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## Common Sense Geography and Ancient Geographical Texts

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## Common Sense Geography and Ancient Geographical Texts

This paper places the concept of ‘common sense geography’ as developed by the members of Topoi research group C-5 within the context of ancient geographical literature. For the first time, a consistent model of arranging and classifying Greek and Roman geographical texts from a historical perspective is presented.

Common sense geography; ancient geographical texts; mental modelling; mental maps; ancient geography; Aristophanes; Eratosthenes; Strabo; Ptolemy.

### I Laughing at and with common sense geography

Athens, the Great Dionysia, 423 BC. Aristophanes’ *Clouds* premiers. It is a spoof of the new kind of teaching that was taking hold in Athens, literally a ‘Thinkery’ of students, with a parody of the leading intellectual of the day, Socrates, at its head. Socrates is accused of corrupting the Athenian youth with superfluous tuition and unnecessary ideas. When Strepsiades, a common demesman, meets one of Socrates’ students, the stage is set for a fascinating glimpse of how Socratic teachings, which we now see as part of the broad achievement of Greek thinking, may have been seen by those at the time not privy to such an education:

STREPSIADES [*pointing to instruments hanging up at the back of the vacated platform*]:

Tell me, what in heaven’s name are these?

STUDENT: This here is astronomy.

STREPSIADES: And what’s this?

STUDENT: Geometry.

STREPSIADES: So what’s that useful for?

STUDENT: For measuring land.

STREPSIADES: You mean land for cleruchs?

STUDENT: No, land generally.

STREPSIADES: A charming notion! It’s a useful and democratic device.

STUDENT: And this is a map of the whole world. Do you see? Here’s Athens.

STREPSIADES: What do you mean? I don’t believe you; I don’t see any jurors on their benches.

STUDENT: I assure you this area is Attica.

STREPSIADES: Then where are the men of Cicyнна, my fellow-demesmen?

STUDENT [*indicating the area south-east of Athena*]: They’re in this part. And here, as you see, is Euboea, lying stretched out beside the mainland for a very long distance.

STREPSIADES: I know; we laid it out, we and Pericles. But where’s Sparta?

STUDENT: Where is it? Here.

STREPSIADES: How close to us! Rethink that one, please, so as to take it a good long way away from us.

STUDENT: It can't be done.

STREPSIADES [*raising his stick*]: In that case, by Zeus, you're going to howl!<sup>1</sup>

Despite its exaggerations and the offensive presentation of Socrates as a caricatured prototype of various philosophical schools in Athens, this text confirms Isocrates' allusion to the debates about new pedagogical methods and curricula at the end of the 5th century BC: older Athenians could not understand the purpose of innovative teaching for the youth educated in Plato's Academy.<sup>2</sup> Among the subjects: geometry. Although methods of measuring and representing the earth may have been explored in philosophical circles as early as the 6th century BC, Aristophanes' play gives us for the very first time a plausible, albeit parodic, glimpse of an encounter between an 'average layperson' (albeit exaggerated) and 'one who studied in a school'. It is a confrontation between two different kinds of knowledge – the everyday and the expert – and we see the reaction of the layman upon discovering the abstract interests of the educated persons. Present on the democratic stage are both the symbols of higher education – the 'scientific' tools (the map), implicit methods (the correct reading of the map), and even a 'higher' object of study (a space larger than the one normally experienced on a daily basis) – and a representative of the common man, in whose hands the meaning of such symbols is effectively challenged and undermined.

This text is often quoted as an example in the history of ancient representations of spaces.<sup>3</sup> It conveys an adequate idea about what 'geometry' must have been in the *curriculum* of an Athenian school: a reasoned approach to the properties of space, involving practical knowledge but also abstract thinking. It also confirms the existence and use of maps in ancient intellectual circles.<sup>4</sup> Accordingly, it suggests that the hodological perspective – the unidimensional view of space as a path, as if travelling through it – was not necessarily the prevalent master model when engaging with larger spaces in classical times.<sup>5</sup>

How can we explain the comical situation staged by Aristophanes? The humour emerges from the juxtaposition of contrasting views of the same object. Strepsiades' remarks reflect a 'naïve', 'concrete' or 'intuitive' understanding of geography. He deals with space from a 'down-to-earth', 'basic', 'human' perspective; his knowledge is 'immediate', determined only by experience, 'fit for purpose', sufficient for everyday use, without further abstraction or even need to spend time and effort analysing something which has no direct application. Strepsiades knows next to nothing about astronomy and geometry – indeed little that goes beyond the needs of a 'normal' citizen from the countryside, familiar with current Athenian policy and economy only as far as this concerns him and his house. He is not interested in the contemplation and conceptualization of large and/or distant spaces or in intellectual games like measuring the world without a practical purpose.<sup>6</sup> In

1 Aristoph. *Clouds* 200–217 (transl. Alan H. Sommerstein, 1981).

2 *Panathen.* 26 with the commentary of Roth 2003, 92–97. For the context of Aristophanes' *Clouds* and the construction of the comical character of Socrates as the most famous sophist who exhibits all kinds of faults associated with learned people, see Starkie 1911, xi–l; Fisher 1984.

3 For example Jacob 1985, 34; Harley and Woodward 1987, 138–139; Lanzilotta 1988; Arnaud 1990, 48, 380; Bianchetti 2008, 113.

4 It may be compared to the 'cartographic performances' described in Plutarch's *Life of Alcibiades* 17.2–3; *Life of Nicias* 12.1–2. Aelianus (*Various histories* 3.28) presents Socrates as showing a map to Alcibiades in order to make him understand the insignificance of Attica when compared to the whole *oikumene*: this is an anachronism, invented when the Romans were probably used to seeing monumental maps. However, the cartographic wonder could be an idea going back to the 5th century BC. Cf. Jacob 1992, 133.

5 See Poiss 2014. For the second dimension in the archaic perceptions of space, see Gehrke 1998; Gehrke 2007; cf. also Janni 1984 and Janni 1988.

