Coastal State Jurisdiction to Protect and Preserve the Marine Environment:

Evolution and Development of the LOSC Regime

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Abstract

This thesis examines the potential impact of evolution and development of the 1982 United Nations Convention on the Law of the Sea (LOSC) on coastal State jurisdiction to protect and preserve the marine environment against accidental vessel-source pollution in the Exclusive Economic Zone (EEZ) and in international straits.

The first Part of the thesis assesses the nature and the most pertinent provisions of the LOSC, the mechanisms that can be utilised for its development, and a selection of relevant international environmental law principles that may influence the Convention's development process.

The second Part of the thesis utilises four case-studies to test the contention that development of the LOSC can result in enhanced coastal State jurisdiction to protect the marine environment. The case-studies examine: the Australian attempt to introduce compulsory pilotage in the Torres Strait; a mandatory ship reporting system in the Canadian Arctic; coastal State regulation of bunkering and Ship-to-Ship (STS) oil transfers in the EEZ; and coastal State action in relation to the transportation of nuclear cargo in the EEZ.

The third Part of the thesis draws overarching conclusions about the evolution and development of the LOSC and provides orientation for its future development. This part addresses important questions about whether it is possible and ideal to continue working within the confines of the LOSC, about limits that need to be respected in its development, and about the enduring relevance of the Convention.

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Abbreviations

BBNJ	Biodiversity Beyond National Jurisdiction
CBD	Convention on Biological Diversity
CITES	Convention on International Trade of Endangered Species of Wild Fauna and Flora
ECHR	European Convention on Human Rights
EIA	Environmental Impact Assessment
ECtHR	European Court of Human Rights
EEZ	Exclusive Economic Zone
EJIL	European Journal of International Law
EU	European Union
G77	Group of 77
GAIRS	Generally Accepted International Rules and Standards
HLW	High Level Waste
IAEA	International Atomic Energy Agency
ICJ	International Court of Justice
ILA	International Law Association
ILC	International Law Commission
ILM	International Legal Materials
IMO	International Maritime Organisation
ITLOS	International Tribunal for the Law of the Sea
IUCN	International Conservation Union
LEG	Legal Committee of the IMO
LOSC	UN Convention on the Law of the Sea
MSC	Maritime Safety Committee of the IMO
MEPC	Marine Environment Protection Committee of the IMO
MOX	Mixed Oxide Fuel
MPA	Marine Protected Area
NAV	Navigation Committee of the IMO
PCA	Permanent Court of Arbitration
PSSA	Particularly Sensitive Sea Area

RIAA	Reports of International Arbitral Awards
SCS	South China Sea
SNF	Spent Nuclear Fuel
SPLOS	States Parties to the UN Convention on the Law of the Sea
UN	United Nations
UNCED	UN Conference on Environment and Development
UNCLOS	UN Convention on the Law of the Sea
UNCLOS III	Third UN Conference on the Law of the Sea
UNEP	UN Environmental Programme
UNESCO	UN Educational, Scientific and Cultural Organisation
UNGA	UN General Assembly
UNTS	UN Treaty Series
UNSC	UN Security Council
VCLT	Vienna Convention on the Law of Treaties
WTO	World Trade Organisation

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1969

Vienna Convention on the Law of Treaties (adopted 23 May 1969, entered into force 27 January 1980) 1155 UNTS 331

1969

International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (adopted 29 November 1969, entered into force 6 May 1975) 970 UNTS 211

1972

Convention Concerning the Protection of the World Cultural and Natural Heritage (adopted 23 November 1972, entered into force 15 December 1975) 1037 UNTS 151

1972

Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (adopted 29 December 1972, entered into force 30 August 1975) 1046 UNTS 138

1973

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1974

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1982

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1985

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1987

Montreal Protocol on Substances that Deplete the Ozone Layer (adopted 16 September 1987, entered into force 1st January 1989) 1522 UNTS 3

1992

1992 Convention on the Protection of the Marine Environment of the Baltic Sea Area (adopted 9 April 1992, entered into force 17 January 2000) 1507 UNTS 167

1992

Convention for the Protection of the Marine Environment of the North-East Atlantic (adopted 22 September 1992, entered into force 25 March 1998) 2354 UNTS 67

1994

Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (adopted 28 July 1994, entered into force 28 July 1996) 1836 UNTS 3

1995

Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (adopted 4 August 1995, entered into force 11 December 2001) 2167 UNTS 3

2003

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M/V "VIRGINIA G" (Panama v. Guinea-Bissau) (Judgment) ITLOS No. 19 (14 April 2014).

MOX Plant (*Ireland v United Kingdom*) (Provisional Measures) ITLOS No. 10 (3 December 2001).

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Sub-Regional Fisheries Commission (Advisory Opinion) ITLOS No. 21 (2 April 2015).

The M/V "NORSTAR" (Panama v Italy) (Judgment) ITLOS No. 25 (10 April 2019) para 219

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Iron Rhine Railway (Belgium v Netherlands), PCA, (2005) 27 RIAA 35.

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Introduction

1. The Forces of Freedom and of Restriction

The history of the LOSC can accurately be characterised as a struggle between two opposing forces – those of freedom and of restriction. It would, however, be wrong to consider the significance of this struggle as limited to its purely historical role in the formation of the law of the sea, since it is one that persists to this day, and its resolution in given instances continues to deeply influence the overall evolution and development of the law of the sea and of the 1982 Law of the Sea Convention (LOSC).[1]

From the range of limitations on the freedom of the seas that are today incorporated in the LOSC, a most important category is that enshrined in the Convention's marine environment protection provisions. Given how clearly these restrictions are incorporated in the Convention, one might be forgiven for making the assumption that any notion of absolute and unmitigated freedom of the seas has long been abondoned. State practice, however, indicates that this is not quite the case and coastal State attempts to introduce environment protection measures are frequently met with varying degrees of protest and countered by a "rhetoric of freedom".[2] Admittedly, there is no obligation on flag States to accept marine environment protection measures that are incompatible with the LOSC and States have, in fact, every right – and, some would argue, a duty – to protest against the adoption and enforcement of such measures. This does not mean that States may justifiably or lawfully adopt a default position of protest against marine environment protection measures. As Rayfuse points out, the failure to embrace the conditional nature of today's freedom of the seas, and the resultant promulgation of a rhetoric of absolute freedom, seriously risks "hinder[ing] the ability of the law of the sea to

[1] United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3. See, e.g., Tulio Scovazzi, 'The Evolution of International Law of the Sea: New Issues, New Challenges' in *Collected Courses of the Hague Academy of International Law* (Vol 286, Brill 2000) 228-232. Scovazzi argues that "[t]he erosion of the principle of freedom of the sea… has been the main trend in the evolution of international law of the sea".

[2] Rosemary Rayfuse, 'Some Reflections on What's Wrong with the Law of the Sea' in Cedric Ryngaert and others (eds), *What's Wrong with International Law?* (Brill 2015) 16, 19.

develop in a way that addresses the multiple challenges posed by contemporary and emerging ocean uses".[3]

This thesis submits that an approach to the LOSC that feeds on growing environmental awareness and that takes cognisance of the relevance of international environmental law can lead to progressive development of the LOSC and, in turn, to enhanced coastal State jurisdiction to protect and preserve the marine environment. Specifically, the primary purpose is to assess whether the LOSC is developing and to consider the extent to which any such development is impacting the scope of coastal State jurisdiction[4] to prevent accidental vessel-source pollution[5] in the Exclusive Economic Zone (EEZ) and in international straits.

2. Protection and Preservation of the Marine Environment

One of the goals of the LOSC is to establish a legal order for the seas and oceans that will, *inter alia*, promote "the conservation of their living resources, and the study, protection and preservation of the marine environment".[6] To achieve this goal, the Convention dedicates one of its 13 substantive parts (Part XII) to 'Protection and Preservation of the Marine Environment'. It also incorporates environmental provisions in several other parts and sections of the Convention.[7]

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[3] ibid.

[4] Churchill notes that the closest the LOSC comes to defining the term "coastal State" is in Article 2(1), which determines that "[t]he sovereignty of a coastal State extends, beyond its land territory… to an adjacent belt of sea, described as the territorial sea". As Churchill points out, Article 2(1) captures the essence of what a coastal State is, i.e. "[a] State having sovereignty, sovereign rights or jurisdiction in certain maritime areas adjacent to its coast". See Robin Churchill, 'Under-Utilized Coastal State Jurisdiction: Causes and Consequences' in Henrik Ringbom (ed), *Jurisdiction over Ships: Post-UNCLOS Developments in the Law of the Sea* (Brill 2015) 278.

[5] Vessel-source pollution can be operational or accidental. Operational vessel-source pollution is produced through normal ship operation. Accidental vessel-source pollution is caused through marine accidents involving vessels.

[6] LOSC, Preamble, para 4. On the legal framework for protection of the marine environment see Rosemary Rayfuse (ed), *Research Handbook on International Marine Environmental Law* (Edward Elgar 2015) Part I; Daud Hassan and Saiful Karim (eds), *International Marine Environmental Law and Policy* (Routledge 2018); Philippe Sands and Jacqueline Peel, *Principles of International Environmental Law* (4th edn, CUP 2018) 455-568.

[7] Part III of the LOSC, for instance, which deals with Straits used for International Navigation, includes at least two environmental provisions of note. Article 39(2)(b) requires ships in transit passage to comply with generally accepted international regulations, procedures and practices for hte prevention, reduction and control of pollution from ships. Article 43(b)

The prominence of environmental considerations in the LOSC contrasts with the situation prevailing under the four Geneva Conventions of 1958, where environmental matters occupy a far more marginal position and are tackled in a limited number of "rather underdeveloped provisions".[8] This difference in approach can be explained by reference to two crucial developments. First, in the intervening period between 1958 and 1982, there was the adoption in 1972 (i.e. just a year before the start of UNCLOS III) of the Stockholm Declaration on the Human Environment and of an Action Plan by the UN Conference on the Human Environment.[9] The Stockholm Conference placed protection of the environment squarely on the international legal and political agenda and influenced the drafting of Part XII of the LOSC.[10] Secondly, concurrently to the negotiation of the LOSC at UNCLOS III, there was the adoption of a considerable number of treaties related to the marine environment. The adoption of these treaties – spurred on in part by a number of oil tanker incidents including the infamous *Torrey Canyon* incident of 1967 – helped to place environmental matters high on the agenda at UNCLOS III.[11]

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requires user and littoral states to by agreement cooperate for the prevention, reduction and control of pollution from ships.

[8] Robin Churchill, 'The LOSC regime for protection of the marine environment – fit for the twenty-first century?' in Rosemary Rayfuse (ed), *Research Handbook on International Marine Environmental Law* (Edward Elgar 2015) 3.

[9] The 1972 Stockholm Conference is widely considered as the foundational moment of modern international environmental law. For the Stockholm Declaration and Action Plan see A/CONF.48/14/Rev1 (1972). The Stockholm Declaration embraced twenty-six principles including principles 7 (prevention of marine pollution) and 24 (cooperation on international issues), both of which will be duly considered in Chapter 2. For an in-depth study of the Stockholm Declaration see Louis B. Sohn, 'The Stockholm Declaration on the Human Environment' (1973) 14 Harv.Int'l L.J. 423. On the historical development of international environmental law see Philippe Sands and Jacqueline Peel, *Principles of International Environmental Law* (4th edn, CUP 2018) 21-51.

[10] Robin Churchill, 'The 1982 United Nations Convention on the Law of the Sea' in Donald Rothwell and others (eds), *The Oxford Handbook of the Law of the Sea* (OUP 2015) 24, 28.

[11] Alongside a number of regional treaties that were adopted, by way of example reference can be made to: the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (adopted 29 November 1969, entered into force 6 May 1975) 970 UNTS 211; the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (adopted 29 December 1972, entered into force 30 August 1975) 1046 UNTS 138; the International Convention for the Prevention of Pollution from Ships (adopted 2 November 1973, entered into force 2 October 1983) 1340 UNTS 62.

Insofar as marine environment protection is concerned, the LOSC can, therefore – especially in view of the time at which it was conceived – be considered as a rather extraordinary achievement. It is a strong and comprehensive environmental treaty that registered a radical improvement over the 1958 Geneva Conventions that preceded it. That said, just as environmental awareness increased and relevant developments were registered in the intervening years between 1958 and 1982, international environmental law has continued to develop, at significant pace, after the adoption of the LOSC. Proper account must be taken of the impact of such developments on the LOSC.[12]

3. Coastal State Action to Protect the Marine Environment

The development of international environmental law, including the international law of marine environment protection, has over the years often been prompted by particular incidents, events and developments that in different ways have helped to focus attention on environmental problems.[13] One such development from contemporary times that has been highlighted by a number of studies and reports is the alarming rate at which Arctic sea ice is melting. The 2017 Snow, Water, Ice and Permafrost in the Arctic (SWIPA) assessment, for instance, concluded that sea ice is "thinning and shrinking more rapidly than projected by most models"[14] and, significantly, that it has become a real possibility that the Arctic will be largely free of sea ice in summer from as early as the late 2030s.[15] The melting of Arctic ice has improved economic prospects in the Arctic not only for the oil and gas sector but also for the shipping industry. Shipping lanes such as the Northern Sea Route (NSR) and the Northwest Passage (NWP) are gradually opening up that can significantly reduce the length of voyages, especially during the summer months. Such prospects and opportunities are, however, accompanied by

[12] Churchill (n 7) notes at p 29 that the LOSC was adopted at a time when "a number of significant principles as guides to the taking of action to protect the environment, including the precautionary approach/principle, sustainable development and the ecosystem approach, had yet to emerge".
[13] Pierre-Marie Dupuy and Jorge E. Viñuales, *International Environmental Law* (CUP 2018) 8 onwards.
[14] Arctic Monitoring and Assessment Programme (AMAP), *Snow, Water, Ice and Permafrost in the Arctic: Summary for Policy-makers* (10 April 2017) 12 <https://www.amap.no/documents/download/2888> accessed 6/6/2017.
[15] ibid 3.

significant risk to the Arctic marine environment. The ecosystems of the Arctic region are not particularly resilient to risk events and "worst-case scenarios may be worse in the Arctic because the ability to manage evolving situations is limited by environmental conditions and the lack of appropriate infrastructure".[16]

This risk-laden scenario has prompted some coastal States to take preventive measures against accidental vessel-source pollution in the Arctic, at times in the face of considerable protest by other States.[17] The Arctic is naturally not the only setting in which coastal States have adopted controversial marine environment protection measures. The case-studies in Chapters 3-6 of this thesis each examine instances of controversial coastal State action to prevent accidental vessel-source pollution. As such, these actions test the boundaries of coastal State jurisdiction and create scope for consideration of the central contention of this thesis, that is, that an approach to the LOSC that encompasses a stronger cognisance of the potential relevance of international environmental law can lead to development of the LOSC and to enhanced coastal State jurisdiction to protect the marine environment.

4. Development of the LOSC

While the LOSC's formal amendment procedures are cumbersome to operate in practice,[18] in Chapter 1 it will be argued that a number of other mechanisms can play a significant role in the Convention's development.[19] What is envisaged here is primarily the possibility of giving greater weight to environmental considerations and to the wider international environmental law framework when *interpreting* LOSC provisions. A second route for development of the LOSC that will be considered revolves around the

[16] Charles Emmerson and Glada Lahn, *Arctic Opening: Opportunity and Risk in the High North* (Chatham House and Lloyds, 2012) 35 <https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy,%20Environment%20and%20Development/0412arctic.pdf> accessed 13/3/2016.
[17] See Chapter 4.
[18] Chapter 1, Section 4.2.2.1.
[19] Irina Buga, 'Between Stability and Change in the Law of the Sea Convention: Subsequent Practice, Treaty Modification, and Regime Interaction' in Donald Rothwell and others (eds), *The Oxford Handbook of the Law of the Sea* (OUP 2015) 46, 47. Buga contends that "complex treaties such as the LOSC tend to be amenable to subsequent development through a range of mechanisms that go beyond formal amendment".

possibility of informal *modification* of LOSC provisions through the subsequent practice of the State parties. Modification of LOSC provisions is, however, and not without reason, highly controversial. Any consideration of modification will therefore be accompanied by contemplation of the associated dangers and by an appreciation of the high threshold that applies before State practice can be considered to have modified the Convention.[20]

The importance of maintaining the balance and inherent integrity of the LOSC cannot be overemphasised. As a text that purports to be a constitution for the oceans, however, the LOSC must evolve in order to maintain its relevance.[21] The principle of good faith in treaty interpretation is no bar to development of the LOSC. Rothwell argues that, when it comes to interpretation of the LOSC, good faith is a principle that should be understood in a manner flexible enough to "reflect a variable obligation depending on the actual text of the treaty".[22] Some parts of the Convention are sufficiently clear and well developed that, when they are interpreted in good faith, relatively uniform State practice should ensue.[23] Other parts of the Convention, however, especially more novel elements such as Part V of the Convention, are more ambiguous so that good faith interpretation can result in several different outcomes.[24] This allows for environmental considerations to play a potential role in the determination of which interpretation should prevail.

The argument that development of the LOSC – a laboriously negotiated and carefully balanced instrument – can impact on the extent of coastal State jurisdiction to protect the marine environment is undoubtedly controversial.

[20] Robin Churchill, 'The Impact of State Practice on the Jurisdictional Framework Contained in the LOS Convention' in Alex Oude Elferink (ed), *Stability and Change in the Law of the Sea: The Role of the LOS Convention* (Brill 2005) 91, 104.
[21] Donald R. Rothwell, 'The Impact of State Practice on the Jurisdictional Framework Contained in the LOS Convention: A Commentary' in Elferink (n 19) 145, 147. See also Scovazzi (n 1) 123. Scovazzi argues that "being itself a product of time, the UNCLOS cannot stop the passing of time… [and] is subject to a process of evolution and progressive development which is linked to international practice and presents several aspects".
[22] Rothwell (ibid) 146.
[23] By way of example, reference can be made to Part II of the LOSC (Territorial Sea and Contiguous Zone). Rothewell (n 21) considers at p 146 that this Part of the Convention "is a particularly well developed regime... [with roots] in the deliberations of the International law Commission during the 1950s and the 1958 Geneva Convention on the Territorial Sea and the Contiguous Zone".
[24] Rothwell (n 21) 146.

While such controversy is understandable, it needs to be balanced against other considerations, including the need to maintain the Convention's relevance to today's world and to keep it in line with developments in international law. Additionally, the proposition that the LOSC can and must develop is intended in a relatively moderate sense, and is definitely not to be construed as a call for radical alteration of LOSC provisions. There will be no suggestion that environmental considerations should prevail over all other considerations in each and every case. What is being suggested is, rather, that there is nothing wrong or inherently illogical about a process that prudently accords more significance to environmental considerations and to the wider international (environmental) law context.

The need for prudence is a point that will be emphasised. It has to be kept mind that there is a potentially dangerous link between environmentalism and what has been described by Bernard Oxman as the "territorial temptation".[25] Oxman contends that the classic *mare liberum* / *mare clausum* debate has effectively shifted from being mainly a debate about geographical limits to being mainly a debate about the substantive limits of the established maritime zones.[26] Protection of the marine environment is singled out as a main source for "a frontal assault on freedom of navigation".[27] Given this link between environmentalism and the territorial temptation, an important question when discussing development of the LOSC concerns the extent to which such development is necessary and justifiable. At what point does it stop being a factor that helps to maintain the Convention's relevance to today's world and start to become a force that threatens to undermine its stability and its position as a constitution for the oceans?[28]

[25] Bernard Oxman, 'The Territorial Temptation: A Siren Song at Sea' (2006) 100 AJIL 830.
[26] ibid 839.
[27] ibid 840. Oxman argues that national security and protection of the marine environment "reflect important values that should be advanced [and] both attract committed adherents who believe that other values must be subordinated to their efforts".
[28] The LOSC's characterisation as a constitution for the oceans will be discussed in Chapter 1. For a comprehensive analysis see Shirley Scott, 'The LOS Convention as a Constitutional Regime for the Oceans' in Elferink (n 19) 9.

5. Research Question, Methodology and Existing Literature

The major question addressed in this thesis is: to what extent, if at all, is development of the LOSC impacting the scope of coastal State jurisdiction to take preventive measures to protect and preserve the marine environment against accidental vessel-source pollution in the EEZ and in international straits. The thesis focuses on the extent of coastal State jurisdiction to take preventive measures against accidental vessel-source pollution *in the EEZ* and *in international straits* because it is in relation to these two areas that there exists the greatest degree of controversy about the extent of coastal State jurisdiction to protect the marine environment.[29] The focus on preventive measures against accidental vessel-source pollution is motivated primarily by considerations of space, as well as by topicality and by the availability of case-studies relating to the adoption of such measures. Highlighting preventive, as opposed to reactive, measures calls for an analysis of the potential impact of certain important international environmental law principles such as the principle of prevention and the precautionary principle, both of which have evolved considerably since the adoption of the LOSC in 1982.

While there is extensive literature that deals with the main topics that are of relevance to this work, the research question at the basis of this thesis distinguishes itself in a number of ways. The concept of coastal State jurisdiction generally and the more specific question of coastal State jurisdiction over vessel-source pollution have both been tackled in the literature.[30] This thesis narrows down the focus further to the question of preventive coastal State jurisdiction to protect and preserve the marine environment against *accidental* vessel-source pollution. Moreover, when selecting case studies for assessment, the deliberate intention was to opt for

[29] Oxman (n 23) argues at p 839 that insofar as the debate about substantive coastal State jurisdiction is concerned, "the real issue concerns the EEZ and the concomitant right of transit passage of straits connecting two parts of the EEZ". In relation to the EEZ in particular he notes that "[t]he essence of the EEZ is its substantive balance [and that this] balance is particularly vulnerable to the territorial temptation because the EEZ is already perceived in quasi-territorial terms".

[30] See, for example, Erik Jaap Molenaar, *Coastal State Jurisdiction over Vessel-Source Pollution'* (Kluwer 1998); Lindy S. Johnson, *Coastal State Regulation of International Shipping* (Oceana Publications 2004).

controversial coastal State measures that test the boundaries of what can presently be considered as permissible under the LOSC.

The LOSC's marine environment protection regime[31] and the relevance of international environmental law principles[32] have also been extensively considered in the literature. This thesis seeks to develop the existing literature base by analysing the potential impact of an ever-evolving international environmental law on the development of LOSC provisions relevant to the determination of the extent of coastal State jurisdiction to protect the marine environment against accidental vessel-source pollution. Insofar as the mechanisms for development are concerned, these too have been well considered, both in literature that deals with treaty law generally,[33] as well as in more subject-specific literature that explores change and development of the LOSC.[34] This thesis adopts an innovative approach and focus and looks in detail at how these different mechanisms can effectively constitute pathways through which international environmental law can influence the development of the LOSC and, ultimately, coastal State jurisdiction.

This thesis makes use of a number of case-studies to apply the theoretical aspect of the discussion to practice. Given the controversial nature of the case-study scenarios, it should come as no surprise that each of these has been examined extensively elsewhere. What differentiates the present work is the fact that it engages in a conjunctive, overarching analysis of the relevant scenarios. By looking at more than one example of controversial coastal State exercise of jurisdiction to protect and preserve the marine environment, it becomes easier to reach conclusions about the evolution and development of the LOSC as well as about possible changes in the extent of coastal State jurisdiction to protect and preserve the marine environment.

[31] See, e.g., Churchill (n 7).
[32] Yoshifumi Tanaka, 'Principles of international marine environmental law' in Rayfuse (n 7) 31.
[33] See, e.g., Richard Gardiner, *Treaty Interpretation* (OUP 2017).
[34] Buga (n 18); Alan Boyle, 'Further Development of the Law of the Sea Convention: Mechanisms for Change' (2005) 54 ICLQ 563.

The methodological approach that will be adopted is the doctrinal legal method. Insofar as primary sources are concerned, the most relevant source will be the LOSC. Where relevant, reference will be made to other international treaties, documents and guidelines, to relevant domestic legislation as well as to resolutions of international organisations, including resolutions of the International Maritime Organisation (IMO). Reference is made to a number of judgments delivered by international courts and tribunals, most notably judgments of the International Court of Justice (ICJ) and of the International Tribunal for the Law of the Sea (ITLOS). In conjunction with reference to primary sources, reference will also be made to secondary sources such as books and journal articles. Relevant LOSC provisions will be considered by reference to real life scenarios and developments.

The thesis will contribute to literature by examining whether the LOSC is developing and how such development is potentially impacting the extent of coastal State jurisdiction to prevent accidental vessel-source pollution in the EEZ and in international straits. It will assess if development of the LOSC is having an impact on navigational interests and whether such impact can undermine / is undermining the stability of the Convention. Beyond the specific context of coastal-State jurisdiction to protect the marine environment in the EEZ and in international straits, the thesis will further contribute to literature by drawing important conclusions about the evolution and development of the LOSC in the context of marine environment protection more generally. Orientation for future development of the Convention will be provided through an examination of important limitations that need to be respected in the Convention's development. The thesis will also address the key question of whether it is possible and ideal to continue working within the confines of the LOSC to achieve marine environment protection goals. As such, the thesis holds practical relevance to academics with an interest in the law of the sea and its development, to practitioners, to coastal States with an interest in marine environment protection as well as to States with an interest in safeguarding navigational rights and interests.

6. Structure of This Thesis

This thesis is divided into three parts. Part I ('Evolution and Development of the LOSC in Context') contextualises the possibility of evolution and development of the LOSC. The first half of Chapter 1 looks at the nature and most pertinent characteristics of the Convention and considers the most relevant LOSC provisions about navigational rights and marine environment protection issues in the EEZ and in international straits. The second half of Chapter 1 considers the main formal and informal mechanisms that are available for development of the LOSC. Chapter 2 analyses the most relevant principles of international environmental law and considers their relationship with the LOSC as well as with the mechanisms for development analysed in Chapter 1. Four main principles are considered: the integration principle; prevention; precaution; and the cooperation principle.

