1. The First Global Exchange and Dispute over the Globe: the Portuguese-Spanish Nautical Interchange (1415–1580)

Abstract
This chapter focuses on the intra-Iberian nautical exchange between Portugal and Spain, beginning in the 15th century and ending in 1580 with the political union between Portugal and Spain under the Iberian Union. It demonstrates the intensity of the Portuguese-Spanish interchange and shows how Portuguese contributions to Spanish nautical science were crucial at several key moments during the 16th century. Additionally, it argues that Spanish contributions to Portuguese scientific and overseas developments were meaningful, and that the process of interchange between Portugal and Spain also affected the rest of Europe.

Keywords: pilots, cosmographers, Charles V, Philip II, John III, secrecy policies

Introduction

The process of nautical exchange between Portugal and what would later become Spain,[1] was of great significance for both sides starting in the 15th

1 Although this process started as Portuguese-Castilian rivalry in the 15th century, it evolved during the 16th century into a truly Portuguese-Spanish process owing to the political union between Castile and Aragon in 1469 by the dynastic marriage of Queen Elizabeth of Castile and King Ferdinand of Aragon. This union was further strengthened when King Charles I assumed the crown of both realms in 1516. As such, it has been deemed appropriate in this chapter to refer to these processes as Portuguese-Spanish rather than simply Portuguese-Castilian, as the union between Castile and Aragon had a great impact on the strength of Spain's claims vis-à-vis Portugal. This will become evident in this chapter's section on diplomacy and espionage. This logic will be maintained in the following chapters too.

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century. As the first European powers to systematically embark on overseas expansion, Portugal and Spain were also the first to establish structures to support their empires and to engage in overseas rivalry. This Portuguese-Spanish rivalry, which initially took place in the Iberian Peninsula and the North Atlantic, soon expanded to encompass the geographies of both empires during the 16th century, as Portuguese and Spanish sailors reached new parts of the globe and established new imperial bases. As a consequence, Portuguese-Spanish nautical exchange also began to occur worldwide as the maritime rivalry intensified. While the importance of this exchange can be clearly observed and is best documented from the 1480s onwards, when Spain began to engage more systematically in overseas enterprises, it is also true that Portugal sometimes utilized this exchange for its own interests. The best-known example of this is Ferdinand Magellan's (1480–1521) proposal to King Charles I of Spain (1516–56) for what became the first circumnavigation of the globe. However, there were also other meaningful cases prior to Magellan's voyage, dating back to the beginning of Portuguese overseas expansion with the occupation of Ceuta in 1415. Both sides quickly understood the importance of controlling the flow of nautical information and knowledge to and from their rival, whether through simple circulation, diplomatic maneuvering, or espionage attempts. This process of exchange remained critical for both sides until the union of Portugal and Spain in 1580, and even after this period, collaboration and rivalry between the two sides did not subside.

The intense circulation of maritime knowledge played an important role in the history of Portuguese and Spanish overseas enterprises in the 15th and 16th centuries. It not only served the needs of both countries' maritime imperial systems, but also embodied scientific knowledge exchanges that influenced what came to be known as Iberian maritime literature, embodied in the Spanish Manuals of Navigation. This interchange also had important consequences for the rest of Europe, as the Portuguese–Spanish exchange was the first of its kind chronologically and set a precedent for other 16th-century instances, such as the Anglo-Iberian, French-Iberian, Dutch-Iberian, Anglo-French, and Anglo-Dutch exchanges of nautical information. However, it is important to differentiate between the normal circulation of nautical experts (such as pilots, cartographers, and cosmographers) and diplomatic and espionage attempts aimed at preventing such circulation. Collaboration, emulation, and rivalry were key but conflicting concepts that affected this intra-Iberian interchange, but that still remained relevant for both sides.

This chapter will examine the exchanges of nautical knowledge between Portugal and Spain chronologically, although it will not aim to be exhaustive due to the vastness of the topic. Instead, it will focus on the main episodes

and their overall significance. The analysis will begin with the Spanish borrowing of Portuguese nautical expertise, starting with well-known episodes, and will then analyze the period after Magellan's circumnavigation until the political union of Portugal and Spain in 1580. In the final sections, the Portuguese borrowing of Spanish nautical expertise and the diplomacy and espionage involved in attempts by both sides to disrupt the rival's maritime expeditions will be discussed. Throughout all sections, it will become apparent that, despite each side's efforts to prevent the circulation of nautical knowledge, and independently of the reasons, most of the attempts failed. This pattern of Portuguese-Spanish nautical interchange will also be noticed in the following chapters.

1.1 Portuguese Nautical Knowledge at Spain's Service (1481–1580)

1.1.1 The First Interchanges up to Ferdinand Magellan's time (1481–1516)

One of the first and most consequential episodes of nautical knowledge interchange between Portugal and Spain took place with the inaugural voyage of Cristopher Columbus (1451–1506), in 1492. It is no secret that before coming to Spain, Columbus had proposed his plan to sail to the West to the Portuguese King John II (1481–95).[2] For this reason, Spanish chroniclers recognized the role that previous nautical knowledge exchanges with Portuguese pilots had for Columbus's ideas. In this context, the Spanish chronicler Bartolomé de las Casas (1484–1566) mentioned the information that Christopher Columbus gathered in conversations with Portuguese pilots such as Martim Vicente, Vicente Dias de Tavira, and Miguel Corte-Real.[3] Antonio de Herrera (1549–1625), another Spanish official chronicler, emphasized the relevance of Vicente Dias de Tavira's intelligence on the existence of islands to the West, which, he claims, were used by Columbus to convince the Catholic Kings (Elizabeth of Castile and Ferdinand of Aragon) to sponsor his first voyage.[4] Furthermore, Columbus had served in Portuguese voyages to West Africa for a decade, and on his inaugural expedition, he brought

2 For a recent overview of Columbus's career see the solidly documented new biography by: Luís Filipe Thomaz, *Cristóvão Colombo o Genovês meu tio por afinidade* (Lisbon: Portuguese Navy Academy, 2021).

3 Bartolomé de Las Casas, *Historia de las Indias*, vol. I (Caracas: Biblioteca Ayacucho 1986), 68 and 71.

4 Antonio de Herrera, *Historia General de los hechos de los castellanos en las Islas i tierra firme del Mar oceano*, I Decade (Madrid: Imprenta Real, 1601), 6.

at least five Portuguese crew members with him. While this is what can be documented, there is a possibility that more Portuguese may have been onboard, providing valuable geographical insights.[5]

Columbus's case is paradigmatic of the nature of these exchanges between Portugal and Spain at the end of the 15th century, which decisively shaped the major pattern of maritime knowledge interchange between the two Iberian realms during the early 16th century. Even before formally becoming king of Portugal, in his quality as regent in 1480, Prince John issued a law forbidding Castilians and other foreigners from participating in Portuguese voyages to West Africa. If anyone was found in the region, the prince authorized Portuguese authorities to kill the interlopers without mercy or any need to consult Lisbon.[6] This treatment of Castilians found in the area during those years was akin to the later approach towards the French and the English, as it was based on the Portuguese attempt to implement *Mare Clausum* policies.[7] However, later and already as king, John II hired several foreigners for his geographical discoveries. Columbus's episode and the hiring of German cosmographer Martin Behaim (1459–1507) took place during his reign, showing how the Portuguese Crown, despite its awareness on the sensitivity of geographical knowledge, did not adopt a full secrecy policy with regard to it.[8] Another instance similar to Behaim's employ is that of King John II's conversation with the German and Imperial ambassador Hieronymus Münzer (1437–1508) on recent Portuguese geographical discoveries.[9] From this perspective, Columbus's case is illuminating and well-documented, as he was able to travel freely with critical information and knowledge between Portugal and Spain. However, this does not imply that Portugal fully accepted the free circulation of nautical experts to Spain.

5 Maria da Graça A. Mateus Ventura, *Portugueses no descobrimento e conquista da Hispano-América. Viagens e expedições (1492–1557)* (Lisbon: Colibri Editions, 1999), 52.

6 Diffie, "Foreigners in Portugal," 34–35.

7 Stefano Catellan, "Iberian Expansion over the Oceans: Law and Politics of *Mare Clausum* on the Threshold of Modernity (XV–XVI Centuries)," *Rivista di Storia Giuridica dell'età Medievale e Moderna* 18 (2020): 12.

8 Inácio Guerreiro, "A cartografia dos Descobrimentos Portugueses e a Política de Siglo," in *As rotas oceânicas (Séculos XV–XVII)*, ed. Maria da Graça A. Mateus Ventura (Lisbon: Colibri Editions, 1999), 196–97.

9 Münzer visited Portugal and Spain during the 1480–90s. He dined at King John II's table and the Portuguese king confided to him that he was sending two Portuguese agents to Cairo to obtain knowledge about the Indian Ocean (Andrade, *Mundos Novos*, vol. I, 110). Although Münzer supported Columbus's idea to venture west to arrive to Asia whereas the Portuguese king did not patronize it, Münzer publicly praised the role of Portuguese navigations for European knowledge (Andrade, *Mundos Novos*, vol. I, 110 and 143).

Indeed, Portugal kept close vigilance and interfered in the circulation of its technical personnel. Again, Columbus's story provides a striking episode. On the return of his first voyage, Columbus anchored firstly in Lisbon. At his arrival, Columbus had a fierce argument with a Portuguese captain. The discussion made him fear that war would soon break out between Portugal and Spain owing to the maritime discoveries he had made.[10] The war was avoided because both realms started the negotiations that ended in the 1494 Treaty of Tordesillas. Shortly after, two other critical instances of documented geographical knowledge exchange took place. Before coming to Spain, the Italian Amerigo Vespucci (1454–1512) also served in Portugal and witnessed the making of Portuguese charts with information that was to be decisive for the Spanish to continue geographical discoveries after Columbus's first voyages.[11] As a consequence, he offered this intelligence to Spain. The Portuguese reaction was clear: the new Portuguese King Manuel I (1495–1521) hired Vespucci, for a time, for Portuguese maritime discoveries in South America. Still, due to unclear circumstances, the Portuguese king was unable to prevent his return to Spain, where he became the first pilot-major of the Sevillian *Casa de la Contratación*.[12] The *Casa* had been created in 1503 by King Ferdinand of Aragon (1452–1516) and Queen Elizabeth of Castile (1451–1504) and followed the model of the Portuguese *Casa da Índia*.[13] This serves as another proof of the importance of these intra–Iberian exchanges and of how Spain benefited from them in the early days of its overseas enterprises.

But if Columbus and Vespucci document instances of "foreign" nautical knowledge being disputed between Portugal and Spain, it was also at the end of the 15th century, that a Portuguese pilot entered Spanish service for good. The case had important repercussions, particularly as it preceded the 1517 migration of Ferdinand Magellan, and it initiated another phase in these nautical exchanges between Portugal and Spain. As this period coincided with the major Spanish attempts to launch systematically overseas

10 Las Casas, *Historia de las Indias*, vol. I, 328–329.

11 *De Orbe Novo. The Eight Decades of Peter Martyr d'Anghera*, ed. Francis Augustus MacNutt, vol. I (New York: Putnam, 1912), 271.

12 On Vespucci see Felipe Fernández-Armesto, *Amerigo: The Man Who Gave His Name to America* (New York: Random House, 2007). For more recent studies on Vespucci see also: Ângelo Cattaneo, ed., *Shores of Vespucci: A Historical Research of Amerigo Vespucci's Life and Contexts* (Bern: Peter Lang, 2018).

13 Sánchez, *La espada, la cruz*, 87; Lino Camprubí, "Travelling around the Empire: Iberian Voyages, the Sphere, and the Atlantic Origins of the Scientific Revolution," *EA*, 1, no. 2 (July–December 2009), 13.

expeditions, the Spanish nautical machine needed to recruit technical personnel with experience in long–distance oceanic voyages. At the time, Portuguese experts were at the head front and some were becoming increasingly interested in serving Spain mainly for the prospects of achieving better rewards than in Portugal. The career of Portuguese pilot João Dias de Solis (1470?–1516) soon became an example of how far a talented Portuguese sailor could rise in Spain's service.

Although there has been some controversy over Solis' nationality, Spanish and Portuguese documents prove his birth in Portugal. In October 1496, pressed by King Manuel I, the Catholic Kings signed an order to jail Solis, mentioned as a Portuguese pilot, as he had fled to Spain. At stake was the fact that Solis had privateered in French fleets against the Portuguese in West Africa.[14] After serving for some time in Spain, Solis returned to Portugal. A Portuguese document related to captain Afonso de Albuquerque's (1453–1515) departure for India in 1506 states that Albuquerque's pilot was Solis. The departure was halted because Solis had escaped. This time, the reason was that he had murdered his wife. Some authors argued that Solis carried with him a manuscript version of the regiment of the astrolabe that was to be decisive in providing the Spanish with the techniques for astronomical navigation.[15] When Solis arrived in Spain, he was promoted by King Ferdinand to the post of pilot of the Casa in 1507.[16] Together with the Spaniard Vicente Yañes Pinzon (1462?–1514), Solis was named for a reconnaissance expedition to the Americas. While Pinzon would have the authority on land, Solis was to be the master in all nautical issues. Despite the important geographical discoveries made by both, upon their return to Spain, Solis was jailed for not obeying previous orders.[17]

Nevertheless, Solis's detention did not last long. At Amerigo Vespucci's death in 1512, King Ferdinand had already released Solis and named him as pilot-major of the Casa, bypassing other Spanish candidates such as the navigator-astronomer Andrés de San Martín.[18] The king recognized the need

14 Martin Fernandez de Navarrete, *Colección de los Viajes y Descubrimientos que hicieron por mar los españoles desde fines del siglo XV, con varios documentos ineditos concernientes a la Historia de la Marina Castellana y de los establecimentos españoles en Indias*, vol. III (Madrid: Imprenta Nacional, 1880), 506–507.

15 Rolando Laguarda Trías, "Pilotos portugueses en el Rio de la Plata durante el siglo XVI," *Revista da Universidade de Coimbra* XXXIV (1988): 61.

16 José Toribio Medina, *Juan Diaz de Solís. Estudio histórico* (Santiago de Chile: author's edition, 1897), CXII.

17 Toribio Medina, *Juan Diaz de Solís*, CXXI and CLXXVIII.

18 Carmen Mena Garcia, "Conocer y dominar los astros. El piloto Andrés de San Martín y expedición Magallanes/Del Cano," *Temas Americanistas* 44 (June 2020): 205.

for the Portuguese pilot experience in training Spanish seamen. Nevertheless, Solis's appointment was linked to the fulfilment of an important condition. In the 1494 Treaty of Tordesillas it had been agreed that Portugal and Spain would send a joint expedition to settle the longitudinal line of demarcation in the Atlantic that divided the Portuguese and the Spanish hemispheres of influence. By 1512, this had not yet taken place. As the Portuguese had conquered Malacca and there were rumors that the antemeridian in Asia would pass close to Malacca, King Ferdinand decided to settle this issue. King Ferdinand's interest in the matter was related to his and Queen Elizabeth of Castile's desire, ever since the beginning of Spanish overseas plans, to find an alternative route to Asia without violating the Treaty of Tordesillas.

It was in this context that, using his previous experience in Portuguese service and Ptolemaic prescriptions, Solis argued that all the area from Malacca to the Pacific belonged to Spain as the antemeridian passed close to Malacca. King Ferdinand appointed Solis as pilot-major on the condition that he would organize an expedition to calculate the exact line of the Tordesillas meridian in the Americas and the antemeridian in Asia. King Ferdinand's secret orders authorized Solis to navigate to Asia by the Cape of Good Hope, something that Spain was not allowed to do according to the stipulations of the Treaty of Tordesillas, as the route fell in the Portuguese hemisphere of influence. Solis was to go to Sri Lanka and Malacca to take measurements, and if he found that any of these areas really belonged to Spain, he was allowed to claim them for Spain. Considering Solis's career between Portugal and Spain and particularly his previous reasons for migration, King Ferdinand worried with regard to his motivations. Accordingly, he ordered a close vigilance of Solis's movements.[19] The king's precautions were warranted in the context of court politics.

