Principles and Developments of General Average: Statutory and Contractual Loss Allowances from the *Lex Rhodia* to the Early Modern Mediterranean

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Average and Contribution: An Etymological Question

'Average' is a word that has made life difficult for historians of language. Commonly used with the meaning of 'mathematical mean', the English word is derived from a formally identical term belonging to the narrower

The research for this essay was conducted thanks to funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and Innovation Programme ERC Grant agreement No. 724544: *AveTransRisk—Average—Transaction Costs and Risk Management during the First Globalization (Sixteenth-Eighteenth Centuries)*. I would like to thank Maria Fusaro, Jake Dyble, Daphne Penna, Guido Rossi and Monica Chojnacka for their comments and suggestions to earlier versions of this text. Translated by Monica Chojnacka.

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M. Fusaro et al. (eds.), *General Average and Risk Management in Medieval and Early Modern Maritime Business*,
https://doi.org/10.1007/978-3-031-04118-1_6

semantic field of maritime law.[1] Its etymology, however, remains a mystery. Lexicographers of the past have proposed numerous hypotheses, taking into consideration any word belonging to disparate linguistic stocks with whatever morphological and semantic affinities that may indicate a shared origin.[2] Thus, we have the Germanic word *haverey*, the French *havre*, and the English *haven*, whose first meaning is 'port', the high-German word *vara*, which stands for 'risk', and even the Persian *avare*, which translates to the English 'ledger'. According to the most recent dictionaries, only a couple of possibilities remain: some scholars lean towards an Arabic origin, suggesting a derivation from the noun *awār*, that is 'damage', from which is derived *awārīya*, or 'damaged goods'[3]; while others—and this is the most accepted hypothesis—point towards a Byzantine origin, but with certain disagreements as to the exact source of the word. Some believe the term derives from the Greek word *βάρος*, or 'weight', plus the alpha privative. In this manner one would refer to lightening a ship's load, the immediate aim of the jettison, which is the first paradigmatic form of Average as described by the so-called *Lex Rhodia*, and acknowledged by the *Digest*.[4] Others call attention to the adjective *βαρεῖα* (pronounced [*varìa*]), the abbreviated form of *Συμβολὴ βαρεῖα* (sumbolè bareîa), or 'onerous contribution'.[5] However, none

[1] The English term, meaning damages compensated by contribution, can be found from the end of the fifteenth century. It begins to be used to indicate the mathematical mean from the middle of the eighteenth century, see *The Oxford Dictionary of English Etymology*, *ad vocem*.

[2] Quintin Weytsen leaned towards a Greco-Byzantine derivation. See Q. Weitsen, *Tractatus de Avariis. Cum observationibus Simonis a Leeuwen et Matthei de Vicq* (Amsterdam: H. & T. Boom 1672), 2–4, and note 2 of de Vicq. Others, like Marcus Zuerius van Boxhorn (Boxhornius) or Johan Locken (Loccenius), imagined a French or German origin. J. Loccenii, *De jure maritimo et navali* (Stockholm: J. Janssonii 1652), 208–209; J. Marquardi, *De iure mercatorum et commerciorum* (Frankfurt: Th. & M. Götzii 1662), 390.

[3] G. B. Pellegrini, *Gli arabismi nelle lingue neolatine con speciale riguardo all'Italia* (Brescia 1972), 95. See also the contribution of Hassan Khalilieh in this volume.

[4] A. Ghiselli, 'Greco abarês, neogreco abaros e l'italiano «avaria»', *Paideia*, VIII (1953): 365–368; and A. Castellani, 'Capitoli d'un'introduzione alla grammatica storica italiana. IV: Mode settentrionali e parole d'oltremare', *Studi Linguistici Italiani*, 14 (1988): 165–172.

[5] H. and R. Kahane, 'Italo-byzantine etymologies, v. Avaria «average»', *Bollettino dell'atlante linguistico mediterraneo*, I (1959): 210–214. Two different forms likely derived from the term *sumbolè bareîa*: (1) *bareîa* [*varìa*]; the variation *avaria*, with the agglutination

of the most ancient texts that lay the groundwork of the elusive law of Rhodians actually use the word *avaria*, but rather several terms all meaning 'contribution' (*contributio*, *συμβολή* – *simvoli* – *συνεισφορά* – *syneisforá*). This is the case in Book 14, Title 2 of the *Digest* (sixth century), taken from the legal *Sententiae* of several jurists (third century CE), but also from the *Νόμος Ροδίων Ναυτικός*, a compilation of Rhodian, or pseudo-Rhodian, law from the seventh century, and finally from the *Basilica*, a late re-elaboration of Roman law from the ninth century.[6] We must wait for the first vernacular compilations of maritime laws to discover the earliest uses of the term.

If the dating were not controversial, the *Ordinamenta et consuetudo maris* from the city of Trani would allow us to locate the use of the expression '*andare a varea*' (in the sense of 'to be refunded by contribution') in the year 1063.[7] Nonetheless, it is fairly certain that the text of the *Ordinamenta* that has come down to us is a translation into Italian from the fourteenth or fifteenth century. Therefore the first evidence of the term Average (in Italian: *avaria*) can be found in the Genoese notarial acts collected by Renée Doehard which date to the end of the twelfth century,[8] while the first certain appearance in a normative text is that of the *Statuta ed ordinamenta super navis* from Venice in 1255. Here,

of the article's vowel, widely used in Genoa, where we have evidence from the thirteenth century, and in the Tyrrhenian region; (2) *barèa* [*varèa*], the variation *varèa*, widely used in the Adriatic region, found in Venice from 1255 (but see Footnote 8), and then Zadar, Split and Trani from the beginning of the fourteenth century, and Ancona from the middle of the same century. There are some interesting thoughts on the topic in A. Lefebvre D'Ovidio, 'La contribuzione alle avarie comuni dal diritto romano all'ordinanza del 1681', *Rivista del diritto della navigazione*, 1 (1935): 130–140.

6 J. M. Pardessus, *Collection des lois maritimes antérieurs au XVIII^e siècle*, 6 vols (Paris: Imprimerie royale 1828–1845), I: 179–208 (Basilici), 231–260 (Νόμος ροδίων ναυτικός). For the most recent editions of these texts, see the contribution of Daphne Penna in this volume.

7 Pardessus, *Collection des lois maritimes*, V: 237–247; E. Besta, 'Legislazione e scienza giuridica dalla caduta dell'impero romano al secolo decimoquarto', in P. Del Giudice ed., *Storia del diritto italiano* (Milan 1925), 666–669.

