THE DUTCH CARTOGRAPHY’S Gouden Eeuw, between art and industry.  
AN ANSWER TO ALESSANDRO RICCI.

Abstract - A recent article by Alessandro Ricci shows the relationship between the visual arts (such as painting) and the large cartographic production in the Dutch Golden Age (1588-1702). But we must not ignore the link between cartography and industrial production: both the characteristics of printing, and for the dissemination of geographical knowledge in many copies, primarily through the East India Company (VOC). Protestant culture was particularly suited to accommodate the press, while the Catholic culture continued to appreciate the manuscript maps, drawn by hand. However, one of the most interesting case study is the great Novus Atlas Sinensis by Martino Martini, an Italian Jesuit who, after 17 years of missionary work in China, in 1655 chose to print his own information in the typography of a Protestant, Johan Blaeu: official cartographer of the VOC in Amsterdam.

1. – Between art and industry. I would like to propose to the community of geographers a brief reflection, triggered by a recent article of my friend the geographer Alessandro Ricci about the relationship between cartography and painting in the age of Vermeer (Ricci, 2013). Start by saying that I am fascinated also by the power of persuasion of the visual arts, and there is no doubt that much of the beauty of the maps derived precisely from their ability to convince observers.

However, I would like to clarify some points, making it possible to distinguish more carefully some characteristics of a historical period that is also very interesting today.

The cartography is, we know, 50% an art, 50% an «happy industry»1 in the words with which he was referring to the Dutch tradition Quaini (2006, p. 97). The art requires a certain amount of genius in the author, and a certain sensitivity in the user; instead the industry, with its technical applications of scientific innovations repetitive, requires only conscientious workers and common users (that does not mean it is unimportant, how effectively explains the adjective «industrious»). The first croissant was a work of art which required a chef to make and a gourmet to taste; the baking industry, however, satisfies a very distracted hunger eater. The intimate essence of industrial production – as noted by Andy Warhol - is that the products tend to homogeneity: «a Coke is a Coke», and the kings and admirals consult the same maps viewed by any boatswain and even by a cabin boy. According to a popular definition, also reported by Umberto Eco, the difference between art and science (and technology) can be summarized in these terms: «science is any event in which a fool of the next generation surpasses a genius of the previous generation» (Eco, 2006, p. 335). The classic example is the chemistry: the next generation to

1 The Italian word is «felice» in the Latin sense of «fertile», «productive». In a Piedmont map by Paolo Forlani drawn in 1567 we read about «felix industria» (perhaps only at the individual level).
Lavoisier considered trivial things that twenty years ago seemed miracles. Another classic example of art is the painting, which depends in large part by the genius of the talented author.

Vermeer was a genius: but they were all geniuses, the Dutch cartographers? Or, turning the question, it was necessary that they were all geniuses? And at the same time, they were all sensitive interpreters users of cartography in the Netherlands of Gouden Eeuw; or not?

It would not be an exaggeration to say that handwritten cartography is also art (art of describing, art of persuasion, art to select wich details to emphasize) and that each manuscript map is a unique piece, while printed cartography - while maintaining at least in early stages a strong content «artistico» - tends to become a technique: needing less brilliant authors and less sensitive users.

Let me give an example. The medieval Mediterranean pilot books – «portolani» – were copied by hand. Each item was different from the others, depending on the needs of the customer and the ability of the copyst. In one pilot book the African coast can lacks (so, the client does not plan to go there), in another details are added on the Dardanelles (there is expected to go, and how!); and many details are written as if they were personal experiences of the author, «seguite con li occhi» (seen by my eyes: Benincasa, 1445) while often are just copied verbatim from texts of 50 or even 100 years before. In many pilot books, the owner – sometimes a true seafarer - interpolated glosses and personal additions of his own hand, on every page. The commentaries, in fact, was the only way to upgrade the handwritten portolani: however, even if you could update only one copy at a time (in a traditional way, or if you want, in an artistic way) and then submit to the good will of other copyists scribes: the son, cousin merchant, the competitor – or the enemy.

The pilot books Dutch early modern form already an industrial product, to the extent that they appeal to a mass of new readers (both literates, and actually seafarers).

The first pilot books printed take the name of wagonner by Lucas Janszoon Wagenaer (Latin name: Aurigarius), not surprisingly a Dutch from Enkhuizen city, which in 1588 will improve the experiments done before him by some Dutch cartographers. Wagenaer was only the most famous, but not the first, to ask its readers-sailors (from all nationalities and languages) to return a feed back to the publisher: requesting that were reported by letter errors and updates, so could include them in the next updated editions: a real cultural revolution implied in this message resides in the medium (as Marshall McLuhan would said). Wagenaer was aware that all copies of his text in circulation reported the same sentences in the same pages, so it could receive reports on time (a certain page, a certain line) and he was sure that any errors would not be depended on the lazy hand of a copyst or the bad eye of an user.

