The so-called early modern ‘Age of European Expansion and Empire’ heralded momentous changes across the globe that still influence us today. Disparate peoples, cultures, flora, and fauna collided and unleashed a dizzying array of transformative experiences as peoples began to venture beyond their local shorelines and consistently interact with distant lands. This transformation was the product of a new embrace of the sea, one that increasingly led to claims of ‘mastery’ in the period 1400–1800. This mastery of the seas, and the related rise of commerce and empires, were the products of new maritime communities’ abilities to traverse the globe reliably. Maritime communities’ innovations in navigation, financial structures, and shipping, were the essential components of early modern European commercial expansionism and imperialism. Specifically, by the seventeenth century, the art of navigation and the act of traversing waterways increasingly became scientific endeavours with the use of charts. As a visual instrument for navigation constructed to depict coastlines, ports of call, and hazards, nautical cartography inherently reflects the willed perceptions of its makers and audience. Accordingly, as visual representations of perceived reality, cartographic sources (maps and charts) offer unrivalled opportunities to assess the evolving conceptions and conventions of peoples of the past. In effect, early modern nautical cartography is as much an embodiment of European mercantile and ministerial interests as it is an artistic and scientific artefact conveying ‘mastery’ of the sea.

A comparative study of seventeenth-century European nautical cartography reveals that English overseas interests shifted from an emphasis on pragmatic mercantilism to a growing expression of territorial dominion and ambition, eventually emulating established European modalities of imperialism. Studying the evolution of English charting, by contrasting the relatively staid presentation of early seventeenth-century English charts to other contemporaneous European traditions, broadens Alison Games’ theory, primarily based on textual sources, of cosmopolitanism as an...
expression of pre-Restoration English attitudes. In addition, the study of English charting after the Restoration reveals that such English pragmatism shifted to outright displays of empire on English charts depicting North America and the Indian subcontinent, analogous to other imperial European mapping traditions. Prior to the Restoration, English charts were remarkably unadorned, in effect cosmopolitan artefacts. Embracing commercial opportunism, they lacked any demonstrative symbols, icons, or perceivable representations of superiority, religiosity, or territorial ambition – unlike their European rivals. After the 1660s, however, English charting began to exhibit dominion and empire, thereby mirroring Portuguese, Spanish, and Dutch charts, and highlighting the dawn of English imperialism. An examination of the changes over time in English seventeenth-century charting, shows how nautical cartography makes complex and evolving historical relationships, such as ambitions for ‘mastery of the oceans’, evident from a distinct vantage point – the surviving instruments of the navigations themselves.

Navigational and spatial relationships gained increasing importance as early modern merchants, mariners, monarchs, and statesmen grappled with commercial and imperial expectations that had expanded across the globe. Contrasting European nautical cartography alongside the maturation of English nautical cartography during the seventeenth century demonstrates the rise of England’s empire. As Lisbon, Seville, and Amsterdam were maritime capitals, so too was London the commercial and imperial centre, as well as the epicentre for England’s emerging nautical cartographic tradition, the Thames School (1590–1740). The existence of the Thames School reaffirms the pivotal role of London as the nucleus of English overseas expansion, and yet one of the vital components of the city’s rise to prominence – its ability to service the maritime community of England as purveyors of charts – has received scant attention by scholars. As London was the mercantile and imperial centre of England from the mid-sixteenth century, its mapmakers were as much the participants in and practitioners of empire as any colonist, sea captain, or socio-political commentator.

To be sure, charts were navigational instruments used in Europe’s maritime expansionism, and studying them elucidates the evolution of geographic knowledge. However, charts also illustrate the various attitudes and processes of Europeans’ attempts to ‘master the sea’. This chapter advances the work of Brian Harley, Dennis Cosgrove, and David Buisseret by applying their scholarship to the history of English charting. In his work, Harley outlined how maps are part of the lexicon of source materials that can more fully conceptualize and enlighten our understanding of the peoples of the past. He notes that the ‘cartographer has never been an independent artist, craftsmen, or technician’ and their work can reflect any manner of power relations imposed by a ‘patron, a state bureaucracy, or the market’. In effect, ‘the power of the map, an act of control over the image of the world, is like the power of print in general’ since maps not only provide the physical shape of the shared ideas of communities, but they are also the willed reflections by societal elites of imagined communities. Responding to Harley’s call to demonstrate how maps could be related ‘to the social implications of their varied form and subject matter’, Cosgrove in 1992 responded by placing cartography ‘in the culture of the sixteenth century [Venetian] Republic’ to reveal it as a reflection of Venetian interests. Cosgrove’s article chronicles how the ‘[e]nvironment,
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The cartography of the sea economy, and historical experience' of sixteenth-century Venetian cartography was 'a form of representational discourse' for and about Venetians.6 Buisseret, in turn, has argued that cartography was part of the political, cultural, and economic milieu of early modern Europe.7 All three of these scholars provide a theoretical model for arguing the importance of placing nautical cartography within the history of commerce and empire in early modern England. As a manifestation of spatial and conceptual relationships of the community, maps are thus mirrors of the perceived reality of any given period; they can be deconstructed like any other text within their historical framework, in this case as signifiers of English commercial and imperial designs from 1590 to 1720.