8 The first of the deeds collected by Doehard containing the term *avaria* is dated March 7, 1200: «Ego Iacobus de Palma confiteor me accepisse […] cannas duecentas unam de telis de Rens, et constant cum dricto consulum et rova et avariis lib. octuaginta septem den. ian.». Many examples follow this, all with the meaning of 'added expense for maritime taxes.' In Provence and Catalonia the first uses of the term are in, respectively, 1227 and 1258, while in Florence the term is in common use from the end of the thirteenth century. Castellani, 'Capitoli d'un'introduzione', 168–169.

chapter LXXXIX, in the section 'De dapnis', establishes that '…si alicui navi vel ligno evenerit quod Deus avertat, de arboribus antenis & timonibus dapnum, illud (non) sit in varea. Et hoc intelligimus in nave, & omni ligno de milliaris CC. & inde supra'.[9]

By the sixteenth century, the word seems to have been adopted by the majority of European languages, long after the reception of the juridical principle asserted by the *Digest*, and in each language with an identical ambivalence of meaning, since the word *avaria* can mean both

[9] "If any ship or boat should suffer damage, God forbid, to the masts, yards and rudders, that damage should (not) be average. And this we mean for ships and for every boat of two hundred *migliara* and more". *Capitolare nauticum pro emporio veneto anni MCCLV Duce Raynerio Zeno. Ex antiquo codice quirino*, in P. Canciani ed., *Barbarorum leges antiquae cum notis et glossariis*, 5 vols (Venice: Coletium et Rossi 1781–1792), V: 341–366, in part. ch. lxxxviii, 359. The codex that contains the *Statuta* of Doge Raniero Zeno, conserved in the *Querini* library in Venice, highlights a correction. The grammatical particle 'non' seems to have been added later, and the commentators note that the correction is congruent with the rule's evolution, in that it departs from a broad concept of indemnification for the damage, the same that is stated by the *Νόμος ροδίων ναυτικός* only to encounter a series of increasing limitations later. I will simply observe that, in the *Statuta*, the term *varea* actually appears this one time with the meaning of contribution, and that more often, when the damage must be shared, the obligation is said to be «de comuni avere navis, & de ipsa nave» (of the owning common stock of the ship and of the ship itself); or «de comune avere ipsius navis, & eciam de ipsa nave, secondum usum» (of the owning common stock of the same ship and also of the ship itself, according to custom), etc. On the other hand, regarding damages verified «occaxione cazandi aliquem navem» (hunting for some ships), it is also said that «dapnum illud sit in avariam averis ipsius navis, & eciam de nave secundum usum» (that damage is in average of the owning common stock of the same ship and also of the ship according to custom), or furthermore, where the contribution of the passengers (*peregrini*) is discussed, the compensation for damaged the masts, yards and rudders is once again excluded, «quia dampnum illud in auria esse non debet, ut superior continetur» (because that damage does not have to be average, as stated above). This specification alone is enough to shed doubt on the conjectures of the commentators regarding the correction mentioned above, but besides this, it is worth noting the use of *avaria* (or *auria*) in place of *varea*, which is the most common version from here on in the Veneto and Adriatic areas, and the substantive equivalent of the expressions «de comune avere navis» (of the ship's owning common stock) and «in avariam averis ipsius navis» (in average of the owning common stock of the same ship). The form *varea*, with the tonic stress on 'e', was consolidated only later, and Castellani theorizes that it is a matter of hypercorrection in a notarial environment, where the etymon of the term was unknown, and thus the suffix 'ìa' was considered a vulgarism, to be amended in a Latinized form—'ea'. On this Castellani, 'Capitoli d'un'introduzione', 172.

the damage itself as well as its remedy, that is, the compensation by contribution, as prescribed by law.[10]

The Only Greek Law Handed Down to Us in Living Form?

Shifting from words to actual objects, it must be said that there is a general consensus on the antiquity of the law of Average. Some even believe that its tradition has remained substantially faithful to the original source, to the point of claiming that the redistribution of the economic damage of the jettison—the first case of General Average (GA)—is 'the only Greek law that has come to the modern world in living form'.[11]

[10] These are exactly the two different meanings on which the most valid etymological hypotheses rest. We should add that one can find an analogous polysemy in another word of uncertain etymology, which has a key role in the conceptual set-up of the law: the word *causa*. The Romanist Yan Thomas, and more recently Giorgio Agamben, have explored this unsolvable semantic bipolarity: *causa* is the process but also its grounding; it is the suit, or the trial, but also what gives it rise; see G. Agamben, *Karman. Breve trattato sull'azione, la colpa e il gesto* (Turin 2017), 9–15.

[11] The principle of the collective distribution of individual damage upon certain conditions is certainly very ancient, and is known also beyond the Greco-Latin region. Something similar to general damage was practiced in 3000 BC by Chinese merchants who traded along the Yangtze river, and the damage inflicted by desert pillagers on the caravan trade were distributed equally among all of the merchants according to a practice legalized by Hammurabi's Code around 1760 BC, in M. Fitzmaurice, N. Martinez, I. Arroyo and E. Belja eds., *The IMLI on International Maritime Law*, vol. II: *Shipping Law* (Oxford 2016), 580. Nonetheless, what the *Lex Rhodia* was exactly remains a mystery. According to an interesting hypothesis of Purpura, the good reputation swirling around the *Lex Rhodia* from Antiquity lies in practice of renouncing the violent appropriation of the stranger's goods on the basis of ancient laws of reprisal (*sylai*), and of the plunder of shipwrecks (*ius naufragi*), a renunciation carried out to encourage trade. This renunciation, which allowed the Rhodians to acquire a reputation as a hospitable people, was nonetheless compensated for by the imposition of customs duties on the goods that entered the port. These constituted, so to say, the generative nucleus of a corpus of laws that was wider than the few fragments included in the *Digest*, all dealing with the aspects of greater interest to classical jurists and the compilers of Justinian, namely the matters connected to the jettison, the Average and the *derelictio*, that is the shipwreck rules. The only exception is D 14.2.9, which specifically concerns the fiscal exemption of shipwrecks. In brief, according to Purpura, the principle of distributive justice that governed the distribution of customs obligations could be applied also to the redistribution of the damage suffered for sake all. «Just as the fiscal charges were distributed upon all those loading their goods on a ship arrived at Rhodes and subjected to customs, so the same modes to levy could to be applied for refunding the damages. Merchants who had suffered an

In reality, we have no direct testimony about the famous *lex Rhodia de Iactu*, which we know in the form of the version in the *Digest*, where first and foremost one finds a disavowal of the mutual obligation between shippers, which became a central element of subsequent legislation. The reasons for the denial are exquisitely technical and formal. Roman law only acknowledges obligations arising from a contract or an offence, and since the contribution of jettison has to be framed within the system, the law can find no better solution than tracing it back to the *locatio conductio* contract.[12] In practice, nothing changes, but by attributing the *ex locato* action to the injured shipper against the *magister navi*, and the *ex conducto* action to the *magister navi* for recourse against the other shippers, it is possible to provide a logical explanation for a situation where two shippers not bound by any contract are nevertheless obliged to provide compensation on the one hand and to be compensated on the other.[13]