Part II ('Evolution and Development of the LOSC in Practice') tests the hypothesis that evolution and development of the LOSC can result in broader coastal State jurisdiction by examining four case-study scenarios. Chapter 3 analyses the Australian attempt to introduce compulsory pilotage in the Torres Strait; Chapter 4 considers a mandatory ship reporting system in the Canadian Arctic; Chapter 5 analyses coastal State jurisdiction over bunkering and Ship-to-Ship (STS) oil transfers in the EEZ; and Chapter 6 examines the extent of coastal State jurisdiction in relation to the transportation of nuclear cargo in the EEZ. The case-study chapters are united by a common factor – controversy about coastal State jurisdiction to take preventive measures to protect the marine environment against accidental vessel-source pollution.

Part III ('Orientation for Future Development') is divided into two chapters. Chapter 7 looks back at the case-studies examined in Part II and draws a number of overarching conclusions about the legitimacy of coastal State marine environment protection measures and of flag State reactions thereto. It assesses the actual role played as well as the potential role that can be played by interpretation and modification as well as by adjudication and arbitration in the Convention's evolution and development. Most importantly,

Chapter 7 examines whether, in view of the case-study scenarios, it is possible to speak of tangible development of the Convention and of improvements in the extent of coastal State jurisdiction to prevent accidental vessel-source pollution. Chapter 8 attempts to elucidate the wider picture regarding the likely, and the ideal, direction for future development of the LOSC. It examines the characterisation of the Convention as a living instrument and asks: what are the roles of the main actors involved in the Convention's development? Can unilateral coastal State action ever play a sustainable role in the LOSC's development? Are there any important limitations that need to be respected if development is to be adequate? How possible and how appropriate is it to continue working within the confines of the LOSC? Does the Convention's flexibility and its ability to adapt and develop mean that its relevance endures and is likely to continue to do so?

PART I: EVOLUTION AND DEVELOPMENT OF THE LOSC IN CONTEXT

Part I consists in two chapters. Chapter 1 looks first at the nature and most pertinent characteristics of the LOSC, focusing on the Convention's amenability to change and development. It then examines the Convention's most pertinent provisions on navigational rights and on coastal State jurisdiction to prevent accidental vessel-source pollution in the EEZ and in international straits. The intricate interrelationship and balance between these two sets of provisions will be considered. Finally, Chapter 1 analyses the formal and informal mechanisms that can be utilised for development of the LOSC. Chapter 2 examines the most pertinent principles of international environmental law and considers their relationship with the LOSC as well as with the mechanisms for development analysed in Chapter 1.

CHAPTER 1: The LOSC and Mechanisms for its Change and Development

1. Nature and most Pertinent Characteristics of the LOSC

1.1 The LOSC as a Constitution for the Oceans

Tommy Koh, President of UNCLOS III between 1981 and 1982, described the LOSC as:

> a constitution for the oceans which will stand the test of time... a monumental achievement of the international community... [which constitutes] the first comprehensive treaty dealing with practically every aspect of the uses and resources of the seas and the oceans.[1]

The metaphorical characterisation of the LOSC as a constitution for the oceans offers "a sense of its breadth and of its stature"[2] and indicates a number of important features that are relevant to this thesis.

In his work about the UN Charter, Bardo Fassbender identifies eight characteristics of an ideal constitution.[3] Among the most relevant is the tendency for constitutions to aspire to eternity and the tendency for constitutional provisions to be entrenched and harder to change than ordinary law. Scott argues that these two conditions are both fulfilled by the LOSC.[4] The LOSC does not make provision for its own termination. Moreover, while Articles 312-316 of the Convention set out formal amendment procedures,

[1] Tommy T.B. Koh, 'A Constitution for the Oceans', Remarks at the final session of the Conference at Montego Bay xxxiii – xxxiv <http://www.un.org/depts/los/convention_agreements/texts/koh_english.pdf> accessed 15/3/2017.
[2] Shirley Scott, 'The LOS Convention as a Constitutional Regime for the Oceans' in Alex Oude Elferink (ed), *Stability and Change in the Law of the Sea: The Role of the LOS Convention* (Brill 2005) 12.
[3] Bardo Fassbender, 'The United Nations Charter as Constitution of the International Community' (1998) 36 Columbia Journal of Transnational Law 529.
[4] Scott (n 2) 12.

these are impractical and have never been utilised.[5] The LOSC may not be a constitution in the traditional legal sense, but it definitely has the stature of a constitution: "it is the principal legal instrument that provides the framework for the public order of the oceans and seas".[6] Proper account must be taken of this fact when considering the Convention's evolution and development.

At the same time, as a piece of legislation that aspires to "stand the test of time",[7] the LOSC must somehow evolve and develop in order to maintain its relevance. In fact, aside from being considered as a constitution, the LOSC has also been described as a living instrument.[8] The Convention's formal amendment provisions may be close to unworkable in practice,[9] but it would be wrong to dismiss the LOSC as incapable of adaptation before considering the relevance of other mechanisms for development, including the Convention's utilisation of rules of reference[10] and the possibility of its development through interpretation and informal modification by the subsequent practice of State parties.[11] In this regard, and as will be seen in Part II of this thesis, given the jurisdiction that they are vested with coastal States "must assume a large share of the responsibility for responding to the most pressing problems of ocean governance confronting us at this time".[12] This is not to say that coastal State marine environment protection initiatives should automatically be accepted as compatible with the LOSC or as acceptable developments thereof. It is, rather, a simple recognition of the fact that the burden of taking the initiative and of trying to push innovative measures through often falls on the said States.

1.2 The LOSC as a Legal Framework

The drafters of the LOSC intended to establish a *comprehensive* regime or, in the words of the Convention's preamble:

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[5] The Convention's formal amendment procedures are examined in Section 4.2.2.1 below.
[6] Ranier Lagoni, 'Commentary [on Shirley Scott's contribution]' in Elferink (n 2) 51.
[7] Koh (n 1) xxxiii.
[8] On the Convention's characterisation as a living instrument see Chapter 8, Section 1.
[9] Section 4.2.2.1, below.
[10] Section 3.2, below.
[11] Section 4.2, below.
[12] Oran Young, 'Commentary [on Shirley Scott's Contribution]' in Elferink (n 2) 39, 44.

> ... a legal order for the seas and oceans which will facilitate international communication, and will promote the peaceful uses of the seas and oceans, the equitable and efficient utilization of their resources, the conservation of their living resources, and the study, protection and preservation of the marine environment.[13]

While the aspiration to comprehensive coverage is clear, when applied to the LOSC comprehensiveness is a term that must be understood in a limited sense; it denotes the sheer breadth of coverage, rather than coverage in considerable detail of all substantive matters that may conceivably arise in practice.[14] Such detail would have rendered the LOSC an unwieldy document and would have made the negotiation process immeasurably harder. A different approach was adopted by the Convention's drafters and the LOSC pragmatically establishes a "legal framework within which detailed norms to regulate the various uses of the sea may be developed and applied".[15]

To say that the LOSC has a framework character[16] is not to say that it is a framework treaty in the classical sense. As Redgwell points out, in the case of traditional framework treaties "more flexible amendment processes are generally provided for in respect of annexes and appendices containing more technical, science-dependent regulations".[17] In the case of the LOSC, the basic rules and the jurisdictional framework are authoritatively set out in the LOSC whereas matters of substantive technical detail are left to be fleshed out in a

[13] LOSC, Preamble, para 4.
[14] The LOSC "has a wide coverage of topics; but it is not a comprehensive code—a full grammar". See Vaughan Lowe, 'Was it Worth the Effort?' (2012) 27 IJMCL 875, 877.
[15] Robin Churchill, 'The 1982 United Nations Convention on the Law of the Sea' in Donald Rothwell and others (eds), *The Oxford Handbook of the Law of the Sea* (OUP 2015) 24, 30.
[16] See Study by the Secretariat of the IMO, 'Implications of the United Nations Convention on the Law of the Sea for the International Maritime Organisation' Leg/Misc.8 (2014), hereinafter 'IMO Study on Implications of the LOSC for the IMO'. At p 8 it is noted that "UNCLOS is acknowledged to be a "framework convention". Many of its provisions, being of a general kind, can be implemented only through specific operative regulations in other international agreements".
[17] Catherine Redgwell, 'From Permission to Prohibition: The 1982 Convention on the Law of the Sea and Protection of the Marine Environment' in David Freestone and others (eds), *The Law of the Sea: Progress and Prospects* (OUP 2006) 180. For an example of a traditional framework treaty see the Convention for the Protection of the Ozone Layer (adopted 22 March 1985, entered into force 22 September 1988) 1513 UNTS 323.

variety of international instruments, including major conventions such as the International Convention for the Prevention of Pollution by Ships ('MARPOL')[18] and the International Convention for the Safety of Life at Sea ('SOLAS').[19] Similarly to the rest of the Convention, many of the sections in the LOSC that deal with marine environment protection are of a framework nature. Churchill argues that this setup is understandable for three main reasons: the need to restrict the Convention to an acceptable length; the fact that too much detail would have made the Convention more prone to becoming quickly outdated; and the fact that certain matters were already regulated in considerable detail by other treaties.[20]

The Convention's framework nature has obvious consequences for any exercise that purports to consider the boundaries of coastal State jurisdiction. The task at hand would have been easier had the drafters chosen to deal in substantive detail with each of the situations selected as case-studies for this thesis. The fact that the Convention does not do so, however, leaves space for a considerable element of interpretation when applying the Convention. The framework nature of the Convention makes it easier for it to evolve and develop as and where required, and the case-study scenarios, being situated at the boundaries of coastal State jurisdiction, offer a good opportunity to consider the question of development of the LOSC.

1.3 Vagueness, Ambiguity and Silence

Given the sheer range of topics covered by the LOSC, and given the fact that, as a general rule, no reservations or exceptions may be made to the Convention,[21] the drafting process at UNCLOS III, which proceeded on the basis of consensus, inevitably involved a considerable number of

[18] The International Convention for the Prevention of Pollution from Ships (adopted 2 November 1973, entered into force 2 October 1983) and its Protocol of 1978 (adopted 17 February 1978, entered into force 1 October 1983) 1340 UNTS 62.

[19] The International Convention for the Safety of Life at Sea (adopted 1 November 1974, entered into force 25 May 1980) 1184 UNTS 278.

[20] Robin Churchill, 'The LOSC regime for protection of the marine environment – fit for the twenty-first century?' in Rosemary Rayfuse (ed), *Research Handbook on International Marine Environmental Law* (Edward Elgar 2015) 3, 5.

[21] LOSC, Article 309: "[n]o reservations or exceptions may be made to this Convention unless expressly permitted by other articles of this Convention". The rationale behind Article 309 lies in the package deal nature of the Convention. Hugo Caminos and Michael Molitor, 'Progressive Development of International Law and the Package Deal' (1985) 79 AJIL 871.

compromises. While such accommodation was doubtless necessary to enable progress, compromises at the drafting stage are responsible for instances of silence in the Convention and for varying degrees of vagueness and ambiguity that can be detected in some of its provisions. The problem is not so much with authentic compromises as with compromises that conceal a continued lack of agreement[22] and which do little more than "[push] fundamental disagreement from the drafting stage to the implementation stage".[23]

A classic example of the latter sort of compromise is provided by the formula for maritime delimitation of the EEZ and the continental shelf. Articles 74 (delimitation of the EEZ) and 83 (delimitation of the continental shelf) – which require delimitation to produce 'an equitable solution' and to be 'on the basis of international law' – are the result of a compromise at the drafting stage between a group of States that favoured the criterion of equidistance (subject to exceptions for special circumstances) and a group of States that preferred the more flexible and nebulous approach to delimitation based on equitable principles.[24] In the words of the arbitral tribunal in the 2006 *Barbados v Trinidad and Tobago* arbitration, the formula adopted by these two provisions is "simple and imprecise";[25] it is "virtually devoid of substantive content… [and] is of next to no practical utility at all for those seeking to better understand how to delimit a boundary".[26] Consequently, the main substance of the applicable law in this area has effectively had to be developed by international courts and tribunals.[27]

[22] Arvid Pardo, 'The new Law of the Sea and Some of its Implications' (1987) 4 Journal of Law and the Environment 1, 12.
[23] Christine Bell, *On the Law of Peace: Peace Agreements and the Lex Pacificatoria* (OUP 2008) 166.
[24] Stephen Fietta and Robin Cleverly, *A Practitioner's Guide to Maritime Boundary Delimitation* (OUP 2016) 25.
[25] *Arbitration between Barbados and the Republic of Trinidad and Tobago, relating to the delimitation of the exclusive economic zone and the continental shelf between them (Barbados v Trinidad and Tobago)* (2006) para 222.
[26] Malcolm Evans, 'Maritime Boundary Delimitation' in Rothwell and others (n 15) 254, 258.
[27] For a commentary on the main judgments and awards see Fietta and Cleverly (n 24) Section II.

There can be little doubt that "vagueness, ambiguity, or silence do not serve the objectives of prevention of conflict and predictability".[28] At the same time, vagueness, ambiguity and silence present ideal circumstances for development of the LOSC by interpretation, be it interpretation by adjudicative authorities or by consensus in the practice of the parties to the LOSC. Viewed less pessimistically, vagueness and ambiguity can present "an opportunity for the interpreter to construct meanings according to… specific political, ethical, societal [and] cultural preferences".[29] Kulick notes that such a process requires a pretention of the part of the interpreter that *the* meaning of a given provision has been found when in reality "there is a multitude of constructed clarities and thus the opposite, i.e. vagueness and ambiguity".[30]

1.4 Jurisdictional Equilibrium

The jurisdictional equilibrium achieved by the drafters of the LOSC was vital to secure the Convention's quasi-universal adoption and remains important to ensure its continued acceptability. This is not to say that development of the Convention should be excluded to maintain the original jurisdictional equilibrium. Rather, it is to say that development must always be undertaken with a considerable degree of care and should ideally continue to occur "as a result of an orderly process at a regional or global level via multilateral institutions".[31] As the LOSC develops and adapts to new circumstances, a strong effort must be made to continue to harmonise opposing interests in line with the general rules and direction established by the Convention.

2. Navigational Rights in EEZs and in International Straits

The freedom of the seas is a well-known principle that characterised ocean use for centuries on end.[32] It is also a principle that has been considerably

[28] Bell (n 23) 13.
[29] Andreas Kulick, 'From Problem to Opportunity?: An Analytical Framework for Vagueness and Ambiguity in International Law' (2016) 59 German Yearbook of International Law 258.
[30] ibid.
[31] Tim Stephens and Donald Rothwell, 'The LOSC Framework for Maritime Jurisdiction and Enforcement 30 Years On' in David Freestone (ed), *The 1982 Law of the Sea Convention at 30: Successes, Challenges and New Agendas* (Martinus Nijhoff, 2013) 27, 35.
[32] On freedom of the seas see Robert Feenstra (ed), *Hugo Grotius Mare Libertum 1609-2009: Original Latin Text and English Translation* (Brill 2009); Nordquist and others (eds), *Freedom of Seas, Passage Rights and the 1982 Law of the Sea Convention* (Martinus Nijhoff, 2009); James Kraska and Raul Pedrozo, *The Free Sea: The American Fight for Freedom of Navigation* (Naval Institute Press 2018)

weakened by subsequent developments. The LOSC in particular subjected the freedom of the seas to a range of requirements, including marine environment protection requirements. In its declaration upon ratification of the LOSC, Germany noted that:

> This principle [of the freedom of the seas], which has governed all uses of the sea for centuries, has been affirmed and, in various fields, adapted to new requirements in the provisions of the Convention, which will therefore have to be interpreted to the furthest extent possible in accordance with that traditional principle.[33]

Scovazzi contends – rightly, in the present author's view – that the German declaration is not convincing in its central aspect: "there is no reason why the UNCLOS should be interpreted in the light of the past… and not in the light of the present, which shows a constant and almost irresistible trend towards the very erosion of the principle in question".[34] The question of whether navigational rights in the EEZ and in international straits should be approached with a retrospective or a contemporary/evolutionary outlook (as Scovazzi suggests), is one that will be contended with throughout later chapters. To begin with, it is important to examine the most relevant LOSC rules in relation to navigation (in this section) and marine environment protection (in Section 3).

2.1 The Importance of Navigational Rights and Freedoms

As explained by Gidel in 1932, the idea of freedom of the high seas owes its importance to the universal character of the need which it fulfills.[35] Although

[33] Declaration of Germany upon accession to the LOSC (14 October 1994) <http://www.un.org/depts/los/convention_agreements/convention_declarations.htm> accessed 29/12/2017.

[34] Tulio Scovazzi, 'The Evolution of International Law of the Sea: New Issues, New Challenges' in *Collected Courses of the Hague Academy of International Law* (Vol 286, Brill 2000) 232.

[35] Gilbert Gidel, *Le Droit International Public de La Mer* (Volume I, Mellottée 1932) 212. Although freedom of the seas is normally associated with the high seas, "it would have been useless and ineffectual if a right of access to and from the open sea and between different parts of it had not been recognised as well". See Ruth Lapidoth, 'Freedom of Navigation-Its Legal History and Its Normative Basis' (1975) 6 Journal of Maritime Law and Commerce 259.

the strategic needs associated with navigational rights are perhaps most relevant to a select group of States,[36] the economic interests are of truly universal concern. Decades after Gidel's assertion, the continuing importance of navigational rights and freedoms is repeatedly confirmed by the overwhelming readiness of flag and naval States to challenge coastal State claims that they perceive as excessive.[37]

Both from a historical as well as from a contemporary perspective, it is difficult to overstate the importance of navigational rights and freedoms in the law of the sea. To begin with economic interests, there can be little doubt that "freedom of navigation has been, and remains, a pre-requisite for international trade and commerce".[38] Historically, the economic importance of the freedom of the seas is well evidenced by the fact that the best known defence of the principle is enshrined in Hugo Grotius' *Mare Liberum*[39] – a work written at the request of the Dutch East India Company to defend its trade interests against Portugal's excessive claims over the Indian Ocean. More contemporarily, around 90% of world trade is carried by the international shipping industry.[40] Insofar as strategic interests are concerned, the importance of navigational rights and freedoms once again spans from the past to the present. Although navigational rights and freedoms may no longer be necessary to sustain the colonial aspirations of the past, they remain important for naval States in their efforts to secure and promote their strategic interests at sea. Suffice to say that, from a strategic perspective, the oceans comprise "the world's largest domain of maneuver, constituting a continuous, global body of water covering 71 percent of the surface of the Earth".[41]

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[36] Namely States such as the US, Russia and China that have vast naval fleets and interests.
[37] A good example is the US' Freedom of Navigation Programme. Annual reports (1991–present) outlining challenges undertaken in relation to what the US considers as excessive maritime claims are available online <http://policy.defense.gov/OUSDPOffices/FON.aspx> accessed 15/3/2017.
[38] Yoshifumi Tanaka, 'Navigational Rights and Freedoms' in Rothwell and others (n 15) 536.
[39] Robert Feenstra (ed), *Hugo Grotius Mare Libertum 1609-2009: Original Latin Text and English Translation* (Brill 2009).
[40] <http://www.ics-shipping.org/shipping-facts/shipping-and-world-trade> accessed 15/3/2017.
[41] James Kraska and Raul Pedrozo, *The Free Sea: The American Fight for Freedom of Navigation* (Naval Institute Press 2018) 1.

2.2 Clash with Coastal State Interests

From a coastal State perspective,[42] navigational interests can clash with security and marine environment protection interests. While conflicts of this type are not new, a number of factors have contributed to their escalation. Given growing environmental awareness and "[g]iven that the size of vessels continues to increase and that certain cargoes may be highly dangerous to the marine environment",[43] coastal States are more willing now than they were even a few decades ago to adopt preventive measures against accidental vessel-source pollution.[44] The LOSC seeks to reconcile navigational interests with coastal State interests. This it does not only by defining the extent of coastal State jurisdiction to protect the marine environment, but also by prescribing navigational rights in relation to the different maritime zones that it establishes.[45]

2.3 Freedom of Navigation in the EEZ

The EEZ regime contained in Part V of the LOSC is an innovation of the Convention the origins of which can be traced back to the practice of Latin American States in the aftermath of the Second World War.[46] That Part V was "[a]greed upon as a compromise between the creeping jurisdictional aspirations of the coastal State and the high seas purists of the flag States"[47] is evident from the first handful of provisions. Article 56 outlines the rights, jurisdiction and duties of the coastal State; Article 58 outlines the rights and duties of other States; whereas Article 59 provides a basis for the resolution of conflicts regarding unattributed rights and jurisdiction in the EEZ. Article 55, the first provision of Part V, provides that:

> The exclusive economic zone is an area beyond and adjacent to the territorial sea, subject to the specific legal regime

[42] It is not uncommon for a given State to have both coastal and flag State interests.
[43] Tanaka (n 37) 537.
[44] The increasing willingness of coastal States to adopt such measures is exemplified by the case-study scenarios in Part II of this thesis.
[45] Relevant LOSC provisions that determine coastal State jurisdiction to protect the marine environment and navigational rights in the EEZ and in international straits will be outlined and examined in Sections 2.3, 2.4 and 3 of this Chapter.
[46] David Attard, *The Eclsuive Economic Zone in International Law* (OUP 1987) 1-42; Orrego Vicuña, *The Exclusive Economic Zone* (CUP 1989) 1-15.
[47] Maria Gavouneli, *Functional Jurisdiction in the Law of the Sea* (Martinus Nijhoff 2007) 62.

> established in this Part, under which the rights and jurisdiction of the coastal State and the rights and freedoms of other States are governed by the relevant provisions of this Convention.[48]

The phrase "subject to the specific legal regime established in this Part"[49] indicates the *sui generis* nature of the EEZ. The EEZ is not a zone that falls under the coastal State's sovereignty. Neither is it part of the high seas. Instead, rights and duties in the EEZ need to be determined in accordance with Part V of the LOSC. The reference to the 'rights and jurisdiction of the coastal State' and to 'the rights and freedoms of other States' foreshadows the balanced and functional approach taken by the drafters in the subsequent articles of Part V.[50]

In allocating rights, jurisdiction and duties the drafters intended to create "a mutuality in the relationship of the coastal State and other States".[51] Nowhere is this more clear than in the text of Articles 56 and 58. Article 56(1), which sets out the rights, jurisdiction and duties of coastal States in the EEZ,[52] is counter-balanced by Article 56(2), which requires coastal States to have due regard to the rights and duties of other States. Article 58, which establishes the rights and duties of other States in the EEZ,[53] is counter-balanced by Article 58(3), which requires other States to have due regard to the rights and duties of the coastal State in the EEZ. Although Article 58(1) to an extent transposes to the EEZ the freedoms of the high seas as they are laid out in Article 87,[54] these are subjected by Article 58(3) to the rights and duties of the coastal State; to laws and regulations of the coastal State adopted in

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[48] LOSC, Article 55.
[49] ibid.
[50] Myron Nordquist and others (eds), *United Nations Convention on the Law of the Sea, 1982: A Commentary* (Vol II, Martinus Nijhoff 2002) 514.
[51] ibid 508.
[52] Including the jurisdiction to protect and preserve the marine environment under Article 56(1)(b)(iii).
[53] Including the right to freedom of navigation under Article 58(1).
[54] According to Article 58(1), the freedoms available in the EEZ are specifically those "of navigation and overflight and of the laying of submarine cables and pipelines, and other internationally lawful uses of the sea related to these freedoms, such as those associated with the operation of ships…."

accordance with the LOSC; and to other rules of international law compatible with Part V. Clearly, there is here "[n]o wholesale import of the high seas regime".[55]

Navigational rights in the EEZ depend ultimately on a delicate balancing of the navigational interests of flag States and the interests of coastal States (including security and marine environment protection interests).[56] The LOSC aids this balancing process by employing what has been referred to in the literature as a general principle of equivalence and reasonableness of competing uses – a principle that is reflected in the mutual obligations incumbent on coastal and other States to have 'due regard' to each other's rights and duties under Articles 56(2) and 58(3) respectively.[57] Where rights and freedoms of coastal and flag States clash, an assessment must be undertaken "of the relative importance of the interests involved".[58] The situation should be considered as a fluid one: since the importance attached to given interests (such as freedom of navigation or marine environment protection interests) may vary, so too may the outcome of any balancing exercise that is carried out.[59]

2.4 Navigational Rights Through International Straits

International straits, as "international highways"[60] of the ocean, are crucial for the expedient conduct of international maritime trade and commerce. To take an example from just one sector, maritime petroleum circulation depends largely on six major chokepoints, with the Hormuz and Malacca straits alone accounting for over 60% of oil transits.[61] Similarly, in the military context international straits "have had a very great importance in the struggle for sea

[55] Gavouneli (n 45) 66.
[56] In the words of Gavouneli (ibid 62): "[s]omewhere in the balance among the enumeration of exclusive rights and the inherent restrictions posed upon instances of concurrent jurisdiction lies the true nature of the EEZ".
[57] Barbara Kwiatkowska, *The 200 Mile Exclusive Economic Zone in the New Law of the Sea* (Martinus Nijhoff 1989) 212.
[58] ibid 213.
[59] See Jon M. Van Dyke, 'The disappearing right to navigational freedom in the exclusive economic zone' (2005) 2 Marine Policy 107, 121.
[60] *Corfu Channel Case (UK v Albania)* (1949) ICJ Rep 4 p 29.
[61] Jean-Paul Rodrigue, 'Straits, Passages and Chokepoints: A Maritime Geostrategy of Petroleum Distribution' (2004) 48 Gahiers de Géographie du Québec 357, 365. The four other major choke points for petroleum circulation are the Panama Canal, the Bosphorus, the Suez Canal and the Bab el-Mandab Strait.

control throughout the ages".[62] At the same time, for littoral States international straits present an increased likelihood for accidents with potentially graver environmental consequences than usual, given factors such as the restricted room for manoeuvrability, the tendency for waters to be shallow and the relative vicinity of waters to the coastline. As such, international straits constitute "a prime example of situations in which the interests of flag and coastal States collide".[63]

The LOSC dedicates Part III to straits used for international navigation and establishes the right of transit passage as the main navigational right through such straits. The right of transit passage is an innovation of the LOSC that was agreed as a compromise between maritime States (who opposed extension of the territorial sea to 12 nautical miles out of a fear that this would negatively impact on navigiational rights in strategically important straits) and littoral States (who, concerned about the threat of environmental pollution, desired competence to regulate the passage of foreign vessels through international straits).[64] Acceptance of the Part III regime made it possible for agreement to be reached on a 12 nautical mile territorial sea and on the EEZ regime.[65]

The transit passage regime applies to straits used for international navigation between one part of the high seas or an EEZ and another part of the high seas or an EEZ.[66] According to Article 38, it entails for all ships and aircraft transiting such straits the freedom of navigation and overflight for the purpose of continuous and expeditious transit. Article 39(1)(d) requires ships to comply with other relevant provisions of Part III. This means that ships must comply with obligations regarding research and survey activities under

[62] Milan Vigo, 'Maritime Strategy and Sea Control: Theory and Practice' (Routledge 2016) 188.
[63] Erik Jaap Molenaar, *Coastal State Jurisdiction over Vessel-Source Pollution'* (Kluwer 1998) 283.
[64] Donald Rothwell, 'International Straits' in Rothwell and others (n 15) 114, 116. See also Nilüfer Oral, 'Governance and Environmental Protection of Straits Used for International Navigation under UNCLOS' in Jill Barrett and Richard Barnes (eds), *Law of the Sea: UNCLOS as a Living Treaty* (BICL 2016) 267, 268.
[65] Nordquist (n 48) 279.
[66] LOSC, Article 37.