Few historians of English navigation, expansionism, and empire have included nautical cartography in their studies. While the groundbreaking maritime studies of E. G. R. Taylor and David Waters focused on the art and growing science of navigation from a mathematical perspective, neither fully addressed the importance of the birth of nautical cartography to English expansionism and empire.8 Nor were they acquainted with the emergence of the Thames School of English cartographers, the existence of which was not recognized by modern scholars until the 1970s.9 Similarly, when A. H. W. Robinson wrote about the origins of marine cartography in Britain, he focused on the rise and spread of mapping geographical knowledge, rather than nautical cartography's role in articulating, informing, or reflecting English interests and sensibilities.10 Furthermore, the work of Ralph Davis, Kenneth Andrews, David Loades, N. A. M. Rodgers, and Jeremy Black does not include the role of charting as a significant feature of England's rise to maritime prominence, mention the Thames School, or deconstruct charts to examine English attitudes.11 In effect, within the historiography of English maritime, commercial, and imperial histories, the importance of nautical cartography has been neglected. The few scholars who have studied early modern English cartographic history have revealed the evolution of a distinct national nautical cartographic tradition and notable developments in publication efforts, surveying techniques, and institutionalization.12 Nonetheless, like imperial or maritime studies, recent cartographic scholarship has not analysed developments in mapping as reflections of English commercial or imperial activities, interests, or attitudes.

Institutionalizing nautical cartography

Maritime histories of Portugal, Spain, and the Netherlands provide a useful model for applying cartographic evidence to the study of the development of England's maritime community. The first iterations of European nautical cartography occurred by the early thirteenth century, as written sailing directions of the Mediterranean fused with the concept of orientation as derived from the compass to create portolan charts. Beginning with the Carte Pisane (1290), European nautical cartography remained virtually unchanged until the latter sixteenth century when Lucas Waghenaer popularized printed charts, and Edward Wright introduced instructions to create Mercator projections that helped spur further navigational revolutions.13 By the early seventeenth century, manuscript portolan charts, which had historically been plane charts, were slowly being replaced by printed sea-atlases that included charts that
attempted to account for the curvature of the earth. However, the medieval tradition of portolan charts remained the archetypal standard for nautical cartography in the early modern period, as charts depicted place names of ports at right angles to the coast, included various compass roses, often showed rhumb lines (lines radiating from the centre in the direction of compass points), and were highly decorative in appearance. Alongside and informing portolan charts, Maximus Planudes’ rediscovery of Ptolemy’s *Geographia* at the end of the thirteenth century helped infuse Renaissance cartographers and explorers with a methodology to plot their exploits reliably and imagine newly refined worlds. By applying meridians and parallels to define the known world, Ptolemy created the basis of co-ordinate mapping; he ensured the scalability of new geographical knowledge and therefore enabled relative positioning beyond the sight of land via the plotting of astronomical observations.14 Paradoxically, as inventions in maritime technology, namely portolan charts, helped encourage the development of Iberian, Italian, Arab, and Turkish polities in the Mediterranean basin, the transfer of these technologies to the Atlantic states – Portugal, Spain, the Netherlands, and England – in time helped ensure the eclipse of the Mediterranean as the pre-eminent European trading zone.

While the Portuguese were the first to apply this newfound cartographic technology to their overseas exploits, each of the early maritime powers institutionalized their cartographic knowledge during the early modern period, except for the English.15 The centralized warehousing of cartographic information, and thus the institutionalization of cartographic knowledge, was a result of direct imperial oversight in Portugal and Spain. While few copies of the charts of the Portuguese fifteenth-century discoveries exist today, we know that mariners were required to return their charts to a Crown-sponsored hydrographic repository (*Almazem*) to ensure that master copies of charts could be updated, and to regulate the new cartographic knowledge by centralizing its storage. In 1547, a new office entitled the *cosmografo-mor*, first held by Pedro Nunes, was established to oversee both cartographic knowledge and the teaching of navigation. Spain also institutionalized its cartographic knowledge. In 1503, the Spanish founded the *Casa de la Contratacion*, or ‘House of Trade’, in Seville to deal with questions concerning the ‘Indies’. In 1508, a hydrographic office was established to supervise charts and to produce a continually updated *padrón real*, or general map. The *padrón real* served as the basis for all charts issued to ships and for other purposes, and was overseen and updated by the *pilot-major*. Unfortunately, no official version of the *padrón real* has survived; however, the works of Diego Ribeiro, who came from Portugal but worked in Spain, are considered small-scale versions of the *padrón real*. The Dutch also institutionalized their cartographic endeavours, though under the corporate aegis of the East and West India Companies. Dominated by a series of great cartographic families, Dutch cartography in the seventeenth century represented the pinnacle of style and accuracy in Europe. Other Europeans copied the Dutch mapping style, even as the Dutch remade the earlier Portuguese style as their own. From training to administration, Dutch cartographers instilled a degree of accuracy and beauty that remains inspiring today. Numerous notable cartographers worked during the golden age of Dutch cartography, including Hessel Gerritsz (1581–1652) and the Blaeu and Vingboons families. The standardization of knowledge that Dutch
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cartographers instituted with their administrative and educational oversight is significant, especially under Gerritz. In the seventeenth century, Dutch mapmakers asserted a near monopolistic influence on nautical cartography in Europe by dominating the publication and dissemination of atlases, maps, and charts. It was not until after the Restoration, with support of Charles II, that English mapmakers and ministers sought to challenge Dutch cartographic dominance by initiating publication efforts, new surveys, and supporting the establishment of the Royal Society and Royal Observatory.16

