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Land ho! Changing conceptions of space in 18th-century coastal profiles

A trip from Holland to Aquitaine is nowadays quick and easy. La TGV takes you from Amsterdam to Bordeaux in a couple of hours. Just sit and relax – work a bit – and switch trains at the right moment. The tracks, the system, and the engine driver brings you where you want to go. You do not have to know the way and often you hardly know where you are – except for the odd check of google maps when you see something interesting.

An eighteenth-century journey would have required much more knowledge of place, space and direction. An overland route would have been difficult, dangerous and time-consuming. In the early modern period journeys would go over water as much as possible. So, in those days you would have taken some ship from the Dutch Republic to France and rely on the pilot's skill and experience. Having rounded Finistère, he would have had to find the estuary of the Gironde and sail on to the city. This was not trivial, as this fragment of an eighteenth-century map makes clear. After having found the right spot, there's islands, sandbanks, and currents to reckon with and one has to figure out what is the right inlet.



Fig. 1. From Van Keulen's, *De Nieuwe Grootte Lichtende Zee-Fakkel van de Gebeele Wereld*, extended edition, Amsterdam, ca. 1750, vol. 2 part 2, following p. 70.

This map gives a clear and comprehensive overview – it is south-side-up but for a traveller from the north that may even be handy. Still, it requires quite some skills to interpret a map like this into the actual position and direction one is in. What you see on the map is not what you see from the sea. On board, one does not have the bird's eye view of the cartographer. Reading a map is not straightforward; it requires a mental operation to transform the two- dimensional shapes and structures into three-dimensional objects and space around you. When travelling across the ocean, this would have been even more difficult. Especially before the introduction of the octant, positioning was not precise enough to know precisely on what stretch of coast the ship had landed.

From the ship the Charente, Aquitaine coast looks more like this. We see the hills and mountains on the coast, islands, inlets, and so on. It can help us find the right entrance to the Garonne.

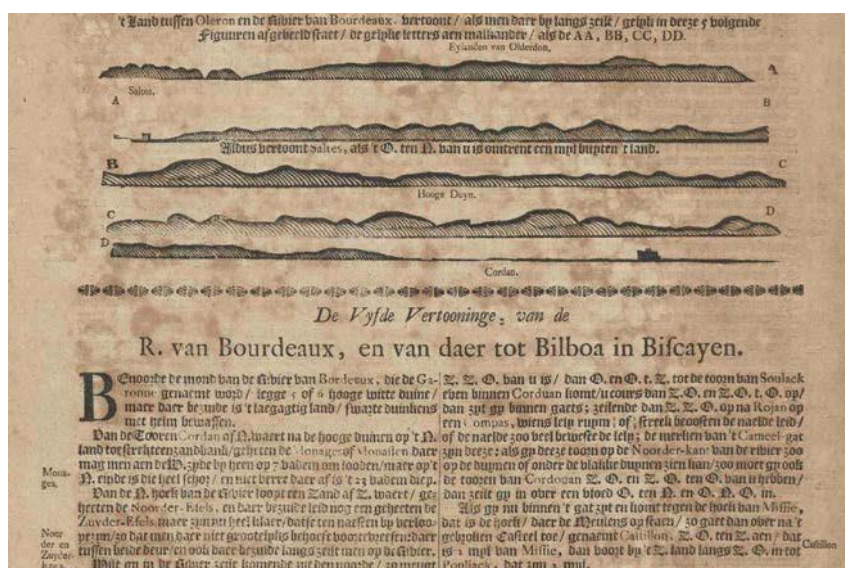


Fig 2. Zee-Fakkel, p.74.

Further assistance is provided by a profile picture with verbal descriptions and instructions.

North of the mouth of the river of Bordeaux, called Garonne, are 5 or 6 high, white dunes but south of that is lowish land, black little dunes grown with marram.¹

From the tower of Cordan northward towards the high dunes on the north shore, lies a sandbank called Monages [...]; one may go passed it on the west side on 7 fathom lead, but it is very shallow on the north part; and not far from there it is 23 fathoms deep.²

From the north corner of the river lies a sandbank southward, called the north-asses,³ and south of that another one called

¹ Van Keulen's, *De Nieuwe Groote Lichtende Zee-Fakkel van de Geheele Wereld*, extended edition, Amsterdam, ca. 1750, volume 2, part 2, p. 74. "Benoorde de mond van de Rivier van Bourdeaux, die de Garonne genaemt word / legge 5 of 6 hooge witte duine maar daar bezuide is 't laegagtig land swarte dunken met helm bewassen".