Regardless of the legal technique chosen, the fundamental device which has been thought unchanged over time and which is axiomatic for the modern theory of Average is the crucial distinction between General

Average could seek refuge in the port of Rhodes, where, being exempt from the customs duties and having the opportunity to repair their vessels in shipyards, they could unload the damaged goods, evaluate losses, and redistribute them among them». On this see: G. Purpura, 'Ius naufragii, sylai e lex Rhodia. Genesi delle consuetudini marittime mediterranee', *Annali dell'Università di Palermo*, 47 (2002): 275–292. Whatever the original law of the Rhodians was, the *Lex Rhodia* incorporated in the Roman system is not a law in the strict sense, but rather a collection of practices and rules of custom developed in the eastern Mediterranean during the Hellenic period. The term "law" here should be understood in the sense of having an obligatory significance among merchants, independent of the formal recognition of constitutive power, as, more generally, one might speak of *lex mercatoria*.

[12] On these issues see also the contributions of Ron Harris and Daphne Penna in this volume.

[13] E. Chevreau, 'La lex Rhodia de iactu: un exemple de la réception d'une institution étrangère dans le droit romain', *Legal History Review*, 73 (2005): 67–80. Chevreau recognizes the reception of the legal principle, even as he refutes the technical reception. The problem of the reception of the *Lex Rhodia* into the Roman system has long been debated. For an exhaustive bibliography on the subject, in addition to Chavreau, see J. J. Aubert, 'Commerce', in D. Johnston ed., *The Cambridge Companion to Roman Law* (Cambridge 2015), 213–245; Id., 'Dealing with the Abyss: The Nature and Purpose of the Rhodian Sea-Law on Jettison (*Lex Rhodia de iactu*, D 14.2) and the Making of Justinian's Digest', in J. Cairns and P. Du Plessis eds., *Beyond dogmatics: Law and Society in the Roman World* (Edinburgh 2007), 157–172.

Average which is 'voluntary', corresponding to the damage consciously sought out with the intention of avoiding a more serious one; and Particular Average (PA) which is accidental, that is the damage from an irresistible or unforeseeable external cause. The first was declared indemnifiable for reasons of equity, the other type falls to the owner of the damaged goods on account of the maxim *casum sentit dominum* (accident is felt by the owner). The entire Rhodian law seems to rest on this distinction between human causality and external randomness. The principle is never formulated in the abstract, but can be deduced from the rules governing the various concrete cases, starting with D. 14.2.1, extracted from the *Sententiae* of the jurist Paulus, who writes that 'the Rhodian law provides that if cargo has been jettisoned in order to lighten a ship, the sacrifice for the common good must be made good by common contribution'.[14]

The *Digest* considers the most frequent cases: the jettison of goods, the sacrifice of ship's equipment, and the ransom paid to pirates, without ever generalizing the principle. It would nevertheless have allowed the jurisprudence to include by analogy among GA all damages and all extraordinary and unforeseen expenses voluntarily borne for sake of all.[15]

[14] "Lege Rhoda cavetur, ut, si levandae navis gratia iactus mercium factus est, omnium contributione sarciatur quod pro omnibus datum sit": *The Digest of Justinian*, translation edited by A. Watson, 5 vols (Philadephia 1985), I: 419. From excavations conducted on the site of Rhodes' ancient port in 1995, there emerged a column that can be dated to between the second and third centuries. It bears in an epigraph a fragment of the *Sententiae* of Julius Paulus, reported in the *Digest* 14.2, with slight variations; on this G. Marcou, 'Nomos Rhodion Nautikos e la scoperta a Rodi di una colonna di marmo con l'iscrizione di Paolo (D 14 2)', in *Studi in onore di Lefebvre d'Ovidio* (Milan 1995), 609–640, 614. This finding re-opens the discussion around dating of the *Sententiae*, which tradition places at the end of the third century. Purpura and Liebs nonetheless suspect that this may be an unintentional falsehood, a commemorative monument dating to the Italian Occupation of the 1920s and '30s, in this case the question remains why the dictate departed from tradition; on this see Purpura, 'Ius naufragii, sylai e lex Rhodia', 275–292; I. Ruggiero, 'Immagini di Ius receptum nelle Pauli Sententiae', in *Studi in onore di Remo Martini*, 3 vols (Milan 2009), III: 425–470; D. Liebs, 'D. 14,2,1 Auf einer Inschrift aus Rhodos', *Iuris Antiqui Historia, An International Journal on Ancient Law*, 10 (2018): 161–167.

[15] Mattheus De Vicq observed that the *lex Rhodia* is primarily concerned with jettison, while in the Christian era compensation by contribution was expanded upon by commentators, like Azo of Bologna, François Douaren e Arnold Vinnius, "ad quodvis damnum, quomodocunque factum, modo navis levandae, servandae, comunisve periculi removendi causa" (to any damage, howsoever done, for the purpose of relieving the ship, preserving it and removing the cause of common danger); see Weitsen, *Tractatus de Avariis*, 14.

It is a tradition that developed over time, spreading across the Mediterranean and then throughout Europe, through the statutory rules of the Italian maritime republics, the fundamental text of the *Consolat de Mar* of the Catalans and Aragonese (fourteenth century), the *Róles d'Oléron* supposedly promulgated by Eleonor of Aquitaine towards the end of the thirteenth century,[16] and the compilation of Wisby (fourteenth century), to mention only the most important texts. The voluntary nature of the damage as a theoretical principle finally reached a clear formulation in the first juridical treatise dedicated to Averages by the Zeelander jurist Quintin Weytsen. In the *Tractatus de Avariis*, published posthumously in Flemish in 1617, and later in Latin in the influential Leiden edition of 1651, Weytsen begins his explanation with a definition that was destined to become the classic one: 'Average is the common contribution of the things found in the ship in order to make good the damage voluntarily inflicted upon items, whether belonging to merchants or the ship, to the end that lives, ship, and the remaining goods should escape unscathed'.[17]

The principle was made a general one, and thus applicable even beyond the context of maritime transport. A classic example is the house that is torn down to contain a fire and prevent the flames from reaching the surrounding homes. The analogic extension of the law was the work of the Medieval school of Glossators. In particular, it appears that the *Glossa Ordinaria*, attributed to Accursius, played a decisive role, on this see: B. Zalewski, 'Creative interpretation of *lex Rhodia de iactu* in the legal doctrine of ius commune', *Krytyka Prawa*, 8 (2016): 173–191; see also J. H. A. Lokin, F. Brandsma and C. Jansen, *Roman-Frisian Law of the 17th and 18th Century* (Berlin 2003), 252–268, where the authors discuss in detail the case of Sierck Lieuwes versus the States of Friesland by reference to the opinions of medieval jurists on the *lex Rhodia de iactu*.