Though they lagged behind their continental contemporaries, the English quickly fashioned a vast network of merchants, mariners, and mapmakers who encompassed the globe during the seventeenth century. During their haltingly expansionistic seventeenth century, the English attempted to ‘master the sea’ by embracing the visual literacy associated with charts as well as establishing their own charting industry. It is traditionally thought that as an island people, the English were a people primed to venture to distant shores; this is not so.17 While the Portuguese and Spanish explored and settled distant lands across the oceans, the typical English mariner was a coastal sailor. In fact, the establishment of Trinity House in 1514 by Henry VIII was a direct attempt to help train and improve in-shore navigation techniques for English pilots and sailors. Few English cartographers published charts in the sixteenth century. It was a Dutchman, Lucas Janszoon Waghenaer, who in 1584 published De Spieghel der Zeevaerdt, one of the most important artefacts in the history of navigation, and thus invigorated an English cartographic revolution. The Spieghel der Zeevaerdt is the first set of printed sailing directions with accompanying sea charts in history. Translated into English as the Mariner’s Mirrour in 1588 by Anthony Ashley, it quickly helped spread visual literacy to English mariners. Its publication introduced England’s coastal and foreign pilots to charts, wherein they were able to see the advantages of charts over rutters (written sailing directions).18 Its success helped create a market for English charts. The Dutch had previously met demand, but eventually they encountered competition from English cartographers living in London along the River Thames.19 Coupled with the existence of early English cartographers such as William Borough, the publication of the Mariner’s Mirrour created the necessary ingredients for the English maritime community to develop its last component, a formalized charting tradition of its own.20 Despite their secondary role in the history of cartography in light of Dutch supremacy, the English did eventually develop their own charting tradition, in part to free themselves from foreign dependence, but primarily to address their own maritime interests. In doing so, English charts began to articulate English perceptions of their ever-increasing role in an expanding world. English merchants and navigators, therefore, instigated the emergence of a modern maritime community to encompass the globe by the end of the sixteenth century.

The Thames School of English nautical cartography

It was not until the seventeenth century, however, that the English developed a nautical cartographic tradition; the Thames School. From 1590–1740, members of the Thames School comprised of a collection of copyists and cartographers who transferred and updated mainly manuscript charts through master–apprentice relationships
facilitated by the Drapers Company. Born out of a close association with English commerce to the Baltic, led by the Muscovy Company, members of the Thames School continued to produce nautical charts reflecting England’s commercial and imperial global interests until the early eighteenth century. Embracing the portolan style of marine charting, the Thames School is defined by both the location of most of the chart-makers along the River Thames and the general stylistic similarities of the 41 men associated with it. As the Thames School matured, so did its style and focus. At first oceanic charts were drawn on the plane projection in coloured inks on vellum, with networks of interlocking rhumb lines and compass roses in the portolan style. By the last decades of the seventeenth century, the school gradually shifted into the production of hundreds of pilotage charts for smaller coastal areas, began to use paper as well as vellum, and started to abandon the traditional portolan style. It is no coincidence that the dates of the Thames School match the emergence of England’s maritime empire. Consequentially, it is as artefacts of the centre that Thames School charts inherently embody an array of English interests, be it the commercial origins of England’s expansion or its imperial turn. Specifically, the Thames School evolved from a functionalism that highlighted mercantilism and began to exude imperialism. Yet, unlike the institutionalization of Portuguese, Spanish, or Dutch charting, neither Thames School charts nor its cartographers were a product of corporate or Crown oversight. For the English, the institutionalization of nautical knowledge only arose at the end of the eighteenth century under the auspices of the Board of Admiralty, Hydrographic Office.

English charts mirror the geographical interests of their clients. For example, England’s American mapping interests started in earnest after the establishment of colonies and viable trading. There are six surviving Thames School oceanic charts of the Americas dated before 1670; afterward, there are 98 charts of North America and the Caribbean, many of which are pilotage charts. A similar increase in charts relating to the East also exists among the Thames School charts. Seven oceanic charts and Gabriel Tatton’s atlas of 17 pilotage charts survive depicting the East prior to 1670, while well over 350 pilotage charts were created between 1670 and 1715. Of course, many charts have been lost so one cannot rely on statistical analysis, but as charts were handed down it is valid to assume that the surviving charts are reflective of the corpus of Thames School activities. Overall, the temporal distribution of chart production (and subjects) demonstrates that the English mapping trade was propelled by the continuing dramatic growth of the English shipping industry, alongside the emergence of imperialism and colonialism during the seventeenth century.

Statesmen and officials responsible for the creation and oversight of English government policy for the colonies and overseas trade personally collected charts and maps. The prominence of the Thames School chart-makers is evident by the use of their charts and maps by two notable Englishmen, Samuel Pepys and William Blathwayt. Pepys held various Admiralty posts and was a prolific commentator on English leaders and policies. He sought out John Burston’s works because he considered him ‘the most exact man in what he do[es] in the world of that kind’. Pepys also trusted the work of another known Thames School cartographer, Joel Gascoyne. When serving as the Secretary to the Admiralty, Pepys asked for Gascoyne’s advice on
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the accuracy of English charts, as well as the reliability and predominance of Dutch charts.20 Blathwayt, general surveyor and auditor for the Committee of the Lords of Trade and Plantations from 1680 until his death in 1717, also used his position to procure and obtain maps concerning the lands under its jurisdiction. As a member of the Committee, Blathwayt and his colleagues were responsible as ‘a fact-finding and advisory body, reporting to the King in Council’ on issues regarding the colonial possessions of England.21 Part of Blathwayt’s duties included the direct responsibility for an institutionalized library for the Committee where he oversaw the purchase of maps and atlases. Though few maps remain from the library, Blathwayt kept some of the Committee’s maps at home. Consequently, the Blathwayt Atlas, a collection of 42 loose-leaf maps in the Blathwayt records, has various cartographical works, ten of which are clearly by Thames School cartographers.28 As an institution, the Committee of the Lords of Trade and Plantations was one of the attempts made by Charles II to administer his growing realm and it regularly relied on maps to inform policy. Its importance was paramount for colonial dealings for approximately 20 years; in 1696, William of Orange created the Board of Trade, a direct precursor to the Colonial Office, which superseded the authority and influence of the Committee of the Lords of Trade and Plantations.29 Similarly, the establishment and early development of the Royal Society was concerned with developing navigation, trade, and empire. The behaviour of Blathwayt and Pepys suggests that maps and charts, as they informed English policy, connected maritime growth and colonial interests to the priorities of an expanding nation.30