² *Zee-Fakkel*, p. 74. "Van de Tooren Cordan af N.waert na de hooge duinen op 't N.land toe strekt een zandbank geheten de Monages of Monasten daer mag men aen de W.zyde by heen op 7 vadem om looden maer op 't N.einde is die heel schor / en niet verre daer af is 't 23 vadem diep".

³ René Bougard, *Le petit flambeau de la mer, ou Le véritable guide des pilotes côtiers ; où il est clairement enseigné la manière de naviguer le long de toutes les côtes de France...*

south-asses [...] : between these two and also to the south one sails onto the river.⁴

Coming from the north, in order to sail the river south passed the asses – which is the best entry – one does the following: bring the tower of Soulack east of you, [...] and sail towards it until the tower of Cordan is north to east and north-north-east; Rojan will be to the north-east [...]⁵

The texts and images provide a truly multi-media account of the route to Bordeaux. The maps, seascapes, coastal profiles, instructions; each tell their own story. In combination they provide a comprehensive account of the features of the coast that can help travellers to find their way.

This multimedia experience is found in *De Nieuwe Lichtende Zee-Fakkel van de Geheele Wereld* – the new luminous sea-torch of the whole world. This massive 5-volume work was printed between 1734 and 1738 in Amsterdam by Johannes van Keulen, the third generation of the famous publishing house. His grandfather had published the first edition of the *Zee-Fakkel* in 1684, setting a new standard for piloting books. His father had expanded and improved it and now with the 1734 edition the project found its definite form. The *Zee-Fakkel* covered the coastal regions of the entire globe: Baltic, North-Sea, Mediterranean, Atlantic, West and East Indies, and so, and so forth. It provided detailed maps, profiles and descriptions, many made by the publisher. It contained knowledge that had been gathered by Dutch publishers over the course of some two

Dernière édition par le feu sieur Bongard..., Au Havre de Grâce, P.-J.-D.-G. Faure, 1763, calls them ‘asnes’ (“âne”, donkey).

⁴ *Zee-Fakkel*, p. 74. “Van de N.hoek van de Rivier loopt een Zand af Z.waert / geheeten de Noorder-Esels, en daer bezuide leid nog een geheeten de Zuyder-Esels, maer zyn nu heel klaer / datse ten naesten by verloope zyn / zo dat men daer niet grootelyks behoeft voor te weesen: daer tussen beide deur / en ook daer bezuide langs zeilt men op de Rivier.”

⁵ *Zee-Fakkel*, p. 74. “Om bezuide de Ezels langs de Rivier te zeile komende van benoorde / dat 't beste gat is / zo doet aldus: brengt de Toorn van Soulack O. van u / wel so noordelyk / en zeilt daer op aen / tot dat de Toorn van Cordan N. ten O. en N.N.O. van u is / Rojan zal dan N.O. van u staen: of zo gy uit den zuide komt / zo brengt de Toorn van Coran N. ten O. en N.N.O. van u / en zeilt daer zo op aen / tot dat Soulack O. van u komt / Rojan sal dan N.O. van u staen / zeilt dan regt daer na toe / daer by komende / zeilt dan na de hoek van Missie.”

centuries. French, Spanish, English, Italian editions were published as well.

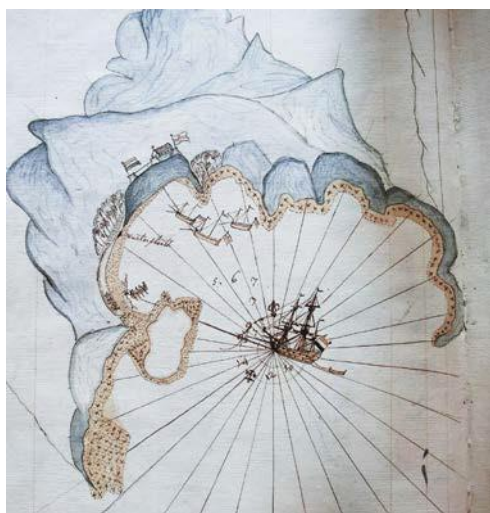


Fig. 3. Manuscript map made by a sailor on his travels to Ceylon. Little is known about the circumstances of its creation, but we can clearly see the combination of perspectives that is present in it. Collection Het Scheepvaartmuseum, B.0208(03). Photograph: Wouter de Vries.

Editions like these were not actually used on board ships, they served the interests of wealthy armchair travellers.

Their attraction to the lay reader stems in part from the fact that they allow the reader to imagine themselves sailing the high seas. The Sea-Torch does reflect, however, actual navigation practices and the paper tools that were used on board. Coastal profiles, route descriptions, maritime maps were all on board of early modern ships in some form of another.

The Van Keulens themselves produced many manuscripts maps for actual navigation. Records of the actual practices and original materials are scarce, but manuscript evidence makes clear that ‘sea-torches’ existed and were used. The skill and experience of pilots were of course the principal means of navigation but paper tools like this gave support. Moreover, they were means to document and exchange expertise.