[16] Some scholars have recently suggested backdating the compilation to the twelfth century. An account written in 1329 claimed that Richard I of England (1189–1199) was the author of the laws and had written them at Oléron on his way back from the Holy Land, but this seems highly unlikely. E. Frankot, *'Of Laws of Ships and Shipmen'. Medieval Maritime Law and Its Practice in Urban Northern Europe* (Edinburgh 2012), 12. On the Rolls of Oléron see also: T. J. Runyan, 'The Rolls of Oleron and the Admiralty Court in Fourteenth Century England', *The American Journal of Legal History*, 19 (1975): 95–111.

[17] "Avaria est communis contributio rerum in navi repertarum, ad sarciendum damnum bonis quorundam mercatorum sive nauclerorum eum in finem sponte illatum, ut vita, navis, & reliqua bona salva evadant": Weytsen, *Tractatus de Avariis*, 1. For a profile of the author's biography and the editorial developments see J. N. Paquot, *Memoires pour servir a l'histoire litteraire des dix-sept Provinces des Pays-Bas, de la Principauté de Liege, et de quelques contrées voisines*, 18 vols (Leuven: Imprimerie academique 1762), X: 296–298; see also: D. De ruysscher, 'How Normative were Merchant Guidebooks? Of Customs, Practices, and… Good Advice (Antwerp, Sixteenth Century)', in H. Pihlajamäki,

Voluntary, Involuntary, and Mixed Acts

Average is the contribution that should compensate the damage *sponte illatum* (voluntarily inflicted). The problem is that while 'voluntary' is a straightforward idea in the abstract, it is much more complicated to establish concretely in a situation at sea. When adverse sea conditions are taken into account, any damage suffered can be described as a sacrifice, due, at least in part, to a desire to save the ship. Regardless of the extent one attributes to free will, intention, that is the faculty of conscious decisions, was already the main criterion of liability as early as Aristotle, who in the third book of the *Nichomachean Ethics* considered it essential to distinguish voluntary acts from involuntary ones, because, he says, from the firsts comes praise and blame, while from the latter there comes, if anything, forgiveness, and sometimes pity. Human acts are involuntary when they are caused by force (or even ignorance). In this case, one does not act, but suffers on account of an external cause, 'for example', says Aristotle, 'when a ship's master is carried somewhere by the weather, or by people who have him in their power'.[18] The voluntary act, on the other hand, presupposes choice and deliberation, critical but somewhat mysterious moments, which morally frame the action. Before examining the fundamentals of the voluntary act, however, the philosopher warns: 'But there is some doubt about actions done through fear of a worse alternative, or for some noble object'.[19] In fact, some actions from a certain point of view may appear forced, and from another free; and if there is a paradigmatic example of this mixed genre, it is precisely the action of jettison. 'A somewhat similar case', Aristotle writes, 'is when cargo is jettisoned in a storm; apart from circumstances, no one voluntarily throws away his property, but to save his own life and that of his shipmates; any sane man would do so. Acts of this kind, then, are "mixed" or composite; but they approximate rather to the voluntary class. For at the actual time when they are done they are chosen or willed; and the end or motive of

A. Cordes, S. Dauchy, D. De ruysscher eds., *Understanding the Sources of Early Modern and Modern Commercial Law: Courts, Statutes, Contracts, and Legal Scholarship* (Leiden 2018), 145–165; and G. P. Dreijer and O. Vervaart, 'Een tractaet van avarien – 1617', *Pro Memorie*, 21 (2019): 37–41.

[18] Aristotle, *The Nichomachean Ethics*, with an English translation by H. Rackham (Cambridge, MA 1956), III [1110a], 117.

[19] Ibid.

an act varies with the occasion, so that the terms "voluntary" and "involuntary"', he concludes, "should be used with reference to the time of action".[20]

In the ideal world of abstract norms, the debt of voluntary sacrifice is transferred immediately and proportionally on those who have taken advantage of it, but in the real world some time elapses between the moment in which one acts, and the legal recognition of the precise obligations that arise from that same action. This would not be a problem were it not for the fact that the evidence used to establish a posteriori the historical truth of what happened at sea is necessarily imperfect, to the point that a solemn oath is necessary to make it acceptable. First of all there is the damage itself, but it is an ambiguous proof because in itself it tells us nothing about its causes: a breach in the hull may be due to the sea that pushed the ship onto the rocks without the men being able to do anything about it, but it can also be explained by the decision to beach the ship to prevent a storm from sinking it, and this is at any rate assuming the damage was truly accidental and not incurred through inexperience, negligence or malice. Choice is the main criterion that would make it possible to distinguish a General Average from a Particular one. But choice has the defect of being an internal act, at best only hinted at by the concrete evidence. The reconstruction of the factual circumstances and the range of reasonably expected behaviours can lead to moral certainty that a voluntary act has actually taken place. Nonetheless, it is necessarily an act of faith, because in the end the only custodian of truth is the master who makes the damage declaration.

Thus, the boundary between human causality and external randomness, and consequently between General and Particular Average, remain an elusive one in practice, despite all principles and distinctions of law. While it is a boundary that should be maintained in order to strengthen the seafarers' sense of responsibility and to limit so-called moral hazard, it must always be borne in mind that it is an artificial and uncertain distinction. It should also be noted, however, that a certain tolerance of abuses works as a tacit incentive to sail, especially in a context of extreme insecurity and uncertainty. Once again, when faced with a choice between fraud and the cessation of any maritime enterprise, the lesser evil is preferred, at least as long as improvements in managing the uncertainty of navigation

[20] *Ivi*, 119.

do not allow for a more rigorous approach. Until this point was reached, it was likely very easy, without impartial witnesses, to replace worn-out equipment by inventing fantastical storms from which it had been possible to escape only thanks to the sacrifice of masts, sails, riggings, ropes, and tenders.

