Seamen’s Guilds, Labor Organizations and Social Protest in Northern Iberia in the Late Middle Ages

Jesús Ángel Solórzano-Telechea
Seamen’s Guilds, Labor Organizations and Social Protest in Northern Iberia in the Late Middle Ages

Jesús Ángel Solórzano-Telechea

Department of Historical Sciences, University of Cantabria, 39005 Santander, Cantabria, Spain; solorzaja@unican.es

Abstract: Craft guilds have been at the core of important historiographical debates on the economic, social and political history of medieval cities for twenty years. The aim of this article is to examine the seamen’s guilds in the town ports of the Northern Peninsula in the Late Middle Ages. This study analyzes fundamental aspects of the social assistance, labor organization and social identity of the town ports, which were located on the maritime border of the Kingdom of Castile. In contrast to the more classic view of the craft guilds as protectionist institutions, which only served the interests of a privileged group of masters, this analysis highlights the contribution of the seamen’s craft guilds to the organization of labor at sea, the training of sea workers, the ability to negotiate with merchants and avoid labor exploitation, the provision of social assistance to the most vulnerable population, and the ability to lead the social protest for the guilders’ representation in the urban government. In summary, it is concluded that the seafarers’ guilds were constituted as networks of mutual help between individuals in the labor, welfare and political spheres of the population of the town ports of northern Iberia in the Late Middle Ages.

Keywords: late middle ages; northern Iberia; labor; seamen’s guilds; town ports; social representation

1. Introduction

The study of professional guilds provides a glimpse into a number of aspects of labor and social history, such as the relationship between the individual and the community, work-related issues, welfare and economic problems faced by residents, the identity of popular groups and their political representation, the dialogue between individuals and political institutions, the importance of the collective in the construction of European states, the role of the community vis-à-vis the individual and many others (Uebel and Robertson 2004). The craft guilds are situated, therefore, at the epicenter of important debates on economic, social and political medieval history.

Individuals, a priori, have always needed the collaboration with others in order to survive. Medieval professional guilds occupied a position that was halfway between the individual and the community, since the individual found, within the craft guild, a vital manifestation of mutual assistance, without which subsistence was more difficult or impossible (Rosser 2009). It has been pointed out that the foundations of mutual assistance lay in a certain kind of friendship, which generated a security that was lacking, but within a logic of vertical relationships, based on patronage and factionalism, which basically produce corrupt societies (Martin Romera and Ziegler 2021). Mutual assistance was, without a doubt, one of the main objectives of the medieval craft guilds (Vincent 2009).

Different kinds of corporations spread across Europe from the end of the twelfth century onwards, known as confratria in Latin, guilds in English, Bruderschaften in German, confréries in French, ghilde in Flemish, confratrias in Occitan and cofradías in Spanish (Rosser 2010, 2015). Although their activities were diverse, in general, they were organized around the invocation of a patron saint of the trade and were characterized by combining professional, religious, economic, social and political objectives with solidarity between members of the guild as a value shared by all (Escher-Apsner 2009).
The chronology of the appearance of craft guilds appears to be related to the first manifestations of the crisis of the Late Middle Ages, which led to a weakening of the support provided by family networks and an increase in rural migration, with resultant social instability in cities (Black 1992, 2003). Popular groups responded to the adversity of the time by creating or reinforcing mutual aid projects or institutions, prominent amongst which were the guilds (Solórzano-Telechea and Haemers 2014). Similarly, the growth of the craft guilds responded to a new social ethic, since, on the one hand, membership of a craft guild meant integration within the community, so was accompanied by respectability and a certain social position within the urban center, however humble (Skinner 1985). On the other hand, the emergence of guilds has traditionally been associated with the weakening of political institutions, which is what appears to be revealed by the favorable attitude of the English Crown towards the craft guilds because of its need for support against nobles, and, on the other hand, the measures adopted against guilds in France and the Castile kingdoms, which a priori could be interpreted—as has been the case with many authors—as an incompatibility between the monarchy and the guilds (Kieser 1989). However, that binary opposition—monarchy vs. guilds—which is evinced by the proliferation of professional guilds in northern Iberia, Flanders and England, was not so simple, and there is an increasing awareness that centralizing policies worked in close conjunction with the guilds in a relationship of mutual benefit, in spite of the fact that the latter were on occasions quite conflictive (Trio 2003; Simon-Muscheid 2009). For instance, royal policy did not always take the same measures throughout the kingdom, as the Castilian case reveals, where the guilds of northern Iberia and the monarchs collaborated, while relations with the craft guilds of the major cities of the kingdom were, in general, conflictive (Solórzano-Telechea 2014c).

The study of craft guilds also has an important place within great historiographic debates, inherent to European culture (Putnam 2011), one of the significant of which has addressed the relationship between individualism and communitarianism (Rosser 2006). On the one side are the scholars who argue that today’s individualism is a consequence of the excesses of the modern absolutist state and of the weakening of networks of solidarity and mutual aid. This stance has led some contemporary thinkers to appropriate the study of the guilds as a medieval example of communitarianism (Putnam 2011). In general, however, communitarian ideas have been undervalued in Western political thinking, at least since Thomas Hobbes established that local corporations posed a threat to the state (Hobbes 1995). Similarly, since the liberal historiography of the nineteenth century established that the Renaissance and the Reformation were the key moments in the development of the individual, individualism has been a trademark of the modern condition of mankind. This means that the guilds, by responding to a principle of collectivity, formed part of medieval societies (Lucassen et al. 2008). This is a very singular vision of Western history, in which the reinforcement of individualism has been inexorable, even when that history has been far more pluralistic and has seen the participation of a diversity of actors (Lynch 2003).

The debate on individualism and corporatism focused on the economic role of the craft guilds and inspired a vision of the latter as a protectionist and medieval institution, which better served the interests of a privileged group of masters and officials than individual entrepreneurial initiative (Pirenne [1910] 2009). This resulted in certain prejudices about the medieval guilds as protectionist market institutions, which determined historical research until beyond the 1970s, when historians again turned their attention to the guilds, no longer solely from an economic perspective, but also in view of their social, political, religious and cultural importance (Epstein 1997; Boone 2010).