Sea-torches concerned coastal navigation. The history of early modern navigation tends to highlight the methods and instruments used for journeys at open sea. The instrumental revolution of the Renaissance had made navigation at open sea easier and more reliable, but this was only a small part of seafaring, the large global trading journeys and navy expeditions. Coastal navigation was, and remained, the principal means of maritime

traffic in the early modern period. Moreover, it was in many cases a highly uncertain and dangerous enterprise: treacherous coasts can harbour dangers such as sand-banks and reefs, and while positioning on open sea does not have to be *that* precise, navigating a coast is highly demanding of the pilot's skill.

Instruments like compass, backstaff, and quadrant were also important in coastal navigation, but they do not suffice to find your way around inlets, islands, and sandbanks. This requires a perceptive eye and a good understanding of the coastal features. At the peak of Dutch Asian trade, the prominent mathematics teacher Abraham de Graaf wrote: "the whole learning of the sea trade consists of nothing but the well and certain knowing of all jetties, harbours and other areas, how they appear and are seen in sea [...]"⁶

Maps, seascapes, profiles and instructions contribute to this expertise. They were a means of recording and transferring data, tools for training and mnemonics, and gave shape to maritime experience. What sets coastal profiles and coastal descriptions apart from maps is that they appealed directly to the practice of sailing and the perspective of the sailor.

Van Keulen's *Zee-Fakkel* is part of a tradition of coastal descriptions that goes back to the sixteenth century and has older, verbal and textual roots. After a brief period of intense innovation in the genre, the *Zee-Fakkel* represents the consolidation of changes in the way coasts were depicted and maritime space was understood. The eighteenth-century editions gradually gave a specific shape to the coastal profiles themselves, as well as their

⁶ Abraham de Graaf, *De Seven Becken van de Groote Zeevaart*, Amsterdam, 1658, vol. 2, p. 1. "Want de geheele wetenschap van de Kleene zee-vaert is nergens anders in gelegen dan in lichtelycken en seeckerlyck te kennen alle hoofden, havenen ende andere revieren, hoe dezelve haer in zee verthoonen ende gesien warden, hoe verre en op wat streeck dezelve van den anderen liggen, op wat tijdt der mane sij volle zee ofte ebben geven, het loopen ende vallen van alle stroomen, ende hoe deselve in gedaente, in diepten ende gronden sijn: 't welck altesamen [...] meest door eygen experientie ende by instructie van oude ervaren piloten ofte stuerlyuden geleert wort."



Fig 4. Bougard, René, *Le petit flambeau de la mer*, p. 179.

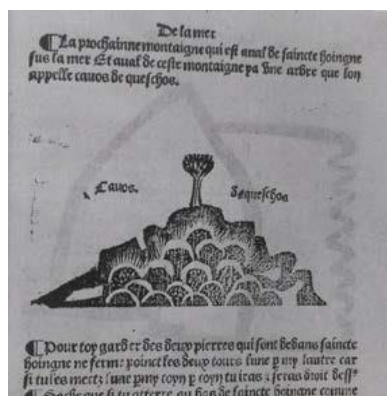


Fig. 5. *Le Grand Routier en Pylottage*. The image is taken from an older edition from 1560. Bibliothèque Nationale de France, ark:/12148/btv1b8609543t.

function in the navigation descriptions⁷. Rutters originate in the 'Seebücher' of the 15th century that contained verbal directions for coastal navigations. The first rutter with illustrations was Pierre Garcie-Ferrande's *Le Grand Routier en Pylottage et Encrege* of 1484. These only depicted landmarks.

In Waghenae's 1584 *Spiegel der Zeevaert*, the Mariners Mirrour, this developed into visual narratives identifying the characteristic objects along the coast – peaks and towers, hills and buildings – and recording the route along them. With Waghenae the dominance by Dutch publishers of the market of pilot books began, continuing with Bleau in the seventeenth century and Van Keulen towards the eighteenth. It is for this reason that many English editions were called 'Waggoners'. With the *Zee-Fakkel* of 1684, Van Keulen redefined the genre by its global scope and comprehensive accounts and basically pushed the other publishers out of the market.

⁷ Wouter de Vries, *Coastlines of Knowledge. Visual epistemologies and the construction of space in coastal profiles, 1500-1800*, unpublished thesis, 2015: https://research.vu.nl/ws/portalfiles/portal/72576423/rMA_Thesis_Wouter_de_Vries_Academia.pdf.

