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Oronce Fine and *L'esphere du monde proprement dite Cosmographie* (1549 and 1551)

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Abstract

The article explores tensions between cosmography and topography in maps and writings of Oronce Fine (1492-1555). Editor and illustrator of two editions of *De sphaera* of Johannes Sacrobosco (1517 and 1527), author of *De sphaera mundi* (1542), Fine composed treatises of cosmography and mathematics in French. Affiliating with typographer-publisher Michel de Vasconsan, he published a vernacular edition titled *L'esphere du monde.* Headed by a poem celebrating the virtue of mathematics, the work is a point of reference in both the history of treatises on cosmography and the history of the illustrated book. The 1551 edition of *L'esphere du monde* transcribes an ornate manuscript of the same title that Fine presented to Henri II in 1549. Close reading of the two documents reveals that in their progression they tilt away from cosmography to geography, and that the French nation and its provinces become increasingly manifest. In the manuscript the monarch is reminded of the extent of his kingdom, while in the printed text *L'esphere* is addressed to a broader readership. Stock is taken of the status of cosmography in French circles in the middle of the sixteenth century, the very moment Münster's *Cosmographia* became a major and longstanding project on the European horizon at large.

Keywords: *Earth, France, Heavens, Manuscript, Topography*

1. *Introduction*

Circulation of Cosmographies: at a cursory glance, the title of this issue of the *Journal of Early Modern Studies* calls to mind the enterprise Sebastian Münster embarked on in his *Cosmographia universalis*, a compendium first published in 1544, that in successive editions, growing substantially in girth and weight, became a bookish monster. At a light year's distance from Bernardus Sylvestris' modest work of the same name, Münster's project – first printed and disseminated in German – epitomized an unforeseen commercialization of knowledge and, along with it, an implicit avowal that in the expanding world there was 'too

much to know' (Besse 2003; Blair 2010; van Putten 2018). At the same time mathematical cosmography was in the foreground and played a significant role in mediating the more scientific and entrepreneurial aspirations of the capacious genre.

The argument of the paragraphs that follow is that mathematical cosmography must be considered as a corrective to the entrepreneurial counterpart that Münster made famous, and that, based on Ptolemy's distinction between cosmography and topography, it betrays a concern about what ties local spaces to the terraqueous globe in its relationship with the heavens. In France, it almost goes without saying that Oronce Fine (1495-1555, a life span close to that of François Rabelais) maybe counted among those who employed 'science' (astronomy, mathematics and astrology) to define the genre. His work appears modest compared with Münster's editions of Ptolemy's *Geographia* in the years 1540-1552 and above all his *Cosmographia*, which inspired François de Belleforest, French polymath, compiler and erstwhile translator, to launch a French edition in two volumes, with a bonus of 150 maps and extensive descriptive history and geography of France.[1] Appearing in 1575, his book was doubled by another of the same proportion under an identical title, André Thevet's *Cosmographie universelle*.[2] Author of a *Cosmographie du Levant* (1554) and *Les Singularitez de la France antarctique* (1557-1558), the latter a memoir of his travel to Brazil and brief sojourn in Nicolas de Villagagnon's aborted Protestant colony in the Bay of Guanabara, Thevet left for posterity the manuscript of his *Grand insulaire et pilotage* (1586).[3] In all these works, Thevet envisaged cosmography as the study of the world in the form of a loose and open-ended agglomeration of real, fabled and sometimes, as it were, imaginary islands. The daring mix of fluvial prose dotted with copious maps and images turned the science of the world and the heavens into an archipelago of often uncharted, fabulous and unreliable knowledge.[4]

This applies less to the legacy of mathematical cosmography, which had witnessed fresh and crisp definition and explication in the writings, maps, illustrations and instruments Fine had designed and executed in the growing trade of print-culture. Mathematician, astrologer, astronomer, surveyor and cartographer, Fine edited and published numerous scientific treatises from 1515 to 1551. A gifted draftsman and a typographer, he established for humanists the principles of a scientific cosmography that included, as Ptolemy had declared in the opening sentences of his *Geographia* (dating to 145 CE), a counterpart and complement in topogra-

[1] The title is a tour de force: *La Cosmographie universelle de tout le monde. En laquelle, suivant les auteurs plus dignes de foy, sont au vray descriptes toutes les parties habitables, & non habitables de la terre, & de la mer … Et encor l'origine, noms ou appellations tant modernes qu'anciennes, & description de plusieurs villes, citez & isles, avec leur plantz & pourtraitctz, & sur tout de la France, non encor jusques à present veus ny imprimez. S'y voyent aussi d'avantage, les origines, accroissemens, & changemens des monarchies, empires, royaumes, estatz, & republiques: ensemble les mœurs, façons de vivre, loix, coustumes & religion de tous les peuples, & natiõs du monde …* (The Universal Cosmography of the entire world, in which, following the most reliable authors, are truly described all the habitable and unhabitable parts of the earth and of the sea … And also the origin, names or appellations both ancient and modern, plus the description of several cities, sites, and islands, with their maps and portrayals, and especially France, not yet either seen or in print. Included too are the origins, growth, and transformations of monarchies, empires, kingdoms, states, and republics: together with the mores, ways of living, customs, and religion of all peoples and nations of the world …). Unless otherwise stated all translations are mine.

[2] *La Cosmographie universelle d'Andre Thevet cosmographe du roy; illustree de diverses figures des choses plus remarquables veuës par l'auteur & incogneuës de nos anciens & modernes* (The Universal Cosmography of André Thevet, cosmographer of the king, illustrated with diverse figures of the most remarkable things seen by the author and unknown to our ancients and moderns).

[3] The manuscript is richly illustrated with maps and is accessible online: <https://gallica.bnf.fr/ark:/12148/btv1b9065835g/f1.item> accessed 1 February 2023. See Laboire and Lestringant 2006.

[4] Especially when appearing adjacent to the *isolario*, an intermediate genre that mediated unknown lands and waters by conceiving of the world as a loose assemblage of islands (see Lestringant 1994 and 2002).

phy. The correlation is evident in *De sphaera mundi*, first published in Latin in 1542, that in 1549 he translated into French as *L'esphere du monde* (The Worldly Sphere). After designing and illustrating *L'esphere* in the form of an elegantly illuminated manuscript honoring Henri II, Michel de Vascosan printed an exquisite edition in 1551, for which Fine slightly emended the prose and set finely engraved woodcuts in place of the hand-drawn illustrations. Now in a vernacular idiom and in print, the book of the 'worldly sphere' brought mathematical cosmography to a broader public. We can speculate that it was then that – unless we recall Hans Holbein's famous depiction of the cosmographer in the twenty-seventh woodcut of his *Images de la mort* (Lyon 1538), sitting in his bureau, who blindly looks upward at an armillary sphere while a skeleton graciously tenders him a skull – cosmographers and cosmography were held in admiration. This is evidenced by numerous re-editions of Ptolemy's *Geographia*, that were expanded to include the new discoveries: translated from Latin into vernacular idioms, and formatted in quasi-portable editions, it was only after 1570, when Abraham Ortelius published the first edition of his *Theatrum orbis terrarum*, like Ptolemy, that cosmography became an object and artefact of history.[5]

Although not circulating far from Paris, or known to a public to which later and greater cosmographies would soon be pitched, Fine's writings and editions of Euclid in the 1540s and early 1550s might have been a point of reference for humanists – mathematicians, surveyors – drawing inspiration from Ptolemy's distinction between cosmography and topography.[6] In their weave of texts, diagrams and images of Fine's own design, Fine's scientific cosmography appeals to a general public; in turn, it alters received notions of topography, extending the classical distinction between a whole and a detail. A faint but implicit narrative of such a shift emerges in the passage from the general description of cosmography in the opening pages of *L'esphere* to that of topography at its closure, where the author directs his gaze away from the firmament and toward the world around him.