Visual evidence presents the unique opportunity to perceive previous representations of reality. A map or chart, as a graphic expression of perceived reality, offers an important perspective into the conceptions and conventions of the peoples of the past. So too do maps succinctly depict the desires and modalities of peoples. An analysis of the works of the Thames School reveals three inherently interrelated themes: functionalism, mercantilism, and imperialism. By highlighting the unique shift from a merely pragmatic and expedient rendering, or a manifestly cosmopolitan delivery, to an imperialistic depiction of territorial ambitions and dominions, English nautical cartography, as compared alongside contemporaneous European charting, visualizes how a developing ‘mastery of the sea’ parallels England’s evolving global interests.

Deconstructing trade: mapping English commercial pragmatism

Alongside other European mapping traditions, Thames School charts appear rather sober, practical, and business-like. While beautiful to the modern eye, Thames School charts are not as stylized as the highly embellished charts of other European mapping traditions. Unlike many typical European charts of the latter sixteenth and the seventeenth centuries, English charts rarely included illustrative cartouches. On similar Portuguese, Spanish, French, and Dutch charts, insets are often included that depicted heraldic markers, animals, trees, local inhabitants, and villages. These continental mapping traditions also portrayed missionaries, logging, and any number of other European activities and experiences across the globe. In sharp contrast, charts of the Thames School rarely included any ornamentation other than colourful scales
and intricate compass roses. In the early seventeenth century, the primary vehicle of English overseas expansionism was commercial growth, not territorial dominion; naturally then, early Thames School charts are principally expressions of England’s expanding overseas trades and functional instruments of mercantilism.

Thames School charts are both anachronistic and evocative. Charts of the Mediterranean produced by Europeans continued the medieval portolan style of nautical cartography longer than charts produced for other parts of the world. As the birthplace of European nautical cartography, Mediterranean shores were the first visual translations of written sailing directions refined by mariners since antiquity; therefore, they were the best-known waters in the world, as the geographic information was well established. Moreover, the Mediterranean remained the heart of European commercial activity until the close of the seventeenth century. Charts of the Mediterranean Sea, therefore, are not only the prototypes of nautical cartography, they are also a settled representation; a control of sorts that can be used to compare the differing mapping traditions of early modern Europeans. The maintenance of this antiquated style suggests the past. As the Mediterranean does not encompass a wide latitudinal shift, a portolan chart – a plane chart – of the Mediterranean remained a highly accurate navigational aid. Thus, representations of the Mediterranean remained unchanged because they were still useful instruments. Effectively, early Thames School charts of the Mediterranean coastlines are identical to their later examples. Yet Thames School charts do not contain the level of ornamentation of other contemporaneous charts, thereby suggesting functionalism. They exhibit a utility of purpose bereft of the vestiges of medieval cosmological symbolism. In this regard, Thames School charts were a utilitarian, or functional, response to a growing English need for a maritime community free of dependence on foreigners.

A comparison between Thames School charts and their counterparts reveals that their differences relate to function over form. One notes, for example, the intricate and highly ornate compass rose on John Burston’s 1640 chart of the Mediterranean (Figure 4.1). Covering present-day Tunisia, the compass rose (beside the scrollwork) includes a flowing fleur-de-lis, ample gold leaf, and a level of precision indicating a fine hand. Of course, as on any portolan chart, the place names are at right angles, coastlines are outlined in alternating colours, and the geographic/topographic interior has been neglected. Yet, when compared to similar Mediterranean charts from other mapping traditions, such as Portuguese chart-maker Francesco Oliva’s 1603 chart (Figure 4.2), Burston’s chart looks restrained. It lacks the numerous heraldic figurines of Oliva’s chart, which are emblematic of Portuguese charts. Nor does Burston’s chart, or any other Thames School chart of the Mediterranean, depict the palm trees, elephants, and camels of Africa as shown on Oliva’s chart. Differences are also apparent on Joan Oliva’s circa 1640 chart of the Mediterranean (Figure 4.3). On Joan Oliva’s chart, the Temple Mount is shown, as are prominent city views, and heraldic flags depicting the extent of the Ottoman Empire and various significant ports throughout the Mediterranean. Burston’s chart, in contrast, appears bare, since it is uncluttered by political and cultural signifiers. Neither the Temple Mount nor other iconic cultural objects appear on Burston’s or any other Thames School charts. In contrast to the embellishments on either Joan or Francesco Oliva’s charts,
Figure 4.1  John Burston, Western Portion of ‘Chart of the Mediterranean (1640)’.

Courtesy of the British Library, BL Add MS 19916
Figure 4.2 Francesco Oliva, ‘Chart of the Mediterranean (1603)’.
Courtesy of the Bibliothèque nationale de France, BnF Rép. Ge C 5093
Figure 4.3 Joan Oliva, ‘Chart of the Mediterranean (c.1640)’.Courtesy of the National Maritime Museum, Greenwich, NMM P/8/6.
Burston’s appears crisp, the lines are finer, the script more legible, and the compass roses more elaborate; in effect, Burston’s chart seems functional, even business-like, while the others do not. The vast majority of European charts in the portolan style – Portuguese, Spanish, Italian, or French – all share the quality of being highly ornate and easily convey religious and political agendas. What makes the Thames School charts interesting, in part, is that they are both the last manifestation of the European portolan tradition, a tradition full of the artistry of the Renaissance, and yet seem to look to the future by their utilitarian appearance when compared to other contemporaneous charts.