Article 40; with any sea lanes and traffic separation schemes designated in accordance with Article 41; and with any laws and regulations adopted by strait States in accordance with Article 42.[67] Article 39(2) requires ships in transit to comply with generally accepted international regulations, procedures and practices for safety at sea and for the prevention, reduction and control of pollution from ships.[68] Article 42 (which deals with the prescriptive jurisdiction of littoral States) emphasises Article 39(1)(d) by requiring foreign ships utilising the right of transit passage to comply with laws and regulations adopted by strait States.[69] It also ascertains that the flag State of any ship that contravenes such laws and regulations or any other provision of Part III bears international responsibility for any loss so occasioned to the strait bordering State.[70]

The transit passage regime "significantly curtailed the ability of [littoral States] to regulate and enforce laws for the protection of the environment and safety of navigation".[71] Article 41(1) allows littoral States to designate sea lanes and to prescribe traffic separation schemes to promote the safe passage of ships. These must conform to generally accepted international regulations and must be referred to the IMO for their (multilateral) adoption.[72] Article 42(1)(a) allows coastal States to adopt laws and regulations dealing with the safety of navigation and the regulation of maritime traffic *as provided for in Article 41*.[73] Article 42(1)(b) allows for the adoption of rules and regulations dealing with the prevention, reduction and control of pollution that give effect to applicable international regulations regarding the discharge of oil, oily wastes and other noxious substances in the strait. The prescriptive jurisdiction of strait bordering States is qualified by two conditions: any laws and regulations adopted must not discriminate among foreign ships and must not have the

[67] Nordquist (n 48) 343.
[68] LOSC, Article 39(2)(a) and (b) respectively.
[69] LOSC, Article 42(4).
[70] LOSC, Article 42(5).
[71] Oral (n 62) 274.
[72] LOSC, Articles 41(3) and (4).
[73] In relation to Article 42(1)(a), it has been noted that "[t]he rules established in article 41 are adopted without expansion in article 42". See Nordquist (n 48) 375.

practical effect of denying, hampering or impairing the right of transit passage.[74]

The traditional interpretation of Article 42 has been that the jurisdiction that it provides is prescriptive only.[75] While in relation to the territorial sea Article 25(1) expressly allows coastal States the right to prevent non-innocent passage, there is no similar right available to strait bordering States which are instead bound in Part III by multiple exhortations (in Articles 42(2) and 44) to the effect that the right of transit passage shall not be denied or hampered. In the case of violations of laws and regulations referred to in Article 42(1)(a) and (b) which cause or threaten major damage to the marine environment of the straits, Article 233 of the Convention expressly allows littoral States to take appropriate enforcement measures. Moreover, there is nothing in Part III that denies litoral States the right to exercise enforcement jurisdiction once a ship enters their ports under Article 220(1) of the Convention.

Article 43 requires user and littoral States to cooperate in the establishment and maintenance of navigational and safety aids and in attempts for the prevention, reduction and control of pollution from ships. Article 43 fails to provide for any possibility of direct enforcement by the littoral State and, should user States fail to cooperate, it is not an option for littoral States to deny or hamper passage. Besides resorting to Part XV dispute settlement, the only conceivable way to enforce cooperation would be for littoral States to refuse to provide navigational and safety aids (given the absence of any direct obligation so to do) until flag States show a willingness to cooperate.[76] To date, the Malacca and Singapore Straits provide the only example of an effective implementation of Article 43.[77]

[74] LOSC, Article 42(2).
[75] Nordquist (n 48) 377.
[76] ibid.
[77] IMO/SGP 2.1/1 submitted by Indonesia, Malaysia and Singapore, 'The Cooperative Mechanism between the Littoral States and User States on Safety of Navigation and Environmental Protection in the Straits of Malacca and Singapore' (14 August 2007).

3. Coastal State Jurisdiction to Protect and Preserve the Marine Environment Against Accidental Vessel-Source Pollution

3.1 General Approach under Part XII

The establishment of a marine environment protection regime was high on the agenda at UNCLOS III.[78] By and large, the concerted efforts that were made to this effect are reflected in a dedicated Part XII, which, in Articles 192 to 237, sets out an international legal framework for marine environment protection. Article 192, "an essential component of the comprehensive approach"[79] to marine environment protection, establishes a general obligation on all States to protect and preserve the marine environment. The obligation is incumbent on all States and, since no specification is made as to which part of the oceans it applies to, the obligation must be considered as a generally applicable one. This seemingly modest eleven-word provision actually has an expansive content that is "detailed in the subsequent provisions of Part XII... as well as by reference to specific obligations set out in other international agreements".[80]

Article 194(1) obliges States to take all measures necessary to prevent, reduce and control pollution of the marine environment from any source. The obligation to take measures in relation to pollution *from any source* indicates the comprehensiveness of the LOSC which, unlike its predecessor Geneva Conventions, does not limit itself to one or more specific types of pollution. Vessel-source pollution is mentioned specifically in Article 194(3)(b), which provides that measures taken pursuant to Part XII must include measures designed to minimise to the fullest extent possible operational and accidental vessel-source pollution.[81] The drafters' awareness of the potential conflict between marine environment protection measures and freedom of navigation, and their desire to maintain a balance between the different interests, is evident

[78] Myron Nordquist and others (eds), *United Nations Convention on the Law of the Sea, 1982: A Commentary* (Vol IV, Martinus Nijhoff 2002) 3.
[79] ibid 36.
[80] *South China Sea Arbitration (Philippines v China)*, PCA, Award on the Merits, 12 July 2016 para 942.
[81] LOSC, Article 194(3)(b).

in the Article 194(4) requirement for States taking measures to prevent, reduce or control pollution to "refrain from unjustifiable interference with activities carried out by other States in the exercise of their rights".[82]

Article 197 is the first provision in Section 2 of Part XII ('Global and Regional Cooperation'). It requires States to cooperate, either on a global or on a regional basis, directly or through competent international organisations, in the elaboration of international rules for marine environment protection.[83] The obligation to cooperate is an important one which – as pointed out by ITLOS in the *MOX Plant* case and as will be seen in Chapter 2 of this thesis – also happens to be a fundamental principle of general international law.[84] To stick to Part XII, however, the general Article 197 obligation to cooperate reappears in a number of other articles. Article 211(1), for instance, requires States to work through the IMO or general diplomatic conference to *inter alia* establish international rules and standards for the prevention, reduction and control of vessel-source marine pollution. As such, Article 211(1) once again emphasises "the pre-eminence of international rules and standards for the control of vessel-source pollution".[85] While coastal States can – or, rather, must – take measures to prevent vessel-source pollution, the general approach under Part XII requires that "if there is to be interference [with freedom of navigation], it must be in accordance with international rules and standards".[86] This clearly limits the ability of coastal States to protect the marine environment. Generally speaking, however, the LOSC can be positively construed as having brought about "a paradigm shift in the international law of the marine environment from the freedom to pollute to an obligation to prevent pollution"[87] from any source, including accidental vessel-source pollution.

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[82] LOSC, Article 194(4).
[83] In calling for the elaboration of international rules, Article 197 illustrates the framework nature of the Convention.
[84] *MOX Plant* (*Ireland v United Kingdom*) (Provisional Measures) ITLOS No. 10 (3 December 2001) para 82.
[85] Nordquist (n 76) 201.
[86] Aldo Chircop, 'The Designation of Particularly Sensitive Sea Areas: A New Layer in the Regime for Marine Environmental Protection from International Shipping' in Aldo Chircop and others (eds), *The Future of Ocean Regime-Building: Essays in Tribute to Douglas M. Johnston* (Martinus Nijhoff 2009) 573, 577. See also Churchill (n 20) 27.
[87] Yoshifumi Tanaka, *The International Law of the Sea* (CUP 2015) 276.

3.2 The Utilisation of Rules of Reference

One of the central aims of Part XII of the LOSC is to harmonise rules and standards dealing with marine environment protection. Primarily, the drafters sought to achieve this goal through the utilisation of rules of reference. Several provisions of the Convention require States to "take account of", "conform to", "implement" or "give effect to" international rules and standards developed through the competent international organisation(s).[88] In relation to vessel-source pollution, for instance, Article 211(5) determines that, in respect of their EEZs, States may "adopt laws and regulations for the prevention, reduction and control of pollution from vessels conforming to and giving effect to generally accepted international rules and standards established through the competent international organisation or general diplomatic conference".[89] Beyond facilitating harmonisation of national rules, rules of reference can fulfil a second important function in the context of the Convention's development. As noted by Tanaka, "by updating 'generally accepted international rules and standards', it becomes possible to adapt relevant rules of the LOSC to [new situations]".[90]

There are two main regulatory levels of relevance to the regulation of vessel-source pollution. First, the LOSC authoritatively determines the boundaries of State competence to take marine environment protection measures. Secondly, there exist a variety of instruments that are developed by international organisations (most notably the IMO) and that lay down detailed technical rules and standards. Rules and standards of the latter type can be contained in two distinct types of IMO instruments, i.e. either in recommendations contained in resolutions adopted (normally unanimously) by the IMO Assembly, the IMO Maritime Safety Committee (MSC), or the IMO Marine Environment Protection Committee (MEPC) or, on the other hand, in IMO treaties. While technical instruments existed and were important even before the adoption of the LOSC, following the adoption of the LOSC they

[88] For a comprehensive list of the various references to international rules and standards and for a list of IMO instruments corresponding to such references see Annex I of the IMO Study on Implications of the LOSC for the IMO (n 16).
[89] LOSC, Article 211(5).
[90] Tanaka (n 85) 277.

became even more so because all State parties to the Convention are, by virtue of its rules of reference, bound to rules and standards contained within such technical instruments.

From the variety of IMO treaties that are relevant to the regulation of vessel-source pollution, one that deserves highlighting is MARPOL. MARPOL sets out to achieve "the complete elimination of intentional pollution of the marine environment by oil and other harmful substances and the minimisation of accidental discharge of such substances".[91] It includes six technical annexes each of which contains detailed regulations on specific categories of vessel-source pollution. MARPOL is a good example of a technical treaty that is "left for dynamic evolution outside the LOSC [jurisdictional] framework but intimately connected with it"[92] through the mechanism of rules of reference.

The possibility for development outside the LOSC framework gives rise to one important question. Formally, the IMO's position is that IMO technical instruments "do not attempt to regulate the jurisdictional power of the coastal State, which is a subject exclusively within the scope of [the LOSC]".[93] In reality, however, the separation between jurisdictional and technical rules is not always clear-cut and it is important to consider the possibility that, in developing technical rules and standards, the international community may alter the jurisdictional balance established by the LOSC. Ringbom, for instance, refers to a series of amendments made to SOLAS Chapter V which "clarified that traffic separation schemes and other ships' routeing systems may be more widely used than what a mere reading of the LOSC would suggest, that such systems may include mandatory 'no go' areas within the EEZ of the coastal State, and that they may be adopted for the sole reason of protecting the marine environment".[94] There is, in fact, a subtle yet detectable progression from the text of Article 211(1) of the LOSC (which suggests that pollution prevention is an indirect consequence of the primary

[91] MARPOL, Preamble, para 4.
[92] Redgwell (n 17) 186.
[93] IMO Study on Implications of the LOSC for the IMO (n 16) 18.
[94] Henrik Ringbom, 'Vessel-source pollution' in Rayfuse (n 20) 121.

aim of routeing systems, i.e. the prevention of accidents) to the text of SOLAS Regulation V/10.1 ("Ships' routeing systems contribute to safety of life at sea, safety and efficiency of navigation, and/*or* [emphasis added] protection of the marine environment"). This said, it would be wrong to consider Regulation V/10.1 and associated guidelines as constituting an outright departure from the LOSC. This much is evident from SOLAS Regulation V/10.10 which states that "[n]othing in this regulation… shall prejudice the rights and duties of Governments under international law…".[95] Regulation V/10.10 acknowledges the superiority of the LOSC and clarifies that Regulation V/10.1 is not to be considered as an amendment of the relevant LOSC provisions. The SOLAS amendments should therefore be considered more as clarifications rather than amendments to the jurisdictional balance of the LOSC, as Ringbom seems to suggest.

Ringbom has a point in asserting that "the LOSC regime is neither designed nor intended to prohibit any future alterations in the jurisdictional balance".[96] Alterations that considerably meddle with the jurisdictional balance struck by the LOSC are, however, likely to tend towards an infringement of Article 311(3).[97] Insofar as the relationship between agreements relating to protection and preservation of the marine environment and Part XII of the LOSC is concerned, the controlling provision is Article 237 – a *lex specialis* applicable to Part XII exclusively.[98] According to Article 237(1), Part XII is "without prejudice... to agreements which may be concluded in furtherance of the general principles set forth in [the LOSC]."[99] Article 237(2) requires such agreements "[to] be carried out in a manner consistent with the general principles and objectives of [the LOSC]".[100] Boyle argues that Article 237 allows "much greater latitude to depart from the terms

[95] SOLAS, Regulation V/10.10.
[96] Ringbom (n 92) 121.
[97] On Article 311(3) see Section 4.2.2.1 below.
[98] Nordquist (n Vol IV) 237.7(a).
[99] LOSC, Article 237(1).
[100] LOSC, Article 237(2).

of Part XII than from other parts of the Convention, since as a *lex specialis* Article 237 overrides Article 311(3)".[101]

3.3 Prescriptive Coastal State Jurisdiction in the EEZ

The general rule in regards to prescriptive coastal State jurisdiction to prevent vessel-source pollution is set out in Article 211(5), which determines that, for the purpose of enforcement in respect of their EEZ, coastal States "…may adopt laws and regulations for the prevention, reduction and control of pollution from vessels conforming to and giving effect to generally accepted international rules and standards established through the competent international organisation or general diplomatic conference".[102] In requiring domestic legislation to conform and give effect to Generally Accepted International Rules and Standards ('GAIRS'), Article 211(5) limits the prescriptive jurisdiction of coastal States and reaffirms the pre-eminence of the international level for rule-setting. There are two notable exceptions to this general approach: Articles 211(6) and 234.

Article 211(6) allows coastal States to adopt special mandatory measures for vessel-source pollution prevention in relation to clearly defined areas of their EEZ where GAIRS are inadequate to meet special circumstances and "where the adoption of special mandatory measures… is required for recognised technical reasons in relation to [their] oceanographical and ecological conditions, as well as [their] utilisation or the protection of [their] resources and the particular character of [their] traffic".[103] A number of cumbersome procedural requirements need to be fulfilled before the relevant legislation can come into force.[104] In practice, Article 211(6) appears never to have been used.[105] Several suggestions have been offered as to why this may be the case, including the possibility that States may be put off by the

[101] Alan Boyle, 'Further Development of the Law of the Sea Convention: Mechanisms for Change' (2005) 54 ICLQ 579.
[102] LOSC, Article 211(5).
[103] LOSC, Article 211(6)(a).
[104] ibid paras (a), (b) and (c).
[105] Although no special areas under Article 211(6) have been created, an increasing number of marine protected areas are being created in the form of MARPOL special areas and Particularly Sensitive Sea Areas (PSSAs), which provide more flexibility than Article 211(6). See Alexander Proelss (ed), *United Nations Convention on the Law of the Sea: A Commentary* (Hart 2017) 1438. On PSSAs see Chapter 3, Section 5.1.

procedural hurdles that would need to be fulfilled in scenarios where they can be under great pressure to act with immediacy.[106] A good example of such a scenario is offered by the aftermath of the 2002 *Prestige* disaster. Effectively acting outside of the LOSC framework, France, Spain and Portugal unilaterally adopted legislation banning single hull tankers that were more than 15 years old and carrying heavy fuel oil from their respective EEZs.[107]

Article 234 (commonly referred to as the 'Arctic Exception')[108] gives coastal States the right to adopt and enforce laws and regulations for the prevention, reduction and control of vessel-source pollution in relation to ice-covered areas within the limits of their EEZ. Conditions must be such that particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance.[109] Article 234 is the only provision in Part XII that allows for unilateral coastal State adoption of rules for the prevention, reduction and control of vessel-source pollution: coastal States are bound by GAIRS as a minimum but are free to unilaterally adopt more stringent conditions in relation to the relevant areas so long as the rules adopted are not discriminatory, have due regard to navigation and protection and preservation of the marine environment, and are based on the best available scientific evidence.[110]

3.4 Enforcement Coastal State Jurisdiction in the EEZ

Coastal State enforcement jurisdiction to protect the marine environment from vessel-source pollution in the EEZ is mainly set out in Article 220. Article 220 provides coastal States with a graduated enforcement competence

[106] Robin Churchill, 'Under-Utilized Coastal State Jurisdiction: Causes and Consequences' in Henrik Ringbom (ed), *Jurisdiction over Ships: Post-UNCLOS Developments in the Law of the Sea* (Brill 2015) 278, 295.
[107] A number of flag States protested against the unilateral introduction of such measures and insisted on a more multilateral approach under the auspices of the IMO. See paras 1.13 – 1.28 of the report of the 76th session of the Maritime Safety Committee (MSC) (MSC 76/23) for a summary of the discussion. Eventually, at the 50th session of the Marine Environment Protection Committee (MEPC) in December 2003, multilateral agreement was reached on the acceleration of the phase-out timetable for single hull tankers. See Aleka Mandaraka-Sheppard, *Modern Maritime Law and Risk Management* (2nd edn, informa 2009) 1000-1002.
[108] Article 234 will be analysed in Chapter 4.
[109] LOSC, Article 234.
[110] ibid.

proportionate to the perceived severity of the pollution damage at stake.[111] Where there are clear grounds for believing that a vessel has committed a violation of applicable international rules and standards for the prevention, reduction and control of pollution, the coastal State may request the vessel to provide information that is required to establish whether a violation has in fact occurred.[112] Where there are clear grounds for believing that such a violation has resulted in a substantial discharge causing or threatening significant pollution of the marine environment, and where the vessel has refused to give information or has provided information that is manifestly at variance with the evident factual situation, the coastal State may undertake a physical inspection of the vessel.[113] Finally, where there is clear objective evidence that such a violation has resulted in a discharge causing major damage or threat of major damage to the coastline or related interests of the coastal State, or to any resources of its territorial sea or EEZ, the coastal State may institute proceedings, including the detention of the vessel.[114]

4. Development of the LOSC

4.1 The Inevitable Need For the LOSC to Develop

That the LOSC needs to develop in order to maintain its relevance is not a new realisation. In his concluding remarks at the 187th plenary meeting of UNCLOS III, a Sri Lankan delegate made the following pointed observation:

> [the LOSC] establishes the combined wisdom of our peoples as to how best to regulate activities with respect to the oceans at the present time and in the light of [current knowledge]… But it is in the nature of all things that they do not remain static, that there will be growth, that there will be decay. The march of technology and changing perceptions and aspirations will, in time, place pressures upon the regimes we

[111] Nordquist (n 76) 282.
[112] LOSC, Article 220(3).
[113] LOSC, Article 220(5).
[114] LOSC, Article 220(6).

establish today.[115]

Noting that the Convention encapsulates within it "the machinery for orderly change",[116] Mr Jayewardene considered that it would be up to the international community "to be vigilant, to detect obsolescence and to remedy it".[117] While the passage of time has a tendency to demand adaptation from all treaty regimes,[118] the regime governing the law of the sea – an extensive and dynamic area of law – is especially prone to such pressures. Moreover, since a number of issues (including the issue of marine pollution) cannot be pigeonholed as exclusively LOSC issues, account must also be taken of related regimes and developments within them. Particularly relevant are the considerable developments registered over the past decades in the field of international environmental law.

As exemplified by law of the sea / international environmental law interactions, fragmentation[119] can be an important catalyst for development of the LOSC. Fragmentation refers to the "rise of specialised rules and rule-systems that have no clear relationship to each other"[120] and is a phenomenon with both positive and negative connotations.[121] Positively, fragmentation reflects international law's expansion into innovative fields. Negatively, it presents the distinct danger of conflicting rules on the international plane. The latter aspect of fragmentation has been considered as one that "increases the need for harmonisation through interpretation and, increasingly, informal

[115] Mr. Jayewardene, *Official Records of UNCLOS III* (Vol XVII) p 48 para 161.
[116] ibid.
[117] ibid.
[118] Bowman, for example, provides an in-depth examination of the need for adaptation of the International Convention for the Regulation of Whaling. He notes that "treaties must be envisaged as living instruments engaged in a continuous process of evolution and development, constantly interacting with other such entities, and constructing an adaptive niche for themselves in the wider juridical environment". Michael Bowman, 'Normalizing the International Convention for the Regulation of Whaling' (2008) 29 Michigan Journal of International Law 293, 333.
[119] On fragmentation see: ILC, 'Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law' (A/CN.4/L.682, 13 April 2006), hereinafter the 'ILC Consolidated Study on Fragmentation'; ILC, 'Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law' (A/CN.4/L.702, 18 July 2006), hereinafter 'ILC Summary Conclusions on Fragmentation'. See also Margaret Young (ed), *Regime Interaction in International Law: Facing Fragmentation* (CUP 2012).
[120] ILC Consolidated Study on Fragmentation (n 117) para 483.
[121] ILC Summary Conclusions on Fragmentation (n 117) para 9.

modification".[122] In the case of international environmental law, the impact that this regime has had on the LOSC regime has been so pronounced that the relationship between the two can be described in terms of 'mainstreaming'.[123] International environmental law discourse has infiltrated the LOSC regime to such an extent that it has "become a part of the latter's daily routine and self-understanding".[124] Since international environmental law has undeniable value, the tendency is for mainstreaming to be viewed positively as an opportunity for reciprocal enrichment. In practice, however, mainstreaming "is rarely so straightforward"[125] – it requires consideration of the strength of the respective regimes, of the likelihood of each to be modified by the other and, in our particular context, of the ability of the LOSC regime to develop in light of international environmental law without undermining its wider acceptability.

4.2 The Mechanisms for Change and Development

This section examines formal and informal mechanisms for change and development of the LOSC. The various mechanisms can be grouped into two categories, i.e. those that have the potential to develop the LOSC through *interpretation* of its existing provisions and those that go beyond interpretation to actually *modify* the treaty.[126] Under the former category, consideration will be given to the relevance of subsequent agreements and subsequent practice to the interpretative process; to evolutionary interpretation; and to systemic integration. The following mechanisms for modification will then be considered: the formal amendment procedures contained in Articles 312-316 of the LOSC; informal amendment through subsequent practice; and the possible (but unlikely) development of new, inconsistent rules of customary law.

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[122] Irina Buga, 'Between Stability and Change in the Law of the Sea Convention: Subsequent Practice, Treaty Modification, and Regime Interaction' in Rothwell and others (n 15) 46, 61.
[123] For a brief overview of 'mainstreaming' as a technique of regime interaction see Martti Koskenniemi, 'Hegemonic Regimes' in Young (n 117) 305, 319.
[124] ibid.
[125] ibid.
[126] This is not to say that the distinction between interpretation and modification is always (or even generally) a simple or a clear-cut one. Making the best of this ambiguity, States are often keen to frame any developments under the category of interpretation rather than modification (if only to avoid the prospect of complicated formal amendment procedures).

4.2.1 Interpretation

Interpretation can play an important role in the Convention's development. Development through interpretation can however occur only within the confines of the text of the Convention (wide as they may be in certain instances). Once the need arises to step outside the said confines, resort must then be had to those mechanisms that can be utilised to modify rather than interpret the Convention.