6 See Geus 2014.

short, he does not know how to read a map and when he tries he fails miserably in dealing with the analogy of real space and its cartographic representation.<sup>7</sup> Of course, all of these are not traits of an actual person, but exaggerations necessary for expressing the comical character of the ἄγροικος καὶ δυσμαθής (v. 646), which the audience should recognise as such.<sup>8</sup>

Socrates' student, on the other hand, shows what the 'highest' level of geographical knowledge at that time could be: he employs 'uncommon' tools and methods in order to gain a better understanding of the world beyond its immediate appearance. His ken betrays the purely intellectual purpose prevalent in his circle. This too is an exaggeration, since the pedagogical aim of this teaching is completely ignored. In fact, while Aristophanes' Socrates recalls Plato's Socrates, who also appreciated the philosophical study of geometry and astronomy,<sup>9</sup> the portrait seems exaggerated, especially when compared with Xenophon's Socrates, who recommended the study of geometry, astronomy and arithmetic only to the extent to which they had a practical application.<sup>10</sup> In any case, if Socrates really did pursue the type of 'scientific,' purely theoretical experiments considered plausible by Aristophanes' audience, they must have been rather marginal in the *curriculum*, as we do not find any trace of Socrates' 'geographical' ideas in the extant sources. Even in the discussions about whether the world was flat or spherical, where we find that Plato's writings have most in common with this scene in Aristophanes, it is impossible to decide if the words assigned by Plato to Socrates reflect Socrates' or Plato's own ideas.<sup>11</sup>

In fact, neither of the geographical views staged by Aristophanes is likely to have represented the customary way in which space was conceived in antiquity. On the contrary, both represent extreme positions; the exaggeration is the source of the comedy. Aristophanes trusts that the 'common sense' of the majority of the Athenians was neither content with a plain perception of the environment nor fully convinced of the usefulness of a 'fully reasoned' approach to it. Being part of a democratic culture which valued knowledge in many fields and topics, the Athenians were surely aware of the importance of knowledge of different regions and spaces.<sup>12</sup> The inventory of place-names and ethnonyms in Aristophanes' comedies attests to the military, political and economic interests of the Athenians.<sup>13</sup> Their general awareness was based, for example, on personal experience with foreigners and travellers, on public and private debates about remote lands and places or on stories that circulated among the Greek world. Contrary to what one might expect today, this involved neither the practical knowledge necessary to travel from one location to another or to estimate the constraints of one's journey, nor the need to deal with maps and other sophisticated tools of representing near and far off spaces. However, what Aristophanes' scene makes clear is that the poet and his audience were able to differentiate between several levels of spatial perception, even if they did not necessarily understand the nuances of the most advanced cartographical representations. Hence, we may suppose that Aristophanes and the majority of his audience would have considered themselves as occupying an intermediary position, one that corresponds to a 'shared' geographical knowledge and that is a proxy of a more 'canonical' level of information.

7 See Jacob 1992; Cosgrove 2001 and Cosgrove 2008.

8 Strepsiades plays the part of the 'cleverly dumb': see also Green 1979; Woodbury 1980. Elton Barker wrote in a personal comment: "the joke simply doesn't work if we believe that the Strepsiades is a straight reflection of the 'common man'." Like Homer Simpson, he is a hyper common man – recognisable to us so that we see things from his perspective, but also different from us so that we can laugh (with him as well as at him) in his willful ignorance.

9 *Rep.* 7.527a–d; *Phileb.* 56d–57a.

10 *Mem.* 4.7.2–8.

11 Aristoph. *Clouds* 269–274; Plat. *Phaed.* 97b–101e, *Tim.* 62d–63e. See Heidel 1937, 81–92.

12 See, e.g., Dan 2014 and Poiss 2014.

13 Olshausen 2000; Olshausen 2009.

As exemplified by Aristophanes' play, both the 'lower' reasoning on the one hand and the 'higher' reasoning on the other hand are only the extremes of the human variety of intellectual capacities, in ancient as in modern times. In epistemological terms, these correspond to the interval between pure empiricism and rationalism. Ancient writers were already conscious of these tensions. They addressed a public with an intermediary background and varied interests, but they were aware of three levels of commonsensical reasoning in spatial perception and representation: the naive or intuitive, the scholarly or canonical, and the so-called 'scientific' or, more accurately, 'fully reasoned'. This distinction allows us to explore spatial perceptions in ancient sources in a way that describes more adequately how knowledge of space was selected, transmitted and consolidated in the premodern world.

## 2 Actual classifications and the need for a new heuristic system of concepts

We have good reason not to be satisfied with the categories of ancient geography widely in use today. While some approaches take into account the content, and some the form with which it was expressed, each by itself is inadequate for explaining the relationship between the *space as object* and the *subject* who construes, describes and presents space in literary terms. The direct consequence is that, when put together, these categories are not consistent. Here are some everyday examples, so common that one does not have to quote any specific study.

'Mythical', 'poetical', or 'philosophical' geography refers to artificial genres, anachronistic and inadequate for trying to gauge Greek and Roman views on literature. They describe mainly formal aspects, lump together often quite disparate information from different cultural contexts and, even more importantly, offer no insight into how space as a whole was conceived, thought of and transmitted by Greeks and Romans.

Current terms like 'professional' geography or 'mathematical' geography (as opposed to 'empirical' or 'descriptive' geography), used in order to underline the characteristic approach of the works of Eratosthenes, Strabo or Ptolemy, also make little sense. In antiquity, there were simply no professional or institutionalised geographers paid for their work. Even a work like Eratosthenes' *Geographika* (now lost) was probably far from being mathematically or astronomically sound in some passages.<sup>14</sup> Geography was never confined to a circle of 'professionals', but was indirectly quite well known in scholarly circles throughout antiquity and the Middle Ages.<sup>15</sup> Strabo's work is no geography *stricto sensu*, but an encyclopaedic synthesis with a particular focus on historical, geographical and astronomical matters, compiled by the author himself.<sup>16</sup> On the other hand, ancient mariners and land surveyors, usually cited as examples for the 'empirical' construction of spaces, were surely 'professionals' in the way they looked at 'their' space and made use of it: they accumulated a special body of spatial information and occasionally even had formal training.<sup>17</sup> However, labelling them as 'professional geographers' would also be misleading, since the written geography (that we know of) most probably had no impact on the real world in which they lived, i.e. on their practises of orientation. Navigating and travelling were carried out without maps or books.