In the meantime, Diogo Mendes de Vasconcelos, the Portuguese ambassador in Spain, discovered Solis's plans. In August 1512, he confronted Solis, whom he identified as a Portuguese pilot serving Spain, and attempted to convince him to return to Portugal. Solis refused. The ambassador also mentioned that Solis had a brother and a goldsmith called João Henriques assisting him. Pending certain conditions, Henriques was willing to return to Portugal. As a man with no sea experience, the Portuguese ambassador reported these events to King Manuel I, warned him of the dangers and asked for the Portuguese king's final position. By September 1512, understanding that he was unable to prevent Solis from sailing, the ambassador confronted King Ferdinand, arguing that this constituted a violation of the Treaty of

19 Toribio Medina, *Juan Diaz de Solís*, CLXXXII–CLXXXVIII.

Tordesillas. King Ferdinand replied that Solis would not navigate to the Portuguese hemisphere in Asia but to the Spanish one in the Americas. Indeed, King Ferdinand by then was planning to send Solis to Central America to discover a nautical passage to Asia. In the official response to King Manuel I, King Ferdinand also asserted that Solis was an old man and that he would not have a leading role in the expedition. But, meanwhile, Henriques had also confessed that Solis would sail by the Cape of Good Hope, and as a result the Portuguese ambassador in Spain informed King Manuel I that he did not completely believe King Ferdinand's words.[20] The final outcome of this was a sibylline letter in menacing tones by King Manuel I to King Ferdinand, in which the insinuation was made of a new war between Portugal and Spain in case Solis sailed to Asia by the Cape route. The Portuguese king's pressure prompted King Ferdinand to cancel Solis's planned voyage to Asia.[21] The conditions for such an expedition would only come with Ferdinand Magellan. Instead, Solis was ordered to direct the first Spanish expedition that sailed to the Plata River region, already in 1512. To prevent any potential issues or escape attempts, King Ferdinand offered substantial rewards to Solis.[22]

This was one of the first significant attempts by the Portuguese to disrupt a Spanish overseas expedition. Later in this chapter, other examples will be detailed. However, when the tables were turned, Spain also exerted diplomatic pressure on Portugal to abort its overseas expeditions. These attempts, as in the case of Solis, often involved espionage efforts that, for the first time in maritime history, accompanied the discoveries, extending beyond Europe to the entire known globe. It is important to note that Solis's story shares similar patterns with those of Columbus and Vespucci in that the dispute between Portugal and Spain over the nautical expertise of ocean captains was not solely political, but also a matter of preventing geographical knowledge from reaching the maritime rival.

The discovery of the Mar der Sur (Pacific Ocean) by Vasco Nunez de Balboa (1475–1519) also triggered an important geographical debate about the discoveries in this area. Solis participated in it and was commissioned by King Ferdinand to discover a route to connect the Atlantic and Pacific Oceans by way of South America, another instance demonstrating how Spain continued to search for a route to Asia on its own. Again, Solis's personal experience and nautical skill were the key reason for his appointment.

20 Fernandez de Navarrete, *Colección de los Viajes*, vol. III, 126–28 and 130–32.

21 Sánchez, *La espada, la cruz*, 103.

22 Toribio Medina, *Juan Diaz de Solís*, CXCV–VI and CCXXIV.

King Ferdinand also allowed Solis's brother to replace him during the voyage should anything happen to Solis. Solis organized the second Spanish expedition to the Plata River, which was first called Solis River, but he died at the hands of indigenous people in 1516.[23] Once more, Solis brought with him other Portuguese experts, such as Henrique Montes, Diogo Garcia, and Aleixo Garcia, who continued to assist later Spanish expeditions.[24]

Solis's migration to Spain thus presaged the well-known case of Ferdinand Magellan, an episode that had decisive consequences for the increasing migration of Portuguese sea experts to Spain. Edward Collins has pointed out that there is a period before and after the Treaty of Zaragoza of 1529 when this applied to the Portuguese contributions to Spanish navigation in the 16th century.[25] It is therefore time to examine how this flow of expertise continued to increase until the Treaty of Zaragoza, by which King Charles I sold the Spanish rights over the Moluccas to Portugal. In a second moment, it will be analyzed whether or not the Treaty decreased the migration of Portuguese sailors to Spain.

1.1.2 Magellan's Voyage and Its Consequences: From the Expedition to the Treaty of Zaragoza (1517–29)

Like Columbus and Vespucci, Ferdinand Magellan arrived in Spain with Portuguese geographical intelligence, asserting that the Moluccan Islands were on the Spanish side of the antemeridian of Tordesillas.[26] As was recently argued, Magellan presented himself to King Charles I with the best cartographers and pilots, besides having behind him the best nautical science, updated and truthful cartographical knowledge.[27] Aside from Portuguese pilots, it is highly probable that the renowned cartographer Diogo Ribeiro also came with Magellan. As it has also been argued that Ribeiro had a Spanish mother, this might have facilitated his coming to Spain with Magellan.[28] What is certain, is that the Faleiro brothers (Rui and Francisco) came with Magellan, two important cosmographical advisors for

23 Toribio Medina, *Juan Diaz de Solís*, CCXXIX–CCXXX and CCLXXX.

24 Ventura, *Portugueses no descobrimento*, 122.

25 Edward Collins, "Interactions of Portuguese Artisanal Culture in the Maritime Enterprise of 16th-Century Seville," *Centaurus*, 60, no. 3 (2019): 203.

26 On this topic see Rui Manuel Loureiro, "As fontes do projecto de navegação de Fernão de Magalhães," *Abriu*, 8 (2019): 35–67.

27 Joaquim Alves Gaspar and Šima Krtalić, *The Cartography of Magellan* (Lisbon: Tradisom, 2023), 15 and 142.

28 *Portugaliae Monumenta Cartographica*, vol. I (Lisbon: INCM/Casa da Moeda, 1987), 94. On Ribeira see: German Latorre, *Diego Ribero, Cosmógrafo e Cartógrafo de la Casa de la Contratacion de Sevilla* (Seville, 1919).

the expedition.[29] Although Rui Faleiro was named to depart with Magellan, his madness prevented that from happening. In 1521, when Rui and Francisco Faleiro were jailed in Portugal, they were only released by King Charles I's intervention.[30] The Spanish king's interest in the brothers might also have been connected to the fact that both brought to Spain the idea (later published in Francisco Faleiro's treatise in 1535 with King Charles I's support) that there was an equivalence between measuring magnetic declination and finding longitude at sea. This idea was debated in the Portuguese maritime milieu in the early years of the 16th century and was already present in the seamanship book of João de Lisboa, a renowned Portuguese pilot.[31] Despite the Faleiro brothers' role in the planning of Magellan's voyage, none of them sailed with Magellan. However, their knowledge was fundamental for King Charles I to such a degree that he had an interest in maintaining them in his service and avoid their return to Portugal. This fact not only justifies King Charles I's intervention to have them released from a Portuguese prison, but also explains the later life of the Faleiro brothers in Spain.

Magellan himself went through several difficulties during the final preparations of his departure. In his fleet, with the exception of the Spaniard Juan Rodríguez de Mafra, the pilots Estêvão Gomes, João Lopes Carvalho, and João Serrão were all Portuguese.[32] Carvalho had personal experience in a previous Portuguese expedition to the Plata River region,[33] and Serrão was even appointed as the pilot-major for the journey.[34] The Portuguese were one of the most numerous non-Spanish groups in the expedition and this fact explains why Spanish authorities tried to reduce Portuguese numbers, excluding at the last minute some Portuguese such as a brother of pilot Estêvão Gomes.[35] Gomes had already been officially named pilot of the Casa with a salary in 1518. In 1519, another Portuguese pilot, Pedro Abreu, was appointed.[36] A similar process happened with Diogo Ribeiro, but not with

29 On the Faleiro brothers' paths in Spain see: Edward Collins, "Wayward Needle and Familiar Spirit: The Trajectories of Rui and Francisco Faleiro in Early Modern Spain," *Anais de História de Além-Mar,* 20 (2019): 145–172.

30 Juan Gil, *El exilio portugués en Sevilla. De los Braganza a Magallanes* (Sevilla: Fundación Cajasol, 2009), 354–356.

31 Bruno Almeida, *A carta de navegar: antologia de textos, 1464–1599* (Lisbon: Althum.com, 2022), 42.

32 Ventura, *Portugueses no descobrimento*, 106.

33 Laguarda Trías, "Pilotos portugueses," 65.

34 Mena Garcia, "Conocer y dominar," 214–15.

35 Gil, *El exilio portugués*, 279 and 291.

36 *Colección general de documentos relativos a las Islas Filipinas existentes en el Archivo de Indias de Sevilla* (Barcelona: Impr. de la viuda de L. Tasso, 1918–19), vol. I, 153, vol. II, 327–28.

the Portuguese cartographers Pedro and Jorge Reinel who helped the Spanish cartographer Nuno Garcia Toreño. Jorge and Pedro Reinel were in Seville temporarily to prepare maps for Magellan's expedition, but both returned to Portugal sometime later. Indeed, father Jorge Reinel came to Seville to bring his son Pedro Reinel back to Portugal.[37] Compared to Solis's two expeditions, Magellan's voyage had the highest participation of Portuguese seamen who had ever set sail under a Spanish flag. Thus, it is no wonder, as shall be detailed below, that, as they did with Solis, Portuguese agents in Spain attempted to disrupt this expedition ever since its initial plans.

Still, after Magellan's death in the Philippines in 1521 and when Juan Sebástian Elcano (1476–1526) returned to Spain in September 1522, the Portuguese-Spanish rivalry in the Moluccan Islands came fully to the fore for both sides and for the rest of Europe. A scientific and diplomatic process was opened between Portugal and Spain to discuss where exactly the antemeridian passed and who was the rightful owner of the disputed islands that produced the so highly desired large quantities of clove and nutmeg. The purpose of this section is not to detail these affairs, which had several phases and led to the 1529 Treaty of Zaragoza,[38] but to document the exchanges of knowledge between Portugal and Spain that continued to take place while the negotiations were ongoing. Already before Elcano's return, King Charles I, who was worried by the news received from some deserters of Magellan's expedition, ordered Gil González de Ávila (1480–1526) in 1521 to sail to the Moluccas, but the Spanish captain ended in Central America.[39]

Once Elcano returned, King Charles I issued two relevant orders. Firstly, he established a new house of trade for the Moluccan spices at the Galician port of La Coruna. The purpose was to capitalize on its location and the wealth of merchants in Northern Spanish ports to finance new expeditions to the Moluccas and North America. For this reason, Cristóbal de Haro (?–1541) was appointed head of the house, as he was an important Spanish merchant with businesses and connections in Portugal, Spain, and the rest of Europe.[40] The Flemish entourage of King Charles I was also interested in

37 On these Portuguese cartographers see: Rafael Moreira, "Pedro e Jorge Reinel (at.1504–60): Dois cartógrafos negros na côrte de D. Manuel de Portugal (1495–1521)," *Terra Brasilis* 4 (2015) – https://journals.openedition.org/terrabrasilis/1209 [accessed on May 25, 2023].

38 For a more detailed account: P. Mariño and M. Moran, *Tratados Internacionales de España. Carlos V/I. Tratados con Portugal* (Madrid: CSIC, 1978), LIX–CIV.

39 Mariano Cuesta Domingo, "La Casa de la Contratación de La Coruña," *Mar Oceana: Revista del humanismo español e iberoamericano* 16 (2004), 66.

40 On Haro see: L. Bénat-Tachor, "Cristóbal de Haro, un marchand judéo-convers entre trois mondes au XVI[e] siècle ou le défi d'une 'globalisation' avant l'heure," in *Les Sépharades: Histoire*

exploiting the maritime commercial connections with the Netherlands and Northern Europe. The creation of the house was also connected to a 1511 charter given to Juan de Agramonte, which authorized him to establish a house at La Coruna for cod fishing in North American shores, but it seems that Agramonte's project did not advance.[41]

The second measure that King Charles I took was to accept in some cases and release in others Portuguese men with robust geographical knowledge that he knew Spain would need to successfully sustain its ambitions in the Moluccan Islands. As to the former, the Portuguese sailor and cosmographer Simão de Alcáçova, whose exact time of arrival in Spain is unknown but likely took place after Magellan's arrival, was formally hired by King Charles I. Alcáçova accumulated experience in Portuguese India, China, and the Moluccas and had long before made proposals to King Charles I. But he was only accepted into Spanish service after Juan Sebástian Elcano's return. As the latter, the Portuguese captain Álvaro de Mesquita was released after Elcano's return and pardoned for his leaving of Magellan's expedition.[42] Estêvão Gomes, one of the pilots who deserted Magellan's expedition and who had been authorized in 1521 to hunt French privateers in Algarve waters under Spanish flag,[43] was also given a new status. Gomes received authorization from King Charles I in March–April 1523 to launch a voyage to Japan and China by sailing to North American areas,[44] where the pilot-major Sebastian Cabot (1476–1557) had already sailed. Gomes's expedition had Cabot's support and was an attempt to find a North American passage to Asia, also having a clear connection with the first voyage of the Italian Giovanni Verrazano (1485–1528) in French service in 1524. Though his expedition was in preparation at La Coruna since 1523, Gomes's participation in the Spanish commission that negotiated with Portugal in 1524 delayed his departure until 1525.

et culture du Moyen Âge à nos jours, ed E. Benbassa (Paris: Presses de l'Université Paris Sorbonne, 2011), 135–160.

41 István Szászdi, "La Casa de la Contratación de La Coruña en el contexto de la política regia durante el reinado de Carlos V," *Anuario da Facultade de Dereito da Universidade da Coruña* 12 (2008), 909–11; Mariano Cuesta Domingo, *A Casa de Contratación da Coruña* (Coruña: Xunta de Galicia, 2009).

42 Antonio de Herrera, *Historia general de los hechos de los castellanos en las islas i tierra firme del mar oceano*, En Madrid, En la imprenta real de Nicolas Rodiquez, 1726, 132.

43 Armando Cortesão, *Cartografia e cartógrafos portugueses dos séculos XV e XVI. Contribuição para um estudo completo*, vol. II (Lisbon: Seara Nova, 1935), 202. On Gomes see: Luis Miguel Benito Fraile, "Esteban Gómez, piloto de la Casa de la Contratación de las Indias", *Revista de Estudios Colombinos*, 13 (June 2017), 69–86.

44 Herrera, *Historia General*, III Decade, 143.

Owing to these negotiations with Portugal, King Charles I in 1524 sent only a warning ship to the Moluccas. On board was an unknown Portuguese, certainly to help guide the Spanish in the navigation in the South Atlantic. While noticing this in February 1525, António de Azevedo Coutinho, the Portuguese ambassador in Spain, also warned King John III (1521–57) that the Portuguese cartographer Diogo Ribeiro had made a significant invention to drain water on board and mentioned the long preparations for Loaísa's fleet.[45] Garcia Lofre de Loíasa's (1490–1526) large fleet was intended to sail to the Moluccas by the Strait of Magellan and was King Charles I's attempt to rescue his Spanish subjects in the Moluccas. However, before Loaísa was able to set sail in 1525, other important events and knowledge exchanges occurred.

After intense diplomatic quarrelling in 1522–23, in 1524 a Spanish and a Portuguese commission met at the Spanish-Portuguese border, at Badajoz-Elvas. The goal was to discuss the antemeridian and the rights to possession of the Moluccas. For the meeting, commissions were arranged on both sides, each composed of three pilots, three astrologers, and three diplomatic agents. The Spanish commission included Portuguese members such as Simão de Alcáçova and Estêvão Gomes. Portuguese protests soon were able to remove Alcáçova from the Spanish commission, but not Gomes, who participated on the Spanish side as a pilot and consultant. Another Portuguese who helped the Spanish in the 1524 negotiations was the pilot André Pires, who proposed a method to count the distance in leagues between the meridian and the antemeridian. With the calculations made, Pires concluded that the antemeridian passed not along Malacca, but along the Ganges River, an argument that Spain had already used, using Ptolemaic geographical prescriptions. But Pires was not alone: beforehand, the Portuguese master Pedro Margalho, a professor at Salamanca University and by then a member of the Portuguese commission, had published a book in which he defended that the Moluccan Islands belonged to Spain.[46] The Portuguese rejected these arguments and stated that the exact longitudinal position of the Moluccas could only be determined with certainty with astronomical measurements. As no agreement was reached in the meetings of Badajoz-Elvas in 1524, the dispute continued. However, it is important to note that the presence of Portuguese pilots, whether on the Spanish or Portuguese side, highlights the importance of practical experience and nautical knowledge in maritime debates that were suddenly transformed into matters of state.

45 *As Gavetas da Torre do Tombo*, vol. I (Lisbon: Centro de Estudos Históricos, 1960), 918–20.
46 Cortesão, *Cartografia e cartógrafos portugueses*, vol. I, 74–75.