The general rule of treaty interpretation is elaborated in Article 31 of the Vienna Convention on the Law of Treaties ('VCLT'):[127]

> [a] treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose".[128]

It is a commonly held conception that the purpose of the general rule of interpretation is to ascertain the common intention of the parties at the time of drafting.[129] The view that the sole purpose of treaty interpretation is to give effect to the intention of its drafters is "the juridically natural view, derived from well-known principles of private contract law".[130] On the other hand, however, the difficulty (and sometimes the outright impossibility) of ascertaining the intention of the parties means that the goal of ascertaining the intention of the parties "[can only be] true in a highly specialized, almost figurative sense".[131] These considerations featured strongly in the reasoning of the ILC and led to the decision to base Article 31 on the view that:

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[127] Vienna Convention on the Law of Treaties (adopted 23 May 1969, entered into force 27 January 1980) 1155 UNTS 331.
[128] VCLT, Article 31(1). For commentaries on Article 31(1) see Anthony Aust, *Modern Treaty Law and Practice* (CUP 2013) 208 onwards; Richard Gardiner, *Treaty Interpretation* (OUP 2017) 161 onwards.
[129] This conception is reminiscent of the subjective approach to treaty interpretation. For an overview of the subjective and other approaches to treaty interpretation see Gerald Fitzmaurice, 'The Law and Procedure of the International Court of Justice: Treaty Interpretation and Certain Other Treaty Points' (1951) 28 Brit. Y.B. Int'l L. 1, 3.
[130] ibid.
[131] Bowman (n 116) 317.

> the text must be presumed to be the authentic expression of the intentions of the parties; and that, in consequence, the starting point of interpretation is the elucidation of the meaning of the text, not an investigation *ab initio* into the intentions of the parties.[132]

Another interesting element in Article 31(1) is the reference to the object and purpose of a treaty. A treaty as complex as the LOSC will almost invariably have a variety of (potentially clashing) objects and purposes[133] to which different parties may well attach varying degrees of importance. In practice, and as illustrated by the *Whaling in the Antarctic* case,[134] the "duality in the object and purpose of [a] Convention… [may prohibit the concept from proving] dispositive in the exercise of interpreting the Convention".[135] For this reason, the emphasis in Article 31 is placed not so much on the object and purpose of the treaty as on the task of *giving effect to the terms* of the treaty in the light of its object and purpose.[136]

Although the first paragraph of Article 31 is probably the one that is most frequently cited, the Article's three other paragraphs are "equally elements of the general rule".[137] The fact that Article 31's heading refers to a singular "General rule of interpretation" rather than to "General rules" indicates that there is no hierarchical order among the various elements of the article.[138] As the ILC commentary states, "all the various elements, as they [are] present in any given case, [should] be thrown into the crucible, and their

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[132] ILC, 'Yearbook of the International Law Commission' (1966, Vol II) A/CN.4/SER.A/1966/Add.l 220. Hereinafter the '1966 ILC Draft Articles and Commentary'.
[133] The objects and purposes of the LOSC are affirmed in paragraph four of the Conveniton's preamble.
[134] *Whaling in the Antarctic (Australia v Japan: New Zealand intervening)* (Judgment) (2014) ICJ Rep 226 para 57: "Australia and Japan have respectively emphasized conservation and sustainable exploitation as the object and purpose of the Convention in the light of which the provision should be interpreted."
[135] Dino Kritsiotis, 'The Object and Purpose of a Treaty's Object and Purpose' in Michael Bowman and Dino Kritsiotis, *Conceptual and Contextual Perspectives on the Modern Law of Treaties* (CUP 2018) 237, 284.
[136] Bowman (n 116) notes at 318 that this "can be regarded as an attempt to strike a balance between the "textual" and "teleological" approaches to interpretation, while according a degree of primacy to the former".
[137] Gardiner (n 126) 222.
[138] 1966 ILC Draft Articles and Commentary (n 130) 219-220.

interaction [will] give the legally relevant interpretation".[139] The subsequent sections go on to analyse four particularly relevant means of interpretation. First, subsequent agreements and practice under Articles 31(3)(a) and (b) VCLT will be considered as authentic means of interpretation. Attention will then shift to evolutionary interpretation and, finally, to harmonious interpretation (or systemic integration) under Article 31(3)(c) VCLT.

4.2.1.1 Subsequent Agreements and Practice Establishing Agreement Regarding Interpretation

Articles 31(3)(a) and (b) VCLT respectively determine that, in interpreting a treaty, account shall be taken of any subsequent agreement or practice which establishes the agreement of the parties regarding the treaty's interpretation. According to the ILC's Draft Conclusions on Subsequent Agreement and Subsequent Practice, subsequent agreements and subsequent practice may contribute to the clarification of the meaning of a treaty and, in doing so, "may [narrow], [widen], or otherwise [determine] the range of possible interpretations, including any scope for the exercise of discretion which the treaty accords to the parties".[140] Subsequent agreements and practice must be presumed as intended to interpret the treaty rather than to amend or to modify it.[141]

Subsequent agreement can be defined as an agreement between the parties reached after the conclusion of a treaty, regarding the interpretation of the treaty or the application of its provisions.[142] So long as it establishes the fact of agreement between all of the parties to a treaty, the form taken by the agreement is largely irrelevant.[143] Given the sovereignty of the parties to a treaty, it is entirely logical that they should be able to establish an authoritative

[139] ibid.
[140] International Law Commission, 'Subsequent agreements and subsequent practice in relation to the interpretation of treaties: Draft Conclusions' (A/CN.4/L.907, 11 May 2018) hereinafter 'ILC Draft Conclusions on Subsequent Agreements and Subsequent Practice', Conclusion 7(1).
[141] ibid, Conclusion 7(3).
[142] ibid, Conclusion 4(1).
[143] ibid, Conclusion 10(1). See also Aust (n 126) 213 and Gardiner (n 126) 243.

interpretation of it by subsequent agreement.[144] The Nodules Regulations,[145] the Sulphides Regulations[146] and the Ferromanganese Crusts Regulations[147] can be mentioned as examples of subsequent agreements between the parties regarding application of the LOSC. In a 2011 Advisory Opinion,[148] ITLOS acknowledged that Article 31(2) of the Nodules Regulations and Article 33(2) of the Sulphides Regulations – which incorporate the precautionary approach into the respective regulations – are relevant for the implementation of the due diligence obligation of States under Article 153(4) of the LOSC to ensure compliance of all activities in the Area with Part XI of the Convention. The same could now be said of Regulation 33(2) of the Ferromanganese Crusts Regulations.

Subsequent practice fulfills a similar function to subsequent agreements, with the primary difference being that "the potential difficulties in establishing whether there has been clear and sufficient practice to show agreement… are obviously much greater than in the case of [agreement under Article 31(3)(a)]".[149] Authors are generally agreed that the direct participation of all of the parties in the practice is not required so long as their acquiescence with the practice can be ascertained.[150]

4.2.1.2 Evolutionary Interpretation

Evolutionary interpretation[151] is not a separate means of interpretation. It is an interpretative method that is prescribed by proper application of Articles 31-33

[144] Ian McTaggart Sinclair, *The Vienna Convention on the Law of Treaties* (MUP 1984) 136.
[145] International Seabed Authority, 'Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area' (ISBA/19/C/17, 22 July 2013).
[146] International Seabed Authority, 'Regulations on Prospecting and Exploration for Polymetallic Sulphides in the Area' (ISBA/16/A/12/Rev.1, 15 November 2010).
[147] International Seabed Authority, 'Regulations on Prospecting and Exploration for Cobalt-rich Ferromanganese Crusts in the Area' (ISBA/18/A/11, 27 July 2012).
[148] *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (Advisory Opinion) ITLOS No. 17 (1 February 2011) paras 124-125.
[149] Gardiner (n 126) 232.
[150] Aust (n 126) 215; Gardiner (n 126) 267. See also Conclusion 10(2) of the ILC Draft Conclusions on Subsequent Agreements and Subsequent Practice (n 138).
[151] On evolutionary interpretation see Erik Bjorge, *The Evolutionary Interpretation of Treaties* (OUP 2014); Christian Djeffal, *Static and Evolutive Treaty Interpretation: A Functional Reconstruction* (CUP 2015).

VCLT[152] in regard to those instances where, in the words of the ICJ, "the parties' intent upon conclusion of the treaty was… to give the terms used… a meaning or content capable of evolving… so as to make allowance for, among other things, developments in international law".[153] An evolutive interpretation can therefore be defined as "an interpretation where a term is given a meaning that changes over time".[154]

Unlike the traditional view, which depicts evolutionary interpretation as a technique that is in direct conflict with the original intention of the parties,[155] the modern view holds that, in appropriate cases, staying loyal to the parties' intentions can mandate an evolutionary approach to interpretation.[156] While the ICJ originally explored the traditional approach,[157] it eventually settled on the modern approach.[158] The *Case Concerning the Gabčíkovo-Naymaros Project*,[159] where the Court had to interpret a 1977 Treaty regarding the construction of hydroelectric dams, is often cited as an example. Hungary contended that the treaty had been terminated on a number of grounds, including the ground of ecological necessity. While this argument was not accepted by the ICJ, the Court concluded that "[w]hat might have been

[152] When Article 31 was being drafted, the ILC concluded that there was no need to include a provision on the temporal element as "correct application of the temporal element would normally be indicated by interpretation of the term in good faith". Report of the of the International Law Commission on the work of its Eighteenth Session, 4 May–19 July 1966, Official Records of the General Assembly, Twenty-first Session, Supplement No. 9 (A/6309/Rev.1) 222.

[153] *Dispute Regarding Navigational and Related Rights (Costa Rica v Nicaragua)* (Judgment) (2009) ICJ Rep 213 para 63.

[154] Sondre Torp Helmersen, 'Evolutive Treaty interpretation: Legality, Semantics and Distinctions' (2013) 6 EJLS 127, 128.

[155] Dupuy notes that "there is a solid tradition of viewing dynamic interpretation with some suspicion" and to this effect quotes the works of Charles de Visscher and Sir Gerald Fitzmaurice. See Pierre-Marie Dupuy, 'Evolutionary Interpretation of Treaties: Between Memory and Prophecy' in Enzo Cannizzaro, *The Law of Treaties Beyond the Vienna Convention* (OUP 2011) 123, 127.

[156] As Helmersen (n 152) concludes at p 135, "[e]volutive treaty provisions may evolve as intended, even though they do so in ways the drafters cannot control and could not predict". Similalry, Bjorge (n 149) concludes at p 139 that "the intention of the parties and the evolutionary interpretation of treaties are cut from the same cloth".

[157] See, for instance, *Case Concerning Rights of Nationals of the United States of America in Morocco (France v United States of America)* (Judgment) (1952) ICJ Rep 176 at p 189.

[158] *Navigational Rights Case*, para 63; *Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) notwithstanding Security Council Resolution 276 (1970)* (Advisory Opinion) (1971) ICJ Rep 16 para 53; *Aegean Sea Continental Shelf Case (Greece v Turkey)* (Judgment) ICJ Rep 1978 p 3 para 77.

[159] *Gabčíkovo-Nagymaros Project (Hungary v Slovakia)* (Judgment) (1997) ICJ Rep 7.

a correct application of the law in 1989 or 1992… could be a miscarriage of justice if prescribed in 1997".[160] When continuing old activities as well as when starting new activities under the 1977 Treaty, the parties were obliged to apply modern environmental norms:

> In order to evaluate the environmental risks, current standards must be taken into consideration. This is not only allowed by the wording of Articles 15 and 19, but even prescribed, to the extent that these articles impose a continuing - and thus necessarily evolving obligation on the parties…[161]

While preliminarily the Court was therefore careful to point out[162] that an evolutionary approach was consistent with the drafters' intention, considerations relating to the specific nature and importance of environmental norms featured strongly in its reasoning:

> Throughout the ages, mankind has, for economic and other reasons, constantly interfered with nature. In the past, this was often done without consideration of the effects upon the environment. Owing to new scientific insights and to a growing awareness of the risks for mankind - for present and future generations - of pursuit of such interventions at an unconsidered and unabated pace, new norms and standards have been developed, set forth in a great number of instruments during the last two decades. Such new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past.[163]

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[160] ibid para 134.
[161] ibid para 140.
[162] Although not nearly careful enough according to the Separate Opinion of Judge Bedjaoui who, at para 18, insists that the Court "should have clarified the issue more".
[163] *Gabčíkovo-Nagymaros*, para 140.

The utilisation of generic terms is one of the best indicators of the parties' intention to adopt an evolutionary provision. The fact that the LOSC embraces a number of generic terms is, therefore, significant. ITLOS, for instance, adopted an evolutionary approach to the concept of 'due diligence' in the *Responsibilities in the Area Opinion*.[164] Other examples of generic or evolutionary terms and phrases in the LOSC include the term 'pollution', the phrase 'conservation of living resources' and the concept of 'generally accepted rules and standards'.[165] Admittedly, evolutionary interpretation is ultimately restricted by the text of the treaty. Interpretation of a treaty cannot be confused with its amendment and a judge that purports to amend a treaty would infringe the sovereignty of the parties by doing so. This said, the utilisation of generic terms and phrases can leave a considerable margin of appreciation for the judge(s) in question who, with a reasonable degree of ingenuity, can play their part in the Convention's development.[166]

4.2.1.3 Systemic Integration

Article 31(3)(c) VCLT determines that, in interpreting a treaty, together with the context account shall be taken of "any relevant rules of international law applicable in the relations between the parties".[167] Article 31(3)(c) expresses the principle of harmonious interpretation or systemic integration[168] i.e. "[a] process… whereby international obligations are interpreted by reference to their normative environment".[169] As Bowman observes, what systemic integration requires is that "interpretation of each individual provision… be woven into the broader fabric not only of the treaty as a whole, but of the wider legal system".[170] It "offers the enticing prospect of averting conflict of norms, by enabling the harmonization of rules rather than the application of one norm

[164] *Responsibilities in the Area Opinion*, para 117.
[165] On the presence of generic terms in the LOSC see Boyle (n 99) 568-569 and Buga (n 120) 66.
[166] Dupuy (n 153) 137.
[167] VCLT, Article 31(3)(c).
[168] On systemic integration see Campbell McLachlan, 'The Principle of Systemic Integration and Article 31(3)(c) of the Vienna Convention' (2005) 54 ICLQ 279; Panos Merkouris, *Article 31(3)(c) VCLT and the Principle of Systemic Integration: Normative Shadows in Plato's Cave* (Brill 2015).
[169] ILC Consolidated Study on Fragmentation (n 117) para 414.
[170] Bowman (n 116) 343.

to the exclusion of another".[171] Article 31(3)(c) can contribute towards the LOSC's development by serving as a tool for harmonious interaction with other regimes, including international environmental law.[172] As it is a means of *interpretation*, however, the usefulness of Article 31(3)(c) is ultimately limited by the text of the provisions being interpreted: while harmonious interpretation can help resolve apparent conflicts, it cannot resolve genuine conflicts.[173]

A textual analysis of Article 31(3)(c) leaves several questions unanswered. It is not completely clear, for instance, what the phrase 'rules of international law' encompasses. This is particularly problematic in the context of international environmental law where, as acknowledged in the *Iron Rhine* arbitration, "[t]here is considerable debate as to what… constitutes "rules" or "principles"; what is "soft law"; and which environmental treaty law or principles have contributed to the development of customary international law".[174] While the tribunal in the *Iron Rhine* arbitration did not need to delve further into the matter (given the finding that the duty to prevent environmental harm had become a principle of general international law), such uncertainty can resurface in other cases.[175] Doubt exists, for instance, regarding the exact status of the precautionary principle[176] that may (or may not) preclude reference to the principle through Article 31(3)(c).

Another two questions that are left unanswered by the text of Article 31(3)(c) concern the intertemporal application of the provision and the question of whether the term 'parties' refers to the parties to the dispute or to the parties to the treaty being interpreted. Insofar as the temporal element is

[171] McLachlan (n 166) 286.
[172] For a clear judicial recognition of the fact that new norms of international environmental law need to be taken into consideration see *Gabčíkovo-Nagymaros*, para 140.
[173] Joost Pauwelyn, *Conflict of Norms in Public International Law: How WTO Law Relates to Other Rules of International Law* (CUP 2003) 272. See also Bowman (n 116) 343.
[174] *Iron Rhine Railway (Belgium v Netherlands)*, PCA, (2005) 27 RIAA 35 para 58.
[175] See, for example, *Dispute Concerning Access to Information Under Article 9 of the OSPAR Convention (Ireland v United Kingdom)*, Final Award, 2 July 2003, 42 ILM 1118 paras 93-105. The OSPAR Arbitral Tribunal decided that the phrase "applicable international regulations" does not cover the Rio Declaration on Environment and Development.
[176] For an extensive analysis of the precautionary principle in the context of marine environmental law see Bénédicte Sage-Fuller, *The Precautionary Principle in Marine Environmental Law* (Routledge 2013). See also Chapter 2, Section 5.

concerned, there is agreement in the literature that this needs to be settled on a case-by-case basis, in accordance with the intention of the parties.[177] The fact that the reference to "general rules of international law *in force at the time of [the treaty's] conclusion*"[178] in an earlier draft was discarded and replaced by the phrase "any relevant rules" in Article 31(3)(c) is, however, a clear indication that, generally speaking, "it is necessary to apply the process of interpretational harmonization not only to pre-existing external norms but on an ongoing basis to any that may subsequently emerge".[179]

The question of what exactly is to be understood by the term 'parties' is more problematic. According to Gardiner, "[t]he context suggests that 'parties' does not necessarily mean all the parties to the treaty being interpreted".[180] Such an interpretation is to be preferred. To require all the parties to the treaty being interpreted to be parties to the treaty being referenced may effectively preclude any reference to conventional international law, especially where the treaty being interpreted happens to be a heavily subscribed multilateral treaty (such as the LOSC).[181] Rather than requiring all the parties to the convention being interpreted to be parties to the convention being referenced, it may make sense to consider instead the degree to which the convention being referenced is supported (tacitly or expressly) and to determine, according to the degree of support, the weight that is to be accorded to it in the interpretative process.[182]

4.2.2 Amendment

Amendment of the LOSC "entails a risk/benefit calculus… [that must] take into account the risks and benefits of alternatives as well".[183] In certain situations, it may be possible to avoid amendment of the LOSC by pushing

[177] Merkouris (n 166) 162; Gardiner (n 126) 298; ILC Consolidated Study on Fragmentation (n 117) para 478.
[178] 1966 ILC Draft Articles and Commentary (n 130) 222.
[179] Bowman (n 116) 344.
[180] Gardiner (n 126) 303.
[181] ILC Consolidated Study on Fragmentation (n 117) para 470.
[182] ibid para 474; Gardiner (n 126) 317.
[183] Bernard Oxman, 'Tools for change: The amendment procedure' in UN Division for Ocean Affairs and the Law of the Sea (DOALOS), *Proceedings of the Twentieth Anniversary Commemoration of the Opening for Signature of the United Nations Convention on the Law of the Sea* (UN 2003) 195, 198.

instead for the adoption or amendment of external rules which are incorporated by reference into the LOSC. A second notable feature of the LOSC that can reduce the need for recourse to amendment is the fact that the Convention at several points encourages States to cooperate and strike agreements towards the implementation of its provisions.[184] In the context of navigation through international straits, for instance, Article 43 requires user and littoral States to cooperate towards the improvement of navigational safety and towards the prevention, reduction and control of pollution from ships. Yet another factor that may help to avoid recourse to amendment is the ambiguity of some of the LOSC's provisions, which can provide space for necessary development to occur through particular interpretations of given provisions.

4.2.2.1 Formal Amendment

The LOSC's formal amendment procedures are contained in Articles 312-316. Articles 312 and 313 establish two amendment procedures that are generally applicable (other than in relation to activities in the Area). A State Party wishing to propose an amendment under Article 312(1) needs to propose the amendment and request the convening of a conference for the amendment's consideration by written communication to the UN's Secretary-General.[185] At least one half of the States Parties to the Convention need to reply favourably within 12 months for the conference to be convened[186] – an already difficult hurdle. Once a conference is convened, Article 312(2) encourages decision-making by consensus but appears to leave open the possibility of amendments being adopted by majority vote. Article 313 provides for a 'simplified' amendment procedure. Although simplified in the sense that it does away with the requirement of convening a conference, an Article 313 amendment procedure will collapse if any one State Party objects to the proposed amendment within 12 months from the date of circulation of the communication.

[184] Oxman (ibid) considers at p 203 that the LOSC "encourages a rich and expanding tapestry of agreements on all levels designed to address specific problems and adapt the law to new challenges and new perceptions".
[185] LOSC, Article 312(1).
[186] ibid.

Once an amendment is successfully adopted under Article 312 or 313, Article 316 requirements need to be met before the amendment can actually enter into force. Article 316(1) requires deposit of instruments of ratification or accession by no less than two thirds of States Parties[187] to the Convention – a requirement that may well prove to be "insurmountable"[188] given that, in practice, "most amendments would probably be only of direct concern to specific interest groups or would seek to shift the balance of interest between these groups".[189] Amendments adopted in this way apply only to those States that actually deposit instruments of accession or ratification. This risks undermining the integrity of the LOSC regime by creating a 'two-track' system. There are other risks associated with the launching of a formal amendment process. Proposing States risk 'inciting' other States into launching their own amendment bids. States are also aware of the fact that amendment bids may fail and that this could undermine the formation of desirable customary law or their view of how a given provision should be interpreted.[190] Given all this, it should come as no surprise that the formal amendment procedures of the LOSC have yet to be utilised.

Article 311(3) allows two or more States to conclude agreements (applicable solely to relations between them) modifying or suspending the operation of LOSC provisions. Article 311(3), however, makes the conclusion of such agreements subject to three conditions: agreements must not relate to a provision derogation from which is incompatible with the effective execution of the Convention's object and purpose; agreements shall not affect the application of the basic principles of the Convention; and agreements must not affect the enjoyment by other States Parties of their rights or the performance of their obligations under the Convention. These conditions are not

[187] Or by 60 States Parties had this number been greater than two thirds of all States Parties to the LOSC.
[188] David Freestone and Alex Oude Elferink, 'Flexibility and Innovation in the Law of the Sea – Will the LOS Convention Amendment Procedures Ever Be Used?' in Elferink (n 2) 169, 179.
[189] ibid 180. This not to mention that, as Bowman (n 116) notes at p 485, "[e]ven when the amendment in question commands widespread support in principle, the forces of inertia are often such as to preclude the practical expression of such support through the formal deposit of an instrument of acceptance".
[190] Jill Barrett, 'UNCLOS: A "Living" Treaty?' in Barrett and Barnes (n 62) 3, 16.

insignificant. Freestone and Elferink opine that, in practice, "Article 311(3) will be invoked in cases in which States Parties oppose the negotiation of an agreement, but in situations where they have taken the decision to negotiate an agreement will take the position that it is compatible with the LOS Convention, and does not fall under Article 311(3)".[191]

4.2.2.2 Informal Modification Through Subsequent Practice

Informal modification[192] through the concordant subsequent practice of the parties is the most controversial role that can be played by subsequent practice in the Convention's development. Much of the controversy can be attributed to a decision at the Vienna Conference to exclude a provision contained in the ILC's 1966 Draft Articles that would have expressly recognised the possibility of treaty modification by subsequent practice. Draft Article 38 provided that:

> A treaty may be modified by subsequent practice in the application of the treaty establishing the agreement of the parties to modify its provisions.[193]

Following an examination of relevant academic works, a 2014 ILC Report on subsequent agreements and subsequent practice concluded that, according to the majority view, "the negotiating States simply did not wish to address [the] question in the Convention and that treaties can, as a general rule under the customary law of treaties indeed be modified by subsequent practice".[194] At the same time, a more recent 2018 ILC Report recognises that "States continue to express different views regarding the general question of whether the

[191] Freestone and Elferink (n 186) 182.
[192] The term 'modification' will be used in a different sense than in Article 41 VCLT (where 'modification' refers exclusively to agreements that are concluded *inter se* between some of the parties and that are intended to vary treaty provisions solely between them). 'Modification' is here taken to embrace both amendment proper in the sense of actual alteration of the text of treaty provisions as well as acts of elaboration that develop given provisions in a novel direction but that stop short of actually amending or disapplying existing provisions. Ultimately, what differentiates modification from interpretation is the fact that "[w]hile interpretation uncovers what is out there, modification places something new into the world". See Ingo Venzke, *How Interpretation Makes International Law: On Semantic Change and Normative Twists* (OUP 2012) 236.
[193] 1966 ILC Draft Articles and Commentary (n 130) 236.
[194] ILC, 'Second Report on Subsequent Agreements and Subsequent Practice in Relation to the Interpretation of Treaties' (A/CN.4/671, 26 March 2014) para 122.

subsequent practice of the parties can lead to the modification of a treaty".[195] Insofar as the LOSC specifically is concerned, possible concerns about the incompatibility of modification by subsequent practice with the Convention's formal amendment procedures can arguably be dismissed on the basis that, in practice, the formal amendment procedures have simply not been treated as the exclusive means for amendment of the Convention.[196]

The view that treaties can be modified by subsequent practice is corroborated by decisions of international courts and tribunals. In the 1961 *Namibia* Advisory Opinion the ICJ refused South Africa's argument that the UN Security Council Resolution requesting the Advisory Opinion was invalid because two permanent members of the Council had abstained in the relevant vote. Article 27(3) of the UN Charter requires Security Council decisions on non-procedural matters to be made by an affirmative vote of seven members, including the concurring votes of the permanent members. Article 27(3) notwithstanding, the ICJ decided that the practice of Security Council members had "consistently and uniformly interpreted the practice of voluntary abstention by a permanent member as not constituting a bar to the adoption of resolutions".[197]

In a 2002 decision, the Eritrea-Ethiopia Boundary Commission did not hesitate in finding that:

> ...the effect of subsequent conduct may be so clear in relation to matters that appear to be the subject of a given treaty that the application of an otherwise pertinent treaty provision may

[195] ILC, 'Fifth Report on Subsequent Agreements and Subsequent Practice in Relation to the Interpretation of Treaties' (A/CN.4/715, 28 February 2018). Conclusion 7(3) of the Draft Conclusions on Subsequent Agreements and Subsequent Practice (n 138) reflects the compromise reached: "[i]t is presumed that the parties to a treaty, by an agreement or a practice in the application of the treaty, intend to interpret the treaty, not to amend or to modify it. The possibility of amending or modifying a treaty by subsequent practice of the parties has not been generally recognized".
[196] Robin Churchill, 'The Impact of State Practice on the Jurisdictional Framework Contained in the LOS Convention' in Elferink (n 2) 91, 97.
[197] *Namibia* Advisory Opinion, para 22.