2 - The modern triumph of Sight on Hearing. The most characteristic feature of medieval (and ancient) reading was the sound: while passing from the eyes, the text spoke to the ears, because it was always spelled aloud (Zumthor, 1990). The medieval pilot book – but also every map – had to be read aloud («lecto», from which the noun «lector» ie reader, is the intensive form of the verb «lego» and means

2 That of course is not to say that the cartographers have ceased, with the press, to act with a personal style and approach to manipulating the cards according to their goals or those of clients: from Ortelius to Mercator, to Arno Peters and today.

3 Handwritten place names and legends need an interpretative role in the user, who must also solve tachigraphic abbreviations, tironian notes, shorthand solutions, and sometimes even real puzzle figured; in the cards to print the user's role is reduced to a simple reader.

4 An edition of the medieval text by Grazioso Benincasa, from Ancona, in Kretschmer, 1909, p. 358, «which ports et appearances of the lands are not taken by the maps, but touched with my very hand and seen with my eyes»: a real guarantee of authenticity.

5 Wagenaer, 1586, p. 3.

6 For the cartography, I disagree with those who say that the revolution of the press has begun to be effective only after 1830: for example, for example McKitterick, 2003 and 2005; and Azzini, 2006. Even the definition of typography as «ars artem conservatrix» (McKitterick, 2003, p. 3: «an art that preserves the arts») seems to me rather inadequate when applied to the mapping of the great discoveries, and the consequences – theoretical, philosophical but also in everyday life - who had the sudden knowledge of America or China in Europe.
precisely «to read alouds): the text got the latin mane of *legend*, ie things to be read aloud, as the the Gospel during Mass Every single word had been written to trigger in the community of those present (including the many illiterate!). We can hear a chorus of memories: Noli, ah yes, where was wrecked my cousin, Savona, excellent white wine, Cogoleto, the city where born sailors, Voltri where starts the trail to the north, Sestri with its famous shipyard, you will see there they can adjust our rudder. A collective memory that varied from time to time, based on the memories of those present and to the most urgent issues on the agenda (where the «aquata» or water supply, the repairs, the enemies, the ever changing alliances, etc.).

The press, however, will appeal to a reader silent, mute, who reads only mentally, as if in meditation, alone face to face with the printed words (without consulting except occasionally with others silent people in the room). That cultural revolution starts naturally in northern Europe, seconded by the Lutheran and Calvinist preachers, who claimed that everyone – not only males, but even females, *incredibile dictu* - would read personally the Bible and the books of morality, while in Catholic countries is preferred that only the priests were reading in favor of the illiterate mass, like the Good Sheperd have a flock of good sheep (*John, 10: 1-21*). So each cabin boy (or even each female chambermaid) on a Dutch ship could read, or at least spell, while still on the Catholic fleet only the officers can read, and not all of them. Consequently, any humble cabin boy could write to the great geographer Wagenaer - or any other publisher of printed maps, for the free market or for VOC - and report updates or corrections that may be necessary.

Silent and segret we have a revolutionary ingredient. Every medieval merchant traveled with his maps, which he shared only with business partners (almost all relatives) in the utmost secrecy: we can think of centuries of travel from Genoa to the «Tana» of the «Caffaio» – that means: from their Black Sea colony of Azov to Chinese Empire, in the of a 14th-century handwriting by Francesco Pegolotti - without ever offer the slightest trace to their «competitors».

3. - *The Age of Discovery and the printing revolution*. The combination of the two great cultural revolutions of Europe (printing and exploration), dates back at least to Francis Bacon and Isaac Newton; but recurs in one of the most cited authors of the 20th century, Karl Marx, in his writings about on the Asian production system. Indeed, the association between the printing and the explorations was already evident at least to genoese mathematician and historian Paolo Interiano, which, not surprisingly, lived long time in Flanders.

---

7 On the spread of illiteracy among the medieval seafarers, see the considerations of the Dutch historian Kees Zandliet (1998, p. 15): «These pilots were not Necessarily literate men».