During this period, Juan de Zuñiga, the Spanish ambassador in Lisbon, actively sought to gather intelligence and persuade prominent Portuguese figures to enter the service of King Charles I. Zuñiga's 1524 letters prove his ongoing negotiations with Diogo Lopes de Sequeira, a member of the Portuguese commission, who had been the first Portuguese to command a Portuguese expedition to Malacca in 1509 and later became governor of Portuguese Asia between 1518 and 1521. Fearing imprisonment upon his return to Portugal, Sequeira anchored firstly in Spain and only entered Portugal when the Portuguese king provided him with a safe conduct. Displeased at the way the new Portuguese King John III treated him, Sequeira confessed to Zuñiga that he was willing to enter King Charles I's service. He handed over information to Zuñiga about the remaining Spanish in the Moluccas, showed him a chart of the area proving that the region belonged to Spain and went so far as to promise him that he would defect to Spain with the renowned Portuguese astrologer Simão Fernandes (another member of the Portuguese commission). All these negotiations took place during the year of 1524, but Sequeira ended up not entering Spanish service. Still, he provided relevant geographical intelligence to Spain.[47] There has been some controversy over Sequeira's intentions in 1524 and it has been argued that he was not willing to betray Portugal but simply to spy and infiltrate the Spanish espionage network.[48] Further research is needed to understand Sequeira's intentions. However, it should be noted that Sequeira's actions were not unique, as other Portuguese figures also sought to negotiate with the Spanish during this time.

Duarte Pacheco Pereira (1460–1533), the renowned author of the *Esmeraldo de Situ Orbis*, also approached Zuñiga due to his dissatisfaction with King John III, stemming from his deposition from the Mina fortress in 1522 and accusations of theft. Pereira, who was well-versed in nautical knowledge, proposed to Zuñiga that he should organize an expedition under the Spanish flag to the Eastern Indies. Zuñiga's letter does not state clearly the destination, merely referring Eastern Indies,[49] but it is likely that Pereira proposed the same as the contract that King Charles I signed with Portuguese pilot Estêvão Gomes in 1523: finding the northwestern passage to Japan and China. In the end, Pereira did not pass into Spanish service either. Finally, Zuñiga's correspondence in 1523–24 demonstrates that an unnamed Spanish cosmographer working for King John III provided Zuñiga with updates on

47 Gil, *El exilio portugués*, 317–21.

48 *Portugaliae*, vol. I, 50.

49 Archivo General de Simancas (AGS), *Secretaria de Estado*, Legajo 367, nº 119, fl. 1v.–2.

Portuguese cartography being produced for the diplomatic negotiations. He also used this contact to acquire the Portuguese *Padrão Real* (the Padron chart of navigation preserved at the Casa da Índia), which had been made by the Portuguese cartographer Lopo Homem, who was also a member of the Portuguese commission. But in 1524, Zuñiga regretted to inform King Charles I that it was hard to acquire charts by Homem, as he was only allowed to produce them for the Portuguese king.[50] This was likely a consequence of the fact that in the meantime King John III issued new rewards to Lopo Homem. Yet in 1524, the Portuguese king confirmed Lopo Homem as his official cartographer, and in 1526, 1531 and 1532 he even increased his income. Still, throughout his life, Lopo Homem kept complaining that various promised rewards were delayed, forcing him to spend his own money in missions in the king's service.[51] Although this situation was not unusual, as several other Portuguese courtiers complained of the same, this came to have an important impact (upon which the next chapters will reflecct) on the paths of Lopo Homem's sons.

Nevertheless, what Zuñiga regretted not being able to access in Portugal, seems to have been much more easily obtained in Spain itself. Pedro Ruiz de Villegas, a member of the Spanish commission at Badajoz-Elvas in 1524, was able to lay hands on Portuguese nautical charts made by Portuguese sailors such as Estevão Gomes, Simão de Alcáçova, or lesser known characters such as Frei Tomás and Heitor de Coimbra. Villegas also acquired a globe, usually attributed to João Dias de Solis.[52] Thus, allegedly "secret" Portuguese cartographical knowledge ended up in Spanish hands by the simple circulation of Portuguese nautical experts to Spain. This is not surprising, as it has been underscored how characters like Estevão Gomes and Simão de Alcáçova deliberately chose to serve Spain instead of Portugal. What is worth highlighting is how the Portuguese-Spanish dispute over the Moluccas soon evolved into a dispute over the whole globe, and how this justified all these events. Such maneuvers are not easily understood without bearing in mind the new geographical horizon of the earth that Magellan's expedition opened. One of its most dramatic effects on Portuguese-Spanish relations was the increasingly global scale of the interchange process that became unstoppable.

The Andalusian Dominican Friar Juan de Caro was another key figure in the network that informed King Charles I after Juan Sebástian Elcano's

50 Gil, *El exilio portugués*, 324–25.

51 Ludmila Kildushevskaya and Alfredo Pinheiro Marques, *Atlas Universal: Diogo Homem* (Barcelona: Moleiro Editor, 2002), 125.

52 Cortesão, *Cartografia e cartógrafos portugueses*, vol. I, 175–76.

return. Caro had decided to serve in India with the Portuguese in hopes of receiving a prestigious religious grant from the Portuguese king, as well as acquiring knowledge of the Portuguese nautical routes, as he confessed in a letter addressed to King Charles I in 1525. He claimed that during his service to the Portuguese, he had gained extensive knowledge in cosmography, navigation, and astronomy, and he criticized the Spanish king for relying on so many Portuguese who did not possess the same level of expertise. He offered to teach navigation, cosmography, and astronomy at the Casa in Seville, but upon his return to Spain, he was jailed in Simancas for selling his "secrets". Later, the king of Portugal, recognizing Caro as a threat due to the knowledge he had acquired about Portuguese Asia and the Moluccas, managed to capture him and deport him to Sofala (in Eastern Africa), where he died.[53] Caro's aspirations were only made possible due to the ongoing Portuguese-Spanish dispute over the Moluccas. His story serves as a paradigm of espionage and counter-espionage attempts from both sides and highlights how, in the Iberian context of the 1520s and 1530s, nautical knowledge, even in the hands of someone without formal academic training, was perceived by both sides as a significant threat to imperial and overseas ambitions.

Returning to Garcia de Loaísa's fleet, when it finally departed in 1525, it also raised anchor from La Coruna, as did Estêvão Gomes' expedition to North America some months later. Loaísa's choice for the head of the expedition was not without ulterior motives. In 1524, King Charles I had appointed him president of the Spanish Consejo de Indias,[54] indicating that Loaísa had compiled a meaningful amount of geographical knowledge before the departure. This was fully justified by the dangers that repeating Magellan's voyage would entail. Loíasa died during the expedition, but the contribution of Portuguese sailors and knowledge remained important during the voyage, as a Spanish chronicler recorded.[55] The maps for Loaísa's expedition were also prepared by Portuguese cartographer Diogo Ribeiro at La Coruna, precisely as António de Azevedo Coutinho, the Portuguese ambassador in Spain, had reported. During 1524, Diogo Ribeiro might have also been occupied with translating Duarte Barbosa's (1481–1521) book, as he worked on it with the Genovese ambassador in Spain.[56] This book, one

53 Cortesão, *Cartografia e cartógrafos portugueses*, vol. II, 20–27.

54 Francisco Lopez Gomara, *Historia General de las Indias*, vol. II (Madrid: Calpe, 1922), 245.

55 Gonzalo Fernández de Oviedo y Valdés, *Historia General y Natural de las Indias, Islas Y Tierra-Firme del Mar Oceano*, vol. II (Madrid: Imprenta de La Academia Real de la Historia, 1852), 34–35.

56 *Portugaliae*, vol. I, 94.

of the first works detailing the Portuguese domains in Asia, had originally been brought to Spain by Magellan. But it was not the first time that Spain received updated news on Portuguese Asia. The Spaniard Martín Fernández de Figueiroa, who likely met Magellan in Asia during the first years of the 16th century, had also published a small book on the Portuguese conquests in Asia in Salamanca in 1512.[57] The book's publication, with all the details of the riches discovered by the Portuguese, contributed to further Spanish interest in acquiring a share of that wealth through discovering an alternative nautical route to Asia through the Spanish hemisphere. This interest existed since King Ferdinand and continued under King Charles I and Philip II.

Some months after Loíasa, but still in 1525, Estêvão Gomes set out on an expedition to North America. Although Gomes made new geographical discoveries, which is why Diogo Ribeiro's famous 1529 *mapa mundi* even noted the "land of Esteban Gómez", he did not find the northwestern passage to Asia. Upon his return, there was a commotion. A rumor circulated that he had brought cloves from India and the news reached the Spanish court. There was great disappointment when it was understood that Gomes had only brought back native Americans, who were mistaken for cloves.[58] Despite the disillusion, Gomes remained in Spanish service. In 1527, he asked for a promotion as he had, in the meantime, sailed to the Caribbean with his countryman Simão de Alcáçova. In August 1533, Gomes proposed the building of a dry dock at Guadalquivir, a project that was accepted. As a reward, King Charles I knighted Gomes in 1534.[59] This is noteworthy for the processes of social promotion and recognition that skilled pilots could achieve in the Iberian context of the early 16th century. His case was far from the only one, as other instances are found in the Portuguese and Spanish contexts of those days. As to Gomes's death, all data indicates that he died in the area of the Plata River in 1536, after being the pilot-major for D. Pedro de Mendonza's (1487–1537) expedition to the area.[60]

Still, even before Mendonza's expedition, in 1526, King Charles I ordered an expedition headed by Sebastian Cabot to sail to the Moluccas via the Magellan Strait. However, Cabot deviated from the original course and instead headed towards the Plata River, due to news about gold that was believed to have been discovered inland. This information was provided to Cabot by the

57 Rui Manuel Loureiro, "A malograda viagem da Trinidad e a expedição a Maluco de António de Brito," *Boletim da Sociedade de Geografia de Lisboa* 137 (2019): 92–93.

58 Lopez Gomara, *Historia General*, vol. I, 86–87.

59 Cortesão, *Cartografia e cartógrafos portugueses*, vol. II, 203.

60 Ventura, *Portugueses no descobrimento*, 119–20.

Portuguese pilots Jorge Gomes and Rodrigo Álvares. Gomes had previously participated in a Portuguese expedition to the area under the command of Captain Cristóvão Jacques in 1521, while Álvares had taken part in the 1511 Portuguese discovery journey to the Plata River led by João de Lisboa and Estevão Fróis.[61] After his return to Europe, Rodrigo Álvares spent some time in Lisbon and Seville. His knowledge and expertise were highly sought after by both Portugal and Spain, and he also maintained close contacts with the Portuguese cartographer João Rodrigues.[62] His contribution as an "explorer" is recorded in the *Islario* of the Spanish cosmographer Alonso de Santa Cruz (1505–67), who named some islands near the Plata River as the "isles of Rodrigo Álvares" in recognition of his role in the exploration and mapping of the area.[63]

Fernando de Ribeira and Gonçalo da Costa were two other Portuguese mariners that proved valuable for Sebastian Cabot, although Costa became more famous. Costa was originally in Brazil and started by assisting Cabot's expedition. His career as a Portuguese pilot in Spanish service continued.[64] Another Portuguese in Cabot's expedition was Diogo Garcia. Garcia wrote a nautical rutter of the Plata River. Upon his return to Spain, he contested Cabot's results, demanding a promotion. As this goal seems not to have been achieved, he returned to Portugal, where he was employed until his death in 1554 as pilot in the Portuguese India Run.[65] Garcia's case is noteworthy. It is an uncommon instance of a Portuguese pilot who went to Spain and then returned to Portugal, as opposed to the more common pattern of Portuguese pilots remaining in Spanish service.

Due to the difficulties in establishing a stable nautical route between the Strait of Magellan and the Moluccas and concerns about the fate of his Spanish subjects, King Charles I signed an order for Hernán Cortés (1485–1547), the viceroy of New Spain, to send a ship from New Spain to the Moluccas.[66] Cortés sent this ship under the command of Álvaro de Saavedra (?–1529). Saavedra arrived at the Philippines in early 1528. Preparing some of the wood for Saavedra's ship was another Portuguese, Diogo

61 For more details on this expedition see Rolando Laguarda Trías, *El predescubrimiento del Río de la Plata por la expedición portuguesa de 1511–1512* (Lisbon: Junta de Investigações do Ultramar, 1973).

62 Ventura, *Portugueses no descobrimento*, 124–27.

63 Laguarda Trías, "Pilotos portugueses," 67. On Santa Cruz's works see: Mariano Cuesta Domingo, *Alonso de Santa Cruz y su obra cosmográfica* (Madrid: CSIC, 1983).

64 For further details see: José Toribio Medina, *El portugués Gonzalo de Acosta al servicio de España* (Santiago de Chile: Imprenta Elzeviriana, 1908).

65 Ventura, *Portugueses no descobrimento*, 124.

66 Cuesta Domingo, "La Casa de la Contratación," 70 and 72.

Correia, who had helped the Spanish in nautical matters at least since the late 1510s.[67] When Saavedra's pilot died and it was decided to return to New Spain, Portuguese and Spanish sources diverge on what exactly happened. Portuguese chroniclers state that due to the lack of a skilled pilot, but profiting from some Portuguese desertions to the Spanish side in the Moluccas, Saavedra hired the Portuguese Simão de Brito Patalim as pilot. Bearing in mind that other Portuguese and Spanish sources also mention the Spaniard Mancías del Poyo as pilot, it is likely that del Poyo was only named after Brito committed treason to the Spanish Crown, for which he was executed.[68] Any case, Patalim's episode evidences how dependent the Spanish were in the 1520s on Portuguese pilots to attempt to sail the opposite route that Magellan had discovered.

When news of the failed attempts by Loíasa and Saavedra to sail to the Moluccas reached Spain, Lope Hurtado de Mendonza, the Spanish ambassador in Portugal since 1528, strongly suggested to King Charles I the need to hire Portuguese pilots for future Spanish voyages to the Moluccas.[69] This news also had a major impact on the final dealings that led to the 1529 Treaty of Zaragoza, with King Charles I accepting to pledge his rights to Portugal in exchange for a large amount of money. Still, the treaty stipulated that if King Charles I repaid the money, he could regain his rights. As a result of the signing of the treaty, King Charles I revoked the authorization for Simão de Alcáçova's planned voyage to the Moluccas.[70] The existence of such authorization to Alcáçova is linked to the fact that the Portuguese became the overseer of the House of Trade of La Coruna that King Charles I created. The House of Trade of La Coruna had also been established due to its close geographical proximity to key Portuguese northern ports. Moreover, La Coruna had been the winning city over Seville in the debate to decide which city would host the House of Trade for spices.[71] However, the Treaty

67 Ventura, *Portugueses no descobrimento*, 67.

68 João de Barros, *Da Ásia*, IV Decade (Lisbon: Real Oficina Typografica, 1778), 119–21; Herrera, *Historia General*, Decade III, 47–48; Martin Fernandez de Navarrete, *Colleccion de los Viages y Descubrimientos que hicieron por mar los españoles desde fines del siglo XV, con varios documentos ineditos concernientes a la Historia de la Marina Castellana y de los estabelecimentos españoles en Indias*, ol. V, (Madrid: Imprenta Nacional), 82, 86 and 124.

69 Isabel Maria Ribeiro Mendes Drumond Braga, "Península Ibérica: um espaço, dois reinos. Interrelações na época de Carlos V" (PhD diss., Nova University of Lisbon, 1996), 132.

70 Mariño and Moran, *Tratados Internacionales*, CIV.

71 Amândio J. M. Barros, "A rivalidade luso-castelhana em perspectiva. Histórias cruzadas de exploração dos mares no século XVI," in *Magalhães e Elcano e a exploração das Pacíficas às Índicas Águas*, ed. Ana Paula Avelar and Vítor Gaspar Rodrigues (Lisbon: Portuguese Navy Academy, 2022), 321 and 324–26.

of Zaragoza would end the house's activities, explaining that when Alcáçova died, it was on service in another geographical area: Patagonia.

Already in 1525, Spanish cosmographer Pedro Ruiz Villegas, who had assisted King Charles I since the beginning of negotiations with Portugal, expressed his opposition to the agreement to pledge the Moluccas to Portugal. Villegas even suggested that Spain should offer Portugal the "poor" region of Estremadura instead of the "rich" Moluccas. The Castilian courts also contested the agreement in 1529 and later even offered King Charles I the money to repay Portugal in 1548 so that new Spanish expeditions to the Moluccas could be launched. But King Charles I ordered them to close the matter, an answer that left many people surprised.[72] Yet, in 1551, King Charles I ordered his ministers to re-examine his rights to the Moluccas, but nothing came of this,[73] except that in 1553 it was Prince Philip who suggested to his father to pay back the money to Portugal to prepare expeditions to the area. King Charles I's answer is unknown but it seems that he delayed the project due to his European priorities.[74] Still, this does not mean that the Spanish use of Portuguese nautical expertise ended. If it is true that it started to decrease after 1529, the contributions of Portuguese experts remained relevant, as an analysis of nautical knowledge exchanges up until the Iberian Union will demonstrate.