2. *Fine's Career and* L'esphere du monde

Born near Briançon in the mountainous Dauphiny, son of François Fine, a doctor 'who also fabricated astronomical instruments, and who wrote a *De cœlestium indagation sine calculo* (1494)', Oronce went to Paris to study at the Collège de Montaigu 'and soon after enrolled at the Collège de Navarre where he remained up to 1528' (Pantin 2009a, 73-94). Upon obtaining a master's degree in 1516 he joined the faculty of medicine, collaborating with printers and booksellers in the role of an annotator and illustrator. In the years 1516-1520, which witnessed Francis I's rise to power, Fine joined with humanists François Desmoulins and Jacques Lefèvre d'Étaples in the manufacture of illustrated manuscripts and books. In 1518, at a moment when the king sought to launch a crusade, Fine was privy to Nicole le Huen's *Grant voyage de Jerusalem* (1488), a work turning Bernard von Breidenbach's *Sancta peregrinatio* (1486) into an argument for a military expedition. In the service of propaganda and to make his talents known, Fine wrote an exhortative poem and drew a map-like image of French forces landing on the shores of the Holy Land (Lecoq 1987, 259-262 quoted in Pantin 2009a, 75; Conley 2007, 92-98). By then specializing in the composition of frontispieces, on three occasions he illustrated himself in the guise of a scribe or an intermediary between the matter of cosmography and its transmission in

[5] As attested by Lestringant 1991 and other works on Thevet.
[6] See the bibliography in Marr 2009.

print.[7] In 1524, after drafting a first version of a cordiform world map, Fine, versed in astrology, reputedly predicted the defeat of French forces at Pavia. Enervated, the king incarcerated him, but upon protest on the part of Swiss and German cartographers he was set free. In 1528 or 1529, reports Isabelle Pantin, Francis I invited Fine, then an *escholier* at the Collège de Maistre Gervais, to teach courses on mathematics and astronomy. And two years later, after the king named him royal lecturer of mathematics at the newly founded Collège de France, Fine quickly established himself at the forefront of the two disciplines in the quadrivium (2009b, 18-22).

Historians of cartography have focused on Fine's woodcut projections, that include a double cordiform world map of 1531; a single cordiform map of 1534 (that he claimed to have begun in 1519); a map of France, executed in woodcut (dated 1525, printed in 1538 and 1553); variants of a map of southeastern France and northwestern Italy, which appears in different editions of *De sphaera mundi*.[8] In 1558, three years after Fine's death, Pirro Ligorio re-drew the latter in copperplate.[9] For over three decades, Fine's legacy as typographer and book-designer (over and above that of his mathematics) had commanded praise and admiration, and so too his artistic talents, manifest in the self-portraiture in the frontispieces and historiated initials of his *Protomathesis* (1532), a compendium of mathematics and cosmography.[10] At the same time astronomers were aware of his solar clocks and, in his writings after 1543, of a propensity to consider a heliocentric model of the earth and the heavens.[11]

[7] The self-portrait in the *Protomathesis* displays the author, seated in the foreground of a barren landscape, holding with his left hand an open book that rests on his knee. With his right hand he extends an astrolabe to a regal lady named as Urania in the banderole above her head. The banderole to his left that would identify him is left blank. The empyrean above is filled with an armillary sphere supported by two rings attached to ornate columns on either side. A roman majuscule O is inscribed in the frame of the ring to the left, and an F in the ring to the right. The scene is set against a stippled background, a style peculiar to Fine's illustrations and historiated initials. Pantin suggests that by virtue of the coordination of the image and poem in the legend readers and spectators are invited 'to abandon perishable interests to force themselves to attain higher places through art and assiduous labor', and to be taken by 'luminous secrets of the divine mathesis' through recall of mathematics, astrology and theology (Fine 1532, 78). Yet the gaze that Fine casts upon the goddess could read otherwise, as a scene of seduction, an effort to bring the goddess out of the empyrean and into the world below.

[8] The double cordiform world map is available online at Gallica (<https://gallica.bnf.fr/ark:/12148/btv1b8459584n/f1.item.r=oronce%20Fine>, accessed 1 February 2023) and also online in the Houghton Collection at Harvard University. The great (and sole surviving) copy of the single cordiform map in the Bibliothèque Nationale de France is online (<https://gallica.bnf.fr/ark:/12148/btv1b531882260/f1.item.zoom>, accessed 1 February 2023). And so also the map of *Gallia*, begun in 1525, printed in 1553 (<https://gallica.bnf.fr/ark:/12148/btv1b72002306/f1.item.r=oronce%20Fine>, accessed 1 February 2023).

[9] *Totius Galliæ descriptio: cum parte Angliæ, Germaniæ, Flandriæ, Brantaniæ, Italiæ, Romanusque* (1558) is accessible online: <https://iiif.lib.harvard.edu/manifests/view/ids:17223589>, accessed 1 February 2023.

[10] See Brun 1930, who held that Geofroy Tory and Oronce Fine were leaders in typography and illustration at the start of the century. The point is not lost on Aude Le Dividich 2000 (333-334).

[11] Frank Lestringant and Monique Pelletier study the context of Fine's work (2007). Pelletier's introduction to *Cartographie de la France et du monde de la Renaissance au siècle des Lumières* (2001, 7-12) indicates how cosmography and cartography are in concert throughout the oeuvre. She studies Fine's world maps (1531 and 1534) from a similar point of view in Pelletier 1995. Critical mass includes Ross 1971; Besse 2009, 100-113; Brioist 2009; Mosely 2009, which establishes modes of projection which Fine deploys in his oeuvre. Pantin (2009b) studies the milieus out of which the maps and illustrated books emerged over the duration of his career. Elsewhere, she meticulously reviews the evolution of the illustrated matter (Pantin 2010). Concentrating on the 'Cosmographia', part 3 of the *Protomathesis* (1532), she concludes that over time (between 1515 and 1550) a personal *style* comes forward, a 'particular balance … between abstract and concrete, geometry and natural philosophy, theory and practice', especially in the intellectual and material legibility of 'text and illustration' (Pantin 2010, 305). In a study of Fine's 'mercurial' character, in a portrait of the artist asleep below the heavens, Pantin lays stress on Fine and astrology (2009a). Angela Axworthy gives an account of work correlative with cosmography (2016).