14 See Geus 2014/2015.

15 Gautier Dalché 2013, 178–184 ("La réception de la mesure de la circonférence de la Terre calculée par Eratosthène").

16 Aujac 1966; Dueck, Lindsay, and Pothecary 2005.

17 Medas 2004 (for mariners); Knobloch and Möller 2014 (for surveyors). More generally, about the 'profession' of ancient geographers, cf. Prontera 1983, XII–XX.

In fact, the discussion about ancient spatial and geographic knowledge and thinking must be distinguished from discussion about genres. We posit that ‘definition games’ such as distinguishing between *periploi/periageseis/periodoi*, although widely used in recent publications, are wide of the mark as these terms were never consistently defined or used in ancient and Byzantine sources.<sup>18</sup> What we consider as ‘titles’ now, do not go back to the archaic and classical authors themselves, but mainly to Hellenistic, Roman and sometimes even Byzantine scholars who quoted, compiled, and classified these works. Hence these designations are not representative of the generic distinctions made by the authors of the texts themselves and, accordingly, are often contradictory.<sup>19</sup> This is why studying ancient geography according to the late antique and Byzantine genres teaches us more about the reception of the geographical texts in the lexicographic tradition than about the geographical knowledge of the ancient authors.<sup>20</sup>

Similarly, the usual distinction between text and drawing does not fit the modern distinction between ‘cartography’ and ‘geography’ or ‘geographical descriptions.’ Ancient drawings of spaces and places are simply not ‘maps’ in the modern sense of the word.<sup>21</sup> Oriental, Greek, Roman and Byzantine scholars and scribes ignore the concept of scale; they lack a systematic, two-dimensional orientation and mix together facts and phenomena from different times and sources, without coherent criteria of choice and representation. Thus, the drawings are just a graphic form, used to represent the same content as the accompanying texts, in a more assertive and memorable way. This idea is corroborated by the fact that some of the earliest surviving texts were written in a pedagogical context.<sup>22</sup> Furthermore, the French term ‘cartographie,’ which was the archetype for the English ‘cartography,’ was not coined before the 19th century, following the lead of ‘geography’ and ‘cosmography,’ which themselves acquired different meanings between antiquity and modern times.

Accordingly, the distinction between geography and cartography must be reassessed by critically reevaluating the relationship between text and image in classical antiquity. Maps are not characteristic of the so-called ‘mathematical’ geography: we know virtually nothing about maps drawn by Eratosthenes himself and in all likelihood Strabo did not illustrate his work. Maps circulated during antiquity in order to illustrate Ptolemy’s *Geography*, but perhaps not in Ptolemy’s time itself; in any case, the archetype of the atlas which accompanies his *Geography* was only drawn at the end of antiquity or even in Byzantine times.<sup>23</sup> At the same time, texts like the pseudo-Hippocratic treatise *On the sevens*, dated between classical and early Roman times, contain descriptions of what we would call nowadays an anthropomorphic map.<sup>24</sup> The most ancient map still preserved today, whose authenticity is not contested, is the so-called ‘Shield’ of Dura-Europos: like the *Tabula Peutingeriana*, this is an *itinerarium pictum*, a graphic illustration of a linear description of a maritime coast, thus of an ‘empirical’ ‘geographical’ text.<sup>25</sup> Similar objections can be made to the cartographical models transmitted as glosses in medieval manuscripts of Greek and

18 Dan 2009.

19 An example is the qualification of Hecataeus of Miletus’ work: for Athenaeus of Naucratis, Porphyrius, the lexicographers this was a *periegesis* (*FGrHist* I T 15a, b = F 291, 358, I T 22, I F 37, 112, 166, 220, 271, 278, 283, 305), for others like Strabo, a *periodos* (*FGrHist* I T 2, I F 125, 145, 154, 217, 284).

20 See already Gisinger 1924; Bischoff 1937; Gisinger 1937, and Van Paassen 1957. More recently, Marcotte 2000, LV–LXXII. Cf. also Schnayder 1950 and Boshnakov 2013. For the transmission of the ancient geographical texts in Byzantine times see Koder 1991.

21 See Jacob 1983; Jacob 1988 and Brodersen 2003; for a *longue durée* perspective, Jacob 1991; also Arnaud 1989a; Prontera 1997 and Prontera 2010.

22 Gautier Dalché 2014. For Solinus in particular, see Brodersen 2011 and Brodersen 2013.

23 Gautier Dalché 2009, 16–19; Mittenhuber 2009.

24 West 1971.

25 Arnaud 1989b.

Latin authors or as vignettes in texts such as the *Notitia dignitatum*.<sup>26</sup> In fact, although cartographic sketches became more frequent during late antiquity than before, this has nothing to do with the enlargement of geographical knowledge. Even during medieval times, Caesar and Augustus remained symbols of the maximum extension of Roman power and knowledge of the *orbis terrarum*.<sup>27</sup> Also, this development of cartography marked no progress in the accuracy of spatial representations, and therefore ancient ‘map’-making ought not to be considered as a separate discipline, as modern cartography is in regard to modern geography. The premises of this evolution are to be found in the cultural context of the late Roman Empire and in the methodological choices of schools for the education of the *elites*. Thus, instead of being isolated, the cartographic drawings, either preserved in physical form from antiquity or cited in ancient texts, must be studied together with the texts in order to allow us to understand properly their relationship with the perception and the mental construction of spaces by their authors.