Another instructive comparison can be made between Nicholas Comberford’s 1663 chart of the Mediterranean (Figure 4.4) and a 1662 chart by the French cartographer François Ollive (Figure 4.5), two remarkably well preserved manuscript charts. Having mentored six apprentices, including Burston, Comberford was a leading member of the Thames School. His work typifies its crisp, fine lines. The regional names are vividly labelled, an index of noteworthy ports is listed where space has become limited, and bright, elaborate compass roses and scales provide a high level of embellishment.34 Despite two-and-a-half highly wrought compass roses and two decorative scales, Comberford’s chart is comparatively unadorned. It is more an example of first-rate artisanship than an ornamental piece. This distinction becomes abundantly clear in comparison to the highly ornate 1662 chart of the Mediterranean by Ollive, who was based in Marseille.35 His chart is full of richly detailed ships, sea creatures, and scrollwork. Moreover, Ollive includes four city views of significant Mediterranean ports and even recognizes the importance of Jerusalem by depicting Jesus. This chart is more decorative than functional. Whereas Comberford’s chart ignored the interior and did not obstruct its seaways, Ollive’s obfuscates the art of navigation by turning the chart into an artistic expression of French mastery.

Upon an initial examination, one could easily believe that surviving Thames School charts were presentation copies kept at home, or master charts that one would refer to rather than use for navigation. However, that inference would be misleading, since it appears that at least two intact charts of the Mediterranean were used at sea. Both John Daniell’s 1642 chart and Comberford’s 1657 chart possess the prick-marks associated with plotting a course for navigating the Mediterranean.36 In addition, having found a fragment of vellum hidden as a binding in a journal of the East India Company, Sarah Tyacke has shown that, in fact, sailors used similar Thames School charts to plot their courses.37 More often, charts such as these were taken to sea and used alongside track charts (plan sheets of paper or parchment with gridlines) that would then be used to affix position in reference to a master chart, thereby preventing unnecessary wear and tear on expensive manuscript charts. Of course, in the well-known waters of the Mediterranean and the Baltic, sailing directions and lore would have been familiar to most navigators; the charts were merely a means to affix relative position. Still, the very nature of the consistent Mediterranean sailing-routes, locales, and trades ensured that the traditional portolan chart remained a viable instrument.

Despite the use of antiquated techniques, early Thames School charts evoke practicality rather than decorative methodologies or demonstrative ideologies. All charts and maps are expressions of the interests of their makers, and perhaps more importantly,
Figure 4.4 Nicholas Comberford, ‘Chart of the Mediterranean (1663)’. Courtesy of the British Library, BL Add MS 26665.
Figure 4.5  François Ollive, ‘Chart of the Mediterranean (1662)’.
Courtesty of the Bibliolitheque nationale de France, BnF Ge SH Archives no 43
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their clients. Thames School charts do not have overt symbolism – cartouches that portray the Temple Mount or exotic produce, peoples, or places – which easily proclaim the cultural attitudes surrounding the creation and use of the charts. Indeed, the absence of overt imagery and the limited use of cartouches on Thames School charts testifies to a different aesthetic, one that highlights the English maritime community’s focus on emerging, vibrant, and expanding trading opportunities rather than other socio-political manifestations. That is, the limited cartouches that do appear on the Thames School charts never conceal the functionality of the documents as navigational instruments. Rather than proclaiming cultural signifiers, the charts of the Mediterranean are indicative of English mercantile pursuits. Comparably, then, in the first half of the seventeenth century, the English maritime community was interested in expanding its shipping concerns rather than asserting a sense of an Anglicization of their achievements. The absence of overt manifestations of English ‘mastery’ is important. In fact, only after imperial rivalries threatened Atlantic and Asian activities did Thames School charts begin to objectify their holdings as English domain. Prior to the late seventeenth century, English interests are only revealed by collating the typical ports of call to place names on Thames School charts, although the West African coast was delineated by naming the coast for commodities as well. Thames School charts were English, to be sure, Anglicizing place names and providing English instrumentation. Yet, as reflections of English expansion, prior to the latter seventeenth century, they reveal the hesitant nature of proclaiming English dominion in the face of other European rivals.

Deconstructing empire: mapping English dominion

As England’s foremost cartographic tradition in the seventeenth century, Thames School cartographers were ultimately, by the close of the century, called upon to help illustrate mercantile and imperial interests. Pepys’ and Blathwayt’s use, among others, of cartographic sources to inform English imperial interests, proves the expanding audience and role of Thames School charts. For example, an anonymous Thames School cartographer compiled the first English map of New York, known as the Duke’s Plan, and it was given to James, Duke of York, in 1665, after New York’s acquisition following the Second Anglo-Dutch War. As a result, Thames School charts that had serviced the inherently maritime nature of England’s commercial empire before 1660 began to exhibit characteristics of territorial dominion, thereby more fully depicting the evolving nature of national attitudes. Yet, despite the expansion of English interests abroad, Thames School charts still maintained an explicitly commercial and functional purpose. In effect, late seventeenth-century Thames School charts were used as cartographic instruments of empire, delineating English domain and advocating imperial intervention.