> be varied, or may even cease to control the situation, regardless of its original meaning.[198]

Reference can also be made to the 1962 *Temple of Preah Vihear* case[199] and the 1988 *Taba* arbitration between Egypt and Israel,[200] both of which were referenced in the 2002 decision by the Eriteria-Ethiopia Boundary Commission to support the assertion that treaties can be modified by subsequent practice.

Although treaties can therefore be modified by subsequent practice, one should not be quick to assume that a treaty has been informally modified. To make an analogy with the requriements for interpretation by subsequent practice under Article 31(3)(b), State practice needs to be consistent and, although it is not necessary to show that each party has expressly engaged in the practice, each party must be shown to have accepted it, at least tacitly. It is not only the practice of States in its most direct form that is relevant but also the practice of States as indirectly manifested through entities such as international organisations (most relevantly the IMO) and conferences of the parties (most relevantly the meeting of States parties (SPLOS)).[201] Finally, some debate may exist as to whether subsequent practice should be viewed as including also subsequent agreements. Following Buga,[202] and with a view to taking account of all subsequent practice that may be relevant to informal modification of the LOSC, in this thesis subsequent practice will be taken to encompass also subsequent agreements.

A number of examples can be cited to illustrate that informal modification of the LOSC by subsequent practice is indeed a possibility:

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[198] *Decision regarding delimitation of the border between Eritrea and Ethiopia (Eritrea v Ethiopia)* (2002) 25 RIAA 83 para 3.8.
[199] *Temple of Preah Vihear (Cambodia v Thailand)* (1962) ICJ Rep 6.
[200] *Case concerning the location of boundary markers in Taba between Egypt and Israel (Egypt v Israel)* (1988) 80 ILR 226 para 237.
[201] See Buga (n 120) 49 and Freestone and Elferink (n 186) 206.
[202] Buga (n 120) 50.

The Part XI and Fish Stocks Agreements:

The most obvious examples are perhaps the 1994 Implementing Agreement relating to Part XI[203] and the 1995 Fish Stocks Agreement.[204] Although an implementation agreement by name, there is a general consensus in the literature that the Part XI Agreement – which, amongst other, disapplied[205] several LOSC provisions – should properly be considered as an agreement that amended the Convention.[206] The Fish Stocks Agreement, on the other hand, does not disapply any of the LOSC's provisions and somewhat "blurs the line between modification and interpretation".[207] This said, many commentators consider that the Fish Stocks Agreement substantially develops rather than simply implements or interprets the relevant law.[208] This means that the Fish Stocks Agreement, like the Part XI Agreement, can be regarded as an act of modification by subsequent practice.

SPLOS Decisions

Although the LOSC only accords an administrative decision-making role to the SPLOS,[209] this has not stopped the SPLOS from taking a number of decisions that have modified the Convention.[210] Reference can be made to the decision that postponed the date from which the ten year period for making submissions to the Commission on the Limits of the Continental Shelf (CLCS) is

[203] Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (adopted 28 July 1994, entered into force 28 July 1996) 1836 UNTS 3, hereinafter the 'Part XI Agreement'.

[204] Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (adopted 4 August 1995, entered into force 11 December 2001) 2167 UNTS 3, hereinafter the 'Fish Stocks Agreement'.

[205] Where the drafters intended to modify, "the term of art used in the Agreement is that a specific provision or provisions "shall not apply"". See L.D.M Nelson, 'The New Deep Sea-Bed Mining Regime' (1995) 10 IJMCL 189, 192.

[206] Nelson (ibid 193) concludes that "[t]he agreement can… be considered a protocol of amendment". See also Freestone and Elferink (n 186) 189; Scovazzi (n 33) 125; James Harrison, *Making the Law of the Sea: A Study in the Development of International Law*' (CUP 2011) 90-99. Buga (n 120) at 53, while acknowledging that there can be "no doubt" that the Part XI Agreement "represents a modification of the LOSC by subsequent agreement", points out that the Agreement "does not as such modify the essential underlying purposes of the LOSC".

[207] Buga (n 120) 55.

[208] See Harrison (n 204) 194; Freestone and Elferink (n 186) 203. Scovazzi (n 33) at 141 goes so far as to contend that the Fish Stocks Agreement "contains provisions that fully derogate from the traditional principle of freedom of fishing on the high seas".

[209] LOSC, Annex II Article 2(3) and Annex VI Articles 4(4), 18 and 19.

[210] For an in-depth analysis of SPLOS decisions see Harrison (n 204) 70-86. See also Freestone and Elferink (n 186) 207.

calculated.[211] As with other modifications made through SPLOS decisions, the aforementioned decision can be regarded as procedural rather than substantive and it is mainly in regard to minor procedural modifications that SPLOS decisions can be most useful and appropriate.[212]

Article 105

Article 105 of the LOSC has been mentioned as another "potential instance of tacit modification".[213] Article 105 determines that, on the high seas, every State may seize a pirate ship and that the courts of the State which carried out the seizure may carry out the relevant prosecution.[214] Although Article 105 is quite vague on whether prosecution may be carried out by third States, the relevant *travaux préparatoires* tend towards the exclusion of such a possibility.[215] Repeated instances of pirates being prosecuted by third States therefore seem geared towards the modification by subsequent practice of Article 105.

The above instances indicate that parties have generally "shown a preference for flexibility and expedience in relation to the LOSC [which grants] subsequent agreements and practice a prominent role".[216] At the same time, and without in any way denigrating the value of informal modification through subsequent practice as a useful (and – compared to formal amendment – a simpler and more expedient) mechanism for the LOSC's development, there are a number of factors that limit what can be achieved through informal modification. The package-deal nature of the Convention creates a general expectation of non-derogation. While this does not exclude informal modification by subsequent practice, it reinforces the importance of achieving

[211] Decision regarding the Date of Commencement of the Ten-Year Period for Making Submissions to the Commission on the Limits of the Continental Shelf Set out in Article 4 of Annex II to the United Nations Convention on the Law of the Sea (Doc SPLOS/72, 29 May 2001).
[212] Aust (n 126) at 214 cautions that "[p]roblems could be caused if such means are used for a purpose which should really be done by formal amendment to the treaty".
[213] Buga (n 120) 58.
[214] LOSC, Article 105.
[215] ILC, Report on the Work of the 18th Session (1956) UN Doc A/3159 283. See the commentary on Article 43 of the ILC's Draft Articles. Article 43 served as the model for Article 19 of the Convention on the High Seas and, ultimately, for Article 105 of the LOSC.
[216] Buga (n 120) 60.

a high degree of practice before the Convention can be considered to have been amended in this manner.[217] Informal modification may also be limited by Article 311(3).[218]

If core principles of the Convention (such as the common heritage of mankind and the principle of the peaceful uses of the oceans) are to all intents and purposes excluded from informal modification by subsequent practice, 'novel' provisions of the Convention are the most susceptible to this method of development. Unlike with more established provisions, it may be possible to modify some of the more 'novel' provisions of the Convention without the need to modify corresponding customary rules.[219] Modification by subsequent practice would of course still require a high threshold of concurring practice to be met and States that are willing to circumvent the Convention's formal amendment procedures need to be cognisant of the fact that, just as consistent State practice can strengthen the Convention, "inconsistent State practice has the potential… to undermine [its] foundations".[220]

4.2.2.3 New Rules of Customary International Law

As in treaty law generally, there can be no doubt about the possibility of new rules of customary law modifying existing LOSC rules.[221] In the *Fisheries Jurisdiction* case, for instance, the ICJ – despite provisions regarding freedom of fishing on the high seas contained in the 1958 High Seas Convention – recognised that the establishment of 12 mile fishing zones had materialised as a right under customary law.[222] At the same time, a general presumption against the establishment of conflicting subsequent customary law applies[223] and the intention of the parties to modify the LOSC must be clearly

[217] Churchill (n 194) concludes at 105 that "[m]odification of the [LOSC should]… only be possible where there is a consensus, or at least a large majority of States parties to the Convention (including representatives of all major geopolitical groupings) in favour of the modification in question".
[218] See Section 4.2.2.1 above.
[219] Buga (n 120) 67.
[220] Donald Rothwell, 'The Impact of State Practice on the Jurisdictional Framework Contained in the LOS Convention: A Commentary' in Elferink (n 2) 145, 158.
[221] Aust (n 126) notes at p 12 that "[i]nternational law does *not* contain any principle of *acte contraire*, by which a rule can be altered only by a rule of the same legal nature".
[222] *Fisheries Jurisdiction Case (United Kingdom v Iceland)* (1974) ICJ Rep 3 para 49 onwards.
[223] Michael Akehurst, 'The Hierarchy of the Sources of International Law' (1976) 47 BYIL 273, 275.

established, especially when the modification in question is actually altering and not simply elaborating upon an existing LOSC provision.[224] The bar for modification by subsequent customary law is therefore set at a rather high level, and it is not entirely surprising that, following a review of State practice relating to coastal State jurisdiction, Churchill concludes that, notwithstanding the existence of practice inconsistent with the LOSC, "none of this practice is sufficiently widespread or uniform… to have given rise to a new rule of customary international law modifying or supplementing the Convention".[225]

Having considered the most pertinent characteristics of the LOSC and the mechanisms for its development, we now turn to examine international environmental law principles of relevance to the prevention of accidental vessel-source pollution.

[224] Churchill (n 194) 97.
[225] ibid 141.

CHAPTER 2: Environmental Principles

Chapter 2 examines four international environmental law principles: integration; prevention; precaution and cooperation. These were selected because of their fundamental importance as well as in view of their potential to determinatively influence the development of the LOSC and of coastal State jurisdiction to protect the marine environment against accidental vessel-source pollution. Chapter 2 also considers the proportionality principle and the principle of good faith. Although they are not principles of international environmental law specifically, these two principles of general international law can have an important parameter-setting impact on the LOSC's development and good faith can play an important role in the practical implementation of the cooperation principle.

1. The Significance and Function of Principles

Dworkin argues that while "[r]ules are applicable in an all-or-nothing fashion",[1] principles "[state] a reason that argues in one direction, but [do] not necessitate a particular decision".[2] A rule lays out a number of pre-conditions that must be met in order for it to apply. If they are not met, the rule will not apply. When they are met, there is no option but for the answer supplied by the rule to be applied.[3] Principles apply in a much less absolutist fashion. When they apply, they argue in a given direction and must be taken into account, but they are not necessarily decisive in each and every instance where they apply. Where there are particularly convincing principles or policies arguing in the opposite direction, a principle may fail to prevail.[4] Their less 'absolute' nature notwithstanding, principles remain an important and potentially decisive[5] component of the law.

[1] Ronald Dworkin, *Taking Rights Seriously* (Bloomsbury 2013) 53 onwards.
[2] ibid.
[3] ibid.
[4] ibid.
[5] Dupuy and Viñuales argue that principles can have "a 'decision-making function' or, in other words, operate as 'primary norms'". See Pierre-Marie Dupuy and Jorge E. Viñuales, *International Environmental Law* (CUP 2018) 60. By way of example, they refer to the *Trail Smelter Arbitration* which was decided on the basis of the no harm principle. See *Trail Smelter (US v Canada)* (1941) 3 RIAA 1905.

Principles provide a sense of identity to the area of law in which they operate. In the case of international marine environmental law, the primary distinguishing feature is the goal of marine environment protection. Just as in international environmental law the "identity function may be performed by principles that are not specifically environmental… as long as they have been reformulated in environmental terms",[6] so long as principles are reformulated accordingly, the same applies in the context of marine environmental law. The vast majority of international marine environmental principles are, in fact, principles of international environmental law slightly reformulated to apply to the marine environment.

In addition to providing a sense of identity, principles can help to systematise rules. International marine environmental law "is not merely a mosaic of specific rules… [and] must be considered as a *system* governing international relations among States".[7] It functions, develops and evolves in the manner of a system. Greater awareness of the role of principles facilitates comprehension of the systemic aspects which, in turn, can shed some light on the possible developmental trajectory of law in this area.

Another important function of principles is that of providing guidance in interpretation.[8] This function can prove decisive in those instances where treaty provisions leave considerable room for interpretation (a feature not entirely atypical of LOSC provisions). In such cases, international marine environmental law principles can sway a decision towards an outcome that is favourable from an environment protection perspective. Yet another function of principles under the remit of interpretation is the conciliatory function that they can perform in scenarios where seemingly inconsistent rules or interests

[6] ibid 59.
[7] Yoshifumi Tanaka, 'Principles of international marine environmental law' in Rosemary Rayfuse (ed), *Research Handbook on International Marine Environmental Law* (Edward Elgar 2015) 31.
[8] Dzidzornu notes that "[since] principles necessitate and validate the emergence of obligatory norms which realise them… the interpretation and application of specific regime rules cannot be disassociated from their underlying principles". See David M. Dzidzornu, 'Four Principles in Marine Environment Protection: A Comparative Analysis' (1998) 29 Ocean Dev.& Int'l.L. 91, 94.

(such as navigational and environmental interests) need to be reconciled. By way of example, the principle of sustainable development can serve as "a conceptual matrix to articulate the sometimes inconsistent requirements of international environmental law and international economic law".[9] Finally, besides but not unrelated to the important guidance role that principles can perform in interpretation, another somewhat under-recognised function of principles is that which can be referred to as their advocacy function. As argued by Paradell-Trius, "[l]awyers, politicians, diplomats and the like may resort to principles with a view to supporting their interests or the interests of their clients".[10] This particular function of principles fits particularly well with the advocacy role of coastal States in pushing for adequate marine environment protection.

When development of the LOSC does happen, it is important that it happens with a sense of orientation. Paradell-Trius observes that "[p]rinciples contained in framework conventions… serve primarily to define parameters for new obligations and to facilitate further negotiations by the parties on more detailed commitments".[11] While the LOSC is not a framework treaty in the classical sense, it does have something of a framework character.[12] Many of its environmental provisions are of a general character and require further elaboration in separate international regulations. Article 211 of the LOSC (which requires States to establish international rules to prevent, reduce and control pollution of the marine environment from vessels) can be mentioned as an example of a provision that deploys the prevention principle in a parameter setting role. In such cases, international marine environmental law principles can effectively "act as magnetic poles attracting and channeling State practice"[13] in a way that could clearly influence the development of the LOSC.

[9] Dupuy and Viñuales (n 5) 60. A similar function can be performed by the integration principle.
[10] Lluís Paradell-Trius, 'Principles of International Environmental Law: an Overview' (2000) 9 RECIEL 93, 97.
[11] ibid 96.
[12] Chapter 1, Section 1.2.
[13] Paradell-Trius (n 10) 96.

2. Some Further General Considerations

2.1 Identifying the Principles of International Marine Environmental Law

International marine environmental law principles can largely be ascertained by reference to international environmental law principles. Since there is no comprehensive globally applicable and legally binding instrument that can be turned to for a readily available list of rights and duties of States on environmental matters, the principles of international environmental law have to be 'teased out' from State practice, including State practice as reflected in treaties and other instruments.[14] This process is facilitated somewhat by the growing body of decisions of international courts and tribunals. Sands and Peel single out seven principles that have broad support: the no-harm principle; prevention; co-operation; sustainable development; precaution; the polluter pays principle; and the principle of common but differentiated responsibility.[15] Four principles will be considered in detail in the forthcoming sections of this chapter: the integration principle; prevention; precaution and cooperation.

2.2 The Stockholm and Rio Declarations

Although there is no legally binding instrument of global application that sets out a comprehensive list of international environmental law principles, useful indications can be found in a number of international instruments. Of these, the most notable are perhaps the 1972 Stockholm 'Declaration on the Human Environment'[16] and the 1992 'Rio Declaration on Environment and Development'.[17] Although not legally binding, these two soft-law instruments are of considerable relevance. A number of the principles that they set out are, in fact, legally binding – even if not exclusively by virtue of inclusion in the respective declarations. Additionally, the repeated statement of principles in such declarations can contribute towards the attainment of the customary law

[14] Philippe Sands and Jacqueline Peel, *Principles of International Environmental Law* (4th edn, CUP 2018) 190.
[15] ibid 198.
[16] 'Declaration of the United Nations Conference on the Human Environment', 16 June 1972, UN Doc.A/CONF 48/14/Rev.1 ('Stockholm Declaration').
[17] 'Rio Declaration on Environment and Development', 13 June 1992, UN Doc. A/CONF.151/26.Rev.1 ('Rio Declaration).

status of those principles that have not yet attained it.[18] Numerous references will be made to the respective formulations of principles in the Stockholm and Rio Declarations as the individual principles are discussed in the forthcoming sections.

Another international instrument of relevance is the 1982 World Charter for Nature.[19] Adopted in the intervening period between the Stockholm Declaration and the adoption of the Rio Declaration, as indicated by its title the World Charter for Nature aims to preserve the environment for its own sake, independently of the interests of humans or States. Some of its provisions foreshadow later developments. Article 11 of the Charter, for instance, provides for the undertaking of environmental impact assessments and foreshadows the precautionary principle in providing that activities likely to cause irreversible damage to nature must be avoided.

2.3 The Legal Status of the Selected Principles

It is practically impossible to make general assertions about the legal status of international environmental law principles with any degree of accuracy:

> Some are established rules of customary international law, while others are emerging rules. Yet other principles have a lesser normative status. They may be guiding interpretative standards or merely aspirational norms.[20]

Even with regard to individual principles, the process of ascertaining the precise legal status can be fraught with difficulties. Principles need to be applied with considerable regard to the facts presented by the given case, including "the source of the principle; its textual content and language; the particular activity at issue; the environmental and other consequences of the activity; and the circumstances in which it occurs, including the actors and the geographical region".[21] By way of preliminary consideration, it could

[18] Dupuy and Viñuales (n 5) 40.
[19] World Charter for Nature, 28 October 1982, UN Doc. A/RES/37/7.
[20] Paradell-Trius (n 10) 93.
[21] ibid 188.

nevertheless be said that prevention and cooperation are widely acknowledged as established rules of customary international law,[22] whereas the integration principle was considered as a 'principle of general international law' by the *Iron Rhine* case.[23] The exact status of the precautionary principle is a matter that remains open to contention. Sands and Peel consider that it has achieved customary status in the European context "and perhaps also more globally in respect of particular activities or subject areas".[24] Insofar as the law of the sea context is concerned, the Seabed Disputes Chamber of the ITLOS noted in its advisory opinion that "[a trend has initiated] towards making [the precautionary] approach part of customary international law".[25] Further remarks about legal status will be made as the principles are individually examined under the respective headings below.

3. The Integration Principle

3.1 Introducing the Integration Principle

For Sands and Peel, the integration principle enshrines a "commitment to integrate environmental considerations into economic and other development, and to take into account the needs of economic and other social development in crafting, applying and interpreting environmental obligations".[26] Principle 4 of the Rio Declaration strikes a similarly delicate balance between environmental and developmental considerations in proclaiming that "[i]n order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it".[27] As a principle of marine environmental law, the integration principle requires marine environment protection to constitute an integral part of any

[22] Sands and Peel (n 14) 198; Patricia Birnie and others, *International Law and the Environment* (OUP 2009) 137.
[23] *Iron Rhine Railway (Belgium v Netherlands)*, PCA, (2005) 27 RIAA 35 para 59. At the same time, Sands and Peel (n 14) note at p 219 in relation to the four elements of sustainable development (including the integration principle) that these are often used in comibination as well as interchangeably in a way which "suggests that they do not yet have a well-established, or agreed, legal definition or status".
[24] Sands and Peel (n 14) 198.
[25] *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (Advisory Opinion) ITLOS No. 17 (1 February 2011) para 135.
[26] Sands and Peel (n 14) 227.
[27] Rio Declaration, Principle 4. See also Principle 13 of the Stockholm Declaration; Article 6 of the 1992 Convention on Biological Diversity; and Chapter 8 of 'Agenda 21: Programme of Action for Sustainable Development', 14 June 1992, UN Doc. A/Conf.151/26.

development, economic, navigational and other activities with a potential to negatively impact the marine environment. The integration principle is often considered as one of the components of sustainable development.[28]

The arbitral tribunal in the *Iron Rhine* case viewed Principle 4 as reflective of a trend in international and European law requiring the integration of environmental measures in the design of development activities. In the tribunal's words:

> Environmental law and the law on development stand not as alternatives but as mutually reinforcing, integral concepts, which require that where development may cause significant harm to the environment there is a duty to prevent, or at least mitigate, such harm. This duty, in the opinion of the Tribunal, has now become a principle of general international law.[29]

Although the tribunal failed to deploy the clearest of language in this regard (leaving room for some doubt about whether it was referring to the prevention or to the integration principle), considering that the prevention principle was already widely recognised as having customary law status, it seems plausible to conclude that the tribunal was in fact referring to the integration principle as having attained the status of a principle of general international law.[30]

The integration principle places environmental and developmental interests on the same footing and there is no such thing as subordination of one set of interests to the other.[31] Although this approach may prove to be disappointing from an environmental perspective (or from a developmental

[28] Sands and Peel (n 14), for instance, consider it as such along with the principles of intergenerational equity, sustainable use and intragenerational equity. See also Birnie and others (n 22) 117; Alan Boyle and David Freestone, 'Introduction' in Alan Boyle and David Freestone (eds), *International Law and Sustainable Development: Past Achievements and Future Challenges* (OUP 1999) 8.
[29] *Iron Rhine*, para 59. See also para 243.
[30] Virginie Barral and Pierre-Marie Dupuy, 'Principle 4' in Jorge E. Viñuales (ed), *The Rio Declaration on Environment and Development: A Commentary* (OUP 2015) 157, 169.
[31] Marc Pallemaerts, 'International Environmental Law from Stockholm to Rio: Back to the Future?' in Philippe Sands (ed), *Greening International Law* (Earthscan 1993) 1, 17.

perspective, depending on which side of the divide one is looking from), it is in fact ideal to secure an objective result and a well-balanced view of environmental needs.[32] The chances of securing such an outcome can be bolstered by reliance on the procedural elements of sustainable development. Public participation in decision-making and environmental impact assessments can significantly enhance not only the quality but also the legitimacy of decisions taken in pursuit of the integration principle.[33]

3.2 Normative significance of the integration principle

The normative significance of the integration principle is explained best in terms of its impact on other rules and principles. It is in these terms that Lowe construes the significance of the related concept of sustainable development:

> Sustainable development can properly claim a normative status as an element of the process of judicial reasoning. It is a meta-principle, acting upon other legal rules and principles – a legal concept exercising a kind of interstitial normativity, pushing and pulling the boundaries of true primary norms when they threaten to overlap or conflict with each other.[34]

The functioning of the integration principle is assisted by Article 31(3)(c) VCLT, which can be considered as a treaty law mechanism that enables integration to occur. When interpreting a treaty provision, Article 31(3)(c) requires account to be taken of any relevant rules of international law applicable in the relations between the parties.[35] By way of example, if a court is examining the limits of a navigational right, Article 31(3)(c) may require the court to take account of the integration and prevention principles and, in terms of the integration principle, to seek to integrate the purported navigational right with the obligation to prevent pollution. In such cases, the integration principle would act in the manner of what Lowe terms as a 'modifying norm': while primary norms "[carry] the prescriptive charge… [m]odifying norms

[32] Boyle and Freestone (n 28) 11.
[33] ibid 15.
[34] Vaughan Lowe, 'Sustainable Development and Unsustainable Arguments' in Boyle and Freestone (n 28) 19, 31.
[35] See Chapter 1, Section 4.2.1.3.

establish the relationship between other, primary norms".[36] Far from a principle the relevance of which boils down to an invocation that can be summarily dismissed where it is inconvenient, the integration principle is a principle with normative impact that may well imply "a modification of the contents of the decisions made".[37]

An illustration of the principle's normative impact is provided by the *Gabčíkovo-Naymaros Project* case.[38] In this case, which arose out of a 1977 Treaty in terms of which Hungary and Czechoslovakia had agreed on a joint project to build hydroelectric facilities on the Danube, the ICJ considered that "[the] need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development".[39] In what can be considered as an application of the integration principle to the facts of the case, the Court held that:

> the Parties together should look afresh at the effects on the environment of the operation of the *Gabčíkovo* power plant. In particular they must find a satisfactory solution for the volume of water to be released into the old bed of the Danube and into the side-arms on both sides of the river.[40]

Beyond this, the ICJ left it to the parties to determine through (directed) bilateral cooperation the exact outcome of the integration process necessitated by its pronouncement.[41] Another example is afforded by the 2010 *Pulp Mills* case,[42] which centered around the alleged environmental consequences that would follow from the construction of two pulp mills on the River Uruguay. The ICJ referred to the *Gabčíkovo-Naymaros Project* case and called on the parties to cooperate with a view to integrating the economic rights of riparian

[36] Lowe (n 34) 33.
[37] Barral and Dupuy (n 30) 163.
[38] *Gabčíkovo-Nagymaros Project (Hungary v Slovakia)* (Judgment) (1997) ICJ Rep 7.
[39] *Gabčíkovo-Nagymaros*, para 140.
[40] ibid.
[41] ibid para 141.
[42] *Case Concerning Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Judgment) (2010) ICJ Rep 14.