In this essay, however, focus is placed on the form of the content of his cosmography in respect to text and image in *L'esphere du monde* (1549 and 1551), a translation of *De mundi sphaera, sive cosmographia* that was first published in 1542.[12] The manuscript and printed text suggest that in the later years of his career (or at least after the decrees of Villers-Cotterêts in 1539), in translating the Latin tract into French, in part to sustain himself and his family, Fine was obliged to appeal either to a less learned public or to readers who had yet to learn principles of geometry, mathematics, and both celestial and terrestrial cartography. In doing so his writing manifested a scientific and even proto-Cartesian style. Direct and terse, in both manuscript and print, the manner and disposition of *L'esphere du monde* more than its content may be regarded as the greatest asset of its cosmography.[13] Composed of six book-chapters, at its outset the manuscript of 1549 appears to be modelled on Ptolemy's *Geographia.* The first book describes how the world fits into the heavenly realm. In the concluding corollary to its first chapter, Fine writes, '*la machine du monde, non sans cause est appellee sphere*' (4r, my emphasis)[14]. Book two (twelve chapters) studies the 'circles' of the world, notably the ecliptic band, the zodiac, the five zones of the world as seen in Macrobian world maps, and the globe as it figures in an armillary sphere. Book three, on the stars and the ascension and descension of the signs of the zodiac, mingles scientific reason with reflections on the virtues of astrology, while book four studies the length of days and nights over the duration of a year. Devoted to latitude and longitude, the fifth and last book takes up what Fine had announced as a last but essential element of the treatise, topography, and with it the art of drawing hydrographic and marine maps.

3. *Fine's View of Cosmography*

In view of its prefatory material, the existential 'situation' or *raison d'être* of *L'esphere* takes precedence over its contents. What Fine meant by cosmography, why he described it in French rather than in Latin, and how it addressed (or betrayed) its cause or its occasion are found, first, in the *Lettre dedicative* Fine addressed to his king in 1549 (and modified slightly in the printed version of 1551, perhaps for the sake of greater clarity, or as a result of the rapid transformation of French in the course of the three years); second, in the table of contents; finally, in the organization of the text – its disposition – and the relation it holds with its illustrations, whether colored in pastel in the manuscript or when printed two years later, in the matte aspect of exquisitely drawn woodcuts. Much like Montaigne, who asserted (in *De l'art de conferer*)

[12] Composed of 137 leaves, reproduced in greater detail and 49 diagrams, it includes a first version of a gridded topographic (and hydrographic) map of eastern and southern France (59v), whose point of origin or center is proximate to Fine's birthplace in the vicinity of Briançon, in the mountainous Dauphiné. Père François de Dainville studies the articulation and composition of the map in the *Protomathesis*: a point of origin is chosen, and from there intersect a meridian and a line of longitude which extend to a trapezoidal frame that accounts for the rotundity of the earthly sphere (1970, 49-55). That the point of origin is in the vicinity of Fine's birthplace indicates that subjectivity ('who' one is being a function of 'where' one happens to be) is not unrelated to cartography.

[13] This prompts the thought that Fine's translation appeared in the same year as Joachim Du Bellay's *Deffence, et illustration de la langue françoyse,* in which the poet contends that French is no less able to convey in its diction the force and grace of classical Greek and Latin. A remark on the surname: is it Fine or, as it has often appeared, Finé? Following Poulle's entry in the *Dictionary of Scientific Biography* (1970-1990), in which it is argued that scholars from the Dauphiné have omitted the acute accent, Alexander Marr asks the contributors to his *Worlds of Oronce Fine* to spell it as such. The title page of the manuscript the cosmographer presented to Henri II in 1549 could not be clearer, stating that *L'esphere*? is by 'Oronce Fine, natif du Dauphiné' (see figure 1 below).

[14] (it is not without reason that the machine of the world is called the sphere).

that we do well to heed 'la maniere, non la matiere du dire' (1965, 928),[15] Fine correlates the geometrical style of his description with images and diagrams crafted to impress readers who set their eyes upon them – most notably the king, to whom the work is dedicated. Inaugurated by a historiated D in roman majuscule, colored in gold, interlaced with four crescents (Henri II's device), the incipit stands against a dark blue background dotted with twenty-eight stars. Fine's dedicatory letter lauds the liberal arts, placing stress on the virtues of the quadrivium (Arithmetic, Geometry, Music and Astronomy), while adding that Geography and Perspective are of no lesser virtue and value[16] (figure 1):

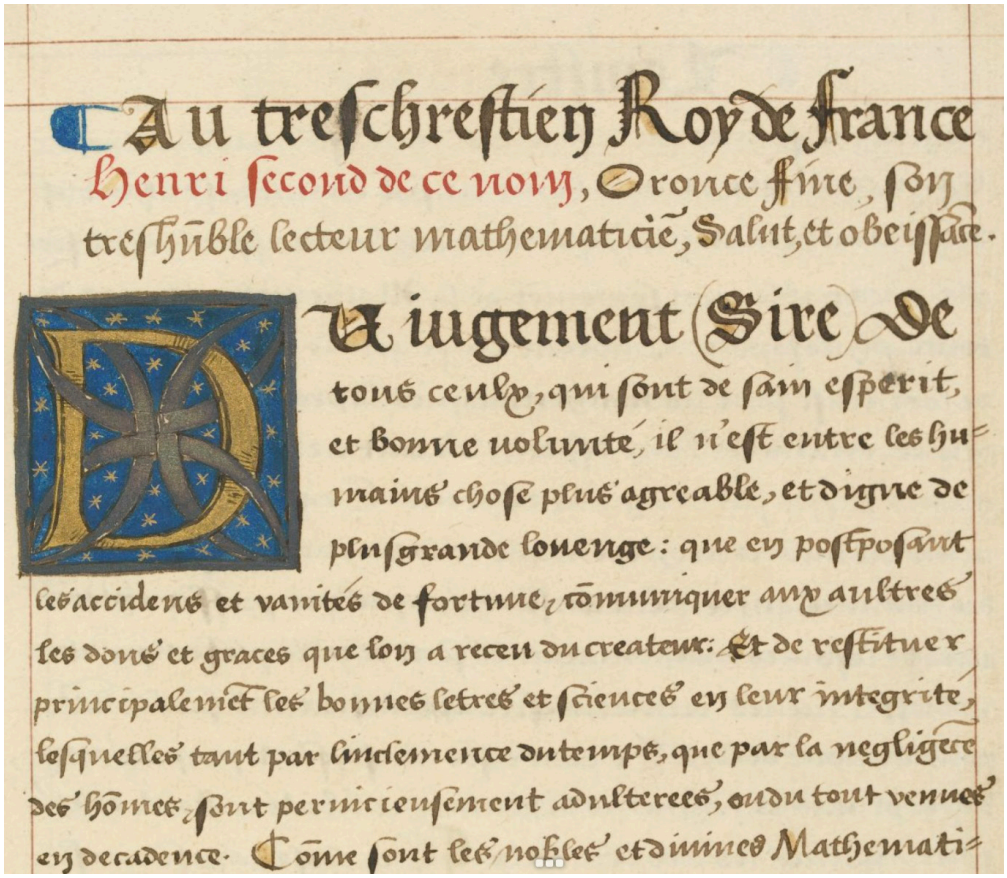


Figure 1 – Oronce Fine, *L'esphere du monde* (1549), title page of manuscript offered to Henri II, Ms. 57 Typ, Harvard Houghton Library. Online at <https://iiif.lib.harvard.edu/manifests/view/drs:18260773$11i>

Du iugement (Sire) de tous ceulx qui dont de sain esperit, & bonne volunté, il n'est entre les humains chose plus agreable, et digne de plus grande louange: que en postposant les accidents et vanités de fortune, communiquer aux aultres les dons et graces que lon a receu du createur. Et de restituer principalement les bonnes lettres et sciences en leur integrité, lesquelles tant par l'inclemence du temps, que par la neg-

[15] (the manner, and not the matter of speech).