Other distinctions, modelled on modern definitions of scientific disciplines or literary *genera*, are no less inappropriate or insufficient for comprehending the acquisition and transmission of ancient spatial knowledge. For example, the distinction between ‘geometry’ and ‘geography’ (*lato sensu*) is anachronistic for antiquity as a whole: such an opposition would imply that there was no ‘geography’ before the term ‘geography’ was coined by Eratosthenes (c. 200 BC).<sup>28</sup> Even in late antiquity, it is difficult to find a coherent distinction between ‘geometry’ and ‘geography’, with the exception of Ptolemy: For example, in the 5th century AD, Martianus Capella included a geographical synthesis in a book devoted to geometry, as a part of his encyclopaedia. The same blurring of distinctions is true for other disciplines, even if they appear better defined in ancient times: Eratosthenes’ distinction between ‘astronomy’ and ‘geography’ was probably blurred already in Hellenistic times, in Strabo’s writings at the latest.<sup>29</sup> The concept of ‘chorography’, like that of the *chora* itself, had different meanings for different authors: this becomes clear when one compares the use of the term by Polybius and Strabo with the restrictive definition and systematic use in Ptolemy’s *Geography*.<sup>30</sup> Of course, one may speak of a ‘periplographic order’ or an ‘itinerary order’ versus a ‘chorographic look’ at the world when describing ancient texts and *tabulae*. We hold that for their original authors, these were only narrative choices (never genres) because we cannot identify any linear evolution of distinct ‘genres’ or classification regarding the invention and use of these forms. Accordingly, paradoxographic texts follow the Mediterranean coastline as an implicit geographical principle of *literary* order without being *periploi*. The oldest preserved *periplus*, attributed to Scylax, only goes back to the 4th century BC and includes some rare chorographic digressions, whereas fragments of Hecataeus of Miletus, from the second half of the 6th century BC, make us believe that his *periodos* was not a *periplus*, but a description of lands and peoples (serving as a source for the chorographic tradition). While trying to classify these texts in accordance with a hypothetical evolution of their supposed genres, modern researchers refused, until recently, to take into account the late date of the elaboration of Pseudo-Scylax’ *periplus*.<sup>31</sup>

In the end, not even the distinction between oral and written sources can be properly applied in explaining the peculiarity of ancient geographical documentation. For the

26 See the cartographic sketches published by Edson and Savage-Smith 2000; Gautier Dalché 2003; Marcotte 2010; Pontani 2010. For the *Notitia Dignitatum*, see recently Traina 2013.

27 Gautier Dalché and Nicolet 1986.

28 For the Eratosthenian concept of geography, see Geus 2002 and Geus 2007. More generally, on the problematic concept of ‘mathematics’ (including geometry), see Lloyd 1992. For the geometric vocabulary of geography, see Marcotte 2006.

29 Geus 2014/2015.

30 See Prontera 2006, who discusses Polybius 34.1.6 (*apud* Strabo 10.3.5); for Ptolemy, see the English translation of Berggren and Jones 2000.

31 See now Counillon 2004, Counillon 2007 and Shipley 2011.



major part of the evidence one can only assume their oral or written composition: One tends to believe that verses, just like *logoi*, were composed and transmitted in oral form before Classical times and that writing and reading as a standard model of communication was established only later, in Hellenistic times, and increasingly so through the Roman education system. The same literary culture would also have affected the development of 'map-making' during late antiquity. However, the exceptional role of memory in ancient cultures contradicts any assumption according to which oral communication would have been less precise, complex and valuable than written texts. Evidence of this are the 'scholarly' itineraries which we find included in, for example, the Homeric epics and hymns (like the *Hymn to Apollo* narrating the itinerary of Leto to Delos), the Pindaric odes and Aeschylus' tragedies. Just like between text and drawing, the boundary between speech and text must have been more fluid for the ancient people than it is for us.

A new look at ancient spatial perceptions, free from the constraints of traditional generic terminology, allows new answers to old questions: Why was Ptolemy, who assembled the most comprehensive catalogue of ancient locations and presented them in the most objective way he could think of, practically not read in late antiquity? Why did Marcianus of Heraclea and Pappus of Alexandria ignore Ptolemy's cartographical principles and effort to convert distances into coordinates and why did they return to the Periplus' unidimensionality?<sup>32</sup> Why did Ammianus Marcellinus and Cassiodorus prefer the text of Dionysius Periegetes and maps derived from Ptolemy's *Geography* to Ptolemy's lists of coordinates, which was much more ambitious in its completeness and accuracy? It seems that the 'average' and 'traditional' knowledge of the 'scholarly' geography, warranted by the Classics and shared by nearly all ancient authors, held too great an influence. Accordingly, we may argue that a 'fully reasoned' abstracted image of the whole world was neither useful for common people with a basic level of spatial thinking, nor for the literati or scholars.

In fact, the characters in dramas or other fictional texts are 'naive' and fail to grasp conceptual notions and symbolic logic that are 'common sense' to an educated audience. The integration of their elementary knowledge in the text had no informative purpose, but only a narrative function. Like Strepsiades in Aristophanes' *Clouds*, persons who are quoted for basic views of the world (to be found not only in comedies but also in historiographical works like those of Herodotus, Xenophon, and Plutarch, in epics and in novels) play a specific role: they allow the author to underline the difference between their view and more elaborated opinions, considered the norm.<sup>33</sup> Therefore, our preserved texts do not faithfully reflect the way 'normal' people thought and spoke about space: choices have been made and they determined the making of tradition. They have nothing to do with modern requirements of science but correspond to what we could call the 'common sense' of educated citizens.<sup>34</sup> The limits of this geographical knowledge we find in most texts of antiquity that came down to our age are determined by the relevance and accessibility of the information for the intended audience. This explains not only the dominance of the 'canonical' geography in our sources, but also its conservatism and determinism, which shied away from fresh experience or more elaborate models.

32 See Gautier Dalché 2009, 45–49; more generally, Prontera 2007.

33 See Dan 2014.

34 For the distinction between modern science and ancient knowledge and wisdom, dependent on common sense, see Lloyd 1992 and Lloyd 2004, 12–23.