Damage resulting from wear and tear and the natural deterioration of materials is expressly excluded from the *Digest*, but it took very little for these losses to be transferred the shoulders of the freighters. At the end of the eighteenth century, an era in which tolerance for such abuses was no longer justifiable, the Livornese lawyer Ascanio Baldasseroni could joke that, with their fraudulent depositions, masters and ship-owners repeated the miracle of the legendary 'galley of Salamis, preserved for more than a thousand years by the Athenians, from the time of Theseus to the reign of Ptolemy Philadelphus, which was always claimed to be the same as that with which Theseus, victor over the Minotaur, has used to return to the island of Crete'.[21]

The Scandal of *Νόμος Ροδίων Ναυτικός*

What in the time of Baldasseroni was considered an abuse, in more ancient and uncertain times represented standard practice, admitted and legitimized by custom. For this we need to go back about a thousand years, to the time of Emperor Leo III the Isaurian (r.717–741AD). A compilation of rules that in that period regulated navigation in the eastern Mediterranean, the *Νόμος Ροδίων Ναυτικός*, demonstrates that the distinction between voluntary and involuntary damage, which is supposedly central to the *Lex Rhodia de iactu*, was dropped for several centuries, at least in that part of the world. The pseudo-Rhodian law of the *Νόμος*, in fact,

[21] A. Baldasseroni, *Trattato delle assicurazioni marittime*, 4 vols (Florence: Tipografia Bonducciana 1803 [Ist ed. 1786]), IV: 14–15. The famous paradox of Theseus' ship originates from a passage in Plutarch's *Parallel Lives*. The problem, which continues to challenge philosophical thought, is to know whether the change in matter implies a change in identity, or whether identity is preserved along with form; on this S. Ferret, *Le Bateau de Thésée. Le problème de l'identité à travers le temps* (Paris 1996); D. Wiggins, *Sameness and Substance Renewed* (Cambridge 2012). Worth noting that the reference to Ptolemy Philadelphus is a mistake by Baldasseroni, as it should instead be Demetrius of Phalerum (c. 350–280 BCE).

prescribes contribution for any damage to the ship and the cargo, with culpable or malicious damage as the only exceptions.[22]

The fact that for several centuries the voluntary nature of the damage was no longer perceived as a crucial aspect—at least in much of the Mediterranean—is also suggested by medieval Italian statutes, particularly from those of the Adriatic area. As these statutes provide scanty provisions regarding Averages, they must presuppose a broader body of legislation, i.e. the *Νόμος*, which the statutory rules were intended to qualify.[23] This is the case, for example, for the laws of Trani, which restore the principle of voluntary action, but only for damage relating to the ship's masts, rigging, sails, and other equipment. It is also the case for the Venetian statutes, where, without prejudicing the general stipulations of the *Νόμος*, certain limitations were established over time, starting with the exclusion in 1255 of the 'damage to masts, yards and rudders'. In the same way, an order of 1428, at the time of the doge Francesco Foscari, limits contribution to two cases, jettison and robbery: 'Average shall not be given except in the case of jettison or theft, i.e. only for such things as are under deck and recorded in the clerk's book'.[24]

The Adriatic tradition is said to have finally surrendered to the completeness of the Catalan *Llibre del Consolat de Mar* in the late fifteenth century, thus remedying the departure from the principles established by the *Lex Rhodia*. However, in lieu of new and more in-depth

[22] In Ch. IX of the *Νόμος* jettison is defined in analogous terms to those in *Digest*, but the consultation of the ship's company is required, and grounds for compensation is extended to the damages caused by piracy: "In the same way if goods are carried away from enemies or by robbers or … together with the belongings of sailors, these too are to come into the calculation and contribute on the same principle". Ch. X excludes compensation for culpable or malicious damage, and explains further: "If there is no default either of the captain or crew or merchant, and a loss or shipwreck occurs, what is saved of the ship and cargo is to come into contribution". The last paragraph of Ch. IX, which Ashburner suspects was added at a later time, takes into consideration contribution from a contractual point of view: "If there is an agreement for sharing in gain, after everything on board ship and the ship itself have been brought into contribution, let every man be liable for the loss which has occurred in proportion to his share of the gain": W. Ashburner, *Νόμος Ροδίων Ναυτικός. The Rhodian Sea-Law* (Oxford 1909), 87–91, and more generally the introduction, especially ccli–cclxxxv.

[23] Lefebvre D'Ovidio, 'La contribuzione alle avarie comuni', 70.

[24] "Vareas dari non debere nisi in casu jacturae, aut predae, videlicet de his rebus tantummodo quae sub coperta essent, et in libro scribani scriptae": Pardessus, *Collection des lois maritimes*, V: 64, K. Nehlsen-von Stryk, *L'assicurazione marittima a Venezia nel XV secolo* (Rome 1988), 222–223.

research which might allow for firmer conclusions, there are indications that the tradition of *Νόμος* actually continued to influence Venetian-Adriatic practice well beyond the date of its presumed demise.[25] Even the idea of deviation from the main line of the Roman law, in my opinion, is not totally convincing. Since contribution is the common remedy for those voluntary damages covered by GA and for involuntary covered by mutual insurance, we might consider the possibility that two legal institutions initially led a confused co-existence, from which later emerged two concepts clearly distinguished from one another.

The Catalan *Germinamento*

The co-existence of two types of contribution, one arising directly from law and the other contractual, is demonstrated by various chapters of the Catalan *Llibre del Consolat de Mar*, although interpreters from at least the seventeenth century have misunderstood their meaning. Chapter 192 of the *Consolat* considers accidental and unavoidable damage, and stipulates contribution for that damage in situations where there had been

[25] Another worthy subject is the question of the *Νόμος*'s influence on Islamic maritime law. The discovery of a treaty of maritime law of the Maliki School of the XI century (*Kitāb Akriyat al-Sufun wal- Nizā' bayna Ahlihā*) in the library of the monastery of San Lorenzo de El Escorial has allowed Hassan Khalilieh to make a comparison with the *Νόμος*, see H. S. Khalilieh, *Admirality and Maritime Laws in the Mediterranean Sea (ca. 800–1050). The Kitāb Akriyat al-Sufun vis-à-vis the Nomos Rhodion Nautikos* (Leiden-Boston 2006). There are certainly many points of contact, but also differences, starting with the discipline of General Average. Muslim jurists recognize the jettison and compensation by contribution for the damage suffered for the sake of all, but most of these exclude personal, non-mercantile property, and the ship and its equipment, while the sailors are deemed not responsible for any non-malicious damage to the cargo. 'Muhammad Ibn 'Abd al-Hakam states: "Our fellow jurists unanimously agree about the exclusion of a vessel from the regulations of jettison. By contrast, our 'Irāqī fellow jurists contend that the vessel, the vessel's slaves, tackle, and all on board that are acquired for commercial purposes or private possessions, all of these enter into the value of jettison", see *Ivi*, 307–308. The Average contribution thus pertains only to the owners of the cargo. Merchants and seafarers have a distinct legal status, and after all the treatise is merely a type of handbook to coordinate maritime law with religious law, for the use and consumption of freighters, as can be seen from the title, which literally means: *Treatise Concerning the Leasing of Ships*. The irresponsibility of the carriers regarding the damages suffered by the merchandise required a strict surveillance on the part of the merchants, so that under these circumstances the need to accompany the merchandise during the journey was particularly urgent. J. L. Goldberg, *Trade and Institutions in the Medieval Mediterranean: The Geniza Merchants and their Business World* (Cambridge 2012), 106–113.

prior agreement to that effect between the master of the ship and the merchants. The commitment to mutualise this risk can be made before the start of the voyage (Ch. 229), but also in the face of an impending danger, and even in the absence of the merchants, provided that the master receives the consent of the boatswain and other officers of the ship. This is the fateful institution of the *germinamento*, which has given rise to many misunderstandings for various reasons, but above all because the legal significance of the 'consultation', or on-deck deliberation foreseen in Ch. 192 has been confused with that of the other consultation which the *Consolat* required (though not strictly) before proceeding with the voluntary jettison as outlined in Ch. 97.