Since the last decade of the last century, there has been increased emphasis on the role played by medieval professional guilds. Stephan R. Epstein highlighted the significance of their contribution to the training of workers, as well as their capacity to negotiate with merchants, provide financial assistance to their members and protect workers from exploitation by opportunist Late Middle Age urban elites (Epstein 2008). Sheilagh Ogilvie,
however, profoundly disagreed with Epstein’s postulates, and maintained that the guilds had an adverse impact on quality, skills and innovation (Ogilvie 2008, 2011).

Other specialists—such as Pascal Lambrechts and Jean-Pierre Sosson (Lambrechts and Sosson 1994), Peter Stabel (Stabel 2004), Gervase Rosser (Rosser 2015), Stephan Epstein and Maarten Prak (Epstein and Prak 2010), Jesus Solórzano-Telechea (Solórzano-Telechea 2016) and Jan Dumolyn (Dumolyn 2014)—have drawn attention to the economic flexibility of the guilds and their leading role in the political and public sphere, and scholars have begun to analyze the guilds as networks of mutual aid between individuals who consciously interacted in the professional, welfare and political sphere; this constitutes the perspective from which this article has been written (Solórzano-Telechea 2012).

The craft guilds of the seafaring population of the Cantabrian coast in the Middle Ages have interested Spanish researchers for some time and, in recent years, this interest has intensified; however, in general, what has prevailed is the empirical demonstration of different cases of the conceptual reflection that is briefly referred to above. In the 1980s, a prominent work was Juan Gracia Cárcamo’s study of the fishermen’s guild of Bermeo and its ordinances; although the most significant work was perhaps Josu Erkoreka’s Ph.D. thesis, in which the author exposed the origins, the genesis, the developments and the internal structure of seafaring guilds in the Basque community, although it is a very descriptive study (Erkoreka Gervasio 1991). Mention should also be made of the comparative and synthetic works on the craft guilds by José Damián González Arce (González Arce 2011), Margarita Sernao (Serna Vallejo 2002) and Jesús Ángel Solórzano-Telechea (Solórzano-Telechea 2016) in relation to fishermen’s guilds in the Medieval Kingdom of Castile, by Ana María Rivera Medina on the legal framework of Basque fishing activity (Rivera Medina 2000), by Soledad Tena García (Tena García 1995) about the internal composition of the seafaring guilds of the Castilian Navy in the Late Middle Ages, by Ernesto García on guilds, fishermen, seafarers and sailors of the Basque country in the Middle Ages (García Fernández 1997), by Juan Ignacio Ruiz de la Peña (Ruiz de la Peña 2007) on professional solidarity within guilds of seafarers and, finally, by Elisa Ferreira Priegue on the relationship between trade and seafaring guilds in northwestern Iberia (Ferreira Priegue 1988). Of the works on specific historiography cited so far, most could be described as analyses of cases, but an interpretative synthesis is still lacking.

2. The Organization of the Seamen’s Guilds in the Bay of Biscay’s Town Ports

The organization of the so-called “people of the sea” (Mollat 1983) of the Cantabrian Sea into craft guilds was quite unusual in the history of Atlantic coastal communities (Davids 1994), since this was not a widespread phenomenon in all European regions (Tranchant 2012; Miranda 2012; Sousa Melo and Sequeira 2022); however, in all the town ports on the Cantabrian coastline, there were guilds of fishermen and seafarers, as the guild of San Nicolás de Llanes observed in a letter of request, addressed to the Catholic Monarchs in 1480:

“On the coasts of the sea of our kingdoms, in all the towns and villages of them, the people of the sea, the inhabitants of these towns and villages have their own guilds, which regulates the trades of the sea by means of ordinances” (Archivo General de Simancas. Registro General del Sello. 148004, 207 [Henceforth, AGS. RGS.]).

The guilds’ members were, in similar fashion, aware of their antiquity and specific origins. Many of them boasted a history of over three to five hundred years, as was declared by the craft guilds of Santa Catalina de Gijón (Ruiz de la Peña 1981), San Andrés de Castro Urdiales (Garay Salazar and Miguel 2003), San Martín de Laredo and Fuenterrabía or Bermeo in the sixteenth and seventeenth centuries. In 1480, the preamble of the ordinances of the guild of Santa María de Itziar de Deba indicated that its origins dated back to the devotional guild of the Virgen María en la Iglesia de Itziar and gave five main reasons for its founding: to honor the Church, to live honestly in accordance with good habits, to take
pity on the poor, to serve the king, his justice and the common good of the town and people, and, finally, to organize seafaring activity (Herrero Liceaga 2005).

The chronology of the appearance of the guilds is similar to that of the other guilds in the European Atlantic in the Late Middle Ages. The oldest guild on the Cantabrian shore was called San Martín de Laredo, founded in 1306 (Figure 1). It was followed by that of San Vicente de la Barquera, which appeared in 1330; San Pedro de Bermeo in 1350; San Pedro de Fuenterrabía in 1361; San Martín de Santander in 1384; Santa María de Iciar de Deba, which would have been founded before 1394; and San Andrés de Castro Urdiales in 1395. Prominent during the following century were the guilds of San Pedro de Lequeitio and San Pedro de San Sebastián in the mid-fifteenth century and those of Santiago in Bilbao and Santa Catalina de San Sebastián, both founded towards the end of the fifteenth century. Meanwhile, the first evidence of Asturian and Galician guilds came later, such as the guild of seafarers of Luarca de Valdés in 1468, San Nicolás de Llanes before 1480, and those of Cuerpo Santo, San Miguel and San Juan in Pontevedra, Vera Cruz and San Andrés in La Coruña, San Pedro de Tuy, Santa Catalina de Gijón, and the guilds of Avilés, Cudillero, Lastres, Ribadesella and Vigo during the second half of the fifteenth century (Pérez Valle 1996; Álvarez Fernández 2009). Other ports on the Cantabrian coast, such as Guetaria, Motrico, Ondárroa, Plencia and Orio, did not become craft guilds until the sixteenth century (Erkoreka Gervasio 1991).

Figure 1. Town ports of northern Iberia in the Late Middle Ages. © Solórzano-Telechea.

The guilds of fishermen and seafarers on the Bay of Biscay grouped together workers from the same trade, although in many towns, this was extended to include most social sectors within the town or community. Thus, the guild of San Vicente in San Vicente de la Barquera sent a letter of complaint to the Catholic Kings in 1496, protesting that lineages divided up councillorships, despite the fact that the latter were a minority and most of the population belonged to the guild (Solórzano-Telechea 2014b):

“Know that the members of the guild of San Vicente complained that despite the fact that there were eight hundred dwellers in the town and seven hundred of them belonged to the guild, the municipal positions of mayors, aldermen, tax inspectors, escribes were controlled by one hundred citizens who belonged to the lineages” (AGS. RGS. 149603, 142).