1.1.3 Sailing to the Americas and the Pacific with Portuguese nautical experts (1530–80)

Even after the 1529 Treaty of Zaragoza, the presence of Portuguese nautical experts serving Spain in its various overseas territories remained considerable. However, the number of such experts varied in different geographical areas.

From the early days of the Spanish presence in the Caribbean, Portuguese pilots were employed locally. When Vasco Nuñez de Balboa first sighted the Pacific Ocean, there were Portuguese sailors with him. Balboa also advised Spain that the first ships to sail in this new ocean should be built according to the designs used in Portugal and Andalusia,[75] a testament to the prestige of Portuguese shipbuilding at the period. Thus, it is not surprising that in a 1514 expedition to Panama, several Portuguese ship builders were identified.[76]

72 Lopez Gomara, *Historia General*, vol. I, 250–51.
73 Mariño and Moran, *Tratados Internacionales*, CIV.
74 Braga, "Península Ibérica," 141.
75 Barros, "A rivalidade luso-castelhana," 312.
76 Ventura, *Portugueses no descobrimento*, 57–58.

Although not all cases are easy to document, mainly because Portuguese pilots tended to disguise themselves as Galicians and easily changed their names to Spanish forms (to short-circuit the Casa's rules limiting the number of Portuguese, as will be detailed below), already during the 1530s it was common for the correspondence from the Caribbean to Spain to be sent via Portugal using returning Portuguese ships.[77] Portuguese sailors were at the helm of nearly every Portuguese ship that entered the Caribbean. This sometimes resulted in famous shipwrecks reported by Spanish chroniclers.[78]

Nevertheless, in several cases, Spanish local authorities hired Portuguese pilots. This happened, for instance, in voyages to Cumana, where Portuguese sailors such as António Fernandes were contracted locally.[79] For Francisco de Orellana's (1511–46) inaugural voyage to the Amazon River in 1541, Portuguese pilots Fernando Gonçalves and António Fernandes were hired. Orellana was so satisfied with their services that he expressly advised the Consejo de Indias to use only Portuguese pilots, as they had all the knowledge of the area and were easier to hire than the Spanish.[80] This was what Orellana did when he organized his 1544 expedition. Due to the Portuguese nautical expertise in an area that was assigned to the Spanish hemisphere, King Charles I even had a special concern. In 1556, when the Spaniard Jerónimo Aguayo was organizing another expedition to the region, he decided to flee to Portugal. King Charles I worried that this would fuel Portuguese ambitions in the area. Yet in 1559–60, Francisco Faleiro, the Portuguese cosmographer in the service of the Casa at Seville, also attempted to organize another journey, but the project failed.[81] Once more it was a Portuguese organizing a Spanish expedition in the Spanish hemisphere. However, this situation was not only limited to this area, as this scenario also extended to other geographical regions.

A very similar case, continuing the precedent set by Portuguese sailors such as Estêvão Gomes, can be observed in Hernando de Souto's (1497–1542) expedition to Florida in 1538. A whole group of Portuguese sailors from Elvas took part in the entire expedition, to the point that the Portuguese had their own captain and ship. Portuguese pilots serving in the Florida region remained present even when the French attempted to occupy the area in the 1560s. It was within this context that the case of Portuguese pilot

77 Braga, "Península Ibérica," 343.
78 Oviedo y Valdés, *Historia General*, vol. II, 577–79 and 587–88.
79 Ventura, *Portugueses no descobrimento*, 89.
80 Collins, "Interactions of Portuguese Artisanal Culture," 207.
81 Gil, *El exilio portugués*, 394–96 and 406.

Bartolomeu Borges has recently been identified. Borges served the Spanish in the Caribbean in the 1550s, was kidnapped by the French and ended up piloting Jean Ribault's (1520–65) voyage to Florida in 1562.[82] The details and story of this Portuguese pilot are only fully understood considering his Portuguese predecessors that served in the area under Spanish flag.

On the opposite shore of the American continent, a similar process took place in relation to the exploration of California. In 1535, the Spaniard Hernando de Grijalva (?–1537) organized a voyage to the Californian coast, which was piloted by the Portuguese Martim da Costa. As a consequence, Martim da Costa wrote a nautical rutter of the region.[83] In 1537, when Grijalva was killed by his crew for refusing to sail to the Moluccas due to the Treaty of Zaragoza, Martim da Costa guided the expedition to New Guinea, as a letter from a Portuguese captain of the Moluccas recorded.[84] Another local reconnaissance of California which D. Antonio de Mendonza (1495–1552), viceroy of New Spain, instructed the Portuguese pilot João Rodrigues Cabrilho (1499–1543) to undertake in 1542, resulted in another relevant report of the expedition.[85] Cabrilho had served the Spanish since the late 1510s in the Caribbean and New Spain.[86] At Cabrilho's death, viceroy Mendonza had another Portuguese pilot, Bartolomeu Fernandes, to guide the Spanish expedition.[87]

In 1535, another Portuguese named João Pacheco proposed the Consejo de Indias to organize an expedition to collect spices from islands in the Pacific Ocean. His request was accepted in 1536 on the condition that he would pay for the expedition himself and could only bring with him twelve Portuguese. This answer was motivated by Pacheco's previous petition to King Charles I in which he asked to be authorized to bring with him ten to twelve Portuguese pilots "because they are much better than any others for navigational purposes."[88] As a reward, Pacheco was promised a share in the gains if the expedition departed before 1538. There is no sign that Pacheco organized this venture, as he soon left for France (albeit his action

82 See Nuno Vila-Santa, "The Untold Story of Oceanic Pilot Bartolomeu Borges Who Guided Jean Ribault to Florida in 1562: Document Transcription and Translation, Accompanied by an Historical Introduction," *Terrae Incognitae* 55, no. 1 (2023): 82–102.

83 Ventura, *Portugueses no descobrimento*, 109 and 214–21.

84 Sousa Viterbo, *Trabalhos náuticos*, 158.

85 *Colección de diarios y relaciones para la historia de los viajes y descubrimientos*, vol. I (Madrid: Instituto Histórico de Marina, 1943), 29–42.

86 Ventura, *Portugueses no descobrimento*, 108–10.

87 Herrera, *Historia General*, Decade VII, 113.

88 Barros, "A rivalidade luso-castelhana," 318.

there remains unclear).[89] Still, Pacheco's attempt bears a resemblance with Simão de Alcáçova's aforementioned agreement with King Charles I signed in 1529.[90] Both stories reveal how important Portuguese nautical knowledge was for the early Spanish attempts and plans to colonize the Pacific, even in clear defiance of the alleged Portuguese rights to the area. For sailors like Simão de Alcáçova, Estêvão Gomes, or João Pacheco, the 1494 division of the world between Portugal and Spain at Tordesillas meant nothing. For these seamen the Atlantic and Pacific Oceans were free seas and what truly mattered was the opportunity to use nautical skill to make a fortune and to achieve better social status. In the following chapters, very similar instances will be detailed when observing the reasons behind Portuguese seafarers coming to England and France.

Thus, it is not surprising to find that the viceroy of New Spain, D. Antonio de Mendonza, recognized and fully rewarded Portuguese nautical expertise. After hiring João Rodrigues Cabrilho and Bartolomeu Fernandes for California, he appointed Gaspar Rico, a pilot from Algarve, to be the pilot-major in Ruy Lopez de Villalobos's (1500–44) expedition in 1544.[91] Villalobos's expedition was another Spanish attempt to establish a regular connection between New Spain and Asia. However, owing to the stipulations of the Treaty of Zaragoza, Villalobos was forced to surrender to the Portuguese. He died at Malacca when attempting to return to Spain. In 1547, viceroy Mendonza considered organizing a new expedition but he dropped the idea, and it is difficult to know if he planned to hire another Portuguese pilot. Yet in 1550–51, Bernardo de La Torre, a participant in Villalobos's journey, sailed to the Moluccas. Apparently, he did so without any Portuguese pilot. Only after a debate held in Madrid, King Philip II (1556–98) ordered D. Luiz de Velasco (1511–64), the viceroy of New Spain, to launch another expedition to colonize the Philippines and establish contacts with China and Japan.

The command was given to Miguel López de Legazpi (1502–72). As the friar Andrés de Urdanetta (1508–1568) participated in the journey and he had previously accumulated knowledge that would enable the Spanish to discover the route for the return voyage to New Spain, there was no need for Portuguese expertise. However, Legazpi's expedition was not an exploratory expedition as the previous Spanish attempts were, but one of

89 Cortesão, *Cartografia e cartógrafos portugueses*, vol. II, 205.

90 Ventura, *Portugueses no descobrimento*, 115–19.

91 *Colección de documentos inéditos relativos al descubrimiento, conquista y organización de las antíguas posesiones españolas de ultramar. Segunda serie*, vol. II (Madrid. Estab. Tip. Sucesores de Rivadeneyra, 1886), 54.

conquest. The Spanish knew they would face Portuguese opposition. It is possible that a previous decision not to hire a Portuguese pilot was taken, so that no betrayals would happen, as had previously happened in the Moluccan scenario. Still, a recent investigation has suggested, based on a missive found in a Portuguese nautical compilation from the 1570s, that a Portuguese might have been onboard Legazpi's voyage. This would explain how secret information for the Portuguese (the letter written by Legazpi to the viceroy of New Spain in 1565 and delivered to Urdanetta for the return voyage to Mexico) ended up in the compilation.[92] However, even if the Portuguese pilots' contributions in the Spanish Pacific decreased before 1580, it is important to stress that once more these knowledge exchanges took place in an area fully in the Spanish hemisphere. For the Plata River region, Portuguese nautical expertise retained a key role for a long period.

After Sebastian Cabot's 1526 expedition to the Plata River, the Portuguese Simão de Alcáçova in 1534 also directed an important journey to Patagonia, although he died there. The next year, D. Pedro de Mendonza was sent to the region with the Portuguese pilot Estêvão Gomes as the pilot-major of the expedition. Accompanying Mendonza were thirty-seven Portuguese, several of them mariners.[93] One of them, Jacome de Paiva, wrote another rutter for the navigation of the Plata River. In 1537, when the bishop of Plascencia sent an expedition to the area, the pilot-major was the Portuguese Gonçalo da Costa, who has already been mentioned in Cabot's 1526 expedition. Costa had a long career in Spanish service, being the pilot-major for the expeditions of Alvar Nunez Cabeza de Vaca (1490–1557) in 1542 and the pilot for Bishop Hernando de La Torre's voyage to the region during the 1550s. Owing to tempting promises from Portugal in case of his return, Costa was officially promoted at the Casa to the rank of pilot in 1537.[94] Nevertheless, Costa's nautical expertise was not, in Spanish eyes, as recognized and consensual as that of his countryman Jacome Luís.[95]

Jacome Luís already had an important role in the 1538 expedition of Alonso de Cabrera. His knowledge of the area caused him to be promoted. In 1545, King Charles I formally appointed him pilot-major of the Plata River and wrote to his officers of the Casa in Seville: "Give him the hope that we

92 For more details see: João Teles e Cunha, "No esteio de Fernão de Magalhães: um relato em português da viagem de Miguel López de Legazpi (1564–65)," in *Magalhães e Elcano e a exploração das Pacíficas às Índicas Águas*, ed. Ana Paula Avelar and Vítor Gaspar Rodrigues (Lisbon: Portuguese Navy Academy, 2022), 401–18.

93 Ventura, *Portugueses no descobrimento*, 128–29.

94 Ventura, *Portugueses no descobrimento*, 128–33.

95 Collins, "Interactions of Portuguese Artisanal Culture," 208–9.

will always remember him and make him happy in whatever way we can. And [...] do not let him leave that city [Seville] to go to Portugal in any way, for you can see the inconvenience that would follow."[96] Aside from several other Spanish expeditions in which Jacome Luís participated, he was the first to be appointed pilot-major for the Plata River. After his death, he was succeeded by the Portuguese Pedro Dias, who received his office in 1581 also because of his experience and knowledge of the area. Dias's services to the Spanish Captain Juan Ortiz de Zárate (1510–76), to Pedro Menendez de Avilés (1519–74) and to Diego Florés de Valdez (1530–95) were so important that they afforded him a better salary in 1586.[97] Laguarda Trías has demonstrated that during the 16th century, out of fifty Spanish expeditions to the Plata River, thirty-nine were piloted by Portuguese.[98] As late as 1620, the Spanish still recognized the need to hire Portuguese pilots to sail to the area.[99] But why were the Portuguese so massively employed in this region, apparently more than in other areas of the Spanish overseas empire?

The Plata River region had been originally discovered by a Portuguese expedition in 1511–12,[100] financed by the Spanish merchant Cristóbal de Haro,[101] at the service of the Portuguese King Manuel I. Soon afterwards, the Plata River nautical route became a natural continuation of the Portuguese Brazil Run, a route that the Portuguese sailed regularly and earlier than the Spanish. Furthermore, the Plata River and the South American region were not as attractive as the Caribbean or New Spain for the Spanish to sail to and conquer in the early 16th century. This, coupled with an earlier coastal settlement of the Portuguese in Brazil, led the Spanish to rely heavily on the local nautical expertise of the Portuguese for their expeditions in the region. This trend of hiring Portuguese pilots persisted well into the 1570s. The geography of the region and its growing geo-strategic importance from the 1580s onwards (after Francis Drake's circumnavigation) can explain why in Pedro Dias's time as pilot-major there was a separate exam for the pilots to this region. The post was abolished only at the beginning of the 17th

96 José María Moreno Madrid, "Circulation and Contacts in Sixteenth-Century Cartography: Spain, Portugal and Italy," *Culture & History Digital Journal* 10, no. 2 (2021): 9. DOI: https://doi.org/10.3989/chdj.2021.015 [accessed 15 December 2023].

97 José de Veitia Lineage, *Norte de la Contratación de las Indias Occidentales* (Seville, por Francisco de Blas 1672), 153–54.

98 Laguarda Trías, "Pilotos portugueses," 83.

99 José Pulido Rubio, *El piloto mayor. Pilotos mayores, catedráticos de cosmografia y cosmógrafos de la Casa de la Contratacion de Sevilla* (Seville: Escola de Estudios Hispano–Americanos/CSIC, 1950), 199.

100 Laguarda Trías, *El predescubrimiento del Río de la Plata*.

101 For more details on Haro see: Bénat-Tachor, "Cristóbal de Haro."

century, when the Spanish cosmographer García de Cespedes (1560–1611) decided to make the pilots' examinations from Plata River similar to those in the other regions.[102] The fact that the two first pilots-major for the Plata River were Portuguese summarizes the importance of Portuguese nautical knowledge in this geographical area for Spain and is emblematic of the intensity of the interchange between Portugal and Spain that has been traced in this chapter.

The employment of Portuguese nautical experts in the Spanish overseas empire was a sensitive issue, particularly when it came to the rules for being accepted as a pilot of the Casa, which often included issues related to Portuguese nationality. In 1513, King Ferdinand issued a *real cédula* allowing the hiring of any Portuguese that appeared in Seville for the Spanish overseas expeditions. But, two years later, he revoked this order.[103] While King Ferdinand's original order should be framed within the early Spanish attempts to start to organize its maritime machine, the king's second order was certainly caused by some of the Portuguese diplomatic pressure over Solis's voyage in 1512 and the other events that will be mentioned below. The many conflicts on Magellan's expedition owing to the participation of so many Portuguese were the target of new legislation for the Casa after the signing of the Treaty of Zaragoza. In 1527, a first order was issued to pilot-major Sebastian Cabot not to hire non-Castilians as pilots for the Casa, but it appears that this order was not fully implemented. In 1547, Cabot was once again ordered to comply with this rule, with reference to a similar order issued in 1534. New commands were also issued in 1551, 1562, and 1576.[104]

Most of these orders established the rules for being considered a Castilian, which was a key requirement for being approved for the pilotage exam at the Casa. In order to prevent unqualified pilots from navigating Spanish ships, one of the documents required for each Spanish fleet departing from Seville stipulated that no pilot would be authorized to make any voyage to the Spanish Indies without first passing the pilotage exam. The document also mandated that pilots had a legal obligation to hand over their nautical charts every time they returned to Seville.[105] This was also the basis for the prohibition of the Casa's pilot-majors to leave Spain without royal authorization.[106] The main goal of these regulations was to avoid the

102 Veitia Lineage, *Norte de la Contratación*, 154.

103 Edward Collins, "Portuguese Pilots at the Casa de la Contratacíon and the *Examenes de Pilotos*," *International Journal of Maritime History* 26, no. 2 (2014): 181.