8 Given the lightning fast changes and turnaround of medieval geopolitics, it would be quite anachronistic try to find in the 14th century maps the same fixity which we can find only from 19th century onwards. In fact, a Muslim unconquerable stronghold suddenly could accommodate an Genoese emporium, or a rich town could be destroyed by a raid or a plague; a loyal port could proclaim its Republican independence, while another could become a feud with marriage. For these reasons, in most cases, the pilot books avoid to report the fleeting *foam of history’s sea* (in the braudelian meaning); they prefer to focus on elements of *lingue darieos*, such as the wheat, the velvet, the quality of the port.

9 In the Vermeer’s paintings studied by Ricci, you can see many women – neither rich nor noble – intent on reading: apparently, forbidden love messages for eyes only, to read silently alone (already Ovid in the *Ars Amandi* attributed a great importance to the little notes, but only for the matrons from the more whealty patrician aristocracy). From literacy, as is known, comes great powers: and - as says Peter Parker – with great powers, comes great responsibility.

10 Caffa, Soldaia, Cembalo and Cauita: the last two best known today in their latest names Balaklava and Yalta.

11 In a world of merchants, based on the jealous preservation of secrecy concerning the affairs, the loquacity of Messer Polo and the spread of his *Book of the Marvels* has to be looked at as an exception. It is not excluded that the long Genoese detention of the elderly Polo in Palazzo San Giorgio was aimed precisely to extort in as much information as possible, including through the action of the other prisoner, Rustichello da Pisa, perhaps not entirely random accidentally placed with him.
Leaving aside the fact that the information were often copied, bungled, badly translated if not invented (by unscrupulous printers that were simply out to sell their wares without any scientific or educational purposes), for at least a century cartographic communication will continue to be mainly in manuscript, if an exception is made for large world maps which, in fact, were printed not to be used aboard a real ship. For the real sailing in the Mediterranean (which does not collapse October 13, 1492, but still continues fruitful decades after Lepanto), seafarers still continue to use nautical charts and pilot books manuscripts, which, as is well known to scholars, allow a degree of customization much higher. Among the most extreme customization, even to «choose» what form assigned to North America according to taste or preference of the client within the geopolitical: to pro-French, or more generally to not rare antispagnoli could indeed propose a threadlike «Verrazano’s isthmus», yet at the end of the 16th century.

The Italian market was so fond of the manuscript production, so that the first experiment to market the cards Dutch failed miserably. In 1664 Francesco Maria Levanto (a patrician Genoese absolutely polyhedric: shipmaster ambassador, merchant and also cartographer) bought in Amsterdam some copper plates already engraved; then he paid the costs of translation in Italian, and tried to sell his product, but with very little profit. In 1640 Italian users had already caused the failure of a similar attempt of englishman, Sir Robert Dudley, in Florence. Only at the end of the 17th century Coronelli would prosper a fair trade of printed maps, allowing to his buyers numerous customization: choose which volumes, which cards in or out, choose to list a dynastic emblem or a portrait, and so on. With those customizations, Coronelli tried to imitate manuscripts works.

4. - The spirit of capitalism, the cartographic art, the technique of printing. Whenever you examine a historical period, you should always first doubt critically labels that previous historians have affixed. In the English language the pre-Elizabethan was defined «Dark Age» («secoli bui»); that fits (maybe) only in part to the British Isles, but that does not do justice to the Italian Lordships, to the Maritime Republics, to the Hanseatic League. It’s easy to say «Golden Age» («Gouden Eeuw»): labels of convenience, which serve to art dealers to exaggerate the prices of contemporary painters of Vermeer, or to economic historians to emphasize the importance of tolerance and education or to historians of political institutions to celebrate the achievements and the goodness of the few republics in centuries monarchists.

It is not my intention to join the pro-Weberian fashion that would describe the peoples of southern Europe as hopelessly «PIGS», as some economists sometimes show a preference for so-called strong areas of central and northern Italy. If proof were needed, it could remind them that the spirit of capitalism was already strong and thriving market towns in the Italian and Hanseatic of 13th and 14th Century, long before the preaching of Luther and Calvin. Not to mention that, unfortunately, the chronicles relate disastrous economic crises even among Protestants over the centuries, especially in the regions of the far north (Scotland and Norway) before the exploitation of oil. But surely Protestantism gave a strong boost to literacy of the masses (including women!), hence the publishers of maps Dutch know that you have an audience of people on average are able to read.

It’s easy to say PIGS, too: and the first letter indicates precisely Portugal. Yet, the Dutch were debtors of the Portuguese (and both debtors of the Genoese of course) from every point of view: technical navigation, shipbuilding, even maps. Van Linschoten lusitanissima lived in Goa, learning all kinds of know-how as secretary of the Catholic bishop; the Mercator projections are based on the

---

12 On lasting persistence of manuscript cartography in the book market of the Peninsula see Valerio, 1990; limited to the case of F. M. Levanto, see also Castelnovi, 2007.