The depiction of the cod fisheries of the North Atlantic is emblematic of the shifting nature of Thames School charts. An anonymous late seventeenth-century Thames chart of the Province of Mayne (Figure 4.6) reveals strikingly informative and suggestive images. The deliberate and careful presentation of various pieces of iconography represents a firm break from earlier staid cartographic presentations of
English activities abroad. The cartouche of the scale in the lower part of the chart reminds the viewer of the richness of New England by depicting plums or peaches, and wild berries. Inside the larger compass rose, a mermaid embracing a human infant holds forth a trident or harpoon as it prepares to spear a large fish or serpent. The mermaid seems to represent how the riches of the Province of Maine act as midwife for emerging settlements. Off the northern coasts of Massachusetts, four small boats and a ship are shown. The four boats are clearly fishing, and the ship ostensibly accompanying them probably represents a transatlantic or trans-American transport for New England cod. Interestingly, both the ‘dry-fishery’, lightly salted and dried cod, and the ‘wet-fishery’, directly transporting freshly caught fish heavily packed in salt, relied upon small parasite-boats often transported by ocean-going vessels.38 Another set of three small vessels under sail and a ship appear along the far northeast of the chart; yet another ship, unencumbered by parasites, is sailing into the bay using the visual cue of the Ayquementicus Hills, as depicted on the chart as well. These fishing images draw attention to the economics of the English Atlantic and the rise of the English maritime empire, as the cod fisheries of North America were important for the English, both as a nursery for English mariners and for providing a highly marketable commodity. Each of the images suggestively highlights the opportunities of Maine and English dominion. Moreover, the delineation of the coast itself appears
to protect and shelter the province, creating a hospitable environment for settlement. Notwithstanding the fact that this is a functioning nautical chart replete with navigational information, the spartan nature of the portolan-style chart itself – e.g. its barren coastlines – seemingly accentuates the cod fishery. In effect, the chart’s careful construction portrays the Province of Maine as a cradle for English settlement. Functionalist and mercantilist attitudes toward English expansionism, and simultaneously emerging imperial aspirations as the Province of Maine offers alluring opportunities for wealth and settlement, compete on this map.

As English interests abroad began to be threatened by rivalry with the Dutch and French, Thames School charts began to exhibit imperial aspirations in addition to their mercantile functions. In effect, they become part of an international political narrative, or campaign for empire. The narrow application of overt manifestations of English ambitions for ‘mastery’ on Thames School charts is important. Charts of India and the Americas are wholly different to their brethren. Unlike charts of the Baltic, Mediterranean, and the West African coast, charts of India and the Americas began to objectify their holdings as English domain. English flags dot the Malabar Coast and Newfoundland fisheries, for instance, before the encroaching presence of foreign competitors. In effect, Thames School charts depict the changing realities of trade and empire by late century: Andrew Welch’s 1677 charts note the Dutch interference in Asia, and Augustine Fitzhugh’s 1693 chart of Newfoundland highlights the French threat in North America. Moreover, the colonial North American boundaries gradually move west to juxtapose English claims against New France on other Thames School cartography. Imperial aspirations in Asia, particularly after the acquisition of Bombay, are notable on Thames School charts; and the colonization of the Americas transformed England’s mercantilism into an Atlantic empire and radically altered the nature of Thames School charts of the Americas. Imperial competition and conflict emerge on the charts to highlight the precarious and evolving nature of English commerce and empire.

Two pilotage charts by Andrew Welch and John Thornton offer useful insight into changing English attitudes toward the west-Indian coast (Figures 4.7 and 4.8). The charts extend south from Gujarat past Calicut to Cranganore in India. Moreover, the charts mirror the growing nationalist and imperialist sentiments of the English and the East India Company in the late seventeenth century. As a set, the two charts continually refer to navigational and commercial hazards in a manner that infers imperial desire. The first chart, recognizable by the prominence of the name Guzarat (Gujarat), includes coastal profiles and a long narrative of navigational information for the user along the western coast of India, known as the Malabar Coast. The chart effectively fuses sailing directions with the graphic benefits of a maritime map. Beautifully rendered, the charted coasts are situated upon a grid pattern, unlike a traditional portolan layout of rhumb lines. Shoals and soundings envelop the approaches to Surat, and visual cues abound. However, despite the large amount of navigational and commercial information, the chart also notably includes an English East Indiaman. The inclusion of an English ship sailing toward the Surat River is important. Though common in other cartographic traditions, Thames School charts never depicted ships or other illustrative addendums (chorography) prior to the Restoration.
Figure 4.7 Andrew Welch, ‘Chart of Gujurat (1677)’.
Courtesy of the British Library, BL Add MS 39178A
Figure 4.8 John Thornton, ‘A Draught of the Coast of Malabar (1696)’.  
Courtesy of the British Library, BL Egerton 741
of 1660. This ship’s proud carriage symbolizes not only the importance of the trades along the Malabar Coast – pepper, indigo, and calicos – but also proclaims English control of trade in and around Gujarat. At no point on this chart are the Dutch noted, unlike the accompanying chart, which reveals a strong Dutch presence. The second chart, ‘A Draught of the Coast of Malabar’, by Thornton, completes the suggestive overtures of the Gujarat chart. All along the Malabar Coast, tiny English flags dot the shoreline, juxtaposed against larger, imposing, Dutch flags. The inclusion of ships amid an endangered coastline is an authoritative gesture. The exquisite and extensive chart plots English concerns about the growing, if not commanding and threatening, presence of Dutch competition. Collectively, these charts display orderly commercial interests alongside a Dutch menace. Furthermore, their symbolism emphasizes English territorial ambitions for the preservation of safe trade, a new development from earlier Thames School charts. Consequently, this shift underscores how earlier English interests in the region had been guided by the search for amicable trading relations that were defined by English perceptions of order and stability, rather than a search for territorial holdings.