It employs the Greek word *chorein*, setting out, setting out to sea, and *choreo*, to make place, passing through. Chorography refers, as Bernard Siegert⁸ indicates, not to topology and maps, nor to space as such, but to the whole of spatial allocation, to the world where we find ourselves in. For his chorography of the coast, Van Keulen employs various visual strategies: verbal descriptions and instructions, inline profiles that present the shape of the coast as a silhouette, and separate collections of engravings that include geological feature of the shores. The latter variant was a novel kind of representation that Van Keulen introduced in coastal descriptions.

Meanwhile, van Keulen's *Zee-Fakkel* also points towards a further development of coastal descriptions. Johan's father, Gerard, was an accomplished cartographer supplying many new and excellent maps to the project. By including high-quality, detailed maps, the 18th-century editions combined chorography and cartography, linking narrative and measurement. In many cases, several perspectives are combined into one print, allowing the reader to change perspective without any effort.⁹

In the course of the eighteenth century the use of instruments and mathematics became more prominent in making coastal descriptions. Coastal profiles had always been an element in more complex *nexi* of knowledge, but with an increasing professionalization and changing demands put on the profiles, they feature in increasingly complex systems of knowledge. Besides the requirements of cartography they also served purposes with regard to recording the properties of coastal features, assessing the proportions of objects and their relationships.

⁸ Bernard Siegert, "The *Chorein* of the Pirate: On the Origin of the Dutch Seascape", *Grey Room*, vol. 57, Fall 2014, p. 6-23.

⁹ For a comprehensive account of multi-media practices in these and other domains of early modern knowledge history see Ulrike Gehring and Peter Weibel, eds., *Mapping Spaces: Networks of Knowledge in 17th Century Landscape Painting*, Munich, Hirmer Publishers, 2014.

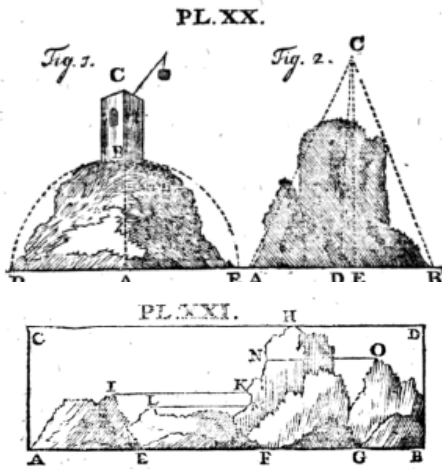


Fig. 7. C.J. Philips, *Zeemans Onderwijzer in de Tekenkunst; of, Handleiding om door perspectivische regelen, alle landverkenningen, kusten, baaien en wat een Zeeman meer voorkomt, op het papier wiskundig aftekenen*, Amsterdam, 1786.

This example is from a handbook of maritime drawing, comparable to the navigational handbooks of the sixteenth and seventeenth centuries that taught *and promoted* the use of instrument by pilots. 18th-century handbooks of maritime drawing not only taught how to depict objects and features but also how to look and perceive them. It is an indication that visual perception became more disciplined, and shows how the production and consumption of coastal profiles are intricately connected. This is also

linked to a shift in the production of coastal descriptions. The lights and torches of the sixteenth and seventeenth centuries were largely commercial products, initiated by publishers and practitioners. The eighteenth century witnessed a gradual shift towards government actors. Both the English and French admiralty established hydrographical offices in the second half of the eighteenth century, largely outdating commercial projects like the Van Keulen editions.

The changing conceptions of space and place that can be identified in the development of rutters and coastal description, and the 18th-century form these acquired in Van Keulen's *Zee-Fakkel*, do not stand on their own. They can also be seen in the art of perspective, surveying, and geometry in general. The common denominator of the 18th-century perception of space is the conception of space as an autonomous entity. Rather than being formed objects and their proportions – as in classical Euclidean geometry – space becomes the abstract place where objects can be placed and arranged. Leibniz has been an early voice of this

transformation but it can be identified in various early modern practices as well. In surveying the shape of a land gradually become to define its value. And in coastal navigation the landmarks got integrated in a coherent coastal space at the passage of sea and land.

Pilots, rutters and profiles offer a specific understanding of space and place that differs from the cartographic representation of maps and is more in line with the experience of those sailing the seas. Maps may have become to dominate our understanding of geography since the Renaissance, but they capture a very specific perception with explicit political connotations. They present the world as territory, dominion, empire, rather than as a place where people find themselves, are rooted and make space by venturing into the world. The *Zee-Fakkel* combined these various ways of perceiving: the bird's eye view of the map, the panoramic view of the profile, and the visual narrative to find your way. In this sense it offered a truly multi-media experience of the coast. It promotes a sense of space that takes the perspective of experience rather than overview, and represents the coast not as a small line on a map, but as something that is seen, travelled and experienced.