104 Pulido Rubio, *El piloto mayor*, 57–61.

105 Archivo General de Indias (AGI), *Contratacion*, 4889, 4.

106 Pulido Rubio, *El piloto mayor*, 56.

dangers of having non-Spanish pilots and masters who could easily betray the Spanish Crown and share nautical and cartographical knowledge with maritime rivals. This would help to maintain a monopoly of the Spanish Crown over the navigation of the seas.

Nevertheless, the Spanish maritime machine's needs frequently devoured its creatures, thus conflicting with these commands.[107] In 1534, the nautical needs of Spain prompted King Charles I to authorize the hiring of foreign pilots, on the condition that they were not French or English.[108] This fact explains why the number of foreigners in Spanish fleets remained high in the 1530s.[109] A similar situation happened in the 1580s when the Casa relaxed the rules on the pilotage exams due to the shortage of Spanish experts.[110] Conflicts arose in 1554 when the Consejo de Indias ordered the Casa to send a list of non-Castilian pilots at the Casa owing to several complaints regarding foreigners' abuses as masters and pilots in the Spanish expeditions, also causing too many shipwrecks.[111] In 1558, the Casa requested permission from the Consejo to hire six more foreign pilots, but the Consejo refused, demanding a new list of foreign pilots working at the Casa and even sending an inspector to check the situation. Some years later, in 1561, the Casa asked the Consejo if the Portuguese were to be included in the prohibition of foreigners. The answer was positive, but the order seems to have been ignored as another *real cédula*, dated 1576, stipulated that no Portuguese pilot or ship master should be hired.[112] In 1579 there was even an order to investigate the Portuguese working at the Casa,[113] precisely because of their overwhelming numbers. After the Iberian Union in 1580, the Portuguese remained the more numerous foreign community working in nautical matters at Seville.[114] Some Portuguese cartographers are examples of this.

107 For an overview of Spanish maritime machine see P. E. Pérez-Mallaína Bueno, *Spain's Men of the Sea: Daily Life on the Indies Fleets in the Sixteenth Century* (London: Johns Hopkins University Press, 1998).

108 Maria da Graça A. Mateus Ventura, *Por este mar adentro. Êxitos e fracassos de mareantes e emigrantes algarvios na América hispânica* (Lisboa: Tinta da China, 2021), 79.

109 Collins, "Portuguese Pilots," 206.

110 Ventura, *Por este mar adentro*, 53. For more details on these exams see also: Alison Sandman, "Educating Pilots: Licensing Exams, Cosmography Classes, and the Universidad de Mareantes in 16th-Century Spain," in *Fernando Oliveira and his Era. Humanism and the Art of Navigation in Renaissance Europe (1450–1650)* (Cascais: Patrimonia, 2000), 99–109; Sandman, "Cosmographers vs. Pilots."

111 AGI, *Indiferente General*, libro 12, fls. 156v.–57v.; Collins, "Portuguese Pilots," 190.

112 Pulido Rubio, *El piloto mayor*, 182–84.

113 Veitia Lineage, *Norte de la Contratación*, 242.

114 Collins, "Portuguese Pilots," 184.

During the 1520s, Portuguese cartographer Gaspar Rebelo endured tough moments due to Sebastian Cabot's refusal to accept him as a member of the Casa. Rebelo was only able to join the institution when King Charles I intervened and compelled Cabot to hire him.[115] Similarly, in 1563, Portuguese cartographer André Freire was prohibited by Spanish cosmographer Diego Gutíerrez (1485–1574) from selling nautical instruments in Seville. The son of a cosmographer of the Portuguese king, Freire had been accused of copying the Spanish *Padrón Real* and sending it to Portugal.[116] While there is limited information available about this alleged incident of Portuguese cartographical espionage in Seville during the 1560s, it is possible that it was connected to King Philip II's competition over the Portuguese settlement at Macau, which had occurred in 1557. This Portuguese settlement in the Far East further consolidated Portuguese trade with China and Japan, and was considered by some Spanish cosmographers to fall within the Spanish hemisphere. As a result, new Spanish plans for a possible occupation of the Philippines began to be debated. In 1565–66, King Philip II summoned his cosmographers from the Casa to discuss the Philippines' longitudinal position and Spanish rights.[117]

Similar tensions between Portuguese experts working in Seville and Spanish authorities persisted, as evidenced by the cases of the Portuguese instrument makers Manuel Peres and Pascoal Silvestre. Pilots who used Portuguese nautical instruments on Spanish expeditions were also rebuked, even when they argued that they were only able to acquire such instruments in Lisbon. This was the case with Portuguese pilot Afonso Dias, who recovered his confiscated Portuguese nautical instruments following protests to the Casa.[118] Still, many Portuguese pilots had their exams rejected because of their nationality.

Despite the tensions between Portuguese experts and Spanish authorities, other notable Portuguese individuals were able to work for the Casa. In addition to the previously mentioned case of cartographer Diogo Ribeiro, who died serving Spain, there were the contributions of Francisco Faleiro. Faleiro had a longer, albeit less well-documented, career at the Casa. He wrote a nautical treatise in 1535 that decisively influenced 16th-century Spanish seamanship,[119] namely Pedro de Medina's (1493–1567) and Martín

115 Moreno Madrid, "Circulation and Contacts," 8.

116 Sánchez, *La espada, la cruz*, 283. On the Spanish *Padrón Real* see José María García Redondo, *Cartografía y Imperio. El Padrón Real y la representación del Nuevo Mundo* (Madrid: Ediciones Doce Calles, 2018).

117 Sánchez, *La espada, la cruz*, 282.

118 Collins, "Interactions of Portuguese Artisanal Culture," 212–13.

119 Edward Collins, "Francisco Faleiro and the Scientific Methodology of the Casa de la Contratación in the Sixteenth Century," *Imago Mundi* 65, no. 1 (2013): 26–27 and Avelino Teixeira

Cortés de Albacar's (1510–82) nautical works.[120] Both Spanish texts incorporated knowledge from Faleiro's treatise and were translated into French, English, and Dutch, later providing the Iberian maritime rivals with critical knowledge when the time came for them to systematically launch maritime overseas enterprises. Furthermore, both Medina and Cortés's treatises are considered to be the mature works on the 16th-century Spanish art of navigation.[121] The incorporation of Faleiro's works into these Spanish canon is a good example of how the Portuguese nautical information that the Faleiro brothers brought to Spain in 1517 was transformed and adapted into a coherent body of maritime knowledge for Spanish purposes. In the next chapters, similar cases will be observed for the English, the French, and the Dutch.

Nevertheless, going even further back in time, the influence of Portuguese nautical knowledge can be traced in the 1519 geographical book that Martín Fernández de Enciso (1469–1533) wrote, which was originally dedicated to King Charles I and is commonly considered to be the first navigation manual in Spain.[122] The instructions provided by Enciso for the use of the nautical astrolabe and the calculation of latitude using measurements of the pole star and sun bear a strong resemblance to the Portuguese nautical guides from Munich and Évora printed in the 1510s. Enciso also used solar declination tables for the years 1497–1500 that were composed in Portugal.[123] This kind of knowledge easily spread to Spain in the belongings of Portuguese pilots like João Dias de Solis,[124] or with men that served both Portugal and Spain like Amerigo Vespucci, who also learned Portuguese nautical and cartographical techniques at the Portuguese Casa da Índia.[125]

Thus, in the period after Ferdinand Magellan, while Diogo Ribeiro and Francisco Faleiro are the most prominent and longest lasting examples of nautical knowledge exchanges between Portuguese and Spanish experts at the Casa, it is important not to overlook the contributions of the other pilots and cartographers previously mentioned. With each Portuguese nautical

da Mota, *A contribuição dos irmãos Rui e Francisco Faleiro no campo da náutica em Espanha* (Coimbra, offprint Junta de Investigações Científicas do Ultramar, 1975). See also illustration 1.

120 On the innovation of Faleiro's treatise see the recent study by Maria do Carmo da Câmara Parreira de La Cerda, "Entre Lisboa e Sevilha: Contribuições Náuticas de Francisco Faleiro" (MA thesis, Lisbon University, 2022).

121 Almeida, *A carta de navegar*, 152.

122 Portuondo, *Secret Science*, 49–50.

123 Waters, "Portuguese Nautical Science," 183.

124 Laguarda Trías, "Pilotos portugueses," 61.

125 Avelino Teixeira da Mota, "Some Notes on the Organization of Hydrographical Survey in Portugal Before the Beginning of the Nineteenth Century," *Imago Mundi* 28 (1976): 53.

expert working in and serving Spain, Portuguese geographical and maritime knowledge was exchanged. Nevertheless, it is also relevant to consider if a similar process occurred with Spanish nautical experts working for Portugal. This topic will now be addressed, as it also falls under the umbrella of intra-Iberian knowledge exchange encompassing the entirety of the globe.

1.2 Employing Spanish Nautical Knowledge for Portuguese Goals (1415–1580)

The examples provided in this section are a small sample, as they are not as well-documented as the cases of Portuguese experts working for Spain. Still, it is clear that for nautical purposes, the Portuguese use of Spanish experts was not as intense as its reverse.

A first important case took place when the Portuguese Prince Henry (1394–1460) hired Jacome de Majorca, the chart-maker, to work for him during the 1420s. At the time, Majorca worked for Aragon. Majorca's hiring was of special importance at the beginning of the Portuguese overseas enterprise, as the cartographical expert brought the Mediterranean cartographical school's knowledge and techniques with him to Portugal. Jacome came from a good, if not, the best European cartographical school of the time.[126] This knowledge was adapted to fit the early Portuguese navigations and had a key role in the birth and development of Portuguese nautical and cartographical science.[127] Still, Majorca's case was not the sole episode in Portuguese early overseas expeditions.

Turning to the voyages organized by Prince Henry to West Africa, a Galician, thus a native of Castile, served as pilot in one of Captain Antão Gonçalves's expeditions to West Africa in 1445.[128] It is possible that other undocumented cases took place, as the Portuguese chronicler Gomes Eanes de Zurara (1410–74) also asserted that the prince hired a Dane who offered himself to sail to West Africa.[129] Furthermore, two Italians, Francisco

126 Alfredo Pinheiro Marques, *Origem e desenvolvimento da cartografia portuguesa na época dos Descobrimentos* (Lisbon: INCM, 1987), 72–73.

127 Sánchez, *La espada, la cruz*, 53–54. For more details see: Rolando Laguarda Trías, *La Aportación Científica de Mallorquines y Portugueses a la Cartografia Náutica en los Siglos XIV al XVI* (Madrid: Instituto Histórico de Marina, 1964).

128 Gomes Eanes Zurara, *Crónica dos feitos de Guiné*, vol. II (Lisbon: Agência Geral das Colónias, 1949), 175; António Joaquim Dias, ed., *Monumenta Henricina*, vol. VIII (Coimbra: Comissão Executiva das Comemorações do V Centenário da Morte do Infante D. Henrique, 1967), 307.

129 Zurara, *Crónica dos feitos de Guiné*, vol. II, 412–13.

de Usodimare and Alvise Cadamosto (1432–88) sailed to Guinea, with Cadamosto writing an important report.[130] Later King John II issued orders to kill any non-Portuguese found in West Africa, but he made exceptions for some Castilians.[131] King John II recognized that he still needed to make exceptions and accept the service of foreigners, as Portugal always lacked manpower throughout its maritime enterprises. This is the reason why King John II answered Columbus in 1486–87 with a map depicting Bartolomeu Dias's discoveries. The king also ordered his ambassador in Rome in 1492, as he did in 1485, to make a public presentation to the pope, in the presence of several other ambassadors. The goal was to inform the pope and the European powers on how close Portugal was to finding the nautical connection between the Atlantic and Indian Oceans.[132]

During the 15th century, Spanish academic knowledge played an important role in Portuguese overseas expansion. This is exemplified by the Portuguese use of the work of the Spanish Jewish scholar Abraham Zacut (1452–1515) and Diego Ortiz de Villegas (1447–1519). Zacut, who frequented the circles of Salamanca University,[133] became an important astrological and astronomical authority in the Iberian Peninsula, later serving King John II.[134] The astrological tables he designed with astronomical predictions for some years were widely utilized by Portuguese sailors, greatly enhancing navigational safety. Villegas came to Portugal in the entourage of the Castilian Princess Juana (1462–1530),[135] and was employed, amongst other matters, on geographical and maritime issues. Villegas had been an astrology teacher at Salamanca University. He counselled Kings John II and Manuel I on the answer to give to Columbus's proposal and on Vasco da Gama's fleet, respectively, and ended his days as a bishop in Portuguese service.[136] Thus, the examples of Zacut and Villegas point to the importance for Portugal, and of the academic knowledge interchange with Salamanca

130 Andrade, *Mundos Novos*, vol. I, 80–82.

131 Braga, "Península Ibérica," 330.

132 Andrade, *Mundos Novos*, vol. I, 110–11.

133 Antonio Barrera-Osorio, *Experiencing Nature*, 33.

134 On this topic see: Inácio Guerreiro, "Tábuas, Cartas. O Almanach Perpetuum de Abrahão Zacuto e a sua Contribuição para a Navegação Portuguesa. As Cartas," in *História da Marinha Portuguesa. Navios, marinheiros e Arte de Navegar (1139–1499)*, ed. Fernando Gomes Pedrosa (Lisbon, Portuguese Navy Academy, 1997), 277–317.

135 Princess Juana was exiled to Portugal at the end of the Portuguese-Castilian war according to the Treaty of Alcazovas-Toledo of 1480. Nicknamed *La Beltraneja* because she was regarded as being the daughter of the Castilian King Henry IV's (1454–74) favorite minister, Princess Juana was defeated in the Castilian war of succession in 1474–79 by Queen Elizabeth of Castile.

136 Waters, "Portuguese Nautical Science," 181.

University. Indeed, it is also well-known that Salamanca was a traditional place chosen by Portuguese students.[137]

Still, it is relevant to underscore that this interchange remained important for Portugal in nautical matters during the 16th century, as shown by the career of the Portuguese master Pedro Margalho. Although Margalho studied in Paris, he later became a professor at Salamanca University. Before serving as a member of the Portuguese commission at Badajoz-Elvas in 1524, Margalho had published a book on philosophy in Salamanca in which he argued that the Moluccas belonged to Spain. As a result, he also came into contact with Ferdinand Columbus. King John III quickly recognized the danger of having a prominent Portuguese academic defending the Spanish claim. Thus, he appointed Margalho as preceptor to his brother Prince Afonso (1509–40) and his natural son Duarte (1521–43). To further ensure that Margalho would not leave for Spain, he was later employed at Coimbra University.[138] Still, Margalho's connection to Salamanca is undeniable, like that of the first Portuguese royal cosmographer Pedro Nunes (1502–78) who also received part of his formation at Salamanca University and had unfulfilled ambitions of becoming a professor there.[139] Additionally, a similar pattern of employing Spanish pilots by the Portuguese can also be observed.

In 1521, a Spanish pilot who had survived Solis's expedition was hired to sail to the Plata River. When this pilot returned to Lisbon, the Spanish ambassador Juan de Zuñiga quickly obtained intelligence about his voyage. It is likely that Zuñiga attempted to send the pilot back to Spain, but the outcome is unknown.[140] Magellan's migration to Spain seems also to have influenced reverse processes: instances of Portuguese appropriation of Spanish nautical knowledge. A notable example took place when António de Brito, the Portuguese captain of the Moluccas, captured the *Trinidad* (one of the ships from Magellan's expedition). On board, he got access to nautical charts drawn by Diogo Ribeiro and Nuno Garcia Toreño. He also imprisoned the pilot, captain, and master of the ship and counselled King John III to kill them, as their knowledge of the Pacific route was too dangerous. In the letter, Brito also mentioned that he was thinking of sending a

137 On this topic see the seminal work of Joaquim Veríssimo Serrão, *Portugueses no estudo de Salamanca, 1250–1550* (Coimbra: University of Coimbra Press, 1962).

138 Cortesão, *Cartografia e cartógrafos portugueses*, vol. I, 75–76. For more details on Margalho's life see also: Luís Ribeiro Soares, *Pedro Margalho* (Lisbon: INCM, 2000).

139 Bruno Almeida, "A influência da obra de Pedro Nunes na náutica dos séculos XVI e XVII: um estudo de transmissão de conhecimento" (PhD diss., Lisbon University, 2011), 18–19.

140 Toribio Medina, *Juan Diaz de Solís*, CCCXVI.

Spanish pilot to Malacca using a faster nautical route by Borneo.[141] Brito's successor in the Moluccas, the Captain D. Jorge de Meneses, indeed sent a fleet to Malacca by this route in 1527, using a Spanish pilot.[142] It was not long before the Portuguese preferred this route to the longer one by the islands of Sumatra and Java. Therefore, the long skirmishes and embassies between the Portuguese and the Spanish in the Moluccas were also used by the Portuguese, and not only by the Spanish, to improve nautical knowledge of the area.