Revealing parallel concerns, Augustine Fitzhugh’s 1693 Newfoundland chart (Figure 4.9) outwardly politicizes the fishery by differentiating the French and English fishing fleets, and revealing how the smaller English fishing fleet is surrounded. In fact, it is almost as if the French are poaching upon English fishing grounds; observe, for instance, the imposing shaded French fleet’s presence in the Maine Bank. The southernmost Union Jack is proudly waving in the wind despite being encircled by a menacing dark cloud of French fishing boats. In turn, each of the coastal insets boldly waves a crisp Union Jack before the encroaching French fleets off Newfoundland. It is as if Newfoundland is under siege, and the tiny English fishing boats and their beset homeports are valiantly defending English interests. The imagery on Fitzhugh’s chart displays one of the economic underpinnings of the Atlantic region, the cod fisheries, but it also underscores the rise of imperial interests and policy by its public expression of English dominion. Interestingly, Blathwayt noted several times his failed attempts to convince the Crown and parliament to fortify various Newfoundland ports from a possible French attack throughout the 1690s. Fitzhugh’s chart dramatically fuses the commercial and rising imperial concerns of the English at the close of the seventeenth century, and perhaps, for the first time, begins to question the obvious navigational utility of a Thames School chart as well. Coming full circle, a Thames School chart now mirrors the demonstrative and ideological charts of every other European cartographic tradition as they declared their ‘mastery of the seas’ in this period.

The dominance of the Thames School in seventeenth-century English overseas charting provides the means to understand how English people envisioned and articulated their expectations of an expanding world. On the most basic level, Thames School charts document the changes in England’s navigational knowledge of distant shores. Yet, they also express the ideas surrounding their use. Encompassing the globe, the charts of the Thames School are representational discourses of England’s maritime endeavours. The copyists and cartographers of the Thames School initially rejected the embellishments of the traditional portolan style that obfuscated the art of navigation, suggesting the functionalism of modernity. In contrast to every other European
Figure 4.9  Augustine Fitzhugh, ‘Chart of Newfoundland (1693)’.
Courtesy of the British Library, BL Add MS 5414/30
charting tradition, which routinely projected politically and/or religiously charged symbols, the absence of any depictions of ideology, other than commercial opportunities, on Thames School charts prior to the latter seventeenth century is extraordinary. Until the late seventeenth century, Thames School charts abstained from this common practice of asserting dominion and mastery. Yet, by the close of the seventeenth century, England had transformed its disparate overseas ventures into a global empire. An emerging English empire had fought battles across the world’s oceans to wrest maritime prowess and mastery from each of its European rivals, and Thames School charts fully reflect these shifts.

Paralleling the growth of English overseas interests, the charts illustrate evolving English attitudes toward the various regions that they encountered. Seventeenth-century Thames School charts not only convey an early pragmatic and cosmopolitan attitude, but they also highlight the transition to articulating English imperial ambitions following the Restoration, as territorial dominion was increasingly expressed. The charts act as actual artefacts of the period, as instruments and reflections of the birth and growth of empire. The hesitant beginnings of empire parallel the tentative origins of charting. As imperial oversight emerged and began to inform policies, the dominant mercantile nature of Thames School charts began to include and then assert imperial aspirations, ambitions, and dominion: as empire matured, so did the functions of charts. In effect, the birth and maturation of English charting coincides with the birth of English expansion and empire; therefore, charts help us better understand contemporary attitudes toward expansion and empire.

The sea has always been a defining feature of English history. The embrace of visual literacy, the emergence of a domestic cartographic tradition, and its evolution mark key features of a maritime community’s capacity to meet the needs of an increasingly interconnected world. The Thames School of nautical cartographers met this need and reflected this reality from the late sixteenth century until the mid-eighteenth century. In particular, early Thames School charts reflect the early English cosmopolitan engagement with the world by consistently displaying commercial functionality in an era of mercantilism. Meanwhile, the defensive and combative imagery on later seventeenth-century Thames School charts mirrors the imperial competition and conflicts indicative of the age. Consequently, English early modern nautical cartography plays an important role in more fully understanding the development of Europe’s burgeoning mercantile and imperial ambitions. Incorporating the cartography of the sea into the history of overseas expansionism provides a necessary but heretofore under recognized perspective on the interrelationships of scientific innovation, artistic expression, and the narratives of cultural expansion in the study of oceans in global history and culture. Accordingly, by incorporating cartographic discourses into the historical narrative, historians can begin to ‘see’ the complex narratives involved in Europe’s attempts to ‘master the sea’.

Notes

1 A. Games, The Web of Empire: English Cosmopolitanism in an Age of Expansion, 1560–1660, Oxford: Oxford University Press, 2008, revitalizes notions of an accidental English Empire by highlighting the cosmopolitanism of intrepid English adventurers, including merchants, clergymen, and officials. Games argues that Englishmen prior to 1660 were relatively free from
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overly national attachments because of the expediencies necessary to establish and develop their diverse contacts across the globe. Games' research, however, like most histories, relies primarily upon textual evidence and does not incorporate surviving cartographic source materials.