[16] The manuscript is available online, in the Harvard Hollis catalogue. For the dedicatory letter, see <https://iiif.lib.harvard.edu/manifests/view/drs:18260773$13i>, accessed 1 February 2023.

ligence des hommes, sont premierement adulterees, ou du tout venue en decadence. Comme sont les nobles et divines Mathematiques, cest asavoir Arithmetique / Geometrie / Musique / et Astronomie, et leurs subalternes Geographie et Perspective. (1549, 2r)[17]

Mathematics, he contends, '*sont la probation de l'entendement, tirans les bonnes esprits du tout a elles,* et les contraignans passer par la rigueur de verité' (2v, my emphasis),[18] before avowing in words into which he folds his name,

Je me suis totalement souzmis à l'estude mathematique, suyvant ma naturelle inclination. En faveur duquel, iay despendu ce peu de patrimoine que dieu [sic] m'avoit donné: desirant proffiter aux aultres en ceste partie, et non sans *espoir* de pouvoir *finablement* parvenir à quelque bien, pour passer honnestement le reste de ma vie. Et fuz d'autant plus incliné audit estude, que je congneu le feu Roy vostre pere (auquel Dieu doint repos eternel) outre le bon iugement qu'il avoit de toute chose, comme prince bien né, porter singuliere affection ausdittes mathematiques. (1552, n.p., my emphasis)[19]

He continues, recalling that Henri's father, Francis I,

Me ordonna *finablement* publique interpretateur en l'université de Paris, ou i'ay fait mon devoir … Dont je suis encore attendant la recompense. Laquelle je ne puis *esperer*, apres Dieu, que de vostre liberalité. Pour inciter donques vostre maiesté me faire à la fin quelque bien, dont je puisse vivre le reste de ma vie, & avancer mes enfans, & mettre en lumiere plusieurs bonnes œuvres, qui demeurent en arriere par faute de pouvoir: je vous ay redigé par et mis en françoys, une des plus belles et delectables qui soit entre lesdites mathematiques. C'est à scavoir, la description universelle du monde, avec les choses les plus notables qui proviennent ça bas, à cause du premier et regulier mouvement de tout le ciel, que l'on appelle Cosmographie, et les principes & rudimens de la geographie & hydrographie concernant le fait de la marine … Et pour rendre le tout plus intelligible, j'ay suivi le meilleur ordre, & la plus facile tradition qu'il a esté possible: & inseré les tables, pourtraits, & figures à ce convenables & necessaires. Desirant, Sire, contenter premierement vostre maiesté … en laquelle consiste tout mon *espoir* et felicité: et puis apres, que souz l'umbre de vous, chacun en face son proffit, mesmement ceulx qui sont privés de la langue latine: en attendant que moyennant vostre aide, faveur & support, je puisse faire mieux. (1552 n.p., my emphasis)[20]

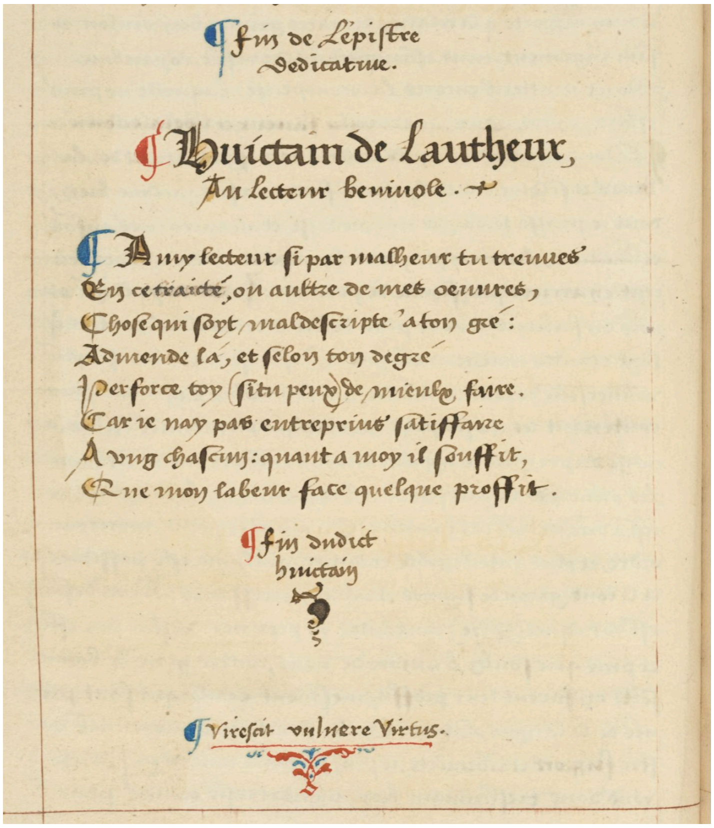
[17] Here and in the citations that follow, in the spirit of comparison, I have chosen to reproduce the texts of both the manuscript and the printed edition. The shift in the style and tenor of the French from 1549 to 1551 suggests that the idiom is undergoing rapid transformation and that perhaps, in concert with Fine's revision, the effect of roman typeface is in concert with the rapid development of the French language. (In the judgement [Sire], of everyone of sound mind and good will, nothing among humans is more pleasing and worthy of great praise, accidents and vanities of fortune set aside, than to convey to others the gifts and graces received from our creator. And principally to restitute knowledge and science in their integrity, that for cause of the inclemency of the time as of human negligence, have been adulterated or entirely fallen into decadence. Such are the noble and divine Mathematics, in other words, Arithmetic, Geometry, Music and Astronomy, and their subalterns, Geography and Perspective).

[18] (*are the probation of understanding, drawing good minds their way*, submitting them to the rigor of truth).

[19] (Following my own inclination, I have devoted myself entirely to the study of Mathematics, for which I have spent the little patrimony God gave me to help others, and not without hoping that *finally* I would achieve some wealth in order to spend the rest of my days living an honest life. I have been even more inclined to do so for having known the late King your father [to whom God owes eternal rest], besides the good judgment he had in all things, as a well-born prince, who possessed a singular affection for the said study of mathematics).

[20] (He *finally* named me [royal] professor [of mathematics] in the University of Paris, where I have done due diligence, for which I still await recompense. My only *hope* [after God] is for your liberal generosity. Thus, to urge your Majesty to be bountiful that I may live the rest of my life and provide for my children and to bring to light a number of fine works which had been held back for want of means. I have edited and translated into French for you one of the finest and most delectable works among those in mathematics: that is to say, the universal description

The preface of the manuscript ends with eight lines of verse in praise of mathematics, the formatting of which directs the reader's eyes toward Fine's carefully designed signature (figure 2).[21]


Fin de Lepistre dedicatiue.

Huictain de Lautheur,
Au lecteur beniuole.

Amy lecteur si par malheur tu treuues
En ce traicté, ou aultre de mes oeuures,
Chose qui soyt mal descripte a ton gre:
Admende la, et selon ton degre
Perforce toy (si tu peux) de mieulx faire.
Car ie nay pas entreprins satisfaire
A ung chascun: quant a moy il souffit,
Que mon labeur face quelque proffit.