The guilds tended to monopolize professional activity. In San Vicente de la Barquera, for example, only members of the guild of sardine fishermen of San Andrés could fish for sardines: “no sardine fisherman can ply that trade in this town unless he is a member of the guild” (AGS. RGS. 149905, 256). The requirements for entry into a guild, apart from being a sailor by trade, basically consisted of being a male and Catholic, as was set out in
the ordinances of Santa María de Itziar (Herrero Liceaga 2005). Women were not totally excluded from professional guilds, although they did organize themselves, unofficially, to defend their rights and lodge their complaints and requests collectively (Haemers and Delameillieure 2017), as occurred with the female fish vendors and the Bilbao city council in 1510 (Vandeweerdt 2021), when the latter had to abandon its attempts to appropriate the area where they sold fish on the quayside, after the women organized themselves and successfully defended their position (Beattie 2007).

The guilds were run by a wealthy sector of the population, formed by the ship owners; next came the shipmasters, the pilots, the skippers, the sailors and, finally, the fishermen. The latter, in spite of their hard lives, were in a better position than the elderly, the disabled, the sick, widows and orphans, who depended on the brethren’s charity. The ship owners were the most powerful guild members and were represented by the shipmasters, although some of the latter also owned vessels (Kowaleski 2011). The shipmasters’ main tasks were to arrange contracts and supervise the fishing season, and they had an obligation to attend the guild’s religious services and all assemblies or face financial penalties (Ward 2009). The figure of the shipmaster was highly respected by other guild members at assemblies, as their training enabled them to “know and determine what proposals were made in their town council”, which contributed to the “good governance of said town hall, peace and serenity within” (Garay Salazar and Miguel 2003). Moreover, shipmasters were responsible for preparing and fitting vessels, as was set out in the ordinances of the guild of San Vicente de la Barquera (Solórzano-Telechea 2011). In addition, shipmasters participated in the election of guild officers, designating those responsible for appointing lookouts, as occurred in the case of San Martín de Santander (Casado Soto 1977). The prestigious role of these shipmasters was endorsed by the fact that they were also responsible for convening the guild lunches and ensuring that none of the brethren brought a “dagger to the table” (Solórzano-Telechea 2011). The sailors, meanwhile, worked on a ship professionally as part of the crew. Theirs was a position that required ample knowledge of the sea. Apart from piloting the boats, they were responsible, along with the shipmasters, for recruiting sailors and preparing the fishing trips, and checking, along with masters, the size of the nets (Garay Salazar and Miguel 2003).

The socio-professional basis of the guild was formed by seamen, sailors and simple fishermen, whose job was the most precarious of all, as they were paid directly in kind, in quiniones and quintaladas, on the basis of verbal agreements (Enriquez Fernández et al. 1991). The seamen occupied a position above simple sailors or fishermen, since they enjoyed greater financial capacity and were able to form small companies. Being a sailor was a risky occupation, into which men were usually driven by need. The fishermen were the humblest of those working at sea (Kowaleski 2006). The ordinances of San Vicente de la Barquera inform us that a sailor, in 1490, received 22 silver reals for working from San Martín until Shrovetide, and 11 silver reals from that date until Easter (Solórzano-Telechea 2011). This suggests that workers earned 33 silver reals for their labors between November and a range of dates between March and April. At the lowest level were the deckhands and cabin boys, whom the ship owners could strike with their hands or with sticks by way of punishment (Erkoreka Gervasio 1991). In some guilds, however, the cabin boys enjoyed the same protection as the other members. Thus, the ordinances of the guild of San Andrés de Castro Urdiales protected both sailors and “cabin boys and apprentices” against illness, and those of San Vicente established that to serve a shipmaster, cabin boys required their father’s blessing, or their mother’s if she had been widowed (Sañez Reguart 1791).

The considerable influence exercised by the guilds upon the development of companies and of merchant capitalism is illustrated by the socio-professional structure of the fishing companies, which was copied by professional guilds from the second half of the 15th century onwards for the organization of deep-sea fishing off Ireland, Galicia or the Barbary Coast, to which was added a merchant lender, with the guilds enjoying exclusive rights of organizing fishing in the so-called “mar de canto”, a maritime space situated around 20 km from the coast. Involved in the commercial fishing companies were land-based merchants,
moneylenders usually, those responsible for subsequent sales, as well as the sailors and fishermen, who went to sea to fish before coming back to port with their catch or sold it in other ports, having to pay off their loans when returned. In fact, the precarious nature of the modus vivendi of sailors and fishermen changed significantly in the second half of the 15th century, thanks to the formation of these merchant-type deep-sea fishing companies, as they began to receive a previously agreed salary or a percentage of profits. Nevertheless, the fact that the guilds did not control these fishing companies had a detrimental effect on working conditions. In 1506, for instance, a merchant lender from Vitoria, by the name of Antonio Esquivel, a shipmaster, teamed up with Captain Lope Aparicio to organize fishing in Ireland from 29 September until All Saints Day or San Martín, and both pledged to pay the fifty sailors and fishermen recruited, from Laredo and Castro Urdiales, 12 florins each; however, the breach of this contract forced the sailors and fishermen to take the issue to court (Archivo de la Real Audiencia y Chancillería de Valladolid, Reales Ejecutorias, 211/6).

The guilds’ interests clashed with those of the fishing companies, as the latter offered greater profits to sailors and fishermen, as we have seen. This was apparent in the establishment of numerous penalties for those sailors that failed to fulfil their obligations. In the guild of San Andrés de Castro Urdiales, when an individual committed to a guild, they could not pledge their services to another, under penalty of 2.000 maravedies (Garay Salazar and Miguel 2003). This fine increased when the person was going to be recruited on dates close to the start of the fishing campaign by a further 1.000 maravedies (Garay Salazar and Miguel 2003). Similarly, in the guilds of San Martín de la Mar de Santander and San Vicente de la Barquera, it was interdicted by the guilds’ ordinances to take to sea members who have “taken part in a campaign on another pinnace” (Solórzano-Telechea 2011).