6 Cosgrove, ‘Mapping New Worlds’, pp. 65–89.

7 Buisséret, The Mapmakers’ Quest, p. 177.


10 Robinson, Marine Cartography.

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13 N. J. W. Thrower, Maps and Civilization: Cartography in Culture and Society, 3rd edition, Chicago: Chicago University Press, pp. 77–80. By the early sixteenth century, the problems of the plane chart (i.e. the traditional portolan–like style on charts) had become significant for cartographers and navigators, since it did not address the curvature of the earth. Gerard Mercator addressed this problem for mariners with his 1569 Nova et Aucta Orbis Terrae Descriptio ad Usum Navigantium Emendate Accommodata; though it took centuries for mariners to embrace this new projection. The projection that Mercator proposed in this work has since borne his name and remains the basis for sea charts today. Mercator’s projection increases the distance between parallels with increasing latitudes, allowing any two points on the map to be joined by a straight line, a loxodrome, which cuts all meridians at the same angle and enables navigation that is more exact. Effectively, the Mercator projection creates scale while maintaining shape and direction at the expense of increasing distortion toward either pole. Yet, it was not until an English mathematician, Edward Wright, in 1599, published Certaine Errors in Navigation, that the instructions for the construction and use of the Mercator projection became available. Mercator, along with Ptolemy, are perhaps the two most important people in the history of cartography; their importance lies in the ability to more accurately portray the globe and thus traverse it, trade being a primary factor. Regardless, it took over a century for English mariners to embrace charts with a Mercator projection.

14 The best introduction into the history of cartography, and one that highlights Ptolemy’s pivotal role, is Thrower’s Maps and Civilization, now in its third edition.


17 Andrews, Trade, Plunder, and Settlement; Black, The British Seaborne Empire; Loades, England’s Maritime Empire; Rodger, Safeguard of the Sea.

18 Delano-Smith and Kain, English Maps, pp. 147–8, 159; Robinson, Marine Cartography, pp. 34–6, 224. Anthony Ashley was clerk to the Privy Council and translated the 1586 Latin edition; it took him nearly three years and was effectively an Anglicized form of the original.

19 The French first challenged Dutch cartographic prowess when in 1693 La Neptune français was published. As a direct result of French attempts to map and chart their lands, French mathematical and astronomical sciences converged to provide the scientific advances necessary to produce highly accurate maps, all of which was under the aegis of the Ingenieurs du Roi (Engineers of the King) starting in 1666. S Toulouse, ‘Marine Cartography and
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The Venetian Ambassador in 1588 essentially noted as much. In 1558 probably not one, as late as 1568 probably only one, English seaman was capable of navigating to the West Indies without the aid of Portuguese, French, or Spanish pilots. Yet, by the time of the Armada, a mere score of years later, Englishmen had gained a ‘reputation of being above all Western nations, expert and active in all naval operations, and great sea dogs’. Calendar of State Papers Relating to English Affairs in the Archives of Venice, Vol. 8, 1581–91, London: HMSO, 1894, p. 349 (8 April 1588).

The first known identification of the Thames School was the work of Ernesto Camarero, ‘La Escuel Cartografica Inglesa’, pp. 65–8, who singled out five chart-makers who signed their charts with ‘At the Signe of the Platt’. The four major scholars who have dealt with the Thames School of English nautical cartography are Jeannette Black, Tony Campbell, Thomas R. Smith, and Sarah Tyacke (see above, notes 7 and 12). Campbell and Smith both persuasively argued that there was a discrete English cartographic movement, and Campbell discovered the association of cartographers in the Drapers’ records. Black contextualizes 10 Thames School charts to highlight ministerial cartographic use. Tyacke includes the Thames School and its precursors within the literature of exploration and discovery but does not connect their efforts to London’s central role in an emerging maritime empire dependent upon trade nor to the developments of the latter seventeenth century. Ultimately, 37 chart-makers are recorded as Masters and Apprentices in the ledgers of the Drapers’ Company and 556 charts are currently known to have survived.


Black, ‘The Blathwayt Atlas’, pp. 20–1. Pepys also noted that he furnished his office with charts by Burston.


B. Schmidt, ‘Mapping an Empire: Cartographic and Colonial Rivalry in Seventeenth-Century Dutch and English North America’, William and Mary Quarterly 54/3, pp. 549–78. Schmidt argues that the Dutch and English governments employed maps as instruments of imperial policy, though he does not explicate the maps as reflections or instruments; he merely notes their existence as geographical markers.

British Library Additional 19916 (hereafter BL MS) – John Burston, ‘Coloured Chart of the Mediterranean, the Sea of Marmora and Black Sea, and of the Bordering Coasts, Made By John Burston, Dwelling ouer Againste New Granell Lane in Radcliff Highway, neare London, Anno Domini 1640’ (western portion).


NMM P/8/6 – Joan Oliva, ‘Chart of the Mediterranean’ (c.1640).

BL Add. MS 26665 – Nicholas Comberford, ‘Map of the Mediterranean Sea, with its Coasts, Islands, and Ports, made by Nicholas Comberford, Dwelling at the Signe of the Platt Neare the West End of the Schoole House in Ratlcliffe, Anno 1663’.

BNF Ge SH Archives no. 43 – François Ollive, ‘Chart of the Mediterranean’, (1662).
36 Trinity College Library, Dublin, IE TCD MS 1209/81: John Daniell, ‘Sea Chart of the Mediterranean’ (1642); Baker-Berry Library, Dartmouth, New Hampshire: Nicolas Comberford, ‘Portolan Chart of the Mediterranean and the Black Sea’, (1657); Rauner Special Collections, Manuscript Codex 657940.
38 Black, The British Seaborne Empire, pp. 28–30.
39 BL Add. MS 13970 A – ‘Province of Maine’, anon, c. late seventeenth century.
40 BL Add. MS 39178 A – Andrew Welch, ‘A Map of the Coast of India from Bombay to Gujerat, by Andrew Welch, 1677’.
41 BL Egerton MS 741 – John Thornton, ‘A Coloured Chart of the Western Coast of Hindostan (1696)’.
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