Fin dudict huictain

Virescit vulnere Virtus.

Figure 2 – *L'esphere du mond*e (1549), end of dedicatory letter, eight-line *captatio benevolentiae,* signature and motto (3v)

of the world, containing the most notable things in our realm, for reason of the first and regular movement of the heavens that is called *Cosmography*, and the principles and rudiments of geography and hydrography concerning seafaring … And for the sake of greater intelligibility, I have followed the best order and the simplest tradition possible, inserting tables, portraits and figures. In the wish to please your majesty, in whom my hope and happiness are invested and further that under your patronage everyone will find profit, even those bereft of Latin. Awaiting your help, favor and support, may I do better).

[21] By contrast, designed for a general public, the 1551 edition includes an ode, 'L'autheur parlant à son livre [qui], l'envoye à Madame la duchesse de Valentinois' (speaking to his book, the author sends it to Madame the Duchess of Valentinois) in which he juxtaposes the figures of his name to the title of the king while humbly asking for recompense: 'Livre vaten saluer celle dame / Que dieu a fait l'honneur du Daulphiné, / Celle qui est noble de cœur & d'ame, / Et de vouloir, à bien faire incliné, / Dont la vertu, sur toutes a *finé* / De la faveur, de ce bon Roy de France: / Car sans support, tu sera *confiné*, / En quelque coing, & mis en obliance. / Tu ly pourras faire la remonstrance / Comment ie n'ay de travaillé cessé / Depuis trent'ans en mon art & science, / Dont n'ay encore recompense …' (ll. 1-12) (O book, go to salute my lady / Upon whom god bestowed the honor of Dauphiny, / Who is noble in her heart and soul, / And of will inclined to do well, / Whose virtue, above all has graced / The favor of the good King of France. / For without support you'll be confined / To a remote corner and put in oblivion. / You can rise in protest / Over how much I have ceaselessly labored / In my art and science for thirty years, / For which I still await recompense …). Fine is relentless in his request for remuneration.

Alternating in red and blue colors, six pilcrows follow a table of contents (1549, 4v-6v) whose first sentences define and delimit the scope of cosmography. A floral majuscule 'L' is graced by the gently curved stem and petals of a daisy. Followed by the 'monde', the inaugural character of the definite article, like a pair of dividers, opens onto the visual character of the greater project:

> Le monde est la perfaicte et entiere composition de toutes choses, et le vray imaige [sic] et admirable artifice de la divinité, de grandeur incomprehensible, et neantmoins limitee: et aorné de tous les corps et especes de creatures, qui peuvent estre en nature. *La description du quel, est proprement appellee cosmographie: comprenant soubz soy la premiere partie d'astronomie, et la geographie, cest a dire, la fabrique et ratiocination tant du ciel, que de la terre*. Le monde doncques, ha deux principales parties: comme il appert tant par la continuelle experience, que par raison naturelle. Cest a sçavoir, la region et partie elementaire, incessament occupee a la generation et corruption de toutes choses, tant vivantes que non vivantes: et la celeste machine privee de toute alteration, et decoree de innumerables estoilles tant fixes comme erratiques, environnant rondement ladicte region elementaire. Tellement que les elemens diversement comixtionnés et proprotionnés, sont la cause materielle et nourriture de toutes choses: Et le ciel par sa lumiere, mouvement, et influence des astres, est cause formelle de leur figure, varieté, et difference specifique, et qui donne la vie. Desquelles deux principales parties du Monde, sensuyt la figure, et description universelle. (1549, 6r-6v, my emphasis)[22]

Cited at length to convey the tenor of a pedagogical style blending reason (in the sense of geometry) and experience (as essay or experiment), the beginning signals that the treatise, a composite creation, is to be *seen* as it is *read* in tandem with the ordering and disposition of the diagrams and illuminated woodcuts. Of mottled coloration that moves from dark blue to light green, the first illustration is a carefully drawn image of the title, *L'esphere* (figure 3).

[22] (The world is the perfect and entire description of all things, and the true image and admirable artifice of the incomprehensible, yet limited grandeur of divinity. And it is adorned with all kinds of bodies and species of creatures we find in nature, the description of which is properly called *cosmography, which includes the first part of astronomy, and geography, in other words, the making and the measure of the heavens and the earth*. The world thus has two parts, as affirmed by continual experience and natural reason. In other words, the elementary region [is] endlessly taken up with the generation and corruption of living and non-living things alike. And the inalterable celestial machine is decorated with countless number of stars, both fixed and erratic, encompassing the elementary region, such that the diversely commixed and proportioned elements are the material cause and nourishment of all things. And the empyrean, by virtue of the light, movement and influence of the stars, is the formal cause of their figure, variety and specific difference so vital to life, whence the figure and description of the two principal parts of the world that follow).

Figure 3 – *L'esphere du monde* (1549), illuminated woodcut introducing 'L'esphere'

The intrados of the circle enclosing 'the celestial part of the world' is shaped as a frame surrounding a pupil-like 'elementary region', the brown shading and shadow in the lower left area suggesting that it could be the earth in its diurnal and nocturnal rhythms.[23] The cosmos becomes a *graphic* creation likened to an eye staring at the reader or, in greater abstraction, a circle suspended in space. In turn, the text of the three chapters that follow appears organized around their 'figures', circles that describe the nature and quality of the world and the heavens. Correlated with the textual matter in the manner of emblems, forty-nine images, grids and diagrams punctuate the cosmography. The work announces how maps, diagrams and their surrounding text are to be seen and read together, haptically, and to be taken as objects of contemplation.

[23] *Experience* as it is employed here seems close to Montaigne. Translating Aristotle, Montaigne writes at the beginning of 'De l'experience', the last chapter of his *Essais* (III, xiii): 'Il n'est desir plus naturel que le desir de connoissance. Nous essayons tous les moyens qui nous y peuent mener. Quand la raison nous faut, nous y employons l'experience, *Per varios usus artem experiential fecit: Exemplo monstrante viam,* qui est un moyen plus foible et moins digne; mais la verité est chose si grande, que nous ne devons desdaigner aucune entremise qui nous y conduise' (1965, 1065) (No desire is more natural than the desire of knowledge. We essay all means that can lead us to it. When we are lacking in reason, we appeal to experience, *it is by different trials that experience has produced art, the example leading us along the way*, which is a weaker and less dignified means; but truth is something so great that we ought never disdain any way that will lead us to it). In the cosmography, it could be said that the illustrations are 'examples' that 'lead the way' (or, as Montaigne soon implies, lead astray) in the 'desire' both *for* and *of* knowledge.

3. *From the General to the Specific*

The second and third illustrations of the first book describe the scope and vision of cosmography. Following the figure of the earth in the heavens, a 'map' or compass-diagram of the four elements locates a living subject in space and time according to moods or forces of attraction and repulsion based on the four elements. Juxtaposed to the image of the astrological house, the third illustration could be considered a 'regional' or topographical depiction of the cosmos. In place of the terraqueous globe within the orbits of the four elements, a map of Europe occupies the center of the sphere (or the pupil of its eye). A depiction of Europe and Africa lays emphasis on the Mediterranean and Black Sea, indicates how the continent may be an island, even if, in its acknowledgment of the providential design of new discoveries, the text states otherwise.[24] Portraying shadow, the dark parallel hatching on the right of the sphere suggests it might float in an aqueous realm (perhaps a remainder of the *ecoumene* of T/O diagrams) that contains *la terre* (the globe or simply telluric matter), in a circle located concentrically in the greater rings of air and fire. From this point the text takes up the mathematics and the geometry of the heavens, further stressing how the two disciplines allow the world to be 'thought' in terms of its measure within the Ptolemaic order of the planets.