### 3 Common sense geography in the making: From ‘intuitive’ through ‘scholarly’ to ‘higher’ geography

Tab. 1 shows a new attempt to classify well-known sources in Greek and Roman geography.<sup>35</sup> The three theoretical categories depend on our model of ‘intuitive’, ‘scholarly’ or ‘fully reasoned’ methods of acquiring and transmitting spatial knowledge. They coexist at the same time and – as the example of Aristophanes has shown – can be recognised by a contemporary audience. One can acquire knowledge of space by means of all three methods; the choice depends only on the cultural context in which the geographical information is used.

Obviously, these three categories are ideal types only: almost all literary texts were written by and for people with a ‘canonical’ knowledge acquired in schools and libraries. They were all imbued with a refined culture and demanded the highest standards of literary craftsmanship. Many texts, however, include information of a lower or higher cognitive level which would justify the classification of some passages as ‘naive’ or, at the other end of the spectrum, ‘well-thought-out’ geography. At the bottom level, we place snippets of the geographical knowledge of lay people, transmitted through inscriptions and papyri but also professional knowledge of spaces in regular use by ordinary people. At the uppermost level we place Ptolemy’s *Geography* illustrating the highest achievement of the ancients’ attempts to understand and represent terrestrial spaces. Despite Ptolemy’s search for accuracy, however, he did not fulfil the requirements of a modern definition of science: his method is not entirely coherent or free from contradictions, since he admits to a mix of ‘absolute’ and ‘relative’ measures, as well as to quite arbitrary corrections he uses systematically in the manipulation of the available data. More importantly, not quoting his sources would disqualify him from being a ‘scientist’ in accordance with the current meaning of the term, a feature which distinguishes a ‘scientist’ from a ‘scholar’: There is no explanation of how Ptolemy obtained the coordinates for his books 2–7.<sup>36</sup> At the same time, as much as we may apprehend from the quite incomplete evidence transmitted to us, ancient scholars like Eudoxus, Aristotle, Eratosthenes and Hipparchus, in conforming to the philosophical tradition of Greek inquiry into nature, focused on theory only at a theoretical level and never undertook fully reasoned research evaluating all the data available to them. Marinus, Ptolemy’s direct predecessor, is criticised by his illustrious follower, among other things, precisely for this lack of systematic methodology.<sup>37</sup>

Studying ancient geography as ‘common sense’ geography and distinguishing between its ‘naive’/‘intuitive’, ‘scholarly’/‘canonical’ and ‘fully reasoned’ models, helps us to a better understanding of the different approaches to ancient spaces over long periods of time. Yet, modern scholars, who deal with the ancient evidence as a whole, still need subcategories in order to explain the relationships between different documents. Thus, even if the distinction between literary genres is not consistent, it still can sometimes

35 We have taken into account general histories of ancient space representations, such as Bunbury 1879; Tozer 1897; Berger 1903; Gisinger 1924; Thomson 1948; Aujac 1975; Pédech 1976; Dilke and Wentworth 1985; Olshausen 1991; Jacob 1991; Magnani 2003; Georgetti 2004; Rathmann 2007; Bianchetti 2008; Dueck and Brodersen 2012; Geus and Rathmann 2013. Not all the fragmentary authors of Jacoby V and *Geographi Latini minores* are registered here, especially when the texts are difficult to date or datable after the 6th – 7th centuries AD or when the number of the fragments is not sufficient enough to give a clear idea about the content of the work. Accordingly, most of the authors of personal travel reports are not included. This system, however, could be used in order to put Greek and Roman texts in a comparative perspective with the geographical knowledge of other ancient cultures: for a recent attempt of such a comparison, see Raaflaub and Talbert 2010; for a case of cultural transfer, see Geller 2014.

36 This view can be extended to other cultures; see Guckelsberger 2014.

37 *Geogr.* 1.6–18.

be useful in order to underline dependencies of geographical data or models as parts of certain traditions.

As a consequence, it is possible to explain the development of the ‘canonical’ tradition of the 6th and 5th century BC philosophers and logographers (inventors of *historie*), who wanted to offer a more objective, more elaborated picture of the *oikumene* in opposition to the ‘intuitive’ epicists. Of course, the epic *aidoi* and rhapsodes themselves, often described as wandering specialists, were able to compose or at least to include some masterpieces (like the catalogues of rivers in the *Iliad* and in Hesiodus’ *Theogony*) for which they were praised as possessing a knowledge superior to the ‘normal’ level.<sup>38</sup> Further, the ‘scholarly’ approach to cultural spaces allowed the composition of texts exclusively devoted to spatial descriptions (beginning with Hecataeus’ *ges periodos* and continuing with the Classical *periploi* of the Internal Sea and with the Hellenistic and Roman *periegesis*). It became a rule to use geometrically based estimations of distances and spaces whenever one single person needed this information. Unlike travel reports, which were designed for practical use, inventories in the scholarly tradition from the archaic period onward had to be exhaustive. Since Classical times, mythical or miraculous connotations of spaces were sometimes replaced by reasoned denotations, for example in the environmental determinism of the Hippocratic School, which served as basis for the systems of *climata* in scholarly texts of the Classical and Hellenistic times.<sup>39</sup>

Throughout history, exceptional scholars have tried to distinguish themselves from their predecessors: A better map of the *oikumene* was not just a list with more names and distances, but also a more objective way of determining locations and, through this, characteristics of regions, environments and peoples. The need for such a map was not only felt for political reasons – for which Herodotus attributed the first use of the map and Strabo declared that he had written the geography –<sup>40</sup> but subtle representations of the world were used in medicine and astrology; in both cases, the precision of locations was a prerequisite for the accuracy of diagnostics. Further, the requirement of comparison between relative measuring on the surface of the earth (*geometrikon*) and absolute measuring with the help of celestial phenomena (*meteoroskopikon*) revolutionized the way the inhabited world was described. Ptolemy’s first book of *Geography* deals with all the motives for looking beyond the ‘intuitive’ and the ‘canonical’ knowledge. In fact, his treatise can be read as a complete revision of the way ‘science’ evolved in antiquity: from the ‘uninitiated’ perception of the travellers (first source of errors) like Maes Titianos to the debates of theoretical principles by Hipparchus and Marinus of Tyre.