3. Governance of the Seamen’s Guilds

The guilds were governed by the board or council, which was the assembly of members, in which officers were appointed or elected and issues of interest to members debated. There were two types of assembly: on the one hand, elective, in which guild officers were elected, which normally coincided with the feast day of the patron saint, the opening of the fishing season and New Year’s Day. The guild boards elected the general advocate, the maritime mayor or judge, the stewards, the representatives, the weights and measures inspector, the overseers, the treasurer, the lantern bearer, the sellers or administrators and the lookouts (Garay Salazar and Miguel 2003). It was also a requirement that all officers were elected by consensus of all the guilds. In some guilds, such as San Nicolás de Llanes, the office of steward was, as well as annual, non-renewable (AGS. RGS. 148004, 207). As for the electoral process, this varied from one guild to another, and there were diverse methods based on deliberative appointment, draw or sortition. The guild of Santa Catalina de San Sebastián employed the sortition method: the members wrote their names on papers and put them in a pot, after which a child drew out the name of the steward. In the case of the guild of San Andrés de Castro Urdiales, the ordinances decreed the holding of an elective board meeting on New Year’s Day, convened via public proclamation in the streets of the town, which would debate the election of the general representative, the maritime mayor and his assistant steward (Banús y Aguirre 1974). All the “shipmasters, fishermen and sailors that are or were guild members” had to participate in this elective board meeting, and quorum was necessary, so all the guild members had to “be in agreement” (Garay Salazar and Miguel 2003). Other guilds employed the co-opting method. The 1353 Bermeo ordinances established that outgoing guild members and stewards should meet annually on the day of San Martin to appoint an electoral commission composed of six members, responsible for appointing the new guild officers (Labayru Goicoechea 1968). The elected members had to be sworn into office “on the cross and before the image of Our Lord”, to which could be added the image of the patron saint, and promise to perform their work “without love, partiality or friendship”, given their role as mediators (Garay Salazar and Miguel 2003).
The stewards or general attorneys were responsible for managing the guild, presiding over the board meetings and internal tribunals, competencies that, depending on the guild, could be performed by the maritime mayors (Garay Salazar and Miguel 2003). These were well-paid positions. The tax inspector of the guild of San Andrés de Castro Urdiales had to pay each of the stewards 2,000 mrs. per annum. The guild of San Martín de Santander did not pay a fixed rate but established that “those appointed be paid for their work as was appropriate, and if they did not accept the office, or gave sufficient cause, they could be expelled from the guild and charged the corresponding fines” (Casado Soto 1977). The general attorney represented the guild in their external relations; the deputies (diputados) were the members’ permanent representatives, who met frequently to address urgent guild issues alongside the stewards; sellers (vendedores) were responsible for the daily sale of captures and dealings with traders and transporters; the linterneros carried a lantern to prevent vessels from getting lost at night; the watchmen towers (atalayeros) or (señeros) were permanent lookouts with considerable responsibility, as they selected the ideal atmospheric conditions in which to fish safely.

Among the functions of the regular meetings were the establishment of sale prices of fish, supervision of guild expenditure and the organization of fishing activities. The sale of fish must have been a delicate issue in relations with councils, since supplying town markets was a competence of the council. In order to sell their catch, fishermen required a council license, but they often sought to avoid payment of this alcabala by selling their produce in the outskirts of the town. Councils legislated against this black market. Castro Urdiales stipulated that no person, especially “maidens and women”, could take fish out of the town in baskets or on their heads, in other words, for retail sale, to hand it over to the muleteers, thus avoiding the payment of town taxes and the muleteers’ obligation to transport wheat to the town (Baró Pazos and Rivero 2006). In 1495, the guild of San Pedro de Bermeo and the council reached an arbitral agreement. The guild members wanted freedom to sell, both from their homes and in the town, the sea bream received in kind, but the council wanted these to be sold in the town square so that everyone might have access to the fish and so as to control this selling of products (Epstein 2000). The arbitrators ruled that collective selling should take place, as usual, freely on the small wharf, but that individual bream could only be sold once the market had been supplied and within the territorial limits established by the agreement (González Arce 2011).

Meetings had to be attended by all sectors of the guild, from owners and captains/shipmasters to seamen and fishermen, including pilots and elderly members, and guild officials. All the guilds imposed a penalty for non-attendance; in San Andrés de Castro Urdiales, for instance, guild members had to give a pound of candlewax for guild masses and could find their assets seized by way of punishment if this fine was not paid (Garay Salazar and Miguel 2003). The guilds convened the meetings via the town crier and held them in a closed space, generally a church or a chapel, or outdoors, as was the case for the guild of Castro Urdiales, in the arcos de Santa Ana. All the members took part in these assemblies, mass was sung, lunch was eaten and alms were distributed. The guild united its members via religious and saintly sentiment and organized collective activities, such as lunches and masses (Barros 2006). Meetings were held in accordance with a strict code of conduct, and participants were instructed not to speak about their vote without the permission of the guild’s mayor, and everything had to take place with “calmness and docility” (Garay Salazar and Miguel 2003). The guilds of San Pedro de Fuenterrabía used to hold their annual lunch inside the Church of Nuestra Señora, until they decided in 1482 to move to an attic of the belltower, as it seemed dishonest (Irixoa Cortés 2013). The cost of these meals was borne by the guilds, many of which limited or prohibited this expenditure. The ordinances of San Martín de Santander banned spending on food or drink on the occasion of meetings or similar events, under penalty of the seizure of assets and a 2000 maravedis fine (Casado Soto 1977).

The guild mayors and stewards had very broad jurisdictional powers that were included in the ordinances, the provisions of which were based on the experiences of
Cantabrian seafarers, stemmed from the custom, and on the significant influence of the Laws of Oleron (Rôles d’Oleron) or Fuero de Layron (Solórzano-Telechea et al. 2004), that dealt mainly with the rights, duties and responsibilities of ships’ captains and crew in relation to discipline, sickness, mutiny, payments, cargoes on board, pilotage, accidents, and similar matters. These regulations feature numerous references to this Atlantic maritime code, such as the prohibition of the right to shipwrecks in favor of merchants. For example, the ordinances of the guild of Luarca reproduce entire paragraphs of the Leyes de Layron; in the case of Pontevedra, the Catholic Monarchs granted fishermen the right to the quintalada de la pesca as prescribed the Laws of Oleron (según el Fuero de Layron) (Filgueira Valverde 1946) in similar fashion to the twenty-four articles of the ordinances of the guild of San Vicente de la Barquera, which were based on the Fuero de Olerón.