States with marine environment protection.[43] The "clearest and boldest application"[44] of the integration principle was undertaken by the Permanent Court of Arbitration (PCA) in the *Iron Rhine Railway* case. In this case, the PCA went so far as to pronounce itself on the matter of the allocation of costs that were necessitated by the integration of the Dutch environmental measures into the project.[45]

3.3 The integration principle as a tool for normative integration

Normative integration can happen at the norm-creation and at the norm-interpretation phase.[46] First, the integration principle imposes a clear obligation for norm-creation processes to integrate environmental and developmental considerations. The LOSC itself happens to be a major example of a treaty whose drafters sought to integrate these ostensibly opposing interests. Norm-creation, however, goes beyond the creation of new treaties or of new customary law. Properly construed, it encompasses also the treaty-modification mechanisms discussed in the preceding chapter. The integration principle, therefore, applies also in regards to potential processes of formal amendment and informal amendment through subsequent practice of the LOSC. Secondly, insofar as integration at the norm-interpretation phase is concerned, this can occur both in terms of pronouncements by courts and tribunals as well as a result of authentic interpretations by the parties under Articles 31(3)(a) and (b) VCLT.

4. The prevention principle

4.1 From the no harm to the prevention principle

The origins of prevention can be traced back to the no-harm principle which, as explained by the arbitral tribunal in the 1941 *Trail Smelter* case, dictates that:

> no State has the right to use or permit the use of its territory in such a manner as to cause injury… in or to the territory of

[43] ibid paras 76-77.
[44] Barral and Dupuy (n 30) 173.
[45] *Iron Rhine*, paras 228-236.
[46] Barral and Dupuy (n 30) 173.

> another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.[47]

Under the no-harm principle, environmental damage is not to be prevented because of a direct intention to protect the environment as such but almost as an incidental consequence of the obligation to safeguard the integrity of the territorial sovereignty of other States.[48] As societal perceptions about the importance of the environment started to change in the late 1960s, the inadequacies of the no-harm principle started to be realised. This ultimately led to the development of the prevention principle. Considering the "often irreversible character of damage to the environment and… the limitations inherent in the very mechanism of reparation of this type of damage",[49] the prevention principle recognises the desirability of early-stage action and focuses on prevention rather than on the question of allocation of liability for damage caused.[50]

Principle 21 of the 1972 Stockholm Declaration – which was, eventually, practically reproduced as Principle 2 of the Rio Declaration – signaled the shift from no-harm to prevention at the international level:

> States have… the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.[51]

Prevention in Principle 21 retained a considerable anchoring in the concept of sovereignty that recalls its origins in the no harm principle and can be

[47] *Trail Smelter* p 1965.
[48] Leslie-Anne Duvic-Paoli, *The Prevention Principle in International Environmental Law* (CUP 2018) 25.
[49] *Gabčíkovo-Nagymaros*, para 140.
[50] Sands and Peel (n 14) 212; Duvic-Paoli (n 48) 27.
[51] Stockholm Declaration, Principle 21.

contrasted with the more modern form of prevention which "operates outside of any reference to sovereignty… and is concerned with preventing damge to the environment *tout court*".[52] This notwithstanding, Principle 21 played an important role in the continuum between no-harm and prevention. In introducing the obligation to prevent environmental damage to areas beyond the limits of national jurisdiction, Principle 21 pushed the boundaries of the no-harm principle and contributed to the establishment of the prevention principle in international law.

Ultimately, the ICJ's 1996 *Advisory Opinion on the Legality of Nuclear Weapons* was the first to recognise the customary law status of the prevention principle (as enshrined in Principle 21 of the Stockholm Declaration and in Principle 2 of the Rio Declaration):

> the existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment.[53]

This finding was reaffirmed by the ICJ in the *Gabčíkovo-Naymaros Project* case[54] and in the *Pulp Mills* case.[55] Reference can also be made to the ILC's 2001 Draft Articles on Transboundary Harm[56] which are firmly based in precedent and which provide that "[t]he State of origin shall take all appropriate measures to prevent significant transboundary harm or at any event to minimize the risk thereof".[57]

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[52] Duvic-Paoli (n 48) 54.
[53] *Legality of the Threat or Use of Nuclear Weapons* (Advisory Opinion) (1996) ICJ Rep 226 para 29.
[54] *Gabčíkovo-Nagymaros*, para 140.
[55] *Pulp Mills*, para 101.
[56] ILC, 'Draft articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries' (2001) <http://legal.un.org/ilc/texts/instruments/english/commentaries/9_7_2001.pdf> accessed 20/7/2017.
[57] ibid, Article 3.

4.2 Prevention Under the LOSC

Prevention provides a basis for an entire section of the LOSC (Part XII). Although a number of relevant provisions can be cited (including the general obligation to protect and preserve the marine environment under Article 192), the most directly relevant provisions are Articles 194(1) and (2). The wording of Article 194(2) recalls the formulation of prevention in Principle 21 of the Stockholm Declaration. Article 194(1) is a more general and spatially-unrestricted provision that binds States to take "all measures consistent with [the LOSC] that are necessary to prevent, reduce and control pollution of the marine environment".[58] It detaches the prevention obligation from its anchoring in the concept of sovereignty and emphasises the obligation to prevent environmental damage as an end in itself. In contrast to Article 194(2), Article 194(1) covers also environmental damage to areas *within* the jurisdiction of the polluting State. This is significant since it is not entirely agreed upon that prevention under customary international law includes a general obligation to protect the domestic environment.[59]

4.3 Prevention as an Obligation to Act with Due Diligence

Prevention imposes a duty of due diligence on States.[60] The characterisation of prevention as an obligation of due diligence clarifies that the obligation to prevent environmental damage is an obligation of conduct and not one of result. States are required to make the best possible effort to prevent environmental damage but it is recognised that this does not amount to a guarantee that harm will be prevented in each and every case.[61] Additionally, the characterisation of prevention as an obligation of due diligence clarifies its substantive content and facilitates the principle's application in practice.[62]

As affirmed in the *Responsibilities in the Area* opinion, the concept of due diligence can be hard to pin down:

[58] LOSC, Article 194(2).
[59] Duvic-Paoli (n 48) 136, 254.
[60] Draft Articles on Transboundary Harm (n 56) para 7 of commentary to Article 3.
[61] ibid.
[62] Duvic-Paoli and Jorge Viñuales, 'Principle 2' in Viñuales (n 30) 107, 118.

> It may change over time as measures considered sufficiently diligent at a certain moment may become not diligent enough in light, for instance, of new scientific or technological knowledge. It may also change in relation to the risks involved in the activity… The standard of due diligence has to be more severe for the riskier activities.[63]

As such, due diligence is subject to variability on two fronts. First, measures taken must be proportionate to the risk posed. The commentary to the ILC's Draft Articles suggests that, in relation to ultrahazardous activities, there must be "a much higher standard of care in designing policies and a much higher degree of vigour on the part of the State to enforce them".[64] Secondly, to ensure effectiveness, due diligence requires measures to be at par with current technological standards. States must actively seek to "keep abreast of technological changes and scientific developments".[65]

Additionally, to quote the 2010 *Pulp Mills* case:

> …the obligation… to prevent pollution [as an obligation of due diligence]… entails not only the adoption of appropriate rules and measures, but also a certain level of vigilance in their enforcement...[66]

The obligation to take reasonably appropriate measures and to ensure that they are adequately enforced was re-affirmed by ITLOS in the *Responsibilities in the Area* opinion[67] as well as by the arbitral tribunal in the *South China Sea* arbitration.[68] It is also outlined in the commentary to Article 3 of the ILC's Draft Articles.[69]

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[63] *Responsibilities in the Area*, para 117.
[64] Draft Articles on Transboundary Harm (n 56) para 11 of commentary to Article 3.
[65] ibid.
[66] *Pulp Mills*, para 197.
[67] *Responsibilities in the Area*, para 120.
[68] *South China Sea Arbitration (Philippines v China)*, PCA, Award on the Merits, 12 July 2016, para 974.
[69] Draft Articles on Transboundary Harm (n 56) para 10 of commentary to Article 3.

Another, somewhat controversial aspect of due diligence was hinted at in the *Responsibilities in the Area* opinion. ITLOS' Seabed Disputes Chamber insisted that an obligation to apply a precautionary approach emerged not only from the relevant mining Regulations but was also "an integral part of the general obligation of due diligence of sponsoring States".[70] The *Responsibilities in the Area* opinion signals a second possible evolution of prevention. The first evolution consisted in the move from no-harm to the prevention principle as it is understood today. This second possible evolution, if undertaken, would result in "the extension of the idea of prevention… to cover situations where there is scientific uncertainty regarding the impact of an activity on the environment".[71]

4.4 The Duties to Conduct an EIA and to Act in a Cooperative Manner

The duties to conduct an Environmental Impact Assessment (EIA) and to act in a cooperative manner are two core aspects of due diligence that have considerable relevance in the context of prevention. The rationale behind EIAs is that "decisions affecting the environment should be made in light of a comprehensive understanding of their effects".[72] In the words of the ICJ in the *Pulp Mills* case, where there is a risk that a proposed industrial activity may have a significant adverse impact in a transboundary context, "due diligence, and the duty of vigilance and prevention which it implies, would not be considered to have been exercised if a party… did not undertake an [EIA]".[73]

One of the best known iterations of the obligation to conduct an EIA is that contained in Principle 17 of the Rio Declaration:

> Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to

[70] *Responsibilities in the Area*, para 131. See also para 135.
[71] Dupuy and Viñuales (n 5) 69.
[72] Neil Craik, *The International Law of Environmental Impact Assessment* (CUP 2008) 4.
[73] *Pulp Mills*, para 204. See also *Responsibilities in the Area*, para 145 for an affirmation of the customary law status of the duty to conduct an EIA.

> have a significant adverse impact on the environment and are subject to a decision of a competent national authority.[74]

The requirement for the proposed activity to be one that is *likely* to cause a significant adverse impact on the environment can be contrasted with the noticeably lower threshold for foreseeability of environmental harm that accompanies the obligation to conduct EIAs under the LOSC. Article 206 of the Convention, in fact, speaks of "reasonable grounds for believing that planned activities… *may* cause substantial pollution of or significant and harmful changes to the marine environment".[75]

Alongside the duty to conduct EIAs, the duty to cooperate is another important obligation in the context of prevention. The duty to cooperate will be analysed in its own right in Section 6. Suffice to say at this point that the *Pulp Mills* case,[76] the *Sub-Regional Fisheries Commission advisory opinion* (which references the *Mox Plant* case in this regard),[77] and the *South China Sea* arbitration[78] have all recognised that fulfillment of the prevention principle requires cooperation between States.

4.5 Relevance to the LOSC's Development

Prevention can perform a number of functions in the LOSC's development. First, it "may drive the contents of a treaty or a section of a treaty… in what can be called an architectural function".[79] This was the case with the drafting of the LOSC generally and with its Part XII in particular. The 'architectural' function of prevention can likewise influence the modification of treaty provisions, be it through formal or informal amendment. Secondly, the prevention principle bears potential relevance to the interpretation process. Where competing norms need to be reconciled, there can be an important interplay between the integration and the prevention principles. As discussed

[74] Rio Declaration, Principle 17.
[75] LOSC, Article 206 (emphasis added).
[76] *Pulp Mills*, para 77.
[77] *Sub-Regional Fisheries Commission* (Advisory Opinion) ITLOS No. 21 (2 April 2015) para 140.
[78] *South China Sea* arbitration, para 985.
[79] Duvic-Paoli and Viñuales (n 62) 120.

in Section 3.2, in such cases the integration principle can act in the manner of what Lowe describes as a 'modifying norm' while the prevention principle acts in the manner of a primary norm with a prescriptive charge.[80] Prevention played just such a role in the *Iron Rhine* arbitration[81] and in the *Gabčíkovo-Naymaros Project* case.[82]

5. The Precautionary Principle

5.1 Introducing the Precautionary Principle

The rationale of the precautionary principle is to secure the taking of early action in the face of reasonable threats of serious environmental damage, notwithstanding the absence of the (supposedly usual) high degree of scientific certainty[83] about the nature and/or extent of the environmental harm at stake. In the words of De Sadeleer, "precaution urges prevention forward in the hope of closing the gap that always exists between decision-making and the mastery of risk".[84] By way of illustration, reference could be made to the 1985 Ozone Convention[85] (the first treaty to refer to 'precautionary measures') and to its 1987 Montreal Protocol,[86] which required action to be taken before the causal connection between ozone depletion and the use of CFC's had been conclusively demonstrated.

[80] Lowe (n 34) 33.
[81] *Iron Rhine*, paras 58 and 243.
[82] *Gabčíkovo-Nagymaros*, para 140.
[83] On precaution and scientific certainty see Michael Bowman, 'The Interplay of Concept, Context and Content in the Modern Law of Treaties: Final Reflections' in Michael Bowman and Dino Kritsiotis, *Conceptual and Contextual Perspectives on the Modern Law of Treaties* (CUP 2018) 1031, 1092. While precaution reduces the level of scientific certainty required for preventive action, as a concept that – to use Bowman's words – is "all but unattainable both in practice and in principle", full scientific certainty should arguably never be (or have been) considered as an impediment to preventive action.
[84] Nicolas de Sadeleer, 'The principle of prevention and precaution in international law: two heads of the same coin?' in Malgosia Fitzmaurice *et al* (eds), *Research Handbook of International Environmental Law* (Edward Elgar 2010) 186.
[85] Convention for the Protection of the Ozone Layer (adopted 22 March 1985, entered into force 22 September 1988) 1513 UNTS 323.
[86] Montreal Protocol on Substances that Deplete the Ozone Layer (adopted 16 September 1987, entered into force 1 January 1989) 1522 UNTS 3.

Since the mid 1980s, when it made its first appearance in international legal instruments, the precautionary principle has been extensively utilised.[87] In the marine environment context, the Ministerial Declaration of the Second North Sea Conference in 1987 was the first intergovernmental agreement to expressly cite precaution.[88] Other examples can be mentioned. The precautionary approach is listed as one of the general principles under Article 5 of the 1995 Fish Stocks Agreement.[89] Similarly, Article 3 of the 1996 Protocol to the 1972 London Dumping Convention[90] lists application of the precautionary approach as a general obligation of States parties. The precautionary principle is also included in a wide range of regional marine pollution treaties.[91]

Notwithstanding the wide endorsement of precaution, in reality "there is no single agreed statement or understanding of the [precautionary principle]".[92] To begin with, there is disagreement about whether precaution should properly be referred to as a principle or as an approach.[93] More significantly, there is considerable debate about the principle's substantive

[87] For an extensive but slightly dated overview of treaties that include express or implied reference to precaution see Arie Trouwborst, *Evolution and Status of the Precautionary Principle in International Law* (Springer 2002) 63-112.

[88] Second North Sea Ministerial Declaration (1987), para VII <https://iea.uoregon.edu/treaty-text/1987-secondnorthseadeclarationentxt> accessed 16/4/2016.

[89] Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (adopted 4 August 1995, entered into force 11 December 2001) 2167 UNTS 3, hereinafter the 'Fish Stocks Agreement'. See also Article 6 ('Application of the Precautionary Approach') and Annex II.

[90] 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (adopted 7 November 1996, entered into force 24 March 2006) 36 ILM (1997).

[91] See, e.g., Article 2(2)(a) of the Convention for the Protection of the Marine Environment of the North-East Atlantic (adopted 22 September 1992, entered into force 25 March 1998) 2354 UNTS 67 ('OSPAR Convention'); Article 3(2) of the 1992 Convention on the Protection of the Marine Environment of the Baltic Sea Area (adopted 9 April 1992, entered into force 17 January 2000) 1507 UNTS 167; Article 5(a) of the Framework Convention for the Protection of the Marine Environment of the Caspian Sea (adopted 4 November 2003, entered into force 12 August 2006) 44 ILM 1.

[92] Jonathan Wiener, 'Precaution' in Bodansky and others (eds), *The Oxford Handbook of International Environmental Law* (OUP 2008) 597, 602.

[93] Some commentators argue that the difference in terminology is largely insignificant. See, for instance, Birnie and others (n 22) 155. Others contend that the different terms have different implications. In this sense see Antônio Augusto Cançado Trindade, 'Principle 15' in Viñuales (n 30) 404, 411. Considering the normative content of precaution (which is somewhat sidelined when the phrase 'precautionary approach' is utilised), except where reference is made to other works or to judgments that utilise alternative phrasing, this thesis will refer to the 'precautionary principle'.

content and, not unrelated to this, discordant views have been expressed about its legal status.[94] Different formulations of the principle provide different 'triggering trescholds' in referring to 'uncertain', 'serious', 'irreversible' or to other types of risk.[95] Another key question that is left unanswered by most formulations is the question of what action should actually be taken when the principle is activated. Tanaka argues that the relevant decision-making process entails not only scientific considerations but also subjective and State-specific considerations revolving around the given State's technical capabilities and economic position.[96]

Sands and Peel consider that, although formulations of the precautionary principle vary significantly across treaties, the core of precaution is encapsulated in Principle 15 of the Rio Declaration: [97]

> In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.[98]

Although it attracts broad support, the Rio Declaration formulation of precaution gives rise to a number of questions. Particularly notable is the lack of reference to any standard of certainty (no matter how low) required to justify precautionary action. While Principle 15 ascertains that lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures, one would assume that some level of scientific evidence is required. Another problematic element is the reference to variable application of the principle according to the respective capabilities of States. This may no longer be considered as an entirely acceptable approach. ITLOS' Seabed Disputes

[94] See Section 5.3, below.
[95] Wiener (n 92) provides an extensive list of key points of divergence at p 602.
[96] Yoshifumi Tanaka, 'Regulation of Land-Based Marine Pollution' in David Attard and others (eds), *The IMLI Manual on International Maritime Law* (OUP 2016, Volume III) 139, 158.
[97] Sands and Peel (n 14) 230.
[98] Rio Declaration, Principle 15.

Chamber made light of the argument that developing sponsoring States should be accorded preferential treatment in the application of the general provisions concerning the responsibilities and liabilities of sponsoring States.[99]

There have been some suggestions that application of the precautionary principle should shift the burden of proof onto the proponent of the allegedly harmful activity. Argentina argued to this effect in the *Pulp Mills* case.[100] This argument was however turned down by the ICJ[101] and, for the time being, it does not seem possible to argue that application of the precautionary principle automatically reverses the burden of proof.[102] At the same time, commentators have noted that an interpretation favouring a reversal of the burden of proof "is beginning to be supported by state practice, even if it still falls short of having sufficient support to allow it to be considered a rule of general application".[103] A number of examples – such as the 1996 Protocol to the 1972 London Dumping Convention – can be mentioned where States agreed to shift the burden of proof. Such instances are, however, exceptional and can be contrasted with instruments – including the 1995 UN Fish Stocks Agreement – where a reversal of the burden of proof "was quite deliberately not adopted".[104]

5.2 Precaution Before ITLOS and the ICJ

Given the questions that are left pending by the Rio Declaration formulation of precaution, one cannot be blamed for hoping that judgments and awards of courts and tribunals can shed some light on the principle's practical application. Up till now, however, the approach of ITLOS and of the ICJ in particular has been characterised by a considerable degree of caution and reluctance.

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[99] *Responsibilities in the* Area, paras 158-159.
[100] *Pulp Mills*, para 160.
[101] ibid para 164.
[102] Sands and Peel (n 14) 234. See also Arie Trouwborst, *Precautionary Rights and Duties of States* (Martinus Nijhoff 2006) ch 8.
[103] Sands and Peel (n 14) 223.
[104] Birnie and others (n 22) 159.

The precautionary principle was first invoked in front of the ICJ in 1995 by New Zealand in the second *Nuclear Tests* case.[105] The ICJ found that it had no jurisdiction and did not refer to the precautionary principle in its order. In his dissenting opinion, however, Judge Weeramantry noted that the principle "is gaining increasing support as part of the international law of the environment".[106] Subsequently, in the 1997 *Gabčíkovo-Naymaros Project* case, although both Hungary and Slovakia invoked the principle, and notwithstanding its reference to new norms and standards of international environmental law, the ICJ did not address the precautionary principle in its judgment. Sands and Peel consider as particularly noteworthy the lack of reference to precaution in the ICJ's consideration of the conditions that Hungary needed to fulfil in order to successfully invoke the concept of ecological necessity.[107] Even as it acknowledged the uncertainties as to the ecological impact of the project, and as it determined that "these uncertainties… could not, alone, establish the objective existence of a "peril" in the sense of a component element of a state of necessity",[108] no reference to precaution was forthcoming from the ICJ.

It is not just the ICJ that has approached precaution with a certain reluctance. Reference can be made to the 1998 *Beef Hormones* case in the World Trade Organisation (WTO) dispute settlement system. In this case, the European Community argued that the principle had become a rule of customary international law but the Appellate Body noted that the customary law status of the principle was "less than clear"[109] and that it would be unnecessary and imprudent for it to take a position on the matter.[110] The WTO

[105] *Request for an Examination of the Situation in Accordance with the Court's Judgment of 20 December 1974 in the Nuclear Tests (New Zealand v France)* (1995) ICJ Rep 288. See Application Instituting Proceedings (21 August 1995), para 105.
[106] Dissenting opinion by Judge Weeramantry, p 342. See also the dissenting opinion of *ad hoc* Judge Palmer.
[107] Sands and Peel (n 14) 235.
[108] *Gabčíkovo-Nagymaros*, para 54.
[109] EC Measures Concerning Meat and Meat Products (Hormones), Report of the Appellate Body, WT/DS/48/AB/R, 16 January 1998, para 123.
[110] ibid.

panel adopted a similarly hesitant approach in the 2006 *EC – Biotech* case.[111] The 2010 *Pulp Mills* case, on the other hand, signals a potential change in the ICJ's attitude towards the principle. When considering Argentina's argument that precaution should result in a reversal of the burden of proof, the ICJ affirmed that "while a precautionary approach may be relevant in the interpretation and application of the provisions of the Statute, it does not follow that it operates as a reversal of the burden of proof".[112] This falls considerably short of a clear endorsement of the principle but is an acknowledgment on the ICJ's part of the principle's potential relevance.

Compared to the ICJ, ITLOS "has shown itself to be notably more open to application of the principle, albeit without express reliance".[113] The Tribunal has on a number of occasions called on the parties to cases before it to act with 'prudence and caution' – an expression which "can be deemed to create an obligation to follow a precautionary approach".[114] In the *Southern Bluefin Tuna* cases,[115] for instance, the tribunal called on the parties to "act with prudence and caution to ensure that effective conservation measures are taken".[116] Although it "[could not] conclusively assess the scientific evidence presented by the parties, [the tribunal found] that measures should be taken as a matter of urgency to preserve the rights of the parties and to avert further deterioration of the southern Bluefin tuna stock".[117] In practice, it was this implicit utilisation of precaution that fulfilled the urgency requirement of Article 290 and enabled the indication of provisional measures.[118] Invocations to act with 'prudence and caution' can also be found in the *MOX Plant*[119] and

[111] *European Communities - Measures Affecting the Approval and Marketing of Biotech Products*, Panel Report, WT/DS291/R, WT/DS292/R, WT/DS293/R (29 September 2006) para 7.88.
[112] *Pulp Mills*, para 164.
[113] Sands and Peel (n 14) 224.
[114] Cançado Trindade (n 93) 418.
[115] *Southern Blue Fin Tuna Cases (New Zealand v Japan; Australia v Japan)* (Provisional Measures) ITLOS Nos. 3 and 4 (27 August 1999).
[116] ibid para 77.
[117] ibid para 80.
[118] Tanaka (n 7) 45. See also the Separate Opinions of Judges Treves (para 8), Laing (para 19) and Shearer.
[119] *MOX Plant* (*Ireland v United Kingdom*) (Provisional Measures) ITLOS No. 10 (3 December 2001) para 84.