The three ideal models of communicating information about space can also be distinguished by the number of spatial dimensions represented in texts and figures: the direct perception in pragmatic contexts favours the representation of hodological, i.e. one-dimensional, spaces. Voyagers registering their travel experience use the hodological, i.e. one-dimensional, representation of spaces. Theophanes and the anonymous Christian of Bordeaux are prime examples for this. The itinerary is also the easiest solution for transmitting geographic, historical and even symbolic information: for this reason it has been used for the *Acts of the Apostles* as well as for the Gospels (canonical as well as apocryphal ones). At the other end of the common sense spectrum, ‘fully reasoned’ geography uses three-dimensional representations: the awareness of a relationship between terrestrial and celestial phenomena determined the success of the third dimension; of course, Eratosthenes’ and Ptolemy’s planimetric maps most probably did not try to

38 For the wanderings of archaic poets, see Hunter and Rutherford 2009.

39 For Hippocrates, see Jouanna 1981 and Staszak 1995; for the Hellenistic *climata*, Marcotte 1998.

40 Herod. 5.49 (cf. Branscome 2010); Strab. 1.1. For the political dimension of geography in Roman times, see especially Nicolet 1988; Strabo’s goal is aptly discussed by Engels 1999 and Dueck 2000.

represent or visualize elevations, but the interdependence of the *oikumenical*, terrestrial and celestial spheres was the basis of their conception.<sup>41</sup>

The prevalence of the mostly two-dimensional, ‘canonical geography’ can be explained by the cultural milieu and interests of the authors whose texts have been transmitted to us. Their mentality was marked by the general low esteem for practical knowledge in the Greek and Roman world. This is why we have relatively few sources of ‘lower’ geography. An exception is the *Corpus agrimensorum Romanorum*, a body of highly specialised texts of ‘immediate’ geography, whose survival is due to their juridical value. Despite the claim for the importance of autopsy in the ancient search for the truth, the concept of scientific exploration is in fact a modern one: ancient expeditions to the edges of the *oikumene* were always motivated by military or economic aims and made possible with the help of local people and their knowledge. As the works of Xenophon and Caesar show, intuitive, uninitiated, direct information acquired in the field was always re-worked afterwards when written down from memory.<sup>42</sup>

The dominance of the ‘canonical’ geography and the fluidity of its borders with both the ‘lower’ and ‘higher’ geography explain the overlap between these ideal categories. In order to reconstruct expressions of intuitive geography in antiquity, one needs to ‘unpack’ or deconstruct scholarly texts. Moreover, for understanding how Ptolemy was able to write his *Geography*, one must trace the origins of his geometrical reasoning back to Eudoxus (4th century BC) at least. In other words: This continuity and development of geographical knowledge is nothing more than the consolidation and illustration of the various forms in which common sense was applied to spatial thinking in antiquity.

#### 4 Common sense geography: Ancient and modern

In antiquity, as in modern times, scholars challenged previous opinions and outcomes on grounds of common sense. They tried to ‘make sense’ of the phenomena and wanted to communicate their findings to other people. The arguments proposed, the tools employed, and the methods used may not be credited as ‘scientific’ *stricto sensu* because of the lack of a universally shared set of definitions, principles and rules, explicit metadata, or a fully established and institutionalised discipline in its own right.<sup>43</sup> In fact, because of its common sense character, ancient geography has been (and for the most part still is) dismissed as ‘knowledge’ which could at best be of a pre-scientific or sub-scientific sort. Instead, common sense can be regarded as the first step in the constitution of modern science. Such a process should not be thought of as an incremental progression (from ‘nothing’ to the ‘truth’) but as a fluctuating, dynamic search for the reality or ‘truth’ in the

41 In fact, solving the problem of representing a three-dimensional object, i.e. the surface of Earth’s globe, on a two-dimensional map can be interpreted as Ptolemy’s main goal in his *Geography*.

42 Viola König’s research on *The Art of Mexico in Native Mexico* and Monica Pacheco’s study of the early colonial *Lienzo Selser II* (AD 1590) show both the problems and challenges of the clash of two Common Sense Geographies that were developed independently from each other but had to cooperate. Such is the special case of the European-Mesoamerican encounter in the 16th century. The depiction and presentation of the place signs is a good example out of many others. While the Spanish administration interpreted place signs as existing geographical places in the landscape, Mesoamerican authors would never regard a place sign as isolated from its larger context. The localization of the central place of ‘mountain of snakes’ on a medium like the *Lienzo Selser II* was insignificant. However, what really mattered was the context of the *altepetl*’s legitimation as a social-religious community, as shown by *Coixtlahuca*’s Land binding and New Fire ceremonies. In 16th century New Spain the integration of European concepts such as the perambulations or determining the bounds lead to a new indo-mestizo common sense geography.

43 For a discussion of a set of criteria applied to ancient and modern scientific texts, see Guckelsberger 2014.

*longue durée*, through synchronic approaches and in similar forms. Empirical and rational methods coexisted in ancient thinking, just as they do today.

The absence of linear progress in science is obvious in the relationship between belief and knowledge. Even if knowledge (*episteme*) has the advantage of proof and justification, people never gave up belief (*doxai*). The method of searching for ‘truth’ relies on the cultural context of the subject, i.e. on political, economic and cultural conditions.<sup>44</sup> Yet, in the pre-modern world, the relationship between facts, perceptions, mental constructions and representations seems more straightforward than in modern science, because it is more ‘intuitive,’ ‘congruent,’ and ‘mechanical.’ The empiricism, which is the first base of common sense, enables individuals from one social group or region – in some cases even from different communities and cultures – to share broad visions of the world, through common constructions of the reality, common frames of reference, and even common mental models of spaces.<sup>45</sup> In contrast to this, the production of data in modern science is based on formalized thinking and consistent methodology. In the long run, this leaves no place for ‘shades’ of reasoning, since a scientist must be able to explain all the methodological metadata which lead him to his data.