Ending the tract with indirect reference to the opening sentences of Ptolemy's *Geographia*, in which the distinction between a representation of the world and that of a region can be pictured through the similitude of a portrait of a sitter and a world-map (as holistic entities) and a city- or island-view (as details), compared to an isolated ear and eye (that bear no resemblance to those in the portrait), Fine turns from cosmography to the depiction of specific places. He draws a topographical map. Two intersecting lines are traced at a perpendicular angle to each other: the horizontal line, designating latitude, is crossed by its vertical complement, a meridian. From the intersection the topographer marks off equal units, respectively, of minutes and degrees to fill out the spatial plan. Once configured in the form of a trapezoid to respect the curvature of the earth (as Ptolemy had advised), the completed map is 'distinguée par degrez atout Cens, & propre pour deferire le royaume ou prouince dont est question, par le moyen, des longitudes & latitudes des lieux comprins en iceile carte par les distances itineraires d'iceux, lesquelles on doit toujours prendre en la ligne meridionale du mylieu de laditte carte'.[25] He adds that the 'exemple des choses dessusdittes, peut estre prins par la figure qui senfuir, contenant une partie de la Gaule de huit degrez de longitude & cinq degrez de latitude. Les lieux descrits en icelle carte, par forme d'exemple, sont exprimez *par leurs propres noms vulgaires*' (1551, 53v-54r, my emphasis).[26]

[24] 'Et convient noter, que leau ne environne point rondement et entierement toute la terre: ains est respandue par divers bras, traicts, & conduyctz (que nous appelons mers) tant audedans, que autour d'icelle. Car il estoyt nccessaire, que aucunes parties de la dicte terre fussent descouvertes, pour le salut et habitation des vivants et la production de ses fruicts. Ainsi quil a pleu au createur, prevoyant la commodité et incommodité de toutes choses. Desquelz, la disposition est comme il est contenu en ceste figure' (1549, 7v) (It should be noted that water does not in sum surround the entirety of the earth: rather, it is distributed by diverse arms, traits, and conduits [which we call seas] both inside and outside of itself. For it was necessary that some part of the earth be discovered for the salvation of human life and the production of its riches, as it pleased the creator in foreseeing the commodity and incommodity of all things, the disposition of which is shown in this figure).

[25] (distinguished by degrees in every direction, fit to describe [in a geometrical sense] the kingdom or province in question, by means of the latitude and longitude of the places included in the map, and by the distances traveled between them, which must always be taken in respect to the meridian at the middle of the given map).

[26] (example of the things noted here can be understood via the figure that follows, a part of Gaul of eight degrees of longitude and five degrees of latitude … By way of example the places described in this map are noted by their common proper names).

First shown in woodcut in *De sphaera mundi*, the map illustrates how, as an instance of a system or method, it can be applied to any regional space (figure 4).

Figure 4 – Map of Gaul in *L'esphere du mond*e (1549)

Specifically designed to stress the hydrography of southeastern Gaul and northwestern Italy, the area demarcating rivers that flow either to the south or the east is to the immediate right of the intersection of the lines of longitude and latitude at the origin of the map. The River Pau and its tributaries begin at latitude 45 N and longitude 29 N, adjacent to *Briançon,* the toponym to the left, ostensibly a center, origin or umbilicus of the projection. Without being stated as such, the map could also be a sort of *autobiography,* a drawn depiction or inscription at whose center is its author's birthplace. Like a linguistic sign that is both 'arbitrary' and 'motivated', Briançon is merely what it is, Briançon, but it can also be a point of origin correlative to that of the author and of the map in which it figures (figure 5).

Figure 5 – Map of Gaul in *L'esphere du monde* (1549), detail

Following chapter seven, in which Fine explains how a representation of an eighth, fourth or half of the terrestrial globe can take the form of a planisphere (54r-56v), the treatise ends with illustrations and an explication of the design of a compass rose. Drawn both as an abstraction and a practical device, the figure belongs to the worlds of both an armchair cosmographer and a navigator or voyager. 'De la distinction des vents, selon les hydrographes: et de la vraye composition des cartes, que lon appelle marines' (56v-58v),[27] chapter eight situates the sixteen cardinal points that designate the major winds (figure 6).

[27] (On the distinction of the winds according to hydrographers, and on the true composition of charts which are called marine maps).

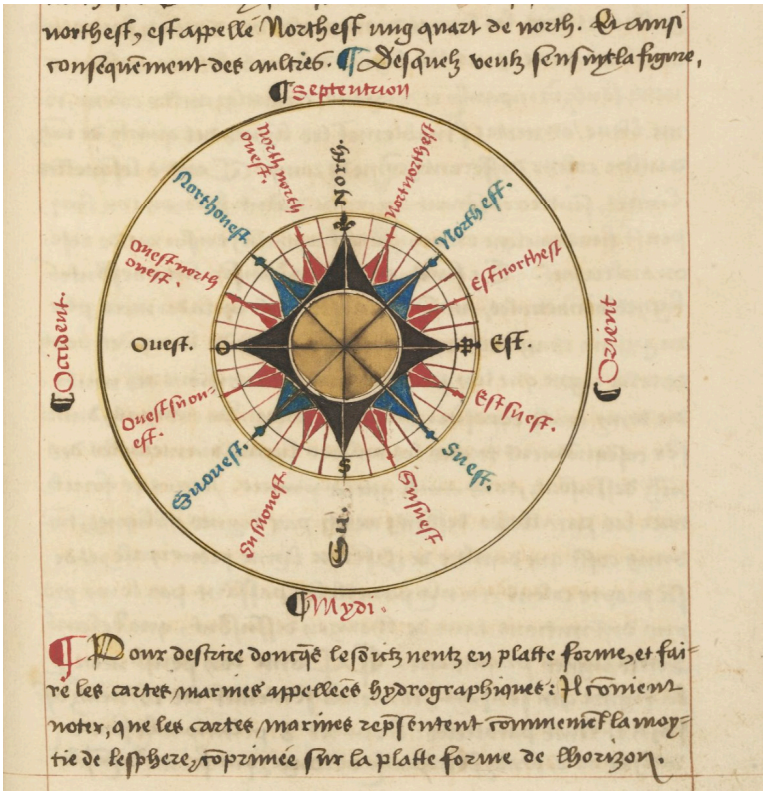


Figure 6 – Origin of map in the region of Briançon, detail of the map of Gaul

The author concludes, '*Finablement* convient noter, que chacun intervalle desdits 16 vents est derechef parti en deux moitiés, qui designent les quarts des vents dessusdits' (57r, my emphasis).[28] Scripting his name into the initial part of the summary, Fine anticipates a second instantiation that goes with a more elaborate wind rose, whose alternating red and black ink lines turn the scientific object into its aesthetic counterpart. Marked on the intrados of the containing circle, a geometrically drawn pattern of six arcs radiating from each of the sixteen wind points (north, north northeast, east north east, east, etc.) calls attention to the material cause and condition of the compass. Belonging to the legacy of a hand drawn manuscript and of maps composed with inks of different colors (including the manuscript of *L'esphere* presented to Henri II in 1549), the illustration invites readers to contemplate a design of sacred latency (reminiscent, perhaps, of the great rose windows dating to the middle of the thirteenth century, e.g., in the south transept of Notre-Dame-de-Paris) and, no less, to consider where the poetics of inspiration and the principles of navigation may be one and the same.[29]

[28] (*Finally* it is worth noting that each interval of the stated 16 winds is once again split into two halves that designate the fourths of the winds).