Meanwhile, in the Iberian Peninsula, Portugal also closely monitored apparently minor events taking place at the Spanish court. In April 1525, António de Azevedo Coutinho, the Portuguese ambassador in Spain, informed King John III that King Charles I had ordered the confiscation of some nautical charts to a Galician pilot who had sailed in the Portuguese India Run and that had offered his services to Spain. This pilot was even summoned into King Charles I's presence.[143] A Portuguese document from April 1524 also appears to refer to this same pilot, who was accompanying the Portuguese commission in diplomatic meetings.[144] This suggests that Portugal used this Galician pilot to counter Spanish interests, in similar fashion to King Manuel I's employment of the Spanish Captain D. Luiz de Guzman in the Portuguese navy in response to the situation with Magellan.[145] The message was clear: if King Charles I intended to use Portuguese, Portugal would also use Spanish, a situation that seems to have become increasingly common.

In 1534, in two letters, Tristão de Ataíde, a Portuguese captain of the Moluccas, recounted that he had spoken with a Spanish pilot who had shown him a nautical chart with the route followed by Garcia de Loaísa's fleet in 1525. This pilot had also presented him the nautical route from New Spain to the Moluccas and had provided him information about Viceroy Hernán Cortés's attempts. For this reason, Ataíde would not risk sending this valuable pilot to Malacca, as he feared his fresh escape.[146] Another critical piece of evidence of how Portugal valued the knowledge of Spanish seamen is friar

141 Artur Basílio de Sá, ed., *Documentação para a História das Missões do Padroado Português do Oriente* (*Insulíndia*), vol. I (Lisbon: Agência Geral do Ultramar, 1954), 152–53.

142 Fernão Lopes de Castanheda, *História do Descobrimento e Conquista da Índia pelos Portugueses*, book VII (Lisbon: Typografia Rollandiana, 1833), 133.

143 *As Gavetas*, vol. I, 918–20.

144 Arquivo Nacional da Torre do Tombo (ANTT), *Corpo Cronológico* I–30–102.

145 Gil, *El exilio portugués*, 257.

146 *As Gavetas da Torre do Tombo*, vol. IX, (Lisbon: Centro de Estudos Históricos Ultramarinos, 1971) 239–41; Sá, *Documentação*, vol. I, 311–12.

Andrés de Urdaneta's return to Lisbon in 1536. Throughout his forced stay in the Philippines and the Moluccas, this Spanish friar had accumulated vital reports, taken notes based on his observations, and compiled information from his fellow countrymen and the Portuguese. At Urdaneta's arrival to Lisbon, all this intelligence, alongside nautical rutters and probably nautical cartography, were seized from him by Portuguese authorities. The Spanish pilot Mancías del Poyo who accompanied Urdaneta at his landing in Lisbon, was threatened with imprisonment. When Urdaneta went to Évora to complain to King John III, the Spanish ambassador Luiz Sarmiento de Mendonza told him to drop his complaint, and gave him a horse to flee to Spain before he too would be jailed.[147] What was at stake in Mendonza's action was his clear awareness that for the Portuguese any Spaniard that appeared in Lisbon, independently of his status, with knowledge connected to Magellan's expedition was considered a threat. This was due to the fact that the Portuguese not only considered Magellan to be a traitor to Portugal, but mainly because they needed to acquire the knowledge associated with his expedition to monitor Spanish plans in the Moluccas.

The treatment of Urdaneta and del Poyo is similar to that of previous survivors of Magellan's expedition when they landed in Lisbon. Among those who faced prison we could include the Genoese pilot Leone Pancaldo, as well as the Spanish pilot Ginés de Mafra and the captain of the *Trinidad*, Gomez de Espinoza. The Sevillian mariner Juan Rodríguez, *el Sordo* (the Deaf), who was the first to anchor in Lisbon, was jailed and released only after he delivered a written report of Magellan's expedition to King John III. Furthermore, the Portuguese Pedro de Lourosa, a collaborator of the Spanish in the Moluccas that Urdaneta met in person and who had nautical knowledge of the Cape of Good Hope route, was promptly executed by Captain António de Brito for his treason. As has been underscored previously, the same António de Brito seized all the belongings of the *Trinidad* in 1521. Among the materials apprehended were two important technical documents: a regiment, signed by Portuguese cosmographer Rui Faleiro, to calculate the longitudinal position of the Moluccas, and the diary of the Spanish navigator-astronomer Andrés de San Martín with all the astronomical measurements taken during Magellan's voyage.[148] These materials went

147 Fernandez de Navarrete, *Colección de los Viajes*, vol. V, 160 and 389.

148 On Rui Faleiro's regiment and the nautical details of Magellan's voyage see: Avelino Teixeira da Mota, *O regimento de altura de leste-oeste de Rui Faleiro. Subsídios para o estudo náutico e geográfico da viagem de Fernão de Magalhães* (Lisbon: Edições Culturais da Marinha, 1986); Avelino Teixeira da Mota, *A primeira viagem de circum-navegação. Estudo náutico e geográfico* (Lisbon: Comissão Cultural de Marinha, 2019).

first to Duarte de Resende, the Portuguese overseer of the Moluccas, who used them to write an account of Magellan's voyage, and they later landed on the desk of the Portuguese chronicler of Asia, João de Barros (1496–1570), in Lisbon, who used them for his famous works about Asia.[149]

Therefore, it is not surprising that King Charles I continued to express concern about Spanish nautical personnel working for Portugal. This is exemplified in 1540, when he wrote to Luiz Sarmiento de Mendonza, the Spanish ambassador in Portugal, regarding the Spaniard Pedro Alvin. In his letter, King Charles I stated: "You say that one of those who wants to go in that Armada [of Portugal] is called Pedro Alvin, a Castilian who has always sailed in our kingdoms and territories, and who has experience about such a discovery. If it were possible, bring him back, making him understand that once here, given his ability, we will send him to be favored and we will employ him in a trade where he can be exploited. And let it seem that this was not ordered from here."[150]

Alvin serves as an example of how knowledge possessed by pilots could become a source of dispute between Portugal and Spain, both in diplomatic and espionage terms. The Portuguese employment of Spanish nautical personnel was also part of a larger policy to disrupt Spanish maritime expeditions. Before concluding, it is important to examine this issue, as well as Spanish attempts to disrupt Portuguese maritime enterprises. In doing so, a chronological approach will be taken, highlighting once again how the dispute over pilots' knowledge of the ocean was at the heart of many of these attempts.

1.3 Disrupting the Rival's Expeditions: Diplomacy and Espionage in the Intra-Iberian Global Interchange over the Globe

Portugal's early recognition of the dangers of having Portuguese pilots sharing their knowledge with Spain is exemplified in an incident from the 1480–90s. Upon learning that a Portuguese pilot and some mariners who had engaged in privateering in West Africa had fled to Spain, King John II dispatched secret agents to kidnap and bring them back to Portugal. These agents successfully captured the men and brought them back in the utmost secrecy. When they arrived in Évora, the king ordered their public execution, sending a clear message, as recorded by the king's chronicler: it

149 Loureiro, "A malograda viagem," 99–102.

150 Moreno Madrid, "Circulation and Contacts," 9.

was safer for nautical experts to fear the Portuguese king's reaction than to risk their lives by venturing to Spain or elsewhere.[151] This incident is connected to a famous Portuguese law that officially forbade Portuguese pilots from entering foreign service without royal permission, as it was considered royal treason and could result in a death sentence. King John II's policy was followed by all of his successors until 1580. Despite this law, Portuguese seafarers continually challenged it throughout the course of Portuguese-Spanish maritime relations. As will be shown in later chapters vis-à-vis England and France, this Portuguese law also justified complex counter-espionage operations in Europe that earned the Portuguese a reputation for fierce secrecy.

Thus, diplomacy and espionage became closely linked as tools to prevent the circulation of nautical knowledge between the two sides. Aside from the Portuguese diplomatic pressure on Spain, mentioned above in relation to Solis's expedition in 1512, Portugal also sent agents to disturb other Spanish preparations. In 1510, the Portuguese agent Afonso Álvares was sent to Seville on a mission to hire the Spanish pilot Juan Barbero. This was reportedly part of a Portuguese plan to launch an expedition that intended to sail to Urabá and Veragua, regions clearly within the Spanish hemisphere according to the Treaty of Tordesillas, in response to Pinzon and Solis's previous voyage. Afonso Álvares was imprisoned, failing to realize his goal.[152] But he also likely intended to win over the Spanish pilot Juan Rodríguez de Mafra, who could provide a detailed account of the new Spanish geographical discoveries. After Afonso Álvares's prison, Portugal dispatched another agent to spy on all movements in the Casa during the 1510s: Francisco de Aguiar.[153] Due to incidents such as these, in 1511, Vespucci was ordered to deliver nautical charts only to trustworthy individuals. According to a Spanish chronicler, the Portuguese plans to sail to Urabá and lay hands on Spanish geographical knowledge of the area were at stake.[154]

The escalation of maritime tensions ensured that diplomacy and espionage continued to play a major role in the interactions between Portugal and Spain. In 1514, King Ferdinand sent an embassy to Portugal to complain about Portuguese preparations to sail to the Caribbean. The Portuguese fleet did not depart, but during that same year, some Portuguese individuals were jailed in the area due to the tension; they were only released in Seville

151 Garcia de Resende, *Crónica de D. João II*, vol. II (Lisbon: Escriptorio, 1902), 46.

152 Herrera, *Historia General*, Decade I, 248.

153 Moreno Madrid, "Circulation and Contacts," 7.

154 Herrera, *Historia General*, Decade I, 287–88.

when it was proven that they were not connected to Lisbon's plans.[155] In 1515, Portugal protested to Spain, as Lisbon had become aware that Spanish nautical charts placed the Brazilian Cape of Saint Augustine within the Spanish hemisphere. As a result, in a meeting headed by the pilot-major João Dias de Solis, corrections were ordered on Spanish nautical charts by the Spanish cartographer André de Morales (1477–1517).[156]

Nevertheless, Solis's second expedition to the Plata River in 1515–16 further exacerbated the rivalry between the two sides. Some of the survivors of the return voyage had loaded products in Brazil, and Portugal considered this a violation and it imprisoned some Spaniards. On the Spanish side, some Portuguese in Seville were also jailed. Both sides issued diplomatic protests and the Portuguese king wrote directly to the Casa, instead of to King Ferdinand, to demand the release of the Portuguese. Spain refused to hand over the cargo, arguing that the mariners had loaded the merchandise in a Brazilian area that was out of the Portuguese hemisphere. The conflict ended with an exchange of prisoners,[157] illustrating how both sides could not lose the knowledge of valuable seamen.

Shortly after Magellan and the Faleiro brothers' passage to Spain in 1517, during the discussions to confirm the formal alliance between Portugal and Spain in 1518, Portugal asked Spain to respect the Portuguese hemisphere and also demanded that any Portuguese fugitives in Spain should be immediately handed over to Portugal. Spain refused the latter point.[158] This rejection can be seen as an indirect acknowledgement of Spain's need for Portuguese nautical expertise. Indeed, very few instances of the Spanish handing over Portuguese nautical experts at previous Portuguese request are known. Similar instances with France and England will also be reported in later chapters.

This Spanish response may have also directly influenced all of Portugal's attempts to disrupt Magellan's expedition. After Magellan had a meeting with King Charles I, the Portuguese ambassador in Spain protested. He was answered by King Charles I, influenced by the opinion of the bishop of Burgos, that he would not relinquish his rights. Consequently, the ambassador advised King Manuel I to discuss the approach to follow with his advisors.[159] Fear of the Portuguese king's reaction even motivated Ferdinand

155 Herrera, *Historia General*, Decade I, 357–58 and 370.

156 Veitia Lineage, *Norte de la Contratación*, 140.

157 Herrera, *Historia General*, Decade II, 44; Toribio Medina, *Juan Diaz de Solís*, CCXCXIC–CCCVII.

158 Mariño and Moran, *Tratados Internacionales*, XXXIX and XL.

159 Fernandez de Navarrete, *Colección de los Viajes*, vol. V, 123–24.

Columbus's secret mission to Lisbon to gauge Portugal's reaction. Word soon spread that the Portuguese ambassador in Spain intended to kill Magellan. The bishop of Burgos reacted by providing Magellan with a personal escort to ensure his safety, particularly at night. The bishop understood that if any Portuguese attempt to murder Magellan was successful, the journey would be at risk as the entire expedition was based on Magellan's personal nautical skill and knowledge. There were different opinions in King Manuel I's council. While some advocated that the Portuguese king should offer Magellan greater rewards than King Charles I, others insisted that he should be killed to prevent similar cases. In the end, King Manuel I sent the agent João Rodrigues to persuade Magellan and the Faleiro brothers to return, but the mission was not successful.[160]

During the preparations for Magellan's departure in 1519, Sebastião Álvares, the Portuguese overseer in Andalusia,[161] also approached him. Although Magellan refused to return to Portugal, Álvares was pleased to inform King Manuel I that Magellan had promised not to sail in Portuguese routes. He had also seen the nautical charts for Magellan's expedition (prepared with the assistance of Portuguese cartographers Pedro and Jorge Reinel, as Sebastião Álvares mentioned), asserting that they were empty in the southern region of America.[162] But by this time, it was already acknowledged that Magellan had heard, in Portugal, of the Strait that he would discover.[163] Thus, it was a repetition of Christopher Columbus's case and discoveries. The nautical challenges and uncertainties that Magellan's expedition would face convinced the Portuguese king that the voyage would fail.[164] However, still in 1520, King Manuel I ordered that the Portuguese Captain Jorge de Brito sail to the Moluccas to intercept a possible Spanish arrival there. The order was so secret that even the Portuguese governor of India was not to be informed of it.[165]

Between Elcano's return from his voyage around the world in 1522 and the signing of the Treaty of Zaragoza in 1529, Portugal not only lodged diplomatic

160 Las Casas, *Historia de las Indias*, vol. III, 379; Gil, *El exilio portugués*, 256–57 and 265.

161 The Portuguese overseer played an important role in Portuguese-Spanish relations as has long been demonstrated (Manuel Corte-Real, *A feitoria portuguesa de Andaluzia (1500–1532)* (Lisbon: Instituto de Alta Cultura, 1967), but his role is better understood in connection with studies of the Portuguese community at Andalusia (António Luis López Martínez, *Cruzar la Raya. Portugueses en la Baja Andalucía* (Seville: Centro de Estudios Andaluces, Consejería de la Presidencia, 2011).

162 Fernandez de Navarrete, *Colección de los Viajes*, vol. V, 153–56.

163 McNutt, ed., *De Orbe*, vol. II, 155; Las Casas, *Historia de las Indias*, vol. III, 368.

164 Lopez Gomara, *Historia General*, vol. I, 215.

165 Gil, *El exilio portugués*, 257.

protests at Spanish expeditions to the Moluccas, such as those led by Garcia de Loaísa in 1525 and Sebastian Cabot in 1526,[166] but also actively sought to disrupt these expeditions by depriving Spain of vital pilots. In 1523, shortly before Portuguese pilot Estêvão Gomes signed the agreement with King Charles I to find the northwestern passage to Asia via a North American strait, King John III thanked Luís da Silveira, the Portuguese ambassador in Spain, for his action. At the Portuguese king's orders, the ambassador had approached Portuguese Captain D. Álvaro de Mesquita and the pilots Estêvão Gomes, Bernardo Pires, and João Rodrigues Mansinho to persuade them to return to Portugal. King John III was delighted to know that all were willing to return to Portugal and authorized the ambassador to promise the minor things they asked. Still, he was also worried that Estêvão Gomes was too much decided in not returning to Portugal. For this reason, he instructed the ambassador to insist with him on his return.[167] As previously demonstrated, Gomes never returned to Portugal and died in Spanish service.

A quite similar instance happened with the abovementioned Simão de Alcáçova. Upon learning of his plans to sail under the flag of King Charles I in 1531–32, King John III sought to use Alcáçova's contacts in Portugal to persuade him to return. The earl of Vimioso, one of King John III's favorites and financial ministers, who was related to Alcáçova, mediated the attempt, which included a meeting at Évora. The king even issued a letter of pardon to Alcáçova and ordered the reinstatement of Portuguese payments to him,[168] but Alcáçova did not return. Simão de Alcáçova's desertion was even more embarrassing for the Portuguese king for another reason: he belonged to the family of King John III's secretary. As his case could easily reach other European courts and affect his prestige, the king reacted quickly to try to revert the situation.