In our understanding, common sense reasoning supposes that an incomplete set of criteria normally required for common sense science is discernible in the arguments under study.<sup>46</sup> The term common sense denotes a reduced level of abstraction so as to make the general inference acceptable to the non-specialist. With increasing abstraction, sophistication and rationalization, a gradual shift from common sense science to science itself can be imagined. Since ancient geographical texts do not fulfil all the requirements of a modern definition of science, a case can be made that there was no ‘scientific’ geography in antiquity at all. Of course, this does not mean that Ptolemy’s *Geography* did not fulfil the requirements of ancient knowledge (*episteme*) and wisdom (*sophia*), the pair of which, taken together, corresponds, in ancient societies, to the repute of science in our society, better than anyone else’s work. By doing so, however, Ptolemy ‘only’ achieved the highest level of ancient common sense science, failing to apply his own ‘scientific’ criteria to all his data or, at least, to leave any trace of this attempt.

Our concept of ‘common sense geography’ is based on that of commonsensical reasoning: The central feature of common sense is that it concerns the consensus of an epistemic community. This is why ‘common’ is not only to be understood as ‘lower’ (vs. ‘professional’ or ‘higher’) but also as ‘shared’ knowledge, applied and discussed in intellectual circles and, thus, forming the canonical level of knowledge. Accordingly, the concept of ‘common sense geography’ relies largely on a body of shared knowledge about the physical environment that is required and used, either intuitively or without much concentrated effort, to navigate from one place to another; once stored it may be retrieved and used for identifying the relative positions of places without much further elaboration. Hence, this concept underlines the concrete basis and the practical purposes prevalent in ancient spatial and geographical thinking. Information is gathered directly on the field, on pragmatic grounds and with pragmatic aims: a clear example is that in ancient times there was probably no exploration for exploration’s sake like in modern times (this is why

44 One must remember that the sophists were the first to discuss and formulate a theory of knowledge. Protagoras’ statement remains famous: ‘Man is the measure of all things.’ Till the 5th century, knowledge was mostly achieved and justified by irrational, divine authorities (oracles, epiphanies, dreams etc.). Opinions of – mostly anonymous – groups were often satirized and derided, e.g. by Parmenides, Heraclitus and Xenophanes. Against this background, a history of common sense must identify and denote the authorities for *doxai* and shared beliefs in geographical matters. The polyvalence of this concept of common sense geography captures the different aspects of our study in Geus and Thiering 2014.

45 See especially Thiering 2014.

46 Compare, e.g., the incomplete observation of crocodiles at the Nile and Indus and the (wrong) analogous reasoning in ancient times (see Geus 2014 and Guckelsberger 2014).

we cannot speak of ‘explorers’ in the strict sense). There always seem to have been practical purposes for geographical inquiries just like for any other travel. These purposes ranged from military conquest to economic trade and political prestige. The extant evidence shows procedures whereby local observations are generalised to obtain statements which are supposedly generally valid in the (inhabited) world. Observation (by experience or experiment) can then modify the inferences or conclusions drawn. Hence, the evolution towards a more abstract view of the world was continuous, but slow. The overarching ‘ancient geography’ dreamed of by 18th and 19th century specialists of Greek and Roman antiquities – unfolding under their very eyes in their time – probably never materialized.

Common sense geography, in our view, reconciles the history of ancient geography with the history of science, but remains, at the same time, respectful of the philological principles of studying ancient texts. Just like in the case of the hodological concepts introduced by Pietro Janni or the research by Alexander Podossinov, itself based on Kurt Lewin’s psychological theories, our ‘common sense geography’ is a heuristic concept, a tool which could encourage the development of new ideas about ancient evidence.<sup>47</sup> The documents taken into account when writing the history of ancient geography would not be classified only by the usual genres any more, but by affiliation within traditions and degrees of rationalization. From Homer to the novelists, from historians to encyclopedists, from early philosophers to late commentators and epitomisers, one could better measure the efforts of ‘correcting the map’ (*diorthosis/ epanorthosis*) of the predecessors by comparing and evaluating the sources of information and the approach to the real world.

Studying ancient spatial evidence in terms of common sense means going back to the (re-)construction of different mental maps. We propose analysing the way people perceived and mentally modelled immediate and remote, real and imaginary, foreign, well-known or symbolically connotated environments. This also entails taking a closer look at the mental frames that ancient people used, determined by their historical context.<sup>48</sup> Finally, it allows a more critical approach to the ways of representing space, and a better understanding of how different levels of knowledge were combined, modified, and thus reshaped in the extant literary texts.<sup>49</sup>