[29] The mix of art and science puts the work into a creative area that Balzac, three centuries later, locates between inspiration and science, between '*la toise et le vertige*' (measure and vertigo). And how can readers versed in literature fail to recall Paul Valéry's *Le Cimetière marin,* in which the voice finds inspiration, asserting, 'Le vent se lève. Il faut tenter de vivre' (The wind is arising. We must try to live)?

4. *Mapping the World, Mapping the Space*

Below the compass rose, the last words of the treatise suggest that cosmography cannot be dissociated from hands-on survey and calculation. In a curtsey to his name and to what it connotes, he links the final sentences with the project of the mapping of the world, perhaps alluding less to the great world maps of 1531 and 1534 than to the topographies, such as the map of southern France and northeastern Italy or the reticulated map of France, riven with five major rivers and with coastlines looking onto the English Channel, the Bay of Biscay, and the Mediterranean, that would appear in 1553:

Finablement qui voudroit comprendre tout le globe terrestre entierement, il faudroit faire deux figures telles que la precedente [the elaborate compass rose], de sorte que l'horizon de l'une touchast l'horizon de l'autre: & pourtraire les lignes & traits des vents outre, & par dehors lesdits horizons, ou *finir* dedans iceux, ainsi que bon semblera. Puis observer le reste selon l'art & usage hydrographique. (1549, 69r, my emphasis)[30]

In ending by emphasizing the mapping of bodies of water, *L'esphere* moves from reflection on the vastness of the worldly sphere in the heavens to the landscapes and boundaries of *Gallia*. In concert with the title and matter of a telling study by the late and regretted Bruno Latour (Latour 2018), Fine's cosmography has come 'down to earth'. If, in accord with a good deal of late medieval and early modern literature, pages of writing are read both forward and backward, turned left to right and right to left, the final folio of *L'esphere*, in the formula of the existential geographer Yi-fu Tuan, moves between 'cosmos and hearth' (1996).[31] Seen and read from both sides, recto and verso, the final folio makes clear the distinction between cosmography and topography. Printed in red and black ink, the last of the 49 illustrations (1553, 58r) and second of the two compass roses is placed over the *explicit* on the verso side, designed in *cul-de-lampe*, formatted to suggest a receding perspective (figure 7).

[30] (*Finally*, to configure the terrestrial globe in entirety two figures must be drawn, as shown above, to have the horizon of the one touch the horizon of the other and portray the lines and traits of the winds beyond and outside of the noted horizons, or else *finish* within them, as seems appropriate. Then the remainder can be observed in accord with the art and practice of hydrography).

[31] In *Le Masque et la lumière* (1976), a path-finding study of the Grands Rhétoriqueurs (roughly, 1470-1520) Paul Zumthor noted that the poetry was conceived to be read spatially, in different and often contrary directions. On this basis, it can be surmised that the faint imprint of the matter on the opposite or 'other' side of a folio would be of an unspoken but vital presence (see Conley 2017 and 2000).

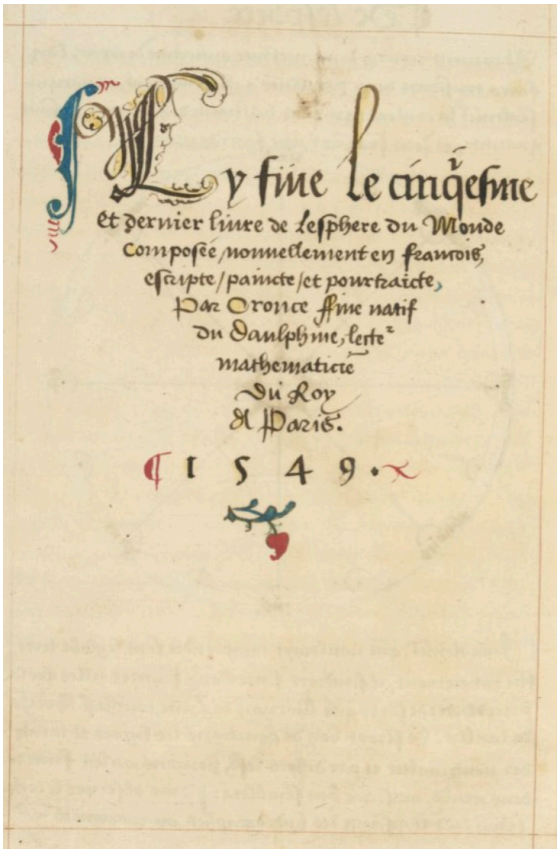


Figure 7 – Compass rose decorated by pilcrows at the cardinal points of the illustration in text of 1551 (57r)

'Here ends', a conventional formula, carries the author's name. The last of four lines of text, places 'A Paris' in the middle or, possibly, at an implicit vanishing point of the design. Around it emerges the faint impression, printed on the other side of the page, of the compass rose the hub of which is adjacent to the origin – in other words, the name of the printer, an indication that the worldly sphere includes the book itself, a mechanically reproduced object. Cosmography cannot be envisaged outside the mechanical means of its graphic representation.

5. *Conclusion*

By way of a conclusion, it is worth recalling the place that Fine occupies in André Thevet's *Vrais portraits des hommes illustres* (1584), an atlas of notable persons of all times and places, including autochtones of the New World (1584, 564r-566v).[32] After a long conceit, calling Fine an 'Archimede Daulphinois', Thevet (or his team of editors) writes of his origins in Briançon, his youth and, after being named professor of mathematics at the University of Paris, of the trials and tribulations of his career. Those who knew him and his creations

[32] For the entry on Fine, see <https://gallica.bnf.fr/ark:/12148/btv1b86246591/f1261.item>, accessed 1 February 2023.

were not wrong when ravished in admiration of our Daulphinois' subtlety. In the space of thirty years and more he was a public reader of mathematics (as he himself attests in the letter he dedicated to the king Henri, second of this name, that prefaces his five books of Cosmography), whose difficulties he cleared up, never being content with his labors, adding to his divine writings that have so much refined these sciences where it was customary to say that mathematics would have been left in an impoverished and pitiful state (and to our marvelous prejudice), if from Dauphiny there had never been a Fine only he could could make them fine. (565r)

In respect to *L'esphere du monde*, Thevet adds that Fine 'composed … the Gallican map …; five books on the Worldly Sphere, that is, Cosmography, with a letter touching on the dignity, perfection, and utility of Mathematical Science; on practical arithmetic, and the first part of Astronomy' (566v).