The sphere of competence of the guild leaders implied a restriction of the jurisdictional powers of the town mayor or magistrate, since guild members settled their legal disputes before the heads of the guilds, a factor at the root of the conflicts between guilds and councils, as was evidenced by a lawsuit in 1496, in which the seafarers of San Vicente de la Barquera appealed against a ruling by the mayor in relation to a dispute between neighbors on the Barbary Coast, since the ruling judge was not as provided for by the Laws of Olérón:

“The charter and laws that are called of Lerión, which said charter and laws were made and ordered to judge the cases and damages and disputes that occur in the ports of sea and at sea between the ships and boats, and caravels and pinaces that sailed and used to navigate, which the said judge of the sea and charter and laws of Leryón were used and kept and obeyed in all Spains and coasts of the sea” (Solórzano-Telechea et al. 2004).

Similarly, there is evidence that some years earlier, in the guild of San Martín de Santander, there was lawsuit over the steward’s jurisdiction, and a ruling, dated 20 June 1429, stating that maritime cases could only be ruled by maritime judges, which in this town meant the seafarers’ steward, without royal or any other justice having the authority to intercede (Solórzano-Telechea 2002). Some towns established jurisdictional limits to avoid these conflicts over areas of competence. Thus, in Bermeo, council mayors had to intervene whenever there was bloodshed and loss of limbs (Erkoreka Gervasio 1991). Guild jurisdiction also clashed with that of the reeves. At the end of the 15th century, the reeve of Gúipúzcoa, Juan de Rivera attempted to take over the jurisdiction of the guild of San Pedro de San Sebastián, but the Royal Council of Castile ordered him to respect the existing situation dating back to 1492 (Erkoreka Gervasio 1991).

4. Seamen’s Guilds’ Finances

Guilds needed sufficient funding to undertake governance activities, protect members’ interests, defend themselves in court, perform the guild’s work, assist members in need and for extraordinary expenditure. Some guilds had ample resources, although this was not normally the case. Of the guild of Corpo Santo de Pontevedra, for example, it was said that the “Town Council and the Guild usually have so much money that they have for extraordinary expenses, and for lawsuits, and works, often five and six thousand ducats, and it does not hurt them in their budget” (Ferreira Priegue 1988). There were two ways of raising funds, either directly from members, voluntarily or not, or via indirect contributions, though fines imposed as a result of non-compliance with ordinances (Cantera Montenegro 1990).

The first source of financing was contributions made by guild members, in the form of their quiñón or mareage. This was part of each fishermen’s payment after distribution of the catch. Thus, sailors handed over part of what had been assigned to them, which could be variable when paid in kind, as occurred in Castro Urdiales or Santander, or a fixed sum in cash, as was the case in Motrico, Bermeo or San Vicente de la Barquera. The ordinances of San Vicente de la Barquera Guild, for instance, established that “Each member of ours must comply with the payment of two maravedies in each entrance and each week that the pinaces go out to sea” (Solórzano-Telechea 2011). The shipmaster ensured that the fishermen paid their portion or quiñón.
The second principal source of income for the guilds were fines, payable as a result of non-compliance with ordinances, contracts, fishing conflicts between guilds, or sizes of nets or boats, among other questions. The size of the fine depended on what the guild considered most important, so it varied from one place to another. In Santander, for example, there were fines of 600 maravedis for those who collected bait without a license and 2000 maravedis for those who turned down positions in the guild, a figure that rose to 10,000 maravedis in the case of the Castro Urdiales’s guild (Garay Salazar and Miguel 2003).

Fines associated with disobeying guild officials were very common. In San Andrés de Castro Urdiales, it was stipulated that “The confreres are not daring to speak, nor speak, nor give their vote, nor appear, without first being commanded by the said procurator under penalty of a pound of wax” (Garay Salazar and Miguel 2003); in Santander, there were fines of 1,000 mrs. for captains and seafarers who disobeyed lookouts; in Laredo, fines were issued not only to those who “went to fish in spite of instructions to the contrary from the watchtower or the dangerous state of the sea”, but also tolookouts who did not carry out their work satisfactorily (Casado Soto 1977).

Fines associated with disobedience of guild officials were very common. In Santander, there were fines of 1,000 mrs. for captains and seafarers who disobeyed lookouts; in Laredo, fines were issued not only to those who “went to fish in spite of instructions to the contrary from the watchtower or the dangerous state of the sea”, but also to lookouts who did not carry out their work satisfactorily (Casado Soto 1977).

The guilds also fined acts of physical and verbal violence, although when there was bloodshed or loss of limbs, the town law courts had to intervene. The ban on carrying arms was established, for example, in the ordinances of Castro Urdiales, with a fine of 2000 mrs. (Garay Salazar and Miguel 2003). There were also penalties for those who proffered insults. According to Santander’s ordinances, any guild member who “uttered injurious words against a guild lawyer, official or lookout faced as fine six hundred maravedis for the first offence and two thousand for the second” (Casado Soto 1977). In San Pedro de Fuenterrabia, members had to participate in the annual lunch and treat one another with respect: “no guild member may say to another any word that should not be said or be impolite at table’, under penalty of 20 maravedis (Irixoa Cortés 2013).

The control of vessels was regulated, with various fines for offenders. Thus, boat size was one of the main factors taken into account by fishing ordinances, as in Castro Urdiales, where no vessel measuring less than 22 cubits could take to sea, under penalty of 2,000 maravedis (Garay Salazar and Miguel 2003). The fishing season had to be strictly observed by guild members. And non-compliance was subject to a heavy fine, as occurred in Castro Urdiales, where there was a ban on “fishing and setting to sea before the day of San Martín of each year, under penalty of ten thousand mrs” (Garay Salazar and Miguel 2003).

Meanwhile, the guilds incurred a series of expenses in relation to their activity, such as officers’ salaries, providing food and drink at lunches, providing assistance for sick members, the elderly, widows and orphans, funerals and burials, fishing gear and bait, among others. Accounts were controlled by the stewards, though there were other specific officers, whose job titles varied from one guild to another: the tax inspectors issued payments and the veedores audited the accounts. The number of inspectors varied between one and six. The guild of San Martín, for instance, appointed “six men, that in company with the officers they took accountability of those officers who came out well and faithfully” (“seis hombres, para que en compañía de los oficiales tomen y reciban las cuentas de los que salieren bien y fielmente”) (Solórzano-Telechea 2011). Furthermore, the ordinances prohibited the appointment as veedores of anyone with up to four degrees of kinship with the stewards (Erkoreka Gervasio 1991). In Santa María de Deba, accounts were recorded in a book with the names of guild members, income, expenditure and rights, which was kept alongside the money pouch in a chest with two locks under the stewards’ supervision (Irixoa Cortés 2013).

