Thomas D. Goodrich) (2012): 1-15.
- 20 Ahmet T. Karamustafa, "Military, Administrative, and Scholarly Maps and Plans," 224, finally published in Robert Dankoff and Nuran Tezcan, *Evliyâ Çelebi'nin Nil Haritası "Dürr-i bî-misil in abbâr-ı Nil"* (İstanbul: Yapı Kredi Yayınları, 2011).
- 21 They are not discussed in Fikret Sarıcaoğlu's important overview of Ottoman map-making: "Osmanlılarda Harita," *Türkler*, ed. H. C. Güzel, K. Çiçek, S. Koca, vol. XI, Ankara 2002. Dankoff and Tezcan, *Evliyâ Çelebi'nin Nil Haritası*, offer a critical study of the legends, but are not much concerned with the visual aspects.
- 22 Beylik suyolu Haritası, TSM III. Ahmet Kütüphanesi, H. 1816, dated 1016/1607; same topic and library, H. 1815, date 1161/1748; both found in Kâzım Çeçen, *Topkapı Sarayı'na su sağlayan isale hatları* (İstanbul: [İstanbul Büyükşehir Belediyesi İstanbul Su ve Kanalizasyon İdaresi], 1997); cf. Kâzım Çeçen, *Süleymaniye suyolları* ([İstanbul]: İstanbul Teknik Üniversitesi, İnşaat Fakültesi Matbaası, 1986); see also Ahmet T. Karamustafa, "Military, Administrative, and Scholarly Maps and Plans," 215.

of network maps, one-and-a-half-dimensional, as the dimension indicated by the observer's movement is fully developed, whereas the other one is only partially represented. Such an interpretation of visualization may also help to rationalize some of the features of the *Atlas al-Islam* tradition which also regularly structures its maps along certain axes which can be interpreted as axes of movement, which can be rivers or roads. However, the Atlas al-Islam maps usually consist of a network of such axes, so that we can speak of a multiplicity of one-dimensional representations within one map.

Maps that are drawn this way require a different form of processing of the information by the beholder: the eye is supposed to follow the axis in order to make sense of the information. Along this axis proportions may be preserved, although not necessarily physical ones. For instance, stations or cities are often indicated at equal distances, to indicate one day's journey, although the physical distance may vary. Second, these maps do not systematically render changes in direction, subjecting the representation to the direction of the observers-traveler's view, rather than the other way round.

Being based on movement, the maps also include a dimension of time, diametrically opposed to the idea of the frozen moment of the renaissance painting that is so intimately related to the Ptolemaic map. A very striking example of a representation of actual movement is found in the illustrations to *Ferahü r-ruh*, İsmail Hakkı Bursevî's commentary on Yazıcıoğlu Mehmed's *Muhammediye*. This work, at least in its printed version, contains diagrams of scenes from the life of the prophet. Persons are indicated by circles, and in several cases a series of circles indicates a movement across space.²³

Interestingly, a similar visualization of space based on movement is also found in Ottoman archival documents, for instance in so-called *hudud-names*, which delineate the boundaries of properties such as *vakıfs*. Ottoman archival documents, such as tax registers, are devoid of visual representations of space: the never included maps, and only in exceptional cases indicate the relative position of villages or other objects listed. Thus, *hudud-names* are important as they give us clues as to how Ottoman bureaucrats, relying on their files only, attempted to visualize space. *Hudud-names* typically give a starting point, and then describe the tour all around the territory, up hill and down dale, along the road, across the river, and so forth, from one landmark to the next. Neither orientation nor

23 İsmail Hakkı Bursevî, *Ferahü r-ruh*, 2 vols. (Istanbul: Elhac Muharrem Efendi Bosnavî Matbaası, 1294h./1877). I am not aware of a study of these illustrations in the context of visualization.

distance are essential, and in fact are frequently lacking. This makes it difficult for instance to gain a sense of the size of the property. Such a description is functional only on site, but is of little use to the reader of the file who has no knowledge of the area. In other words, it lacks the portability of a map, as it does not consist of self-sufficient information.²⁴ This leads to one fundamental problem of visualization along axes of movement: it regularly requires additional information. In the case of the *hudud-name*, this would be found on site, as the only way of utilizing the information in the *defter* would be to re-enact the trip around the property. It does not suffice for the clerk in the central administration in faraway Istanbul: he cannot derive a picture from the description. In other cases, additional information might be supplied by accompanying texts, so that these one-and-a-half-dimensional maps were not fully emancipated from the text in the same way as Ptolemaic maps were.