Thus, the Portuguese strategy of making diplomatic protests against all Spanish expeditions that intended to reach the Moluccas up to 1529 was also complemented by attempts to repatriate Portuguese nautical expertise. For this reason, it is plausible to assume that King John III intervened to avoid the possible defections of Diogo Lopes de Sequeira and Duarte Pacheco Pereira to Spain. The king himself was informed in 1524 by Sequeira that King Charles I personally wrote letters to convince the Portuguese cartographers Pedro and Jorge Reinel to work for him.[169] In fact, there is no sign that Pedro

166 FLopez Gomara, *Historia General*, vol. I, 242.
167 Sousa Viterbo, *Trabalhos náuticos*, 164–65.
168 Sousa Viterbo, *Trabalhos náuticos*, 65–68.
169 Sousa Viterbo, *Trabalhos náuticos*, 300.

and Jorge Reinel, like Diogo Ribeiro, switched from Portuguese to Spanish service, despite King Charles I's offers. Soon afterwards, King John III issued new grants to them and also to the astrologer Simão Fernandes,[170] whose services Diogo Lopes de Sequeira, as mentioned, had offered to King Charles I.

King Charles I faced difficulties in formally justifying to King John III his authorization for Garcia de Loaísa to sail in 1525. These difficulties were further exacerbated in 1526 after Charles's marriage to Empress Elizabeth, sister of King John III. By then, the Portuguese ambassador, D. Pedro de Meneses, marquis of Vila Real, confronted Charles with the need to finally resolve the dispute over the Moluccas. King Charles I was forced to admit that he had to rely on his cosmographers as he lacked the knowledge to respond directly to the demands.[171] Thus, ultimately, King Charles I excused himself to King John III, stating that he was too busy dealing with France in the run-up to the Treaty of Madrid to make a final decision on allowing Loaísa's departure. It is evident that Charles used the Spanish maritime preparations as a means to exercise pressure, just as King Manuel I had done with King Ferdinand in the abovementioned examples from the 1510s. Thus, in 1527, King Charles I replied to King John III's complaints, stating that he would cancel a new Spanish expedition to the Moluccas if John were to pay for all the expenses incurred for the voyage.[172]

This reply was already a preparation for King Charles I's court's change of position in the negotiations: instead of sustaining his rights, and given the costs of his Europeans wars, Charles would suspend his rights to the Moluccas in exchange for the right amount of money that Portugal was to offer. On the other side, although King John III recognized that the original idea of buying the alleged Spanish rights was not his, he wanted and needed to settle the dispute in the Moluccan islands in order to concentrate on a more delicate matter for Portugal: French interloping in West Africa and Brazil. Indeed, the French overseas challenge also influenced the Treaty of Zaragoza, as France also challenged the Spanish Atlantic, thus prompting a reconciliation on the Moluccan question between Kings John III and Charles I.

Nevertheless, the signature of the Treaty of Zaragoza in 1529 did not end the tension and the need for spying on the rival's overseas intentions on both sides; there continued to be stories that involved nautical experts and

170 Cortesão, *Cartografia e cartógrafos portugueses*, vol. I, 255.

171 Cortesão, *Cartografia e cartógrafos portugueses*, vol. I, 84.

172 Mariño and Moran, *Tratados Internacionales*, LXXVI–LXXVIII and LXXXVII.

that fully document the importance of sea knowledge in this period. This section will start with the Portuguese side.

In 1531, Lope Hurtado de Mendonza, the Spanish ambassador in Lisbon, received an order to protest against new Portuguese preparations (likely those of Martim Afonso de Sousa's fleet) for the Plata River. Spain, at that point ruled by the Empress Elizabeth of Portugal due to King Charles I's absence, was worried that Portugal had repatriated the Portuguese pilot Gonçalo da Costa, alongside other Portuguese that had served Spain during Cabot's expedition, and would attempt to occupy the Plata River. Although the embassy did not receive a favorable response, Spain was relieved to know that Portugal did not plan any other serious expedition in the region, as the goal was to expel French interlopers from Brazil.[173] Also in the 1530s, Portugal was informed of the proposals that Portuguese cartographer João Rodrigues was making at the Spanish court, together with the Portuguese pilot Rodrigo Álvares, who has been mentioned previously as serving Spain in the Plata River. The Portuguese agent Francisco Dias was able to ensure that Rodrigues did not menace Portuguese interests.[174] Still, Rodrigues was retained in Spain due to Ferdinand Columbus's orders to give him everything on condition that Rodrigues designed globes for him.[175]

Similarly, Portugal formally lodged a complaint when the Spanish explorer Pedro de Alvarado (1485–1541) directly approached a Portuguese captain in the Moluccas to assist him in planning another Spanish expedition there. Alvarado openly acknowledged that the best option for sailing from New Spain to the Moluccas and the Philippines was to hire a Portuguese pilot. King Charles I replied to the Portuguese ambassador's protest that Alvarado "could perfectly request some Portuguese to go with him as the King of Portugal also availed of the services of several Castilians."[176] This response illustrates the key importance of the intra-Iberian knowledge exchange and that the kings of both countries were aware of it. Therefore, it is not surprising that Portuguese and Spanish maritime espionage continued until the 1580 Iberian Union, and that it involved the hiring of experts in the field of seafaring.

During the late 1540s and 1550s, another area of tension involving Portuguese pilots serving Spain came to preoccupy Portugal: the Canaries. Spanish expeditions mounted from Seville and the Canaries to West Africa

173 Herrera, *Historia General*, Decade IV, 214.

174 Sousa Viterbo, *Trabalhos náuticos*, 309–10.

175 Cortesão, *Cartografia e cartógrafos portugueses*, vol. II, 205.

176 Sousa Viterbo, *Trabalhos náuticos*. 72.

with Portuguese pilots from Algarve were so regular that King John III felt forced to dispatch the agent Aires Cardoso. While his official mission was to ensure the best Canaries wine that Portugal needed for its India Run fleets, his non-declared mission was to report all Spanish voyages to West Africa. John used Cardoso's reports to present the proofs of Spanish violations of Portuguese *Mare Clausum* directly at the Spanish court, as well as of what he considered to be overuse of Portuguese pilots.[177] Amidst threats against Cardoso's life, the Portuguese king's protests were to no avail. During the 1550s and 1560s, the Portuguese complaints against Spanish voyages to West Africa were met with counter-claims of Portuguese illegal voyages to the Spanish Indies, as is shown by a letter, dated August 27, 1558, from D. Juan de Ribera y Mendonza, the Spanish ambassador in Portugal, to Princess Juana of Austria (1535–73), ruler of Spain in the absence of King Philip II.[178] The tensions in West Africa and the Spanish Indies prompted a formal complaint from Portugal to the Spanish court regarding the traditional Spanish violation of diplomatic immunity and the right to privacy of correspondence sent from Portugal to the Portuguese ambassador in Spain. This protest was made in response to the violation of Portuguese diplomatic bags that were opened upon reaching the Spanish border. This tactic employed by Spain was not novel; similar instances occurred in the Spanish relations to Valois France and Tudor England, although primarily for political and military, rather than maritime, motivations. Various examples are readily found in the *legajos* at the Simancas archive.

On May 27, 1558, King Philip II was concerned about illegal Portuguese voyages to the Spanish Indies, many of which originated from the region of Algarve. He instructed his ambassador in Portugal, D. Juan de Ribera y Mendonza, to gather intelligence on these voyages and to use dissimulation to do so.[179] Another 1558 *real cédula* sent to Ribera y Mendonza and formal instructions by King Philip II reinforced the same approach.[180] After naming D. Alonso de Tovar as the new ambassador to Portugal in 1561, King Philip II ordered him, in October 22, 1563, to formally complain, while collecting all intelligence about men from Algarve who traded with the Spanish Indies. King Philip II also gave instructions on how to handle Spanish pilots who were secretly imprisoned in Lisbon.[181] Tovar received similar instructions

177 Braga, "Península Ibérica," 334–37.
178 AGS, *Secretaria de Estado*, Legajo 380, doc. 39.
179 AGS, *Secretaria de Estado*, Legajo 380, doc. 81.
180 AGI, *Indiferente* 425, book 23, fl. 332v.–33.
181 AGS, *Secretaria de Estado*, Legajo 381, docs. 74, 98 and 104.

up to the end of his tenure as ambassador in 1567.[182] The specific Algarve origin of many Portuguese pilots in Spanish service increased to almost half of the total of Portuguese pilots serving in Spain during the Iberian Union.[183] The geographical proximity to Seville and the interconnection between Algarve, Andalusia, and Morocco help explain this numbers. Although the problem became more pronounced under King Philip II, it had already existed prior to his reign.

The tension in West Africa also helps to elucidate why Manuel de Mesquita Perestrelo, the renowned author of a Portuguese nautical rutter on the East African coast written at the Portuguese king's orders in 1576, also had a Spanish phase in his career. Temporarily occupying the captaincy on the Portuguese fortress of Mina due to the previous captain's death, Perestrelo was subsequently accused of embezzling money and failing to fight against the first voyage of John Hawkins (1532–95). He was imprisoned in Lisbon for some time. Perestrelo later fled to Spain, but Portugal managed to repatriate him. The negotiations for Perestrelo's return are not entirely clear, but they involved D. Francisco Pereira, the Portuguese ambassador in Madrid, who sheltered Perestrelo in his home for some time. Perestrelo's story is recorded in a letter of pardon by the king of Portugal.[184] This is another important example of how Spain continued to be a tempting destination for Portuguese nautical experts who left Portugal for various reasons and particularly in the decades before the union with Spain.

Still, Portuguese maritime espionage in Spain had its flipside too, as has been demonstrated for the period up to 1529. It is impossible not to mention other important instances up to the 1580 Iberian Union. Most of the episodes took place under King Philip II. The king's espionage network within Europe is well-known,[185] but it is surprising to observe that studies on this subject rarely mention Spanish geographical and maritime espionage in Portugal. Once more, a chronological overview will be followed.

An interesting first instance of Spanish acquisition of Portuguese nautical knowledge took place in 1545, when the Spanish royal cosmographer

182 AGI, *Indiferente* 425, book 24, fl. 246v.–47v.

183 Liliana Oliveira and Amélia Polónia, "Shipping and Empire Building: Crown versus Individuals in Portuguese Overseas Expansion, c. 1500–1700. A Mixed Model of Seaport Development," *The International Journal of Maritime History* 32, no. 1 (2020): 145. On the problem of Algarve pilots at the Spanish Carrera de Indias see, Sérgio Rodríguez Lorenzo, "El Algarve y la Carrera de Indias. Marginalidad provechosa de un enclave geoestratégico en el corazón del comercio con las Indias de Castilla (siglos XVI–XVII)," *Revista de Historia Naval* 66 (1999): 23–38.

184 Sousa Viterbo, *Trabalhos náuticos*, 623–28.

185 Carlos Carnicer and Javier Marcos, *Espías de Felipe II: los servicios secretos del imperio español* (Madrid: La Esfera de los Libros, 2005).

Alonso de Santa Cruz visited Portugal to solve several scientific doubts that he had concerning the possibility of measuring longitude with magnetic declination. Santa Cruz's *Libro de Longitudes* is testimony to how easy it was for him to meet Portuguese pilots, exchange knowledge (including receiving Portuguese nautical rutters to India and the Moluccan Islands from Portuguese unnamed pilots) and also to learn from them. His meeting with Portuguese Captain D. João de Castro (1500–48) is also well-known.[186] It is more controversial to assume that Castro handed over his famous nautical rutters to Santa Cruz. The Portuguese historian Luís de Albuquerque argued that Santa Cruz's claim that Castro did so might be erroneous. Santa Cruz stated that Castro had taken magnetic measurements in his voyages with an instrument designed by the Spaniard Felipe Guillén. However, in reality, Castro used the instrument given to him by the Portuguese royal cosmographer Pedro Nunes.[187] The controversy is connected to the fact that Santa Cruz also used several excerpts from Pedro Nunes's main treatise in his *Libro de Longitudes*, without formally assuming Nunes's authorship.[188] Possibly for this reason too, he opened his book by crediting the Spaniard Felipe Guillén's invention, stating that it was made in Portugal at the service of King John III, who had hired and paid Guillén during some years because of his instrument. But later in the book, Santa Cruz recognizes that Guillén returned to Spanish service during the 1530s.[189] Guillén is also a rare case of a Spanish nautical expert who served in Portugal before returning to Spain.

As with the abovementioned case of Diogo Lopes de Sequeira, a previous governor of Portuguese Asia between 1518 and 1521 and member of the Portuguese commission at Badajoz-Elvas in 1524, Spain was also a temptation to Portuguese previous rulers of India who returned to Portugal. At any sign of dissatisfaction, Spanish ambassadors in Portugal intervened with tempting proposals. This happened with Francisco Barreto, a governor of Portuguese Asia between 1555 and 1558, whom King Philip II attempted to enlist in his service due to his nautical knowledge and prestige to assist him in the fight against Islamic pirates and corsairs. For this purpose, the Spanish ambassador D. Alonso de Tovar conducted negotiations with Barreto that

186 Alonso de Santa Cruz, *Libro de las longitudes*, ed. D. António Blásquez y Delgado Aguilera (Seville: Tip. Zarzuela, 1921), 31 and 150.

187 Luís de Albuquerque, *Ciência e Experiência nos Descobrimentos portugueses* (Amadora: Instituto de Cultura e Língua Portuguesa, 1983), 109.

188 On this topic see: Luciano Pereira da Silva, "Pedro Nunes espoliado por Alonso de Santa Cruz," *Lusitania, Revista de Estudos Portugueses* III (1925): 191–210.

189 Santa Cruz, *Libro de las longitudes*, 25–26.

appear in some of his letters to King Philip II.[190] A similar instance took place with João de Mendonça, a provisional governor of Portuguese Asia in 1564, who was also displeased when he returned to Portugal. In 1567, King Philip II ordered his ambassador in Lisbon to gather information about Persia from him.

King Philip II also issued a similar order to his ambassador regarding Fernando de Oliveira (1507–85) in 1567. At that time, Oliveira had attracted Philip's attention.[191] In his early days as a priest, Oliveira had fled to Spain during the 1530s. Although he later returned to Portugal, he passed through Spain once more in the 1540s. During his first sojourn in Spain in the 1530s, he published the first Portuguese grammar. Oliveira published his *Art of Sea Warfare* in 1555, the first nautical warfare treatise to be published in Europe. Although this work had been published in Portuguese, it was certainly known at King Philip II's court, owing to the many connections between the two Iberian courts. When the Spanish ambassador Fernando Carrillo de Mendonza became aware, in 1567, that Oliveira was negotiating joining the service of Valois France, he immediately stepped in, seeing an opportunity for Spain to engage him.

As the documents published by León Bourdon prove,[192] the ambassador had personal meetings with Oliveira, in which they spoke about the conditions of his transfer to Spain. Oliveira started by showing ambassador Mendonza the French letters promising him rewards for his move to France. Oliveira also recalled the many times he had warned Queen Catherine of Austria and Cardinal Henry, the two Portuguese regents between 1557

190 AGS, *Secretaria de Estado*, Legajo 381, doc. 89. Later, King Philip II even interfered directly in Barreto's career at the Portuguese court. On Barreto's career see also: Nuno Vila-Santa, *Do Algarve, a Marrocos e à Índia: Francisco Barreto e a Casa de Quarteira* (*Séculos XV–XVI*) (Loulé: Municipal Archive/Town Hall, 2021).

191 On Oliveira's career see: Dejanirah Couto, "Some Remarks on a 16th-Century Portuguese Shipbuilding Treaty: Fernando Oliveira and his 'Book of how to Build Oceangoing Ships' (Livro da Fabrica das Naos) (1570–1580)," in *Proceedings of the Third International Eurasian Maritime History Congress on History of Shipbuilding*, ed. Dejanirah Couto and Filipe Castro (Istanbul: Piri Reis University, 2022), 194–209; Rui Manuel Loureiro, "Experiencia de navegación y Tratados de construcción naval en Portugal en el siglo XVI," in *Barcos y Construcción Naval entre el Atlantico y el Mediterráneo en la época de los Descobrimentos*, ed. David González Cruz (Madrid: CSIC, 2018), 41–49; Harold Livermore, "Padre Oliveira's Outburst," *Portuguese Studies* 17 (2001): 22–41; Léon Bourdon, "Episodes inconnus de la vie de Fernando Oliveira," *Revista Portuguesa de História* V, no. II (1951): 439–53 and Francisco Contente Domingues and Inácio Guerreiro, eds., *Ars Nautica: Fernando Oliveira e o seu Tempo. Humanismo e Arte de Navegar no Renascimento Europeu (1450–1650): Actas da IX Reunião Internacional de História da Náutica e Hidrografia* (Cascais: Patrimonia, 2009).