13 PIGS, as reported in 1997 by a French journalist (Vernet, 1997: «eue l'argot communautaire to affublés d'un peu sobriquet élegant dans sa signification anglaise: PIGS pour Portugal, Italy, Greece, and Spain»), was and stands blatantly acronym with which, in the jargon of economists, was referred to the countries most in need, all Mediterranean and non-Protestant: elements that will soon take on an almost racist meaning.
calculations of Pedro Nunes; Cornelius Hotman spent two years in Lisbon in espionage activities, preparatory to the first major assault on the Dutch trade with the Indies (Seed, 1995, p. 149).

5. - International interdependence. The sociologist Max Weber, also recalled by my friend Ricci in his article, had formulated the theory that there is an inseparable link between the Protestant ethic and the spirit of capitalism. Weber enunciated his doctrine in a specific historical moment, when Europe dominated the other continents, and not only in the cartographic symbology. But after decades of decolonization, we are now able to understand that - for better and even for worse - the spirit of capitalism blew already strong when a large part of Holland was covered by marshes (so according to Adam of Bremen: Pagani, 1996 p. 158). I will not bore you again with examples drawn from medieval Genoese, that everyone knows from grandiose reconstructions of Lopez (1975) and Arrighi (2008). But – provided that remains to examine what geographers Western, and not only Dutch, having learned from the Chinese cartographic tradition – there are many examples that demonstrate the strong interdependence between the Dutch and the so-called PIGS.

Take the case of Martino Martini, a Jesuit missionary in China: he says he is half Italian and half German, feeling partaker of both cultures: fools today the cataloghèrèbbbero trivially among the PIGS (although, for cunning or need, he prefers to appeal to Germans wealthy patrons). But if you examine in detail the role played from Italian Martini in the Dutch knowledge of China, you will discover very interesting elements.

In 1653, after the defeat of the Ming at the hands of the invading Manchu (Qing future) had upset the missionary projects, and after that Martini himself had improvised ally of Manchurian earning the unusual nickname of «Mandarin Gunpowder» (under his knowledge on saltpetre and ballistics), it was necessary to return to Rome to discuss with the pope of the so-called «Cinesi Rites» affair. On this occasion, Martini picked up a large number of maps and atlases used by the imperial bureaucracy and undertook to translate them intensely. Grieved the hassles of navigation on the Portuguese galleons, decided to «surrender» as a prisoner to the Dutch rivals. In this way he obtained all the time and tranquility necessary to pursue his cartographic work, but also the guarantee that their efforts would not have been closed in some secret archive in manuscript form, as had happened to his predecessors as Ruggieri, Ricci and Boym), visible only by a small circle of kings, diplomats and bishops (among them Giovanni Botero: Ravera, 2014). Martini want his work of cultural mediation was available to all Europeans, and for that reason he decided to publish his Novus Atlas Sinensis with the publisher Joan Blau, who (besides great signing of commercial works as the Atlas Maior) was also the official supplier of cartography for VOC Amsterdam, the great East India Company. Collecting information from maps and atlases produced by the bureaucracy of the Chinese Empire, Martini provides the exact coordinates of more than eight thousand cities, mountains, forts, rivers; and for the first time offers the reader an accurate drawing of the western provinces located in the interior mainland, after a century and a half Portuguese and Dutch sailors were limited to mapping the coastline (imposing names entirely invented

14 Already in the Middle Ages, the Genoese merchants imposed monocultures for export (mastic, sugar cane), reaching the paradox of starving natives farmers.