Land Reclamation[120] cases. Insofar as ITLOS jurisprudence is concerned, however, the most notable output is the *Responsibilities in the Area* opinion. The Seabed Disputes Chamber affirmed that the obligation to apply precaution emerged not only from the Nodules and Sulphides Regulations but was "also an integral part of the general obligation of due diligence of sponsoring States".[121] The Chamber took note of the increasing incorporation of the principle in a growing number of international instruments and considered that this "has initiated a trend towards making the [precautionary] approach part of customary international law".[122] As the precautionary principle is increasingly included in international instruments and as its core content becomes clearer, reluctance of international courts and tribunals in the principle's regard is unlikely to last long into the future and present international judicial reluctance around the principle may "come to be seen, some decades form now, as a conservative – if not reactionary – posture".[123]

5.3 Legal Status and Content

To an extent, the 1998 finding of the WTO appellate body in the *Beef Hormones* case to the effect that the customary law status of the precautionary principle is less than clear still holds true today. Two decades later, however, it is fair to say that the matter is clearer now than it was in 1998. Although still not possible to outrightly affirm the customary law status of precaution, it is today reasonable and not inaccurate to speak, as ITLOS' Seabed Disputes Chamber did, of a trend towards making the precautionary principle part of customary international law.[124] This view is an increasingly common one. After a detailed consideration of State practice, *opinio juris* and expert opinion in 2002, Arie Trouwborst came to the conclusion that "the assumption that nowadays the precautionary principle is a principle of customary international law is much better defensible than the contrary".[125] Sands and Peel consider that "a strong argument [can] be made that [the precautionary principle]

[120] *Land Reclamation by Singapore in and around the Straits of Johor (Malaysia v Singapore)* (Provisional Mesures) ITLOS No. 12 (8 October 2003) para 99.
[121] *Responsibilities in the Area*, para 131.
[122] ibid para 135.
[123] Cancado Trindade (n 93) 427.
[124] *Responsibilities in the Area*, para 135.
[125] Arie Trouwborst (n 87) 276.

reflects a principle of customary law, and that within the context of the European Union it has now achieved customary status".[126] Similar conclusions are reached by other authors[127] and, although they do not share the same perspective, Birnie Boyle and Redgwell acknowledge that the view that precaution can now be considered as a customary international law rule is "quite a widely held view".[128]

Statements that precaution should now be considered as a principle of customary international law do not, however, in and of themselves, clarify the *content* of the alleged obligation. When taking note of the trend towards making the principle part of customary international law, the Seabed Disputes Chamber considered "the growing number of international treaties and other instruments, *many of which reflect the formulation of Principle 15 of the Rio Declaration*".[129] This is somewhat problematic. As discussed in Section 5.1, the Principle 15 formulation does not make for easy application in practice. It also fails to create any obligation to act. Unlike, for instance, the formulation of precaution in the OSPAR Convention,[130] the formulation of precaution in the Rio Declaration is purely negative. As Bodansky contends, "States may, for other reasons, decide not to act, but they should not use scientific uncertainty as an excuse for inaction".[131]

If usefulness of the precautionary principle is to be ensured, reliance on the Principle 15 formulation is hardly going to be ideal. In this regard, it is pertinent to make reference to a study undertaken by Trouwborst in 2006 with

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[126] Sands and Peel (n 14) 228.
[127] See, e.g., Owen McIntyre and Thomas Mosedale, 'The Precautionary Principle as a Norm of Customary International Law' (1997) 9 Journal of Environmental Law 221, 241; de Sadeleer (n 84) 195; Cançado Trindade (n 93) 412.
[128] Birnie and others (n 22) 160.
[129] *Responsibilities in the Area*, para 135 (emphasis added).
[130] Article 2(2)(a) of the OSPAR Convention obliges contracting parties to apply "the precautionary principle, by virtue of which preventive measures are to be taken when there are reasonable grounds for concern that substances or energy introduced, directly or indirectly, into the marine environment may bring about hazards to human health, harm living resources and marine ecosystems, damage amenities or interfere with other legitimate uses of the sea, even when there is no conclusive evidence of a causal relationship between the inputs and the effects".
[131] Daniel Bodansky, 'Deconstructing the Precautionary Principle' in David D. Caron and Harry N. Scheiber (eds), *Bringing New Law to Ocean Waters* (Martinus Nijhoff 2004) 381, 384.

the aim of ascertaining the rights and duties of States under the precautionary principle in general international law.[132] Trouwborst concludes that the (positive) duty of States to take precautionary action can be defined as follows:

> Wherever, on the basis of the best information available, there are reasonable grounds for concern that serious and/or irreversible harm to the environment may occur, effective and proportional action to prevent and/or abate this harm must be taken, including in situations of scientific uncertainty regarding the cause, extent and/or probability of the potential harm.[133]

Trouwborst's assessment of State practice results in a formulation that is more meaningful than the one in the Rio Declaration. As Trouwborst explains, it clarifies that "not *every* chance of *any* adverse impact is supposed to trigger a reaction".[134] Also notable is the requirement for action taken to be proportionate, a requirement that is especially relevant in the maritime context where environment protection is often in direct competition with navigational and other interests.

While studies such as Trouwborst's are significant, Birnie, Boyle and Redgwell consider that the wide range of uncertainties that continue to plague the principle "suggest that the proposition that it is, or that it is not, customary international law is too simplistic".[135] For them, the real value of precaution is to be found in its link with other rules and principles, most notably in the link with prevention: precaution "redefines existing rules… and brings them into play at an earlier stage".[136] This is a valid argument which recalls a statement of the ILC special rapporteur for the Draft Articles on Transboundary Harm[137]

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[132] Trouwborst (n 102).
[133] ibid 159.
[134] Arie Trouwborst, 'Prevention, Precaution, Logic and Law' (2009) 2 Erasmus Law Review 105, 110.
[135] Birnie and others (n 22) 160.
[136] ibid 163.
[137] Faced by the suggestion that precaution be addressed in the draft articles, the Special Rapporteur noted that "the precautionary principle was already included in the principle of

as well as the finding by the Seabed Disputes Chamber that the precautionary principle is implied by the obligation of due diligence.[138] In the end, it may well be that the normative force of precaution is not to be found in its application as a stand-alone principle but in its utilisation as "an element of interpretation of existing rules of international law".[139] This view is supported not only by the ICJ's pronouncement in the *Pulp Mills* case (finding that "a precautionary approach may be relevant in the interpretation and application of the provisions of the Statute")[140] but also by the implicit utilisation of precaution to fulfil the urgency requirement of Article 290 in the *Southern Bluefin Tuna* cases.[141]

5.4 Precautionary Thinking in the LOSC

Adopted in 1982 and negotiated before the precautionary principle's formal emergence on the international level, the LOSC does not encompass any explicit enunciation of the principle. It is nevertheless possible to detect instances of *avant la lettre* precautionary thinking in some of its provisions.[142] By way of example, Article 1(4) – which defines 'pollution of the marine environment' as "the introduction by man… of substances or energy into the marine environment… which results *or is likely to result* [in environmental damage]"[143] – makes allowance for a degree of scientific uncertainty. Similar precautionary wording is utilised in Article 206 of the Convention, while the precautionary approach of sections of the Convention dealing with the conservation of marine living resources has been pointed out by judges[144] and authors[145] alike. Additionally, as mentioned in Section 5.1, the precautionary approach is listed as one of the general principles under Article 5 of the 1995 Fish Stocks Agreement.

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prevention… and could not be divorced therefrom". See ILC Report (2000) GAOR A/55/10 para 716.

[138] *Responsibilities in the Area*, para 131. See also the last paragraph in Section 4.3, above.

[139] Tanaka (n 96) 160.

[140] *Pulp Mills*, para 164.

[141] *Southern Blue Fin Tuna Cases*, para 80.

[142] Trouwborst (n 87) 64.

[143] LOSC, Article 1(4) (emphasis added).

[144] See, e.g., para 17 of the Separate Opinion of Judge Laing in the *Southern Blue Fin Tuna Cases*.

[145] David Freestone and Zen Makuch, 'The New International Environmental Law of Fisheries: the 1995 United Nations Straddling Stocks Agreement', Yearbook of International Environmental Law 7 (1996) 3, 19; Trouwborst (n 87) 64.

As discussed in Section 4.3, in the *Responsibilities in the Area* opinion ITLOS' Seabed Disputes Chamber considered that the obligation to apply precaution is "an integral part of the general obligation of due diligence of sponsoring States".[146] On this basis, Cançado Trindade mentions Article 192 as an example of a LOSC provision that "can be interpreted as including an obligation to follow a precautionary approach".[147] The same could be said of Article 194(1), which enjoins States to take all measures necessary to prevent, reduce and control pollution of the marine environment from any source.

6. The Cooperation Principle

The obligation to cooperate is today reflected in a wide variety of international instruments across practically all areas of international environmental law.[148] Principle 24 of the Stockholm Declaration embodies a political commitment to cooperate in environment protection matters whereas Principle 27 of the Rio Declaration references the importance of cooperation in good faith "in the fulfillment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development".[149] The obligation to cooperate in good faith in preventing significant transboundary harm is also reiterated in Article 4 of the Draft Articles on Transboundary Harm. Additionally, as noted by ITLOS in the *MOX Plant* case:

> the duty to cooperate is a fundamental principle in the prevention of pollution of the marine environment under Part XII of the Convention and general international law...[150]

The LOSC contains numerous explicit and implicit references to cooperation including in Articles 43 (in relation to straits); 117 (duty of States to adopt, with respect to their nationals, measures for the conservation of the living resources of the high seas); 123 (cooperation of States bordering

[146] *Responsibilities in the* Area, para 131.
[147] Cancado Trindade (n 93) 409.
[148] For a list of treaties that cite the cooperation principle see Sands and Peel (n 14) 214.
[149] Rio Declaration, Principle 27.
[150] *MOX Plant*, para 82.

enclosed or semi-enclosed seas); 197 (general obligation to cooperate on a global, regional basis); 199 (cooperation in eliminating the effects of pollution) and 211 (pollution from vessels). The general obligation to cooperate under Article 197 is a testament to the close link that was envisaged by the Convention's drafters between cooperation and the achievement of ambitious marine environment protection goals. Freestone describes it as "a benchmark for what the participants in the Third Conference on the Law of the Sea had in mind for the way that the international community would cooperate to achieve the strong requirements of marine environment protection set out by Part XII".[151]

The necessity for cooperation has been repeatedly acknowledged by ITLOS. In the *MOX Plant* case, for instance, ITLOS affirmed the binding nature of the cooperation principle and outlined detailed instructions in the way of provisional measures to direct the cooperation efforts which it ordered the parties to undertake.[152] Detailed instructions for cooperation were also offered by the Tribunal in the *Land Reclamation* case (once again, by way of provisional measures).[153] In the *Sub-Regional Fisheries Commission* advisory opinion, ITLOS considered that the obligation to "seek to agree" under Article 63 and the obligation to cooperate under Article 64 of the LOSC:

> require the States concerned to consult with one another in good faith, pursuant to article 300 of the Convention. The consultations should be meaningful in the sense that substantial effort should be made by all States concerned, with a view to adopting effective measures necessary to coordinate and ensure the conservation and development of shared stocks.[154]

[151] David Freestone, 'Governance of Areas Beyond National Jurisdiction' in Jill Barrett and Richard Barnes (eds), *Law of the Sea: UNCLOS as a Living Treaty* (BICL 2016) 231, 263.
[152] *MOX Plant*, para 89(1).
[153] *Land Reclamation*, para 106(1).
[154] *Sub-Regional Fisheries Commission*, para 210.

Similarly to ITLOS, in the *Gabčíkovo-Naymaros Project* case the ICJ instructed the parties to cooperate in good faith to find an agreed solution that takes account of the treaty's objectives.[155] The ICJ made reference to its earlier finding in the *North Sea Continental Shelf* cases to the effect that:

> [cooperating States] are under an obligation so to conduct themselves that negotiations are meaningful, which will not be the case when either of them insists upon its own position without contemplating any modification of it.[156]

Applied to the context of this thesis, this means that a coastal State would be in breach of its obligation to cooperate in good faith if it blindly insists on environment protection interests without taking heed of concerns about navigational interests. The same applies to a flag State that steadfastly ignores environment protection interests.

A problem with the cooperation principle is the fact that, while it requires cooperation, it provides no definite indication as to the precise measures that need to be taken in order for the obligation to be fulfilled. To take an example, it will be recalled that, in relation to straits, Article 43 of the LOSC requires user and littoral States to cooperate in the establishment and maintenance of navigational and safety aids and in the prevention, reduction and control of pollution from ships. Article 43, however, does not provide further details as to what measures need to be taken. A number of options are nevertheless available to obtain further clarity. One particularly useful mechanism is the possibility of recourse to courts and tribunals, which can not only require but also direct cooperation efforts. Additionally, Tanaka points to the possible usefulness of international institutions.[157] The usefulness of the IMO as a forum for cooperation is beyond dispute. Due consideration must

[155] *Gabčíkovo-Nagymaros*, paras141-142 and para 155(B).
[156] *North Sea Continental Shelf Cases (Federal Republic of Germany/Denmark; Federal Republic of Germany/Netherlands)* (1969) ICJ Rep 3 para 85.
[157] Tanaka (n 7) 53.

also be given to the possible role of institutions (existent or to be created) that can exercise a more supervisory role than the IMO.[158]

7. Other Principles of Relevance

Besides the principles of international marine environmental law discussed above, reference can be made to two other principles of general international law that can also play a role in the LOSC's development. These are the principles of proportionality and good faith. To begin with proportionality, as a general principle of international law proportionality requires "a State's acts [to] be a rational and reasonable exercise of means towards achieving a permissible goal, without unduly encroaching on protected rights of either the individual or another State".[159] Proportionality has three constituent elements: suitability; necessity; and commensurability.[160] Suitability requires that the measures adopted are suited to fulfilment of the intended objective, whereas necessity entails that measures should not be adopted if less burdensome but equally effective alternatives exist. Proportionality *strictu sensu* requires "balancing the effects of measures chosen against the objective sought".[161] Given the potential for clashes between competing interests, the final element of the proportionality principle is particularly relevant in the law of the sea context.

Good faith is a universally recognised foundational principle of the international legal system[162] whose primary normative content consists in "the protection of legitimate expectations freely created in another subject by some deliberate course of conduct".[163] The principle has several applications but is particularly important in the context of treaty creation and treaty

[158] Tanaka (ibid 54) cites the OSPAR Commission as a prime example in this regard.
[159] Emily Crawford, 'Proportionality' MPEPIL (May 2011) <http://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e1459> accessed 21/4/2017.
[160] ibid.
[161] ibid.
[162] The preamble to the VCLT expressly acknowledges the principle of good faith as a 'universally recognised' one. Good faith is one of the seven principles included in the 1970 Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations (UN DOC A/RES/25/2625, 24 October 1970).
[163] Robert Kolb, *Good Faith in International Law* (Hart 2017) 15.

interpretation.[164] In a negative sense, good faith excludes abusive interpretations that are incompatible with the treaty's spirit and the supposed intention of the parties during its drafting. As noted by the ICJ in the *Gabčíkovo-Naymaros Project* case, "it is the purpose of the Treaty, and the intentions of the parties in concluding it, which should prevail over its literal application".[165] In a positive sense, good faith favours that interpretation which is most in accordance with the legitimate expectations of the parties to the treaty. It mandates adoption of that interpretation which "[an] honest and reasonable party could and should have understood with regard to the text as it has been adopted".[166]

Notably, although good faith may be cited by some as an argument against evolutionary interpretation, good faith may actually *require* evolutionary interpretation if this is the only way to realise the parties' legitimate expectations upon agreeing to the treaty.[167] Good faith can also support recognition of the modification by subsequent practice of a given treaty provision. In such cases, reference will frequently be made to the 'intention' of the parties as manifested in their subsequent conduct. In reality, however, "[an adjudicator] will consider whether the practice is such that allowing a state to deny its normativity would be a breach of faith, of reasonableness and of legitimate expectations".[168]

Besides being an obligation under general international law, good faith is also enshrined in Article 300 of the LOSC:

> States Parties shall fulfil in good faith the obligations assumed under this Convention and shall exercise the rights, jurisdiction and freedoms recognized in this Convention in a

[164] *Nuclear Tests Case (New Zealand v France)* (Judgment) (1974) ICJ Rep 457, para 49. The VCLT embodies several implicit and five explicit references to good faith. The most relevant is Article 31(1).
[165] *Gabčíkovo-Nagymaros*, para 142.
[166] Kolb (n 163) 63.
[167] Erik Bjorge, *The Evolutionary Interpretation of Treaties* (OUP 2014) 64.
[168] Kolb (n 163) 77.

> manner which would not constitute an abuse of right.[169]

In the context of a Convention that balances such a wide range of competing interests, Article 300 has the potential to perform a "constitutional function".[170] Since the LOSC could never realistically provide concrete solutions to every possible practical problem, inclusion of Article 300 effectively "[opened] the way for *ad hoc* reasonable adjustments"[171] and provides adjudicators with a mandate to find reasonable solutions to specific problems in application of the Convention's provisions. The requirement to fulfill the Convention's obligations in good faith is a requirement on States parties to interpret the Convention in good faith.[172] The abuse of right doctrine, on the other hand, has been considered by the Appellate Body of the World Trade Organisation as:

> [an] application of [the good faith] principle… [that] prohibits the abusive exercise of a state's rights and enjoins that whenever the assertion of a right 'impinges on the field covered by [a] treaty obligation, it must be exercised bona fide, that is to say, reasonably'. An abusive exercise by a member of its own treaty rights results in a breach of the treaty rights of the other members and, as well, a violation of the treaty obligation of the Member so acting.[173]

Article 300 can be especially important in the context of provisions which are ambiguous and/or which confer considerable discretionary rights. By way of example, reference can be made to Article 234[174] which, in relation to ice-covered waters, empowers coastal States to take exceptional regulatory and enforcement measures *vis-à-vis* navigation without any need for IMO

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[169] LOSC, Article 300.
[170] Alexander Proelss (ed), *United Nations Convention on the Law of the Sea: A Commentary* (Hart 2017) 1938.
[171] Robert Kolb, 'Principles as Sources of International Law (With Special Reference to Good Faith)' (2006) 53 Netherlands International Law Review 1, 36.
[172] Proelss (n 170) 1940.
[173] *United States – Import Prohibition of Certain Shrimp and Shrimp Products*, Appellate Body Report, WT/DS58/AB/R (12 October 1998) para 158. On the relevance of the abuse of right doctrine to the law of the sea context see Proelss (n 170) 1942.
[174] Article 234 will be discussed in Chapter 4.

approval. Used abusively, Article 234 powers could devastate navigational interests. In such cases, Article 300 constitutes "a potential instrument of control over excessive use of [discretionary powers]"[175] and can be a vital bulwark for the preservation of navigation rights guaranteed by the Convention.

8. Concluding Comments

The scope for impact of the principles of international marine environmental law on the LOSC's development is clearly considerable. Integration, prevention, precaution and cooperation can influence not only the interpretation of the Convention's provisions but also their modification. It is possible to see, for example, how the precautionary principle has gradually infiltrated LOSC discourse through interpretation (*Responsibilities in the Area* opinion) as well as through informal modification by subsequent practice, as evidenced by the principle's incorporation in the 1995 Fish Stocks Agreement.

The considerable scope for impact of these principles should not be viewed as cause for concern. There is no need to guard against the infiltration of the law of the sea regime by 'extraneous' environmental law elements. The principles discussed in this Chapter are not at all extraneous to the LOSC. Moreover, as Boyle points out, categorisations of international law into different branches are "no more than convenient labels…. [t]hey are not stockades to be defended from impurity".[176] What should be guarded against is not the principles themselves but, rather, the possibility of their misuse. It will be recalled that one of the possible functions of principles that can be particularly relevant to coastal States is their usefulness as advocacy tools. As Paradell-Trius warns, in utilising principles in this manner it would be wrong to seek to "profit from the nebulous nature and content of principles".[177] Any attempt at misrepresentation of the principles would only serve to undermine their authority in cases where they genuinely apply.

[175] Proelss (n 170) 1938.
[176] Alan Boyle, 'Relationship Between International Environmental Law and Other Branches of International Law' in Daniel Bodansky and others (eds), *The Oxford Handbook of International Environmental Law* (OUP 2008) 125, 127.
[177] Paradell-Trius (n 10) 97.

Part I of this thesis considered the mechanisms for development of the LOSC (in Chapter 1) as well as principles of international environmental law (in this Chapter) that can influence the Convention's development. Part II will now apply the theoretical discussion undertaken in Part I to four case-study scenarios of controversial coastal State action to prevent accidental vessel-source pollution.

PART II: EVOLUTION AND DEVELOPMENT OF THE LOSC IN PRACTICE

Part II considers four case-studies of controversial coastal State action to prevent accidental vessel-source pollution. The case-studies analyse: the Australian attempt to introduce compulsory pilotage in the Torres Strait (Chapter 3); the viability of Article 234 LOSC as a basis for mandatory ship-reporting in the Canadian Arctic (Chapter 4); the extent of coastal State jurisdiction in relation to offshore bunkering and ship-to-ship (STS) oil transfers in the EEZ (Chapter 5); and the extent of coastal State jurisdiction in relation to the EEZ transportation of ultra-hazardous nuclear cargo (Chapter 6).

The case-studies test the boundaries of what can be considered as permissible coastal State action under the jurisdictional framework established by the LOSC. In a most basic sense, they indicate coastal State willingness to take preventive action against accidental vessel-source pollution. More fundamentally, it is hoped that they will shed light on the nature of possible development of the LOSC, on the potential role of international environmental law in shaping and catlaysing such development, as well as on the impact of any development of the Convention on the extent of coastal State jurisdiction to protect the marine environment.

In terms of structure, the four case-study chapters roughly follow the same order. Each chapter begins by providing the background and wider context to the relevant coastal State measure(s). This is followed by an examination of the most relevant LOSC provisions, of the wider legal framework and of relevant State practice. The respective case-study chapters then analyse the compatibility of the relevant coastal State measure(s) with the LOSC. Suggestions about possible and ideal approaches to the LOSC are made at the end of each chapter. Following on from the respective case-study examinations in this Part, overarching conclusions about possible development of the LOSC and about the impact of such development on coastal State jurisdiction in the case-study contexts will be drawn in Part III Chapter 7.

CHAPTER 3: Compulsory Pilotage in the Torres Strait

1. Introduction

In 2003, in a joint submission to the 49th session of the Marine Environment Protection Committee (MEPC), Australia and Papua New Guinea (PNG) set forth a proposal[1] for the designation of the Torres Strait as a Particularly Sensitive Sea Area (PSSA) and for the extension of the Great Barrier Reef (GBR) compulsory pilotage area to the Torres Strait. A compulsory pilotage system requires vessels to take on board a pilot with specialist knowledge of local conditions for the duration of the transit.[2] Although it was widely agreed that the compulsory pilotage proposal was "largely proportionate to provide protection to the marine environment",[3] a number of delegations argued that there was no clear legal basis for the adoption of compulsory pilotage regimes in international straits.[4] States remained divided on the legality of compulsory pilotage in international straits[5] but, at its 53rd session in July 2005, the MEPC adopted a Resolution "Recommend[ing] that Governments recognise the need for effective protection of the GBR and Torres Strait region and inform ships flying their flag that they should act in accordance with Australia's system of pilotage…"[6] This Resolution was controversially utilised by Australia as a legal basis for the adoption of a compulsory pilotage requirement for vessels navigating the Torres Strait.

The Torres Strait separates Australia and PNG and is located to the north and north east of Cape York.[7] It lies within the EEZs of Australia and PNG and includes some areas of the territorial sea and internal waters of both

[1] MEPC 49/8 submitted by Australia and PNG, 'Extension of Existing GBR PSSA to include the Torres Strait Region' (10 April 2003).
[2] The pilotage regime that applies in the Torres Strait can be described as 'coastal pilotage' and is a type of pilotage that "[differs significantly] from port or harbour pilotage because it involves long transits and coastal navigation through relatively open waters". See Francis Rose, *The Modern Law of Pilotage* (Sweet & Maxwell 1984) 1.
[3] NAV 50/19, 'Report [on the 50th session of the Sub-Committee on Safety of Navigation] to the MSC' (28 July 2004) para 3.27.14.
[4] ibid para 3.27.15.
[5] LEG 89/16, 'Report of the Legal Committee on the Work of its 89th Session' (4 November 2004) para 241.
[6] Resolution MEPC.133(53), 'Designation of the Torres Strait as an extension of the GBR PSSA' (22 July 2005) para 3.
[7] Cape York is a large peninsula in the northern most tip of Australia.

countries.[8] As a natural northern extension of the GBR,[9] the strait is a unique ecosystem that is home to a number of marine species of conservation interest and provides critical habitats for several commercial fish stocks.[10] Indigenous Australian and PNG nationals inhabit a number of the Strait's islands.[11] There is no controversy about the legal status of the Torres Strait, which Australia readily recognises as a strait used for international navigation. This said, while the Australian Government focuses on the 'fragile' and 'pristine' environment of the Strait as well as on the indigenous people that depend on it,[12] in reality, and as discussed in Chapter 1 Section 2.4, straits used for international navigation are widely recognised as "a focal point for both environmental and freedom of navigation interests".[13]

Although not the busiest of international straits in terms of volume of shipping traffic,[14] the Torres Strait is an important shipping route that provides the quickest access from northern Australia and southeast Asia to Eastern Australia and New Zealand.[15] Additionally, those opposed to Australia and PNG's compulsory pilotage proposal were concerned with the possibility of setting a precedent for other straits, including busier and more important straits (such as the Malacca and Singapore straits) that can be considered as 'choke points' of the global economy.[16] In 2010, France and Italy made a joint

[8] MEPC 49/8, para 2.4.
[9] ibid para 3.1.1.1.
[10] ibid paras 3.1.1-3.1.2.
[11] ibid para 2.2.
[12] See, e.g., LEG 89/15 para 9.
[13] Jeanine Womble, 'Freedom of Navigation, Environmental Protection, and Compulsory Pilotage in Straits used for International Navigation' (2012) 61 Naval L. Rev. 134, 135.
[14] 3418, 3209 and 3257 vessels transited the Torres strait in 2016, 2017 and 2018 respectively. Email from Murray Widdeson (Australian Maritime Safety Authority (AMSA) Advisor on Coastal Pilotage) to author (9 January 2019). This can be compared to the 83,740 transits of the Straits of Malacca and Singapore in 2016 <http://www.seatrade-maritime.com/news/asia/malacca-and-s-pore-strait-traffic-hits-new-high-in-2016-vlccs-fastest-growing-segment.html> accessed 2/2/2018.
[15] Stuart Kaye, *The Torres Strait* (Martinus Nijhoff 1997) 14.
[16] On straits as choke points see Lewis M. Alexander, 'The Role of Choke Points in the Ocean Context' 26 GeoJournal 503. According to Alexander: "[a] choke point… should be a relatively narrow waterway, capable of being closed off to shipping… [t]here should be no readily available alternative maritime route… [and] a choke point should be of considerable significance to the interests of several States, other than the State or States controlling the waterway".

submission to the IMO to have the Strait of Bonifacio[17] designated as a PSSA and to establish a mandatory pilotage regime for vessels wishing to transit the said strait.[18] As their proposal was being assessed by the IMO, however, France and Italy took heed of objections raised and decided to withdraw their proposal to establish a mandatory pilotage system. A purely recommendatory system was adopted instead.[19]

Natural conditions make navigation in the Torres Strait a perilous task. Useable routes for larger vessels are restricted to the Great North East Channel and to the Prince of Wales Channel, which are limited in certain areas to a few hundred meters in width.[20] Their shallow waters are characterised by an "extremely complex and highly variable"[21] tidal regime. The fact that a voluntary pilotage service has been available in the area for more than 100 years[22] provides testament to the dangerous conditions that prevail. In September 2002, some years before Australia's move to introduce compulsory pilotage, the *Aegean Falcon* drifted outside the normal shipping route and grounded in the strait while there was no pilot on board.[23] The vessel grounded on a sandy bottom and was successfully refloated without any pollution damage but, had the grounding not happened on a sandy bottom, considerable pollution damage could well have ensued and the incident signaled the need to take bolder preventive measures.[24] Another indication of the need for such measures was provided by a 2001 Det Norske Veritas study which found that compulsory pilotage in the Torres Straits would reduce the risk of incidents by 35%.[25] Australia and PNG argued that the considerable decline in the take-up of voluntary pilotage services indicated an unacceptably

[17] The Strait of Bonifacio separates the Italian island of Sardinia from the French island of Corsica. Like the Torres Strait, the Bonifacio Strait is a commercially important strait that happens to be located in an area of ecological significance.
[18] MEPC 61/9 submitted by France and Italy, 'Designation of the Strait of Bonifacio a Particularly Sensitive Sea Area' (25 June 2010).
[19] Resolution MEPC.204(62), 'Designation of the Strait of Bonifacio as a Particularly Sensitive Sea Area' (15 July 2011).
[20] MEPC 49/8, para 2.1.
[21] Ross Babbage, *The Strategic Significance of Torres Strait* (ANU Strategic and Defence Studies Centre, 1990) 3.
[22] For a brief historical overview of pilotage in the Torres Strait area see <http://www.reefpilots.com.au/history> accessed 23/1/2018.
[23] MEPC 49/8, para 4.1.2.4.
[24] ibid.
[25] ibid para 5.11.

high risk of accident and necessitated a transition to compulsory pilotage.[26] No official reasons for the decline in compliance with the voluntary scheme were provided but cost may well have been the major factor.[27]

Another incident that is worth mentioning is the April 2010 grounding of the *Shen Neng I*, a Chinese registered bulk carrier, on Douglas Shoal in the GBR marine park. An Australian Transport Safety Bureau (ATSB) investigation attributed the grounding to the fact that "the chief mate did not alter the ship's course at the designated course alteration position".[28] The incident occurred in an area of the GBR marine park where compulsory pilotage does not apply. Although the general public demanded an extension of compulsory pilotage to this area, the Australian Maritime Safety Authority (AMSA) ultimately decided that this would be inappropriate:

> the coastal waters off the port of Gladstone and the Capricorn and Bunker group of islands… are not navigationally complex…. introducing compulsory coastal pilotage in the area may unnecessarily increase costs, be a logistical challenge and may not be a cost effective mechanism to mitigate the risk of groundings.[29]

This decision indicates a degree of responsibility and cognisance of navigational interests on the part of Australian authorities who, notwithstanding considerable public pressure, opted for the more proportionate measure of extending the REEFVTS system to cover the waters in question.[30]

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[26] ibid para 5.9. By August 2002, compliance had declined to 32% for vessels on eastbound voyages and to 38.5% for west bound voyages.
[27] Email from Murray Widdeson (AMSA Advisor on Coastal Pilotage) to author (31 January 2018).
[28] Australian Transport Safety Bureau, 'Independent investigation into the grounding of the Chinese registered bulk carrier Shen Neng 1 on Douglas Shoal' (Queensland, 3 April 2010) xii < https://www.atsb.gov.au/media/2478832/mo2010003.pdf> accessed 5/1/2019.
[29] ibid 36.
[30] ibid. REEFVTS monitors the transit of vessels and interacts with individual vessels which deviate from the recommended routes.