If the master judged that there was no other option than lightening the ship by jettison, the *Consolat* demanded that he make his resolution known to the concerned parties and obtain their consent (which was nevertheless not binding). The master was required to declare the following: 'Merchants, if we do not jettison, we are in great hazard and are faced with losing both persons and property, and everything on board, and, if you merchants desire the jettison, with the will of God we would be able to save persons and a great part of our property; and if we do not jettison, we are faced with losing ourselves and all our property'.[26] Unless the master had lost his wits, it was unlikely that a merchant with sense would want to oppose this decision. However, the *Consolat*, while requiring the consultation of the merchants and other bureaucratic formalities—which in this case is called a plain or regular jettison—in Ch. 281 admits that in the event of imminent danger it is rather rare that one has the opportunity to consult the interested parties, or even to write

[26] "Senyors mercaders si nos nons alleuiam, som a gran ventura e a gran condicio de perdre les persones e lo hauer e tot quant açi ha. E si vosaltres senyors mercaders voleu que alleuiassem, ab la voluntat de Deu porem estorçre les persones e gran partida del haver e si nos non gitam serem a ventura e a condicio de perdre a nos meteixos e tot lo hauer": E. Moliné y Brasés ed., *Les costums marítimes de Barcelona universalment conegudes per Llibre del Consolat de mar* (Barcelona 1914), Ch. 99, available at: http://www.cervantesvirtual.com/obra-visor/les-costums-maritimes-de-barcelona-universalment-conegudes-per-llibre-del-consolat-de-mar--0/html/ff398bb2-82b1-11df-acc7-002185ce6064_322.html (last accessed 24 December 2021). On Catalan commerce and the *Consolat*: M. Del Treppo, 'Assicurazioni e commercio internazionale a Barcellona, 1428–1429', *Rivista Storica Italiana*, 69 (1957): 508–541, and 70 (1958): 44–81; Id., *I mercanti catalani e l'espansione della corona d'Aragona nel secolo XV* (Naples 1972), E. Maccioni, *Il Consolato del mare di Barcellona. Tribunale e corporazione di mercanti, 1394–1462* (Rome 2019).

down a list of the goods that ended up in the sea. In the midst of a storm, everyone throws whatever comes to hand first, and it is therefore not possible to deny the validity of 'irregular' jettisons, which are referred to as 'quasi-shipwrecks'. The 'irregular' was in fact the normal procedure, so much so that at the end of the seventeenth century, the famous Genoese jurist Carlo Targa could report having encountered 'just four or five' cases of regular jettison 'in sixty years of maritime practice', 'and in each of these cases there was criticism that the case appeared excessively premeditated'.[27] Since the terrifying force of a storm remained the same between the fourteenth and seventeenth centuries, while there was, if anything, an improvement in shipbuilding and nautical science, it is logical to think that the regular jettison was unlikely even at the time of the *Consolat*'s compilation. In spite of this, in 1588 the reformers of the Genoese Statutes felt the need to burden the procedure with additional formalities, impossible to carry out and bordering on the ridiculous, such as the election on board of a sort of 'Magistracy of the Jettison' formed by 'three consuls, two of whom are chosen from among the officers and one from the said merchants'.[28]

In conclusion, the obligation to consult those on board the ship remained, although it was clearly regularly disregarded. The persistence of a norm which was completely unenforceable in practice, can only be explained by the need to make the voluntary nature of sacrifice communicable and transparent. Levin Goldschmidt, who interpreted General Average as a 'company against danger', identified the consultation of the ship's board as the genesis of this contract.[29] I rather believe, along with Antonio Lefebvre d'Ovidio, that the consultation and all the other

[27] C. Targa, *Ponderationi sopra la contrattatione marittima* (Genoa: A.M. Scionico 1692), 253.

[28] "…et, non existentibus mercatoribus, duo sint ex officialibus prorae et unus ex officialibus puppis: qui tres consules, auctoritatem habeant projicendi in mare quid eis necessarium videbitur pro residui salvatione" (…and there being no merchants, two shall be of the bow officers, and one of the stern officers. And these three consuls shall have authority to cast into the sea what they think necessary to save the rest): Statuto 16 dic. 1588, Lib. IV, cap. XVI, *De jactu et forma in eo servanda*, in Pardessus, *Collection des lois maritimes*, IV: 530.

[29] L. Goldschmidt, 'Lex Rhodia und Agermanament der Shiffsrat: Studie zur Geschichte und Dogmatik des Europäischen Seerechts', *Zeitschrifts für gesamte Handelsrecht* (ZHR), 35 (1889): 37–90, 321–395 (Italian translation by G. Carnazza) (Catania: Martinez 1890).

prescriptions regarding the regular jettison do not speak to the contractual nature of General Average, but should be interpreted instead as 'a formal act, carried out as proof of the necessity of the act, against those who may wish to contest the jettison'; and, furthermore, as a 'guarantee of the opportunity for the jettison itself', in case there were doubts regarding the master's expertise.[30]

If the consultation preceding the jettison essentially performs a probative role, that is, serving to make explicit the voluntary nature of sacrifice, the *germinamento* presents contractual features, since it creates a reciprocal obligation that did not exist before, not regarding a voluntary loss but rather an inevitable, and therefore involuntary, one. Ch. 192 of the *Consolat* shows this clearly: 'When any ship or boat has to be beached in bad weather, or in any other circumstances, the vessel's master must say and declare the following, at that point and at that hour to the merchants in the presence of the *scrivano*, the boatswain, and seamen: 'Gentlemen, we cannot hide that we have to beach the ship, and I propose to proceed as follows, that the ship cover the goods, and the goods cover the ship….'.[31] Here we are no longer 'in great hazard', nor must we put hope in the 'will of God'. The force of the sea has taken over, and the master has only one choice left: he can declare that it is 'every man for himself', or he can propose to the merchants to face adversity together, mutually committing to share the damage equally. Here the consent of the merchants, unlike their consent in the consultation that precedes the jettison, is crucial. It is already clear that their absence poses a problem, remediable (up until a certain point) with a legal fiction, but there is no doubt that their consent creates a new bond of mutual obligation. The contractual nature of the obligation is moreover confirmed by the variety of conditions that can be agreed, since it is clear that the obligation can be defined variously to cover different eventualities.