5. The Regulation of Professional Activity

It is not easy to learn about medieval fishing, because in general, this was an everyday activity that has left little in the way of documentary evidence, except when vessels went to fish in distant fishing grounds that called for a more complex voyage, or when a conflict arose that ended up in court. Fishing activity was organized into two annual seasons, winter and summer, determined by the migration of species according to the time of year. The winter fishing season started in autumn, normally beginning in November, around
All Saints or San Martín, and ending in spring, coinciding with Easter, and the second ran from Easter until San Martín. In some ports, like San Vicente de la Barquera, there was an intermediate season between San Miguel and San Martín (Solórzano-Telechea 2011). The guilds prohibited fishermen from fishing out of season, as was the case in Castro Urdiales, where there was a ban on fishing “before the day of San Martín” (Casado Soto 1977) or from catching different species, like the guild of San Martín de Santander, which banned “catching sardines when fishing for sea bream” under penalty of a fine (Garay Salazar and Miguel 2003). The objective of this measure was that all guild members should enjoy the same conditions and benefits. Fishing days were very long, lasting from dawn to dusk.

The winter season involved greater risks for fishermen than summer. The ordinances of San Martín de Laredo referred to the “bad weather during winter and Lent”, and those of San Andrés de Castro Urdiales alluded to the “grave and harsh misfortunes and storms that often strike in winter, night and day” (Garay Salazar and Miguel 2003). For this reason, the ordinances stipulated that the lookouts’ indications should be respected or that there should be no fishing at night, as was the case with the guild of San Andrés de Castro Urdiales, which prohibited “remaining at sea at night in pinnace, dinghy or launch” (Solórzano-Telechea 2016). In winter, the ordinances established that fishermen should set to sea very early to take full advantage of the daylight.

The guilds also ensured that fishing vessels adhered to minimum dimensions. For example, the ordinances of the guild of San Andrés de Castro Urdiales established that pinnaces—a light boat propelled by oars or sails—that went to fish for sea bream should be “twenty-two cubits long inside”, and those of San Vicente de la Barquera required a minimum keel length of 15 cubits (Solórzano-Telechea et al. 2004). Meanwhile, fishing gear was subject to control by the guilds, and net size was taken into account; in Castro Urdiales, for instance, sardine nets had to be “the same in breadth and length”, under penalty of loss of catch plus a fine of 4000 mrs. Incorrect use of or an excessive number of nets were fineable offences. In San Martín de Santander, fishermen were prohibited from “casting more than two hundred and sixty nets” (Casado Soto 1977). Similarly, some types of nets were also banned, like the jito or geito. This net was suspended with floats over a sardine zone but did not discriminate between species, so its use was prohibited by all fishing guilds in the Cantabrian Sea. In San Pedro de Fuenterrabía, these nets were not banned, but fishermen using geito nets had to maintain a distance of 60 strokes from the sardine vessels in order to avoid conflicts, under penalty of a fine of ten florins (Iríoxa Cortés 2013).

The sale of fish was also regulated by the ordinances. The guilds had sellers or catch administrators, although in some, it was the first captain to reach port, assisted by the next to arrive, as occurred in Santander. Fish was auctioned in public. In Castro Urdiales, sales were held in the town square, and the guild of San Vicente de la Barquera banned the sale of fish on the boats themselves and catches had to be taken “to the riverbank and sold at the best possible price”, although the fishermen’s houses could be used in the event of bad weather (Solórzano-Telechea 2016). The ordinances of Luarca prohibited fishermen from selling fish to muleteers and wholesalers, since only administrators could sell the produce in a public place and under the mayor’s supervision. In 1428, the guildsmen of San Martín de Santander won a lawsuit initiated by the tenants of the fish sales tax after being denounced, because the wives, girls and daughters of the fishermen were selling the fish in the town square without paying the corresponding alcabala. The plaintiffs demanded 20 mrs. from each by way of alcabala, but the accused fishermen were absolved, as they demonstrated that since time immemorial, they had enjoyed the right to sell the fish in their baskets from the boat. Years later, in 1472, the guild members signed an advantageous agreement with the council of Santander, granting the fishermen freedom to fish in the bay in exchange for the payment of the fixed sum of 3.500 mrs. yearly with a commitment not to increase the latter, even in the event of an increase in the amount of tax that the town had to contribute to the royal coffers; for its part, the council declared that it had signed the agreement in compensation for the fish taken from the pinnaces for public consumption (Solórzano-Telechea 2002). The ordinances of Plencia established that fish should be sold...
on the riverbank in the presence of all those wishing to buy as well as the innkeepers that were hosting the mule drivers (Erkoreka Gervasio 1991). During the sale of fish, priority was given to the fishermen themselves and the town inhabitants, after which the remainder of the catch was sold wholesale to visiting muleteers and retailers, who subsequently marketed the fish elsewhere.

The system of wholesale purchase of the fish was via an auction, known as mio sea (that is mine), in which the opening price was set by the stewards and shipmasters, and the first purchaser to utter these words acquired the lot in question, as is reflected in the ordinances of San Martín de Santander and San Martín de Laredo, which also state that note should be taken of the purchaser’s name. The guilds prohibited individuals from fixing the sales price of fish. The guild of Castro Urdiales forbade “The innkeepers, muleteers, transporters and other persons” from assembling “in private homes as they pleased and there form leagues or monopolies to fix a price for a dozen sea breams, sardines or other fish, which constitutes a considerable prejudice to the Crown and royal tax revenues” (Garay Salazar and Miguel 2003). The fish sold supplied Spain’s domestic market (Salicrú i Lluch 2009).