47 Lewin, F. Heider, and G. M. Heider 1936, 87; Podossinov 1979; Janni 1984. Cf. also Gehrke 1998.

48 See the chapters of Bekker-Nielsen 2014 and Chiai 2014 in Geus and Thiering 2014.

49 For a recent case study on Dionysios Periegetes see Goerz, Ilyushechkina, and Thiering 2013.

'Intuitive' geography	'Scholarly' geography	'Fully reasoned' geography
	<ol style="list-style-type: none"> <li>1. Private and official documents made for or devoted to common people, from archaeological, epigraphic and papyrologic documents (e.g., letters, decrees, military diplomas).</li> <li>2. Simple itineraries: the silver cups of Vicarello, the <i>Stadiasmus</i> of Patara, the travels of Theophanes (<i>P. Ryl.</i> 616–651) and Aurelius Gaius (<i>AE</i> 1981, 777, <i>SEG</i> 31.1.1116), <i>Edictum de pretiis rerum uenialium, Itinerarium Burdigalense</i>.</li> <li>3. Specialists of naive geography: traders, pilots, messengers, guides (mentioned by Caesar, Vegetius), land surveyors (<i>Corpus agrimensorum Romanorum</i>).</li> </ol>	<ol style="list-style-type: none"> <li>4. Popular representations of spaces partially quoted or reconstructed in theatre (Aristophanes, Menander, Herodas, Plautus), public speeches (Demosthenes, Aeschines, Cicero, Dio Chrysostomus), epigrams (Greek Anthology), satire (Lucilius, Horatius, Juvenal, Martial), novels (Petronius, Chariton, Longus, Achilles Tatius, Xenophon of Ephesus, Heliodorus of Emesa).</li> <li>5. Echoes of travel reports, transmitted through the scholarly tradition of Xenophon, Strabo, Caesar, Arrianus, Ptolemy, Rutilius Namatianus, Alexander romance. A special case is represented by the naive interpretations of remote spaces, people, phenomena (e.g. Herodotus 4.7.31 about snow; Ctesias and Megasthenes about monsters on the edges of the world).</li> <li>6. Christian geography: travels of the Apostles.</li> </ol>

'Intuitive' geography	'Scholarly' geography	'Fully reasoned' geography
	<p>7. Epic, lyric, dramatic poets (Homer and the Homeric singers, Hesiod, Aristaeus of Proconnesus, Pindarus, Aeschylus, Lycophron, Callimachus, Theocritus, Apollonius of Rhodes, Ennius, Terentius, Catullus, Lucretius, Virgil, Propertius, Ovid, Lucanus, Statius, Valerius Flaccus, Silius Italicus, Ausonius), commentaries and reinterpretations of their works.</p> <p>8. The historiographical tradition (ιστορίαν): Hecataeus, Herodotus and the logographers (Hellanicus, Damastes, Antiochus of Syracuse), Thucydides, Ephorus, Theopompus, Timaeus, Polybius, Alexander Polyhistor, Diodorus Siculus, Metrodorus of Scepsis, Caesar, Cornelius Nepos, Sallustius, Titus Livius, Strabo, Tacitus, Flavius Josephus, Plutarch, Cassius Dio, Diogenes Laertius, Ammianus Marcellinus, Orosius, Historia Augusta, Procopius, Jordanes.</p> <p>9. Geographic elements in works generally considered as belonging to other branches of 'science': cosmology / natural sciences / philosophy / astronomy (Thales, Anaximander, Anaximenes, Anaxagoras, Plato, Dicaearchus, Strato of Lampsacus, Theophrastus, Aratus, Berossus, Aristarchus of Samos, Crates of Mallus, Posidonius, Pseudo-Aristotle's <i>De Mundo</i>, Cleomedes, Geminus, Manilius, Seneca, Sextus Empiricus, Macrobius), medicine (Hippocrates), architecture (Vitruvius), mathematics (Euclid, Hero of Alexandria, Theon of Alexandria), theology (church fathers like Saint Jerome, not only for his commentaries, but also for more geographical works, like <i>Eptaphium Paulae</i>), chronicles (like Hippolytus of Rome).</p> <p>10. The literary tradition of periplois, periegesis, itineraries, stadiasmoi: Pseudo-Scylax, Timosthenes of Rhodes, Demetrius of Scepsis, Agatharchides of Cnidus, the Attic Periegesis of the Hawara Papyrus, Pseudo-Scymnus (Apollodorus of Athens?), Artemidorus of Ephesus, Dionysius son of Calliphon, Menippus of Pergamum, Isidorus of Charax, <i>Periplus maris Erythraei</i>, Arrianus' and Pseudo-Arrianus' Periplus Ponti Euxini, the 'Shield' of Dura Europos, Protagoras, Dionysius Periegetes, Pausanias, Dionysius of Byzantium, <i>Stadiasmus Maris Magni</i>, <i>Tabula Peutingeriana</i>, <i>Itinerarium Antonini</i>, Avienus, the pilgrimage of Egeria, of Antoninus of Piacenza, Marcianus of Heraclia, Theodosius' <i>De situ terrae sanctae</i>.</p>	



'Intuitive' geography	'Scholarly' geography	'Fully reasoned' geography
	<p>11. The chorographic tradition: Apollodorus of Alexandria, Agrippa, Iuba, Pomponius Mela, Pappus of Alexandria (especially his chorographic works, probably preserved in the Armenian Աճարհա՛օյ՛), Ampelius, Vibius Sequester, <i>Dimensatio provinciarum</i>, <i>Divisio orbis terrarum</i>, <i>Expositio totius mundi et gentium</i>, <i>Lateculi</i>, <i>Nomina provinciarum omnium</i>, Hierocles' <i>Synekdemos</i>, Iulius Honorius, Cosmas Indicopleustes, Aethicus Ister.</p> <p>12. The scholastic and encyclopaedic tradition: Varro, Pliny the Elder, Quintilianus, Aulus Gellius, Servius, Eusebius, Martianus Capella, <i>Notitia dignitatum</i>, Priscianus of Caesarea and Priscianus of Lydia, Stephanus of Byzantium, Isidore of Seville.</p> <p>13. Paradoxography and mythography: Palaephatos, Antigonus Carystius, Pseudo-Aristoteles' <i>De mirabilibus auscultationibus</i>, Isigonus of Nicaea, Sotion, Phlegon, Pseudo-Plutarch, <i>De fluviis</i>, paradoxographical lists.</p> <p>14. Invented travel reports and parodies: Hanno, Euhemerus, Flavius Philostratus, Iambulus, Lucian.</p> <p>15. Pedagogical and pseudo-pedagogical treatises for a broader audience: Xenophon of Athens, Ovid, Seneca the Elder, Quintilianus, Oppian, Vegetius.</p> <p>16. Published letters written by scholars: Cicero, Pliny the Younger, Paulinus of Nola, Libanius.</p>	<p>17. Scientists who thought of more reasonable ways of representing terrestrial spaces: Eudoxus of Cyzicus, Aristotle, Hipparchus.</p> <p>18. Eratosthenes.</p> <p>19. Marinus of Tyre.</p> <p>20. Ptolemy.</p>

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