The situation is now clear. The legal obligation that in the *Νόμος* pertains to any sea risk must cede part of its domain, while the obligation to bear involuntary damage mutually remains subject to the consent

[30] Lefebvre D'Ovidio, 'La contribuzione alle avarie comuni'.

[31] "Nau o leny qui haia a ferir en terra per fortuna o mal temps o per qualsevol altre cas se sia, lo senyor de la nau o leny deu dir e manifestar en aquell punt e en aquella hora als mercaders en oida del scriua e del notxer e dels mariners: senyors, nos poden ascondir que no haiam a ferir en terra, e yo diria en axi: que la nau anas sobre los hauers, e los hauers sobre la nau". *Les costums marítimes de Barcelona*, Ch. 195.

of the interested parties. Yet, when we examine the history of mercantile laws, we find a curious misunderstanding. Here is how, at the beginning of the eighteenth century, the great Giuseppe Casaregi felt that he had to paraphrase and explain the stipulations of Ch.192 in language accessible to his contemporaries: 'When the Master judges that it is needful to beach the ship in order to avoid a greater evil, he is required to give notice of it to Merchants …'[32] The master 'judges', recognizes the lesser evil, and is still able to warn the merchants of it. Sometime earlier, Carlo Targa, in his *Ponderationi*, was even more explicit: 'This is nothing more than a deliberation made by the Master … to voluntarily risk a distant danger, and a lesser damage, in order to avoid a closer, worse one…' And further: 'The most frequent case that gives rise to this *Germinamento* is when your cargo is thrown overboard to lighten the ship'.[33] Even before Targa, the Neapolitan Francesco Rocco in *De navibus et naulo* (1655) had acknowledged the right to be compensated for the beaching of a ship, 'ut in cap. Consulat. Maris 192', thus connecting this to the voluntary principle of jettison.[34]

Ch. 192 also provides for the possibility of a unilateral obligation, and it is in the passage in which it is explained that the merchants could agree to cover the damage of the ship without the master reciprocally assuming the same commitment to the cargo, that the specific name of the contract is learned. Merchants, in fact, can allow that 'la nau vaia sobre los havers' (the ship goes over the cargo), although 'lo senyor de la nau no agermanara la nau ab laver' (the shipmaster will not make the ship brother [agermanara] to the cargo).[35] *Agermanar* becomes *germinare* in Italian. Thus Carlo Targa, having confused this 'deliberation' with that of the jettison, can present to us an imaginative etymology, which at least has the advantage of unconsciously returning us to the word's most authentic moral and economic sense. It is possible that the Genoese Targa intuited

[32] *Il Consolato del mare colla spiegazione di Giuseppe Maria Casaregi* (Lucca: Cappuri & Santini 1720), 178. On the same topic, but broader and more involved: G. M. Casaregi, *Discursus legales de commercio*, 4 vols (Venice: Balleoniana 1740), I: disc. XIX, 54–59.

[33] Targa, *Ponderationi*, 316–317.

[34] F. Rocco, *De navibus et naulo. Item de assecurationibus notabilia* (Amsterdam: F. Halma 1708), not. LX, 62.

[35] *Les costums marítimes de Barcelona*, Ch. 195.

that he was tying himself up in knots, but he still felt that he could claim that the «seafaring word *Germinamento*» derived from the «French verb *germiner*» (in actual fact the verb *gérmer*, meaning 'to sprout'). Just as in a tree "the various branches, and the things divided in several parts formally make up *unum germen* [one sprout alone]", in the same way the several interested of a shipping venture make up 'a union and a body, only as far as the interest is concerned, and thus a capital or holding fund, to be then shared out at lira, *soldo and denaro*, in proportion to each one's interest'. He concludes that through the *germinamento*, the relationship among the interested parties changes, and it is 'accidentally reduced to a kind of company'.[36] And he's right: it is in fact a company, more precisely a company of mutual insurance. According to Targa, who does not express a personal opinion but repeats the understanding widespread in the courts, it was a company only 'accidentally', founded not on the consent of the parties, but on the dangerous situation that induces the master to 'voluntarily put himself at risk'.[37] The correct derivation of the term is probably from the Catalan *germà* (in Castilian, *hermano*). This

[36] "…comecché di più rami, e cose distinte in più parti se ne costituisca formalmente *unum germen*, o sia un'unione ed un corpo solo in quanto all'interesse, o sia un capitale e fondo di partecipazione, da ripartirsi poi a lira, soldo e denaro, o sia per rata porzione dell'interesse d'ognuno": Targa, *Ponderationi*, 316–317.

[37] "Di qui è che se la nave restasse ridotta in procinto tale ch'il pericolo maggiore fosse inevitabile, e perciò il minore non potesse più esser appigliato V.G. se si elegesse investire, e la nave investisse da per sé, overo non riuscisse ciò che si elegge, il Germinamento non ha effetto, e non si contribuisce, perché cessa la ragione dell'equità addotta dalla legge". *Ivi*, p. 320. Targa admits that "delle volte", that is occasionally, the *germinamento* can be made in port before departure, as laid out in Ch. 229 of the *Consolat*, but without departing from the equitable principle of the *Lex Rhodia*, because in his view there should be in any case the condition of impending danger, like "quando vi è necessità di partire e vi è dubbietà di corsari, o per altra causa urgente", *Ivi*, 318. It is a pity that the only concrete example that came to his mind did not comply with the condition. Despite this, it was he himself who ruled that, in that case, the damage had to be brought equally in contribution, since it did not consist "di Germinamento proprio, ma improprio, che è piuttosto un concerto mercantile che Germinamento" (!), *Ivi*, 319. Nothing about the *germinamento* is contemplated in the 1681 *Ordonnance de la Marine*, the most influential normative text in the Mediterranean area during the Eighteenth Century. However, it was recalled by Balthazard Emerigon, who, with reference to Targa, posits that the *Germinamento* was an Italian custom quite different from General Average: "The obligation to contribute indefinitely to the common loss is called in Italy *germinamento*, that is, to put in common and together the vessel and the merchandise, *tanquam in unum germen*" (as in one sprout alone): B. Emerigon, *Traité des assurances et contracts à la grosse*, 2 vols (Marseille: J. Mossy 1783), I: 601.

suggests that the pact proposed by the master establishes a circumstantial bond among strangers (or maybe it would be fairer to say, among their property) who are nevertheless all pursuing the same aim: a brotherhood, where all members commit to bearing one another's losses.[38]

Conclusion

According to a strict interpretation of the *Consolat*, General Average and mutual insurance continued to coexist side by side into the late Middle Ages, as in the *Νόμος* but without its confusion. This is to say that, to