Compared with Thevet's generally loquacious *Cosmographie universelle*, the terse tenor of praise in the *Portraits* suggests that Fine's mathematical cosmography of the 1530s and 1540s could have been the point from which the genre developed and was soon to circulate and later, with the impact of Copernicus, would reach a moment of stasis. In Fine's world the mathematical treatment of the earth and the heavens proposes judicious calculation of the kind for which *De revolutionibus* would be better known. In every respect, the visual and textual appeal that as artist, typographer and draftsman Fine brings to the genre in manuscript and print sets it apart from Münster's *Cosmographia universalis*, its translations, and imitations. A point of reference in the early chapters of its history, the writings and elegantly drawn (and colored) illustrations show how and why cosmography held strong in the decades prior to the advent of the atlas as it would soon be conceived and realized by Ortelius and Mercator.

Works Cited

Manuscript Source

Houghton Library, Harvard University, Cambridge, MS Typ 57, Oronce Fine, *Le sphere de monde: proprement dicte Cosmographie*, <https://iiif.lib.harvard.edu/manifests/view/drs:18260773$13i>, accessed 1 February 2023.

Printed Sources

Axworthy Angela (2016), *Le mathématicien renaissant et son savoir: le statut des mathématiques selon Oronce Fine*, Paris, Classiques Garnier.
Belleforest François de (1575), *La Cosmographie universelle de tout le monde*, Paris, Michel Sonnius, 2 vols.
Besse Jean-Marc (2003), *Les grandeurs de la Terre: aspects du savoir géographique à la Renaissance*, Lyon, ENS Éditions.
Besse Jean-Marc (2009), 'Cosmography and Geography in the Sixteenth Century: The Position of Oronce Fine between Mathematics and History', in A. Marr, ed., 100-113.
Blair A.M. (2010), *Too Much to Know: Managing Scholarly Information Before the Early Modern Age*, New Haven, Yale University Press.
Brioist Jean-Jacques (2009), 'Oronce Fine and Cartographical Method', in A. Marr, ed., 137-155.
Brun Robert (1930), *Le Livre illustré en France au XVIe siècle*, Paris, Libraire Félix Alcan.
Conley Tom (2000), *L'inconscient graphique: essai sur l'écriture de la Renaissance (Marot, Ronsard, Rabelais)*, Paris, Presses de Universitaires de Paris/Vincennes.
Conley Tom (2007), *The Self-Made Map: Cartographic Writing in Early Modern France*, Minneapolis, University of Minnesota Press.

Conley Tom (2017), 'L'île-sonnet: aux abords des *Regrets* de Du Bellay', in F. Lestringant and A. Tarrète, eds, *Îles et insulaires (XVIe-XVIIIe siècles)*, Paris, Presses de l'Université Paris-Sorbonne, 281-298.
Dainville François de (1970), 'How did Oronce Fine Draw his Large Map of France?', *Imago mundi* 24, 49-55.
Fine Oronce (1532), *Protomathesis*, Parisiis, Gherardi Morrhij [et] Ioannis Petri.
Fine Oronce (1551), *L'esphere du monde*, Paris, Michel de Vascosans.
Fine Oronce (1558), *Totius Galliae Descriptio cum parte Angliae, Germaniae, Flandriae, Brabantiae, Italiae Romam usque*, Pyrrho Ligorio Neap. Auctore, Romae, Michaelis Tramezini formis.
Laborie Jean-Claude and Frank Lestringant, eds (2006), *Histoire d'André Thevet Angoumoisin, Cosmographe du Roy, de deux voyages par luy faits aux Indes Australes, et Occidentales*, Geneva, Droz.
Latour Bruno (2018), *Down to Earth: Politics in the New Climatic Regime*, trans. by C. Porter, Cambridge, Polity Press.
Le Dividich Aude (2000), 'La Libération de l'œil: de la schématisation géographique à la symbolique mathématique' in Henri-Jean Martin, ed., *La Naissance du livre moderne. Mise en page et mise en texte du livre français (XIVe-XVIIe siècles)*, Paris, Éditions du Cercle de la Librairie, 328-340.
Lecoq Anne-Marie (1987), *François Ier imaginaire. Symbolique et politique à l'aube de la Renaissance française*, Paris, Éditions Macula.
Lestringant Frank (1991) *L'Atelier du cosmographe, ou l'image du monde à la Renaissance*, Paris, Albin Michel.
Lestringant Frank (2002), *Le Livre des îles: Atlas et récits insulaires de la Genèse à Jules Verne*, Geneva, Droz.
Lestringant Frank and Monique Pelletier (2007), 'Maps and Descriptions of the World in Sixteenth-Century France', in D. Woodward, ed., *The History of Cartography, Volume 3: Cartography in the European Renaissance*, Chicago, University of Chicago Press, 1463-1479.
Marr Alexander, ed. (2009), *The Worlds of Oronce Fine: Mathematics, Instruments and Print in Renaissance France*, Donington, Shaun Tyas.
Montaigne Michel de (1965), *Essais*, ed. by P. Villey and V.L. Saulnier, Paris, Presses Universitaires de France.
Mosely Adam (2009), 'Early Modern Cosmography: Finé's *Sphæra Mundi* in Content and Context', in A. Marr, ed., 114-136.
Pantin Isabelle (2009a), 'Altior incubuit animus sub imagine mundi. L'inspiration du cosmographe d'après une gravure d'Oronce Finé', in F. Lestringant, ed., *Les méditations cosmographiques à la Renaissance*, Paris, Presses de l'Université Paris-Sorbonne, 73-94.
Pantin Isabelle (2009b), 'Oronce Fine's Role as Royal Lecturer', in A. Marr, ed., 13-30.
Pantin Isabelle (2010), 'The Astronomical Diagrams in Oronce Finé's *Protomathesis* (1532): Founding a French Tradition?', *Journal for the History of Astronomy* 41, 3, 287-310.
Pelletier Monique (1995), 'Die herzförmigen Weltkarten von Oronce Fine', *Cartographica Helvetica* 12, 27-37.
Pelletier Monique (2001), *Cartographie de la France et du monde de la Renaissance au siècle des Lumières*, Paris, Bibliothèque Nationale de France.
Poulle Emmanuel (1970-1990), 'Oronce Finé', in C. Coulston Gillespie, ed., *Dictionary of Scientific Biography*, vol. 15 Supp. I, New York, Charles Scribner's Sons, 153-157.
Ross R.P. (1971), 'Studies on Oronce Fine (1494-1555)', PhD Thesis, Columbia University (unpublished).
Thevet André (1575), *La Cosmographie universelle d'Andre Thevet cosmographe du roy; illustree de diverses figures des choses plus remarquables veuës par l'Auteur & incogneuës de nos Anciens & Modernes*, Paris, Chez Guillaume Chaudière.
Thevet André (1584), *Les vrais pourtraits et vies des hommes illustres grecz, latins et payens, recueilliz de leurs tableaux, livres, médalles antiques et modernes*, Paris, Par la Vesve Kervert et Guillaume Chaudière.
Tuan Yi-Fu (1996), *Cosmos and Hearth: A Cosmopolite's Viewpoint*, Minneapolis, University of Minnesota Press.
van Putten Jasper (2018), *Networked Nations: Mapping German Nations in Sebastian Münster's Cosmographia*, Leiden and Boston, Brill.
Zumthor Paul (1976), *Le masque et la lumière. La poétique des grands rhétoriqueurs*, Paris, Éditions du Seuil.