6. Seamen’s Guilds and Social Assistance

One of the fundamental purposes of the guilds was the provision of aid to sick members and their families, as well as to other sectors in the town that were in need of assistance (Vincent 2009). Social assistance was provided for those guild members in need due to temporary circumstances, old age, precarious living standards or ill health. In the guild of San Andrés de Castro Urdiales, for example, reference was made to those “elderly, blind and needy persons, who on account of their woes and being poor and unable to take to sea” received aid from the guild (Garay Salazar and Miguel 2003). Thus, the guilds offered these members a series of aid measures, financed by the quiñón and the fines resulting from infractions. For instance, the elderly, the disabled and the sick received the benefits resulting from a fictitious catch, organized by means of a draw and coinciding with the feast of the patron saint, in the case of Castro Urdiales for Santa Catalina, or after the election of the guild officers, as in Laredo for San Martín (San Felíu 1944). Elderly guildsmen were called by the town crier, along with the shipmasters and owners, for a simulated boarding and given a payment and the sea bream that would correspond to a pinnace crew member. Similarly, sick guild members also benefited from this aid, especially if they had a family. In Bermeo, the ordinances stated that it was obligatory to help, because “Many honest men are poor and needy, and there are children, or men with their arms or feet crippled or broken so that they cannot be maintained by themselves” (Erkoreka Gervasio 1991). Both groups were given part of the vessels’ quiñón, in the same way that any fishermen would be. In San Martín de Santander, refusal to assist a sick guild member was subject to a fine of 1.000 maravedís (Solórzano-Telechea 2002). In the case of sick guildsmen, the guild of San Martín de Laredo even established that if they could not get by on one payment, the guild should borrow money to help them (San Felíu 1944). In the guild of Luarca, alms were given to members whose boats were broken or who had been injured while fishing and could not take to the sea, and even their treatment was paid for (Solórzano-Telechea 2016). In the guild of Santa María de Deba, the elderly and disabled were examined by the stewards and five or six good men, after which, once their degree of disability had been assessed, the guild assumed responsibility for their upkeep (Irixoa Cortés 2013).

Orphans and widows also received social assistance from the guild. In San Vicente de la Barquera, the steward called upon “orphan children and their widowed mothers” to participate in the distribution among the different boats, in similar fashion to the simulated handout to the sick and elderly, as the document refers to the fact that the orphan should be given a quiñón “as if he had actually taken to sea to fish”, a similar measure to that employed in Luarca, where widows and orphans received the full quiñón (Solórzano-Telechea 2011). Finally, guild charity was also directed towards the poor in general, particularly on patron saint days, when the needy were invited to lunch or given the leftovers from the
banquet that was enjoyed by the guildsmen. In San Vicente de la Barquera, the stewards fed the destitute on the day of the annual lunch (Solórzano-Telechea 2011). In San Pedro de Fuenterrabía, the guild mayor gave the poor the food and drink that were left over after the guild banquet (Irixoa Cortés 2013).

Another of the guilds’ charitable goals was providing assistance for members at the time of death and with funerals. Funeral ceremonies and burials were to be treated with all the dignity owed to a deceased colleague. In Laredo, the body was wrapped in the guild cape and accompanied by a cross belonging to the congregation (San Feliú 1944). The guilds also paid for the funeral candles. In Santa María de Deba, the deceased’s body had to be accompanied by guild members with four lit candles from his home to the cemetery (Irixoa Cortés 2013). All guild members were obliged to attend their colleagues’ funerals, unless they had to set out to sea to fish, in which case they were to be represented by the stewards, escorted by a sailor from each vessel. In Luarca, those who received assistance from the guild also had to attend funerals, with the oldest guildsman at the head of the cortège (Solórzano-Telechea 2016). The guild of Santa María de Deba imposed a fine of a silver real on guild members who failed to fulfil this obligation, a similar penalty to those in place in Bermeo and Plencia (Erkoreka Gervasio 1991).

The guilds ensured that members who died outside of the town were buried among their own. In San Vicente de la Barquera, if a guild member died between Santander and Ribadesella, he should be brought home, by sea or by land, at the guild’s expense, and if he died in Castile or León, he should also be returned to San Vicente, accompanied by the guildsmen, who were to receive the body a league’s distance outside the city. If a guild member died during the fishing campaign, the body should be preserved until the latter ended and then buried in the town (Solórzano-Telechea 2011).

Thus, the guilds’ positive response to the social changes of the Late Middle Ages must have alerted their members to the need for an institution that ensured their survival in difficult times and for practicing charity not only among themselves, but also towards strangers, which served to consolidate bonds between guild members, on the one hand, and between the latter and the society in which they lived, on the other.

7. The Defense of the Commons’ Voice

The relationship between guilds and political power has been the subject of considerable controversy since the mid-19th century, as noted above in the introduction, between those who defended the guilds’ political role in urban political life and those who regarded them as an obstacle to the consolidation of monarchic authority (Rosser 2006), as their privileges and rights were incompatible with the legal standardization of Late Middle Age monarchic states (Dumolyn 2014). The underlying tenet was that the construction of centralized states clashed with the existence of local institutions and exclusiveness. However, the formation of Late Middle Age monarchic states was a complex process, and one that proved compatible with the participation of other local powers, many of which collaborated with centralized institutions, so the guilds can be said to have been an indicator of the weakness of the state. In fact, the guilds of seafarers and fishermen received ample royal protection, the concession of privileges and support for letters of request, making them fundamental political actors in these towns (Epstein 1997).

The seafaring guilds became the common voice of the townspeople. Following the introduction of the Regimiento into these towns between the late 14th and early 15th centuries, the councils relegated the townsfolk to a position of irrelevance without any political influence in political issues, in spite of being residents, which raised hackles within this important social sector in Cantabrian coastline town ports (Naegle and Solórzano-Telechea 2014). In 1428, the council of Noya complained to the Archbishop of Santiago that “on occasions, when the council met, fishermen, carpenters and other persons appeared on the scene, spoke at will in ill-mannered fashion and prevented necessary and opportune agreements from being reached” (Solórzano-Telechea 2014c). The guilds were formed by residents that did not belong to the urban ruling group, but who represented people with
common origins, although their socio-economic levels and their activities were diverse. Thus, the guilds played a fundamental role in the defense of the rights of the common townspeople in the 15th century. The collective action taken by guilds against the abuses of the urban oligarchies stimulated a civic consciousness, a strong sentiment of collective common identity, to the extent that in most towns, the objectives and interest of the guilds and the townspeople were inseparable. The royal administration made few distinctions between the town population and the guilds, as for example when the Catholic Monarchs confirmed the privileges of the guild of San Martín de Laredo, which they addressed as “people and community of the town of Laredo” (Solórzano-Telechea 2016). In this way, the guilds were able to organize a collective defense of the townspeople to guarantee protection of their members and even negotiate with local authorities.