[38] The *fraterna*, based on the concept of an undivided heredity among brothers, represented the most common form of mercantile organization, as we know from the studies of medieval Venice by Frederic C. Lane ('Family Partnerships and Joint Ventures', *Journal of Economic History*, 4 [1944]: 178–196). Traces of mutual insurances on a more conventional basis can also be found in normative texts that predate the Consulate. In addition to the *Νόμος*, in a pair of dispositions of the *Synopsis Minor*, a work deriving from the *Basilica*, Pardessus discerned the beginnings of mutual insurance (*Collection des lois maritimes*, I: 203n). We must nonetheless ask ourselves why we should dismiss the notion that something like this had not already been contemplated in more ancient customs. Regarding this, I would like to call attention to D 14.2.2.1, the most obscure and controversial fragment of the *Lex Rhodia*, which addressed the matter of the vessels deterioration, and more broadly the damages produce *by force majeure*: "Si conservatis mercibus deterior facta sit navis aut si quid exarmaverit, nulla facienda est collactio, quia dissimilis earum rerum causa sit, quae navis gratia parentur et earum, pro quibus mercedem aliquis acceperit: nam et si faber incudem aut malleum fregerit, non imputatetur ei qui locaverit opus. Sed si voluntate vectorum vel propter aliquem metum id detrimentum factum sit, hoc ipsum sarciri oportet" (If the ship suffers damage or loses any of its gear and the cargo is unharmed, no contribution is due, because there is a distinction between property relating to the ship and property on which freight is paid; after all, the damage arising when a smith breaks his anvil or hammer would not be charged to the customer who gave him the work. But a loss at sea falls to be made good if it arises from a decision of the cargo-owners or a reaction to some danger). *The Digest of Justinian*, I: 419. In the text there are at least a couple of obscure passages, or at least they are contradictory with respect to the dogmatic framing of General Average. Current commentators have rushed to declare the text corrupted, while in the past the problem turned out a big headache for many jurists who forced themselves to re-establish the original text and render the fragment coherent with their assumptions: Lefebvre D'Ovidio, 'La contribuzione alle avarie comuni', 46–47. Jacques Cujas in particular, and many others after him, found that "vel" extremely annoying, because it seem to put the merchants will and the fear of danger in opposition, as if they were two separate and alternative conditions for claiming damages by contribution; see: J. Cujas, *Observationum et emendationum*, Lib. XXIII, cap. XXXV *Duobus in locis emendatur* § 1. l. 2. D *de leg. Rhod. De jactu*, in *Opera*, pars. I. tom. I (Prato: F. Giachetti 1836), 1069–1071.

limit the most predictable abuses, the *Consolat* established that contribution for involuntary damage was no longer required by customary law, but became a possibility through consent of the parties. It is thus rather interesting that in the modern age the literal interpretation was obliterated by humanistic jurisprudence's sense of system, and that the *germinamento* was in fact absorbed by General Average and made to conform to its logic: '*Germinamento*' writes Domenico Azuni, 'is usually carried out at the time of a jettison designed to lighten the ship and prevent an imminent shipwreck'.[39] If, between the fifteenth and sixteenth centuries, the *germinamento* ended up being amalgamated with the consultation that preceded (or should have preceded) jettison to make clear its voluntary nature, this is because in the meantime a profound restructuring of Mediterranean trade had taken place.[40] This introduced two fundamental changes. Once the legal procedures that guaranteed the fulfilment of contracts were consolidated, it was possible to build networks of trust along commercial routes which obviated the need for merchants to travel with their goods. At same time, while commission trading developed, a new indemnity tool emerged: the modern instrument of premium insurance. This new contract promised to refund losses entirely, and was more efficient than any mutual solution, if only because it allowed for the spread of risk across a number of guarantors—the underwriters of the policies—that was incomparably wider than any consortium of directly interested shippers.[41]

Once the presence of the merchants on board diminished, the consultation lost its meaning, so much so as to make the master who carried it out seem suspect, as Targa noted. Above all, the *germinamento*, in its

[39] D. A. Azuni, *Dizionario ragionato della giurisprudenza mercantile*, 4 vols (Livorno: G. Masi, 1822), *ad vocem* I: 157.

[40] R. S. Lopez, *The Commercial Revolution of the Middle Ages, 950–1350* (Cambridge 1976); S. R. Epstein, *Freedom and Growth: The Rise of States and Markets in Europe, 1300–1750* (London 2000); A. Greif, *Institutions and the Path to the Modern Economy: Lessons from Medieval Trade* (Cambridge 2006).

[41] F. Edler de Roover, 'Early Examples of Marine Insurance', *Journal of Economic History*, 5 (1945): 172–200; L. A. Boiteux, *La fortune de mer: le besoin de securité et les debuts de l'assurance maritime* (Paris 1968); F. Melis, *Origini e sviluppo delle assicurazioni in Italia (secoli XIV–XVI), 1: Le fonti* (Rome 1975); E. Spagnesi, 'Aspetti dell'assicurazione medievale', in *L'assicurazione in Italia fino all'Unità. Saggi storici in onore di Eugenio Artom* (Milan 1975), 3–69; and A. B. Leonard ed., *Marine Insurance. Origins and institutions, 1300–1850* (London 2016).

most original and authentic sense, now appeared problematic from several points of view, since masters would be prompted to take advantage of the uncertain boundary it introduced between voluntary and involuntary damages to seek compensation for both via General Average. After all, it didn't take much to present damages as the consequences of a voluntary sacrifice intended to escape danger. Goods soaked in the hold could be compensated by contribution if, at the point of delivery, it was claimed that the hatches had had to be opened during a storm to throw part of the cargo overboard. Even worn-out equipment which had reached the end of its usefulness, could be replaced in large part at expense of the freighters: it was enough to say that they had broken in a risky manoeuvre made necessary by an impending danger. As Ascanio Baldasseroni noted, without the presence of merchants on board, ship masters discovered the secret of the legendary Ship of Theseus. Modern insurance intervened to counterbalance these dubious practices however, at least when Averages were covered by the policy, and when the practice of insuring ship hull and equipment in addition to the cargo became standard practice. In short, the reorganization of maritime risk management that took place between the late Middle Ages and the early modern age placed the new insurance contract at the centre of the system, sweeping away the mutual company of *germinamento*, but leaving General Average contribution for voluntary damages intact. It was probably a slow process, common to all maritime contexts, the exact dynamics of which are still waiting to be investigated. For now, I will observe that, if it is true that the new sedentary habits of the merchants and the modern insurance contract produced the effects that we suppose, then in theory the number of Averages measured over the long-term, and the ratio between General Averages (voluntary) and Particulars ones (involuntary), should be regarded as two significant indicators of the spread of contractual insurance and the consolidation of the new maritime risk management system.