In a way, it is quite possible that entire mental maps of the Ottoman Empire were more structured by means of axes of movement than conceived as two-dimensional expanses. The axes here might for instance be provided by the main roads radiating from Istanbul to the European provinces, known as *sağ kol*, *orta kol*, and *sol kol*, in reflection of the perspective from Istanbul. There are documents such as registers that basically define the location of towns giving the situation in relation to the main roads, and a distance from Istanbul.²⁵ Even some geographical works, like that of *muvaqqit* Mustafa b. Ali in the sixteenth century,

24 Amy Singer, "Transcrire les frontières de village," In *Lucette Valensi à l'oeuvre: une histoire anthropologique de l'Islam méditerranéen* (Paris: Editions Bouchene, 2002), 133-43. The lack of geographical or topographical information in Ottoman archival documents remains a puzzle which will not be discussed here. The absence of images of the empire contrasts with the profound interest of European kings in cartography, starting most prominently with Charles V (see Richard Kagan and Benjamin Schmidt, "Maps and the Early Modern State: Official Cartography," In *The History of Cartography, Volume 3: Cartography in the European Renaissance*, edited by David Woodward (Chicago: University of Chicago Press, 2007), 661-79. Requests of European maps by members of the Ottoman dynasty are known, but no further information on the use of such maps has been found (Arbel, Benjamin. "Maps of the World for Ottoman Princes? Further Evidence and Questions Concerning 'the Mappamondo of Hajji Ahmed'." *Imago Mundi* 54 (2002): 19-29).

25 M. Kemal Özergin, "Rumeli Kadılikları'nda 1078 Düzenlemesi," İ. H. Uzunçarşılı'ya Armağan, ed. O. Aslanapa, Ankara 1976, 251-309. On the concept of mental maps see Peter R. Gould and Rodney R. White, *Mental Maps* (2nd ed. London: Allen & Unwin, 1986), and Roger M. Downs and David Stea, *Maps In Minds: Reflections On Cognitive Mapping* (New York: Harper & Row, 1977).

and even Kâtip Çelebi's own chapter on Rumeli in the 19th century have been organized in this way.²⁶

At the end, a question arises: if there was another culture of visualizing space besides the Ptolemaic tradition, what happened to it? Kâtip Çelebi used both types of maps indiscriminately, according to practicality and source material at hand. Most likely, he was unaware of their major implications as different ways of seeing and representing, but ultimately, he helped to pave the way for the modern map. My (still tentative) explanation is that the two-dimensional map, deriving from Ptolemaic principles of a unified perspective did survive because it was recognized as the more abstract representation. This type of map is ultimately independent of accompanying texts or oral information, it is fully emancipated and self-sufficient. It can be read as a whole, or just consulted for a detail. In this way, it is also more democratic, and accessible to the non-specialist, and suits the needs of the time, in which a broader, educated public sought new accesses to knowledge. In this respect, it is the Ptolemaic map that suits the purpose of dissemination of knowledge in a non-specialist public, which was Kâtip Çelebi's main interest. Although Kâtip Çelebi's maps were the products of a cartographic dilettante, and in no way comparable to the maps made by his professional contemporaries in Europe (or in the Ottoman Empire?), ultimately his efforts in *Cihânnümâ* turned out to be important steps in this direction.

Kâtip Çelebi's Maps and the Visualization of Space in Ottoman Culture

Abstract ■ While Kâtip Çelebi, the great Ottoman intellectual and geographer (1609-57), is also often celebrated as a cartographer, this article critically assesses the maps found in his autographs, excluding those that can be identified as copies of European maps. I argue that Kâtip Çelebi did not have a mathematical method to draw maps, and often resorted to reproducing a type of mental mapping which represents space not in a Ptolemaic 'bird's eye' perspective centered on a fixed observer, but based on the assumption of a movement through space, creating a web of road- or network maps.

Key words: Kâtip Çelebi, *Cihânnümâ*, maps, perspective.

26 On Mustafa b. Ali see Pinar Emiralioğlu, "Cognizance of the Ottoman World: Visual and Textual Representations in the Sixteenth Century Ottoman Empire (1514-1596)." Unpublished PhD dissertation, University of Chicago, 2006. The first *Cihânnümâ* is available only in an unsatisfying partial German translation: Joseph v. Hammer, Rumeli und Bosna, geographisch beschrieben von Mustafâ ben Abdalla Hadschi Chalfa, aus dem Türkischen übersetzt von Joseph von Hammer, Wien 1812.