A regular complaint made by guilds was over economic irregularities committed by councils (Solórzano-Telechea 2014a). In 1451, the guild of San Martín de Santander addressed several letters of request to King John II in the name of the townspeople, as “the guild members of San Martín de la Mar, the people of the town”, denouncing the fact that council members were repeatedly committing fraud with communal accounts and properties, so they requested that two guild representatives be present at council meetings to oversee council decisions (Solórzano-Telechea 2002). King John II acceded to the request and granted the guild the privilege of appointing representatives to the council, one from the Puebla Nueva and another from the Puebla Vieja, to represent the guild when the council was addressing economic and fiscal issues of general interest to all. However, the council did not heed the royal mandate, alleging that guild members could not take part in council meetings because common people were ignorant (Vaquerizo Gil and Bustamante 1977).

The guild of San Vicente de la Barquera served to channel popular discontent. In 1428, this guild denounced a charge imposed upon residents by the council, which it regarded as unfair, and requested representation at council meetings (Solórzano-Telechea 2014a). In 1453, the Prince of Asturias, Don Enrique, granted them a privilege, by dint of which the guild stewards could attend council meetings when economic questions related to maritime activity were addressed (Biblioteca Municipal de Santander, ms. 219, volume I, folio 696). This guild’s collaboration with the monarchy was clearly evidenced two years later, in 1455, when the council prohibited the guilds from participating in struggles between factions, except to help the mayors and the town’s legal authorities.

Despite the royal support, at the end of the 15th century, the council had still not heeded the guild’s request, so the latter turned to the Catholic Monarchs, arguing that, although it represented 700 of the town’s nearly 800 inhabitants, urban governance was in the hands of a minority of 100 residents (Solórzano-Telechea et al. 2004). The Catholic Monarchs ruled in favor of the guild and ordered the council to grant representation to “all the estates of persons able to participate so that the said officials of the City Council are chosen according to our letter and not by partialities of nobles” (AGS. RGS. 149603, 142).

Until 1480, the guild of San Nicolás de Llanes played a significant part in the local government of the town, but that year, it presented a series of requests to the Catholic Kings related to the rights enjoyed by the steward and the representatives since time immemorial, to attend the election of town council officials, just as it “occurs in other towns and places on the coast where there are guilds” and to supervise council accounts; however, Fernando de Estrada, exploiting the difficult situation within the kingdom, had stripped the guild of that right (Solórzano-Telechea 2014b).

One of the most influential guilds with regard to local politics was Lequeitio’s. In 1488, the monarchs reprimanded the guild because it had arrogated the right to impart justice and was organizing unrest in the town (AGS. RGS. 148807, 308). The official sent by the monarchs to establish order, the lawyer Chinchilla, prohibited the guild from intervening in the mayors’ legal issues and annulled its ordinances. However, the guild ignored the prohibition and increased its political power to the extent that it was able to appoint half of the council officials via the two stewards who represented the guild on the council in the name of the community. In 1514, Queen Juana acceded to a request by Lope de Endaldi,
a guild steward, contrary to the opinion of the council, to the effect that at least one of the stewards should be a man of letters, as until that time, “because they are not literate or experienced in business, but men who live by labor of their hands by the sea”, their decisions had prejudiced the community, which served to increase his knowledge of council issues (Enríquez Fernández et al. 1991). The guild’s political influence was based on the discourse of common good, as is evidenced by a document of 1530, in which the guild stated that it had been formed to combat the violence provoked by local factions and to defend the interest of the monarchs of Castile and of the town (Solorzano-Telechea 2014a).

The other guilds on the Cantabrian coast lodged similar protests or requests, almost all related to their participation in local council politics or the vindication of the representation of the commons, and their requests were endorsed by the monarchy. Both the introduction of the electoral system of sortition and the acceptance of most of the townspeople’s demands in the towns of the Northern Peninsula led to a significant degree of collusion between the guilds and the Castilian monarchy.

8. Conclusions

Thus, the medieval guilds of Atlantic Spain were grouped into what historiography has come to describe as “institutions for collective action”, in other words, a kind of socio-professional organization that emerged when people involved in activities related, in one way or another, to the sea, committed their resources and efforts in order to help one another. This collaboration responded to the needs of the inhabitants and the social or professional groups of the coastal towns. The guilds successfully tackled the organizational, work-related, economic, welfare and political problems of the townspeople’s lives. Similarly, these professional guilds played a fundamental political role, bringing together and representing the común—the majority of the population of the coastal towns—who faced a policy of exclusion from the councils, implemented by the urban oligarchies. The seafaring guilds thus provided an effective response, on the one hand, to the organization of professions and duties associated with the sea, and, on the other, to the welfare needs of guild members, widows, the disabled, the elderly and orphans, as well as making a significant contribution to urban political life. The professional guilds found a good ally in the Castilian monarchy, as was demonstrated by the monarchs’ support for letters of request and the granting of privileges. The professional guilds created models of political action for townspeople and participated actively in local politics, which reduced the political tension that was so characteristic within the population of towns and cities in the Kingdom of Castile between the late-15th century and the War of the Communities. The monarchy’s centralizing policies merged with the guilds’ need for support, and the two parties collaborated closely in their quest for mutual reinforcement.

Funding: This research article was funded by the State Investigation Agency (Ministry of Science and Innovation of the Government of Spain), grant number PID2020-118105GBI00.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The repository of the historical sources of Spanish National Archives (Archivo General de Simancas and Archivo Chancillería de Valladolid) is available through the website PARES: Portal de Archivos Españoles (PARES)—PARES|Ministerio de Cultura (culturaydeporte.gob.es, accessed on 1 September 2023). The edited historical sources edited by Sociedad de Estudios Vascos are available on the web: Fuentes Documentales Medievales del País Vasco | Eusko Ikaskuntza (eusko-ikaskuntza.eus).

Conflicts of Interest: The authors declare no conflict of interest.


San Felici, Lorenzo. 1944. La Cofradía de San Martín de Hijosdallo, Navegantes y Mareantes de Laredo. Madrid: Instituto Histórico de Marina.


Solórzano-Telechea, Jesús Ángel. 2014c. The politics of the urban commons in Northern Atlantic Spain in the Later Middle Ages. *Urban History* 41: 83–204. [CrossRef]


**Disclaimer/Publisher’s Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.