192 Bourdon, "Episodes inconnus," 450–53.

and 1568, on French overseas expeditions prepared against the Portuguese *Mare Clausum*. The Spanish ambassador was so interested in Oliveira that he even wrote two different letters, recalling Oliveira's previous career. He also went to speak with Queen Catherine of Austria and Cardinal Henry to inform them that he was in negotiations to have Oliveira come to Spain. As both did not credit Oliveira's person and work much, there was no formal opposition to Oliveira's move to Spain. Interestingly, the tone of disappointment in Mendonza's letters to King Philip II is palpable, as he had to explain why Oliveira ultimately did not go to Spain despite the negotiations and promises.[193] It should be noted that Mendonza's efforts to recruit Oliveira were also motivated by a desire to prevent him from joining the services of the Valois together with the Portuguese cosmographer Bartolomeu Velho (who did eventually go to France). Ultimately, Oliveira's potential hiring was primarily justified by his extensive geographical and nautical knowledge, which King Philip II highly valued.

Fernando Carrillo de Mendonza's correspondence continues to prove how attentive he always was to any similar opportunities that might present themselves for Spain. In November 1569, as relations between Spain and England were rapidly deteriorating, the ambassador, stationed in Lisbon, reported on news of Portuguese merchants in the Netherlands collaborating with London merchants to plan English trade overseas. However, he also recognized the potential opportunity for Spain. When António Fogaça, an experienced Portuguese who had spent time in England, returned to Portugal, Carrillo de Mendonza promptly suggested that King Philip II hire Fogaça for maritime espionage in England. The advantage of Fogaça's long experience and Portuguese background, which would enable him to act as a spy for Spain without arousing suspicion from the English, was evident. While Philip did not formally respond to the suggestion, Carrillo employed Fogaça as his spy in French and English ports. Finally, in December 1569, Philip approved Fogaça's formal hiring to work for D. Guerrau de Spes, the Spanish ambassador in England between 1568 and 1571.[194] Fogaça served effectively, but was eventually imprisoned in 1579 when his espionage activities were discovered.[195] Thus, Ambassador Carrillo de Mendonza used his embassy in Lisbon, like his predecessor D. Alonso de Tovar had done, to deal also with Spanish *Mare Clausum* issues and policies in Europe.

193 AGS, *Secretaria de Estado*, Legajo 385, doc. 70 and last document of the *legajo*.

194 AGS, *Secretaria de Estado*, Legajo 386. This *legajo* does not have folio numeration. The letters in question are from November–December 1569.

195 Martin A. S. Hume, ed., *Calendar of State Papers, (Simancas), 1568–1579* (London: Her Majesty's Stationery Office, 1894), xli–xlii.

Another interesting case of a Portuguese nautical expert who considered serving Spain was that of the pilot Bartolomeu Baião. Two undated papers (likely dated 1564–65) in the archive of Simancas and addressed to the Spanish court, show that the Portuguese pilot was interested in entering King Philip II's service. The negotiation was likely mediated by D. Alonso de Tovar, the Spanish ambassador in Portugal. Baião promised to reveal a secret nautical instrument to measure latitude at sea whenever there was no sunlight (the typical examples he provided were in the midst of a storm or during cloudy weather). He argued that Spain, as the great maritime power of the time, would need his invention more than any other seaborne empire and offered it to King Philip II, as no one in Portugal valued his creation. In a second more detailed document, he also suggested that the king could use his long experience at sea to have important geographical information on the Florida question. He also claimed to possess secret and sensitive intelligence precisely when the French and the Spanish were fighting each other in the region.[196]

Baião received no reply as his alleged invention, even by the way he wrote, seemed to be a façade. Baião, then, went to England, where he participated in English privateering against the Spanish and the Portuguese, resulting in accusations of piracy.[197] Owing to this, D. Guerrau de Spes, the Spanish ambassador in England, conducted negotiations with the Portuguese pilot during the summer of 1570 to try to avoid his going with John Hawkins to the Spanish Indies. The ambassador was tricked on several occasions by Baião, but it seems that Baião in the end wished to return to King Philip II's service if he was pardoned for his piracy.[198] As we shall see in the following chapters, Baião's history was far from unique. Still, it is an enlightening example of how King Philip II's failure to reply a request of employment could have dire consequences for Spain.

Finally, during the 1570s, the tension created by the Spanish establishment in the Philippines was reflected in the espionage mission of Juan Baptista Gesio (?–1580), a Neapolitan subject of King Philip II. Gesio had been sending intelligence to Philip since 1569.[199] When D. Juan de Borja was appointed Spanish ambassador to Portugal, King Philip II ordered him in

196 AGS, *Secretaria de Estado*, Legajo 382. This *legajo* does not have folio numeration. On the Franco-Spanish skirmishes in Florida see: John T. McGrath, *The French in Early Florida: In the Eye of the Hurricane* (Miami: University Press of Florida, 2000).

197 Hume, *Calendar …* (*Simancas*), *1568–1579*, doc. 2721.

198 Hume, *Calendar …* (*Simancas*), *1568–1579*, docs. 185, 186, 189, 193, 198–200, 202–5, 210 and 213.

199 Portuondo, *Secret Science*, 186.

an instruction dated December 6, 1569 to use dissimulation to acquire all important Portuguese geographical knowledge. Given Portuguese protests regarding the Spanish presence in the Philippines, Philip instructed Borja to respond that the matter was still being discussed at his court in the Consejo de Indias.[200] Although only the geographical and nautical espionage will be mentioned here, Borja also became an expert on political espionage, earning the reputation of *espía-embajador* (spy-ambassador).[201]

One of Borja's primary concerns upon his appointment as ambassador to Portugal was with the movements of the Portuguese Captain Manuel Mesquita Perestrelo, particularly due to his prior presence in Spain. By way of a certain Diogo Lopes, a Portuguese pilot from Ceuta, Portuguese authorities had convinced Perestrelo to return to Portugal, pardoning his past offenses and appointing him to lead the abovementioned expedition to the Moluccas. Borja's initial concern was heightened when he discovered the "secret" instructions delivered to Perestrelo by the Portuguese Crown, which included fighting the Spanish in the Moluccas and the Philippines. In another missive, dated September 27, 1570, Borja confessed that Perestrelo had been convinced to return to his homeland by D. Francisco Pereira, the Portuguese ambassador in Madrid, who retained him in his house to debate the Moluccas question. Perestrelo's retention in the Portuguese ambassador's house in Spain is similar to incidents that took place at the same time involving the Portuguese ambassador in France, as shall be detailed in chapter 4. Borja was so concerned with Perestrelo's expertise that he tried to prevent his expedition, but what he regretted most was that Spain had lost the service of such a skilled cosmographer. In his own words, written to King Philip II he stated that Perestrelo "is seen here as a great *mariner and cosmographer and they* [*the Portuguese*] *think that he will do great things there.*"[202]

While attempting to disrupt Perestrelo's expedition, Borja did not neglect King Philip II's initial directive for espionage. In two of his first letters, dated July 14 and August 6, 1570, addressed to the king, the ambassador admitted that he had employed someone to work for him on nautical charts and rutters. He also revealed that he was learning as much as he could on the subject himself.[203] Although Borja never refers directly to names, he was

200 AGS, *Secretaria de Estado*, Legajo 386, last document of the *legajo*.

201 On Borja's espionage in Lisbon see also Sylvie Deswarte-Rosa, "De l'emblématique à l'espionnage: autour de D. Juan de Borja, ambassadeur espagnol au Portugal," in *As Relações artísticas entre Portugal e Espanha na época dos Descobrimentos* (Coimbra: Livraria Minerva, 1987), 147–83.

202 Underlined in the original, by Philip II: AGS, *Secretaria de Estado*, Legajo 387, doc. 20.

203 AGS, *Secretaria de Estado*, Legajo 387, docs. 16 and 24.

probably referring to Juan Baptista Gesio and the Portuguese cartographer Luís Jorge Barbuda. Indeed, Borja had brought Gesio with him to Lisbon and hired him to access Portuguese geographical accounts and knowledge. For the same reason, Borja suggested to King Philip II that he should hire an unnamed Spanish friar who was old and wise and had served in Portuguese India for years. The Spanish friar had offered to help Philip in the Moluccan and Philippines question. Even though recommended by Borja, the king declined to engage the friar's services for Spain.[204]

Borja's espionage activities continued after 1570 through the services of Gesio. Gesio obtained geographical accounts and facilitated relations with the Portuguese cartographer Luís Jorge Barbuda, who defected to Spain in 1579. This knowledge benefited the Spanish royal chronicler Juan Lopez de Velasco (1530–98) and El Escorial library.[205] The goal was fully achieved when Gesio provided Spain with key Portuguese geographical knowledge, as a letter by Velasco proves: several Portuguese nautical rutters, two reports on Ferdinand Magellan's voyage, the 1569 manuscript version of a treatise on Brazil written by Pero de Magalhães de Gândavo and originally dedicated to Cardinal Henry, D. João de Castro's nautical rutter of the Red Sea and a manuscript version of Duarte Pacheco Pereira's *Esmeraldo de Situ Orbis*, written in the first years of the 16th century. In the course of his activities, Gesio also tried to convince King Philip II to declare war on Portugal over the Portuguese use of geographical knowledge against Spanish interests, an idea that the king did not consider owing to the ongoing negotiations for King Sebastian of Portugal's (1557–78) possible marriage with his daughter, Isabel Clara Eugénia (1566–1630). After D. Juan de Borja was replaced as ambassador by D. Juan de Silva in 1575, who was similarly instructed by the king to procure as much Portuguese cartography and nautical rutters as he could manage, using dissimulation and secrecy if necessary,[206] Gesio left Lisbon together with Borja. Gesio and Borja tried to bring the Portuguese cartographer Barbuda with them, but King Sebastian ordered Barbuba's arrest at the border in Olivenza due to a scandal at court. Barbuda was well-known to have been willing to defect to Spain for years. When Gesio died in Madrid in 1580, a note indicated that he had died as a result of his service (of espionage) in Portugal.[207] The 1580 union between Portugal and Spain obviated the need for this type of technical espionage.

204 AGS, *Secretaria de Estado*, Legajo 387, doc. 34.
205 Albuquerque, *A projecção da náutica*, 12.
206 Moreno Madrid, "Circulation and Contacts," 6.
207 Cortesão, *Cartografia e cartógrafos portugueses*, vol. II, 278–80.

Conclusion

It is evident that during the exchange of nautical knowledge between Portugal and Spain, not only was the intensity of exchange always high, but also that it significantly and deeply influenced both sides in their overseas endeavors. While it is true that in the early 16th century, Spain relied more on Portuguese nautical skill and knowledge than vice versa, it is still important to note that Portugal also appropriated Spanish knowledge on several occasions. In most cases, the Portuguese acquisition of Spanish geographical knowledge was primarily utilized as a diplomatic tool of intimidation rather than as a genuine attempt to plan expeditions to Spanish overseas territories. In this sense, what can be observed for Portugal is remarkably similar to what will be detailed in the following chapters regarding England and France: the counter-espionage attempts of the Portuguese were primarily defensive tactics to help plan diplomatic responses.[208] Therefore, and although this has not been treated here until now, this fact should also be considered when approaching the global interchange between Portugal and Spain. For this reason, not only joint Portuguese-Spanish diplomatic efforts will be identified, but also military expeditions that engaged both sides against French and English maritime plans. This was, perhaps, one of the areas in which Portuguese reliance on Spain increased up to the 1580 Iberian Union: the Portuguese need for Spanish maritime and diplomatic cooperation to fight against English and the French interlopers in the Atlantic. Still, none of this means that the Portuguese did not contribute to the Spanish art of navigation, and thus directly to the nautical practices that fostered scientific practices in the Iberian maritime milieu. Although on a lesser scale, the same might be said concerning the reverse.

The Iberian Union marked the end of the need to raise barriers, resort to espionage, or use diplomatic pressure on both sides. Thus, it is no surprise that after King Philip II's stay in Lisbon between 1581 and 1583, the king brought the Portuguese cosmographers João Baptista Lavanha (1550–1624) and Luís Jorge Barbuda with him to Madrid. Both played a key role when Philip founded the Royal Academy of Mathematics in Madrid and they worked closely with Juan de Herrera (1530–97), the king's architect of El Escorial. João Baptista Lavanha's role, as Portuguese royal cosmographer, in reorganizing Portuguese nautical knowledge is well-known but it did not

208 Jorge Borges de Macedo, *História diplomática portuguesa. Constantes e linhas de força*, vol. I (Lisbon: Tribuna, 2006), 126 and 129.

only affect Portugal.[209] It had a deep influence in Spain as it coincided with a generation of other Portuguese experts working at the Madrid court.[210] Similarly, under the Iberian Union, Portuguese sailors continued to serve in the Spanish hemisphere areas with fewer problems. Pedro Fernandes Queirós,[211] Luís Vaz Torres, and Sebastião Rodrigues Suromenho are examples of Portuguese pilots who served under Spanish expeditions in the Pacific in the late 16th century and early 17th century, reviving the previous tradition of Spanish employ of Portuguese nautical experts in the region.

Thus, within this context, it is not surprising to find nautical rutters of Spanish and Portuguese areas joined together for imperial and maritime purposes. A good example is Mateo Jorge's 1615 compilation. The son of Portuguese cartographer Luís Jorge Barbuda, Mateo Jorge compiled the main nautical routes pertaining to both Iberian overseas empires across the globe. His compilation is preserved today at the Madrid Maritime Museum,[212] and is an excellent by-product and consequence of the nautical interchange that took place between Portugal and Spain during the 16th century. A similar case is found in an early 17th-century nautical compilation, preserved in the Spanish National Library, which seems to have belonged to the Portuguese royal cosmographer João Baptista Lavanha. It is composed of several nautical rutters in Portuguese and Spanish and encompasses the whole world.[213] This interchange, as has been demonstrated, not only took place in privileged places for knowledge interchanges (such as the Sevillian Casa de la Contratación, the Portuguese Casa da Índia or the Portuguese and Spanish courts), but also took deep root in overseas territories such as Brazil, South America, the Caribbean, Florida, West Africa, or the Moluccas. All these areas became privileged places were nautical knowledge circulated informally, deeply influencing both sides' initiatives. The truly planetary scope of the Portuguese-Spanish nautical interchange, the first to achieve

209 On Lavanha's nautical works see: António Costa Canas, "A obra náutica de João Baptista Lavanha (c. 1550–1624)" (PhD diss., University of Lisbon, 2012).

210 On this topic see Mariano Cuesta Domingo, *Tres cartógrafos portugueses en la corte de España: Ribeiro, Lavanha, Teixeira* (Lisbon: Portuguese History Academy, 2010).

211 On Queirós see: Celsus Kelly, "Pedro Fernandes de Queirós, the Last Great Portuguese Navigator," in *Actas do Congresso Internacional de História dos Descobrimentos*, vol. III (Lisboa: Comissão para as Comemorações do V Centenário da morte do Infante D. Henrique, 1961), 289–315.

212 José Manuel Malhão Pereira, "Roteiros Portugueses, Séculos XVI a XVIII. Sua Génese e Influência no Estudo da Hidrografia, da Meteorologia e do Magnetismo Terrestre" (PhD diss., Lisbon University, 2018), 79–86.

213 BNE (Biblioteca Nacional de España), *Derroteros de Indias*, MS. 3176. A transcription of several of this rutters will be made available online on the RUTTER project website.

such a scale, can be seen as the first nautical interchange in history, fostered and pioneered by the consequences of 16th-century globalization. Thus, Portuguese and Spanish nautical science became so deeply intertwined during the 16th century that it would be a challenge to understand one without the other. The same goes for nautical and cartographical experts working for both sides. These facts also explain many similarities between the Portuguese and Spanish overseas empires.[214]

By 1580 when the Iberian Union occurred, there was not so much a Spanish nautical tradition as an Iberian nautical tradition, as Mateo Jorge's and João Baptista Lavanha's nautical compilations illustrate. Curiously, it was exactly as such that Iberian nautical knowledge came to be perceived in the early 17th century by Iberia's maritime rivals, France, England, and the Dutch Republic. It is, thus, time to study how Portuguese maritime knowledge was also circulating to other maritime rivals, starting with England.

214 On this topic see: Paulo Pinto, "No extremo da redonda esfera: relações luso–castelhanas na Ásia, 1565–1640 – um ensaio sobre os impérios ibéricos" (PhD diss., Catholic University of Lisbon, 2012).