15 This subject deserves entire volumes. Certainly, the recent discovery of the so-called Selden Map in the Bodleian Library, Oxford (Nie, 2014) calls into question many clichés about the supposed ignorance Chinese geography overseas and shipping routes, even and especially in the Ming period (as it is known, Western historiography has often exaggerated the consequences of the end of the voyages of Zheng He: Castelnovi, 2013). But no one can ignore the power of persuasion of the great maps of the Empire, which since the mid-twelfth century exhibited throughout China with the mountains and rivers with amazing accuracy (Black, 1997, p. 2; Thrower, 1999, p. 27). No one, in the early modern period, could keep a straight face in front of a map «fish scales» (Brook, 1999, p. 64), consisting of many small square maps specially prepared (by a plethora of bureaucrats educated and trained) to be side by side as regular anchors of a large mosaic: even then resorting to engraving for printing, for legal requirement placed by the founder of the Ming Dynasty, Emperor Hongwu. It remains to be investigated, how great the influence of the example of China on Western cartography (found that the opposite belongs more to myth than to historical reality: Yee, 1995, p. 170).
- as «Formosa» - according to a disrespectful style colonialist that perhaps could be eligible to the Caribbean but certainly not off the coast of a millennial empire). But Martini did not just translate from Chinese. The long stay with the Dutch, both in Nova Batavia (Jakarta) in both the long journey home, had not been without fruit. In its cartographic representation of Japan, and Korea, Martini exceeds its Chinese sources and draws directly to the most advanced Dutch cartography. The mutual exchange was not limited only to libraries. For the Dutch, it was essential to replace the colonialists Iberian wherever it was possible to make it a religious mission, for «sea beggars», but also a continuous opportunity to earn (the example, once again, he had been given from those pre-PIGS of the Republic of Genoa: since the thirteenth century, in fact, the Genoese merchants had obtained the granting of warehouses and trading centers in Muslims ports, either by paying a tribute, is often through the careful use of military force). Until the meeting with Martini, the Dutch (showing very little initiative, and an inefficient system of verification of information) had believed the Portuguese version of the concession in Macau, according to which the Portuguese themselves would be as it were invested with a kind of «monopoly» of trade between the Empire and the West: that was enough to divert the Dutch to another island, Formosa/Taiwan. «»

In fact, far from the point of view of the imperial bureaucracy, Macao and Taiwan seemed insignificant, «a ball of mud outside the light of civilization [...] inhabited by naked savages tattooed», and the merchants «barbarians from the south» (namban) did not look that much different from other monotheists seafarers who came from centuries to the ports of China to the south, crossing the Indian Ocean, as we read in the writings of Jakob D’Ancona and Ibn Battuta. Immediately after the publication of the Atlas, the VOC sent directly to Beijing one of its most experienced diplomats, the patrician Johan Nieuhof (Blussé and Falkenburg, 1987), with a dual role: to establish a commercial agreement with the new Qing dynasty, but also check whether the information provided by the Jesuit Mediterranean were reliable or not: trust is good, not to trust is better.

Here again the proof plastic of the scientific method: do not blindly accept as auctoritas the authority of a great traveler, but you must always refer to the verification of a generation of technical information provided. Is that, in fact, the definition that separates art from science and technology: art is unique and unrepeatable, like a medieval nautical maps (and need a user-sensitive and trained to interpret), the technique is common and reproducible (and is the flow of all or almost), as an atlas printed by the VOC.

Bibliography.

AZZINI E., Calligrafia e map lettering. Il peritesto per il disegno del mondo, in «Paratesto», n. 3, 2006, pp. 45-60.
BALDUCCI PEGOLOTTI F., Avisamento dei viaggio del Gattaio per lo cammino della Tana ad andare e tornare con mercantantia, circa 1343, edited by A. Evans, Cambridge (MA), The Mediaeval Academy of America 1936.

16 The Genoese fought with crossbow: an advanced, expensive and complicated but guaranteed reliable results even against noble horse with armor. Oversimplifying, but not too much, it can be said that the bow is art (because the shot depends on the individual genius of the archer) while the crossbow is technical (because the result depends on meticulous protocols fixed).
17 In 1683 the emperor Kanxi, declared that Taiwan was not greater than «a ball of mud» and that it was only «a place beyond the seas: possessing or not is of no consequence for China» (Teng, 2004, p. 34).


KRETSCHMER K. (a cura di), Die italianischen Portolane des Mittelalters, Berlino, Georg Olms, 1909.


LOPEZ R. S., La rivoluzione commerciale del medioevo, Torino, Einaudi, 1975.


PAGANI I. (editor), Adamo di Brem: Storia degli arcivescovi della Chiesa di Amburgo, Torino, Utet, 1996


RAVERA A., La Città ideale: Giovanni Botero e la Cina, in Castelnovi M. (a cura di), La Cina come sogno e come incubo. Uno sguardo sull’immaginario onirico occidentale, in «Sulla Via del Catai», n. 9, maggio 2014, pp. 41-54.


WAGENAER L. J. (alias AURIGARIUS), (Pars Prima) Speculum nauticum super navigacione maris occidentalis..., Amsterdam, Plantin, 1586.


Michele Castelnovi – Centro Studi “Martino Martini” of Trent (Italy). 
michelecastelnovi@hotmail.com