Navigation in the Torres Strait is regulated by the regime of transit passage. As discussed in Chapter 1 Section 2.4, transit passage is an innovation of the LOSC that was agreed as a compromise between maritime and littoral States. The need to accommodate maritime State interests significantly curtailed the marine environment protection capabilities of littoral States.[31] The assertion that transit passage is too generous to navigational interests at the expense of environmental interests is not an uncommon one[32] and there is some irony in the fact that the LOSC accords littoral States such limited environment protection powers notwithstanding the greater risk of incidents in straits. The jurisdictional balance established for international straits by the LOSC must be respected and unilateral coastal State action outside of the LOSC framework discouraged. At the same time, it will be argued that the LOSC may in fact allow for interpretations that support improved littoral State control over straits for the purpose of marine environment protection.[33] Such interpretations can result in a better balance between navigational and environmental concerns – two equally important sets of interests that need to be harmonised if long-term sustainability of the transit passage regime is to be ensured.

Following this introduction, Section 2 considers the multilateral process that Australia went through before controversially introducing compulsory pilotage. Section 3 revisits the most relevant aspects of the transit passage regime. Section 4 analyses the relevance of the World Heritage Convention to the Torres Strait context whereas Section 5 examines Australia's compulsory pilotage proposal in the context of the IMO's Particularly Sensitive Sea Area (PSSA) regime. Section 6 addresses the compatibility of compulsory pilotage with Part III of the LOSC while Section

[31] Nilüfer Oral, 'Governance and Environmental Protection of Straits Used for International Navigation under UNCLOS' in Jill Barrett and Richard Barnes (eds), *Law of the Sea: UNCLOS as a Living Treaty* (BICL 2016) 267, 274.
[32] See, e.g., Hugo Caminos and Vincent Cogliati-Bantz, *The Legal Regime of Straits: Contemporary Challenges and Solutions* (CUP 2014) 4.
[33] For a similar view see: Caminos and Cogliati-Bantz (n 32) 4; Tulio Scovazzi, 'Management regimes and responsibility for international straits: with special reference to the Mediterranean Straits' (1995) 19 Marine Policy 137, 142.

7 assesses subsequent State practice. Section 8 offers some concluding thoughts.

2. The Long and Winding Road: How Australia Went About Introducing Compulsory Pilotage in the Torres Strait

The first step towards introducing compulsory pilotage in the Torres Strait was taken in 2003 when Australia and PNG jointly submitted a proposal for the designation of the Torres Strait as a PSSA and for the extension of the Great Barrier Reef (GBR) compulsory pilotage area to the Torres Strait.[34] The IMO's Sub-Committee on the Safety of Navigation (NAV) agreed that the proposed compulsory pilotage measure would be "operationally feasible and largely proportionate to provide protection to the marine environment".[35] At the same time, a number of delegations argued that no clear legal basis existed for the adoption of a compulsory pilotage regime in international straits. At the Legal Committee (LEG), some delegations supported the Australia-PNG proposal and some argued that, since the LOSC does not contain specific provision sanctioning or preventing compulsory pilotage, compulsory pilotage can be legally introduced.[36] Conversely, some delegations argued that the articles cited by Australia and PNG did not provide a proper legal basis; that the absence of an express provision allowing or sanctioning compulsory pilotage did not imply the legality of compulsory pilotage; and that introducing compulsory pilotage would impede transit passage.[37] This ongoing disagreement was side-stepped by the Maritime Safety Committee (MSC) when, at its 79th Session in December 2004, it endorsed an Australian proposal to word the operative paragraph of the draft Marine Environment Protection Committee (MEPC) Resolution in a way that would not expressly state whether pilotage in the Torres Strait would be voluntary or compulsory.

Resolution MEPC.133(53) was adopted at the 53rd session of the MEPC. Targeted at flag States, it:

[34] MEPC 49/8.
[35] NAV 50/19 para 3.27.14.
[36] LEG 89/16 paras 228, 230.
[37] ibid para 233.

> Recommend[ed] that Governments recognize the need for effective protection of the Great Barrier Reef and Torres Strait region and inform ships flying their flag that they should act in accordance with Australia's system of pilotage…[38]

Commenting on the text of the draft Resolution, the US stated that:

> …it must be recognised that this resolution was recommendatory and provided no international legal basis for mandatory pilotage for ships in transit in this or any other strait used for international navigation. The United States could not support the resolution if this Committee took a contrary view.[39]

Several delegations supported the US statement and Australia is recorded as having "indicated that it did not object to [the US] statement".[40] This notwithstanding, on the force of Resolution MEPC.133(53), in May 2006 the Australian Government issued Marine Notice 8/2006[41] informing interested parties that a new compulsory pilotage area was about to be specified for the Torres Strait and that significant penalties would apply under the Australian Navigation Act[42] for vessels that navigate the relevant area without a pilot. The Torres Strait remains specified as a compulsory pilotage area up to this day[43] and, under Article 166 of the Australian Navigation Act, the master or owner of a vessel[44] that navigates the strait without a pilot will be committing a

[38] MEPC.133(53) para 3.
[39] MEPC 53/24 para 8.5.
[40] ibid para 8.6.
[41] Australian Maritime Safety Authority, 'Marine Notice 8/2006' (16 May 2006) <http://www.amsa.gov.au/shipping_safety/marine_notices/2006/documents/0806.pdf> accessed 10/8/2017.
[42] Navigation Act 2012 (No 128, 2012) ('Australian Navigation Act').
[43] Marine Order 54 (Coastal Pilotage) 2014 <https://www.legislation.gov.au/Details/F2016C01055> accessed 28/8/2017. The original designation was made in a 2006 version of Marine Order 54.
[44] Article 162(1) of the Australian Navigation Act determines that compulsory pilotage applies to vessels 70m or longer in length and to oil tankers, chemical carries and liquefied gas carriers of any length.

fault-based offence subject to 600 penalty units and will also be liable to a civil penalty of 6,000 penalty units.[45]

Australia's move to introduce compulsory pilotage did not go down well with those countries that had expressed their opposition to the adoption of just such a regime. In a statement, Singapore pointed out that the Australian action was not in conformity with the understanding reached at MEPC 53 that Resolution MEPC.133(53) was recommendatory.[46] The Singaporean statement was supported by the US, Russia, Japan, Panama, Norway, China, Greece, Liberia, Brazil, the UK, Ukraine, Cyprus, the Bahamas and South Africa.[47] At MEPC 55 the Chairman clarified that "historically, when the Committee adopts resolutions with an operative paragraph beginning with the word "RECOMMENDS", the content of that paragraph is of a recommendatory nature".[48]

Given the clarity of the US Statement at MEPC 53 (quoted above), the support that this received from a number of delegations, and given especially the Australian assertion that it did not object to the US Statement, it does not seem possible to in good faith reach the conclusion that Resolution MEPC.133(53) provided a legitimate basis for the adoption of a compulsory pilotage requirement for the Torres Strait. Australia is quoted as having argued that the fact that it did not object to the US Statement did not imply its acceptance of the US position as correct.[49] While pedantically tenable, this line of argumentation implies that Australia adopted a deliberately deceptive *modus operandi* to secure the passage of Resolution MEPC.133(53). In such situations, the principle of good faith during negotiations "requires a party not to attempt to profit unduly from ambiguities and misunderstandings to the

[45] A penalty unit is presently equivalent to $210. See <https://www.ato.gov.au/Business/Large-business/In-detail/Business-bulletins/Articles/Commonwealth-penalty-units-increase/> accessed 28/8/2017.
[46] NAV 52/18, 'Report to the MSC [on the 52nd session of the sub-committee on the safety of navigation]' (15 August 2006) para 17.74.
[47] ibid para 17.75.
[48] MEPC 55/23, 'Report of the MEPC on its fifty-fifth session' (16 October 2006) para 8.10.
[49] Australian reply to US Diplomatic Note of July 2006, as quoted in Robert Beckman, 'PSSAs and Transit Passage-Australia's Pilotage System in the Torres Strait Challenges the IMO and UNCLOS' (2007) 38 Ocean Dev.& Int'l.L. 325, 337.

detriment of the other party"[50] and would arguably have required full disclosure of Australia's intended plan of action.

In order to assuage international concerns that it may seek to intercept ships exercising the right of transit passage, Australia adopted Marine Notice 16/2006:

> …Australian authorities will not suspend, deny, hamper or impair transit passage and will not stop, arrest or board ships that do not take on a pilot. However, the owner, master and/or operator of the ship may be prosecuted on the next entry into an Australian port...[51]

This clarified that Australia intended to apply compulsory pilotage as a port-State rather than as a coastal State measure as originally intended.[52] In April 2009 Australia issued yet another Marine Notice which stated that:

> …if a vessel passes through the Torres Strait and it does not comply with Australia's system of pilotage… the Government of Australia will notify the vessel's Flag State, Owner, Operator and Master that the vessel failed to take a pilot and henceforth cannot enter an Australian port without the risk of the Owner, Operator and/or Master of the vessel being subject to a non-custodial penalty under Australian law.[53]

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[50] Robert Kolb, *Good Faith in International Law* (Hart 2017) 67.
[51] Australian Maritime Safety Authority, 'Marine Notice 16/2006' (30 October 2006) <https://www.amsa.gov.au/Shipping_Safety/Marine_Notices/2006/Documents/16_06.pdf> accessed 10/8/2017.
[52] On this point see the detailed discussion in Section 7, below.
[53] Australian Maritime Safety Authority, 'Marine Notice 7/2009' (17 April 2009) <https://www.amsa.gov.au/Shipping_Safety/Marine_Notices/2009/0709.pdf> accessed 10/8/2017.

Compared to Marine Notice 16/2006, Marine Notice 7/2009 removed the reference to prosecution and clarified that any penalty applied would be non-custodial.

Leaked US embassy cables have since revealed that Marine Notice 7/2009 was the subject of a compromise agreement between Australia and the US.[54] Tellingly, a cable dated 3 July 2008 cites Adam McCarty (Department of Foreign Affairs and Trade, International Division Assistant Secretary) as acknowledging that "Australia… [had] not handled the Torres Strait pilotage issue particularly well"[55] and that the Australian Government was willing "to explore ways to address U.S. concerns within Australian political constraints".[56] Following a series of discussions the US and Australia were able to reach an agreement which apparently resulted in the text of Marine Notice 7/2009. A cable dated the 29 April 2009 "conveys U.S appreciation"[57] and indicates that the US' concerns have been "assuaged".[58] Similarly, a cable dated the 23 April 2009 indicates that Singapore had toned down its rhetoric and "[backed] away from the threat of legal action".[59]

3. Revisiting Transit Passage

The right of transit passage entails for all ships and aircraft the freedom of navigation and overflight for the purpose of continuous and expeditious transit between one part of the high seas or an EEZ and another part of the high seas or an EEZ.[60] Rather than providing a comprehensive analysis[61] of the right of transit passage, this section focuses on two points of relevance to the present case-study, i.e. the jurisdictional competence of littoral States and the duty for user and littoral States to cooperate under Article 43 of the LOSC.

[54] A search for 'Torres Strait Pilotage' in the WikiLeaks database conducted on 19 August 2017 returned 18 results. The WikiLeaks database can be accessed here: <https://wikileaks.org/>.
[55] <https://wikileaks.org/plusd/cables/08CANBERRA679_a.html> accessed 19/8/2017.
[56] ibid.
[57] <https://wikileaks.org/plusd/cables/09STATE43234_a.html> accessed 19/8/2017.
[58] ibid.
[59] <https://wikileaks.org/plusd/cables/09CANBERRA404_a.html> accessed 19/8/2017.
[60] LOSC, Article 38(2).
[61] For which see Chapter 1, Section 2.4.

3.1 The Jurisdictional Competence of Littoral States

Article 41(1) allows littoral States to designate sea lanes and to prescribe traffic separation schemes to promote the safe passage of ships. These must conform to generally accepted international regulations and must be referred to the IMO for their (multilateral) adoption.[62] Article 42(1)(a) allows coastal States to adopt laws and regulations dealing with the safety of navigation and the regulation of maritime traffic *as provided for in Article 41*.[63] Article 42(1)(b) allows for the adoption of rules and regulations dealing with the prevention, reduction and control of pollution that give effect to applicable international regulations regarding the discharge of oil, oily wastes and other noxious substances in the strait. While this question will need to be analysed in greater detail in the forthcoming sections of this Chapter, a preliminary reading of Articles 41 and 42 indicates that it is not easy to argue that the imposition of a compulsory pilotage regime falls within the legislative purview of littoral States.[64]

The only enforcement jurisdiction available is under Article 233, which allows for appropriate enforcement measures where violation by a foreign ship of the laws and regulations referred to in Articles 42(1)(a) and (b) causes or threatens major damage to the marine environment of a strait. The phrase 'causing or threatening major damage' "does not provide much assistance regarding the assessment of what ought to be included in its ambit".[65] Koh suggests that the test for major damage is that there should "be an odds-on possibility that major damage is likely to occur".[66] On the one hand, it is clear that the exceptional nature of Article 233 needs to be accounted for. Not any threat of damage can be considered as sufficient. On the other hand, requiring an odds-on possibility that major damage is likely to occur appears to be somewhat arbitrary and it hardly seems logical to conclude that the Article 233

[62] LOSC, Articles 41(3) and (4).
[63] In relation to Article 42(1)(a), it has been noted that "[t]he rules established in article 41 are adopted without expansion in article 42". See Myron Nordquist and others (eds), *United Nations Convention on the Law of the Sea, 1982: A Commentary* (Vol II, Martinus Nijhoff 2002) 375.
[64] Beckman (n 49) 334 finds no difficulty in simply concluding that "[p]ilotage is not one of the matters specified in [Article 42(1)]".
[65] Alexander Proelss (ed), *United Nations Convention on the Law of the Sea: A Commentary* (Hart 2017) 1566.
[66] Kleng Lian Koh, *Straits in International Navigation* (Oceana Publications 1982) 160. Caminos and Cogliati-Bantz (n 32) 286 consider that damage must be "highly likely" to occur.

requirement of a threat of major damage is not fulfilled by a situation where there is a considerable possibility – be it not with an odds-on probability – that major damage will occur. In such cases, the prevention and precautionary principles strongly militate against the tolerance of a substantial level of risk and account would certainly need to be taken of factors such as the size of the vessel and the type of cargo being carried. Then still, however, other than in relatively exceptional circumstances, it is difficult to argue that a ship's failure to take a pilot on board can of itself automatically justify enforcement action under Article 233.

In the context of Article 233, reference is frequently made to a letter sent by Malaysia (on behalf of Malaysia, Singapore and Indonesia) to the President of UNCLOS III which contained a common understanding on the meaning of Article 233 in the context of the Malacca and Singapore straits reached with a number of delegations, including the major users of the said straits.[67] The delegations agreed that the breach of an Under Keel Clearance (UKC) requirement was to be considered as a law or regulation relating to traffic separation schemes under Article 42(1)(a) and that a breach of it would constitute a violation within the meaning of Article 233.[68] Given that the understanding was restricted to the Malacca and Singapore straits, however, "it is doubtful that its scope may be extended to other straits"[69] and surely out of the question to apply it by analogy to the context of compulsory pilotage unless a similar express agreement is reached to that effect.

3.2 The Duty to Cooperate under Article 43

Article 43 provides that:

> User States and States bordering a strait should by agreement cooperate:

[67] 'Letter dated 28 April 1982 from the representative of Malaysia to the President of the Conference' (UN Doc A/Conf.62/L.145), *Official Records of UNCLOS III* (Vol XVI) 250.
[68] ibid.
[69] Caminos and Cogliati-Bantz (n 32) 291.

a) in the establishment and maintenance in a strait of necessary navigational and safety aids or other improvements in aid of international navigation; and
b) for the prevention, reduction and control of pollution from ships.[70]

Much has been made of the fact that Article 43 uses the term 'should' rather than 'shall'. This choice is not coincidental: a proposal to replace the term 'should' with 'shall' was expressly turned down and, on this basis, several authors conclude that Article 43 does not establish an obligation to enter into an agreement or grant unilateral authority to littoral States.[71] To stop at this point, however, would be to present a distorted image of the relevance of Article 43.

Article 43 entails "a measure of obligation to cooperate".[72] It reiterates that user and littoral States should cooperate to improve navigational safety and to protect the marine environment. Moreover, Article 43 needs to be read in its wider context. As discussed in Chapter 2, cooperation is a principle of general international law and the LOSC itself establishes a general obligation to cooperate in Article 197. As such, "it would be a mistake to place too much emphasis on the use of the word 'should' rather than 'shall'".[73] The significance of Article 43 should also be bolstered by the realisation that "[r]egimes of freedom of use depend for their survival on responsible and effective co-operation among users and with those affected by their

[70] LOSC, Article 43.
[71] Caminos and Cogliati-Bantz (n 32) 376; Satya Nandan, 'The Provisions on Straits used for International Navigation in the 1982 United Nations Law of the Sea Convention' (1998) 2 Singapore Journal of International and Comparative Law 393, 397. By way of contrast see Craig Capon, 'The Threat of Oil Pollution in the Malacca Strait: Arguing for a Broad Interpretation of the United Nations Convention on the Law of the Sea' (1998) 2 Pacific Rim Law and Policy Journal 117, 133.
[72] Satya Nandan, 'The Management of Straits used for International Navigation: International Cooperation in Malacca and Singapore Straits' (1999) 3 Singapore Journal of International & Comparative Law 429, 433.
[73] Bernard Oxman, 'Sub-regional, Regional and International Co-operation in Responding to and Deterring Transboundary Marine Pollution' (1999) 3 Singapore Journal of International & Comparative Law 410, 425.

activities".[74] A failure to find satisfactory multilateral solutions for marine environment protection could entice littoral States towards unilateral action with a potential to undermine the transit passage regime and the navigational interests that it protects.

Without much elaboration, Bateman and White suggest that the reference in Article 43 to cooperation in the establishment of other improvements in aid of international navigation "could be extended to considerations of pilotage being made compulsory for those ships that pose the most risk".[75] Article 43 is clearly no panacea. The normative force of Article 43 could however be invoked by a littoral State as part of its case for compulsory pilotage before the IMO. As Oxman notes, Article 43 "assumes that enlightened self-interest and a mature sense of responsibility will be sufficient to achieve its objectives".[76] Should user States refuse to cooperate, Article 43 does not offer a direct enforcement mechanism to littoral States. A blatant refusal to cooperate following a request for cooperation by a littoral State may however amount to a breach of Article 300 of the LOSC and, should the littoral State choose to institute proceedings, a court or tribunal may employ the constitutional function of Article 300[77] to find a balanced and equitable solution to the dispute.

4. Relevance of the World Heritage Convention

Insofar as the wider legal framework is concerned, an instrument of potential relevance to the Torres Strait context is the 1972 World Heritage Convention[78]

[74] Bernard Oxman, 'Observations on the interpretation and application of Article 43 of UNCLOS with particular reference to the straits of Malacca and Singapore' (1998) 2 Singapore Journal of International & Comparative Law 408, 425.
[75] Sam Bateman & Michael White, 'Compulsory Pilotage in the Torres Strait: Overcoming Unacceptable Risks to a Sensitive Marine Environment' (2009) 40 Ocean Dev.& Int'l.L. 184, 194.
[76] Oxman (n 73) 425. The fact that only a single cooperative mechanism has been adopted under Article 43 somewhat calls this assumption into question. The cooperative mechanism for the straits of Malacca and Singapore is available online: <http://www.cm-soms.com/uploads/2/1/CF%201-2-1%20Annex%201_Cooperative%20Mechanism_1.pdf> accessed 17/8/2017.
[77] On the constitutional function of Article 300 see Chapter 2, Section 7.
[78] Convention Concerning the Protection of the World Cultural and Natural Heritage (adopted 23 November 1972, entered into force 15 December 1975) 1037 UNTS 151. For a general overview of the Convention see Michael Bowman et al, *Lyster's International Wildlife Law* (2nd edn, CUP 2010) Chapter 14.

- a widely subscribed[79] Convention with the objective to protect the world's most important cultural and natural heritage.[80] The central aspect of the Convention is a mechanism for the listing of cultural and natural heritage on a World Heritage List.[81] Article 12 clarifies that the fact that a property of cultural or natural heritage is not listed on the World Heritage List does not mean that it does not have outstanding universal value for purposes other than those resulting from inclusion in the list.[82] The obligations under Articles 6(1) and (3) for State parties to cooperate in the protection of natural and cultural heritage and to refrain from deliberate measures that might damage such heritage, for instance, apply also to property that is not listed.

Since the inscription of the first marine site in 1981, protected marine sites under the Convention "have grown into a global network that stretches form the tropics to the poles".[83] Several provisions of the Convention refer to heritage that is situated on the 'territory' of a State party.[84] This may give the impression that, insofar as maritime sites are concerned, only heritage that is situated within the internal and territorial waters of a State party can be designated. In practice, however, at least two maritime sites (the Phoenix Island Protected Area in Kiribati and the Papahānaumokuākea Marine National Monument in the US Hawai'ian islands) have been inscribed as World Heritage Sites which have outer limits that extend beyond the territorial sea of the States in question.[85]

Unlike the Great Barrier Reef,[86] the Torres Strait has not been designated as a World Heritage Site and there is currently no intention on

[79] The Convention has almost 200 States parties. For an updated list see <http://whc.unesco.org/en/statesparties/> accessed 29/10/2018.
[80] Articles 1 and 2 refer to cultural and natural heritage of "outstanding universal value" – a phrase that is defined in the 2017 Operational Guidelines as "cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity".
See <https://whc.unesco.org/document/163852> accessed 30/10/2018.
[81] World Heritage Convention, Article 11.
[82] ibid Article 12.
[83] UNESCO, 'World Heritage in the High Seas: An Idea Whose Time Has Come' (UNESCO 2016) 15 <http://unesdoc.unesco.org/images/0024/002454/245467e.pdf> accessed 29/10/2018.
[84] See, e.g., Articles 3, 4 and 11(1).
[85] World Heritage in the High Seas (n 83) 50.
[86] The Great Barrier Reef was inscribed as a World Heritage Site in 1981.

Australia's part to propose the Strait for designation.[87] The Torres Strait is a natural extension of the Great Barrier Reef and, considering that it has fulfilled the ecological criteria for designation as a Particular Sensitive Sea Area by the IMO, it would not be a stretch to consider that it too meets the criteria for classification as natural heritage under the World Heritage Convention. This would mean that all State parties to the World Heritage Convention are obliged under Articles 6(1) and (3) to cooperate in the protection of the Torres Strait and to refrain from deliberate measures that might damage such heritage. In his 2008 Commentary on the World Heritage Convention, Francioni notes that, in practical terms, "only the properties that are inscribed on [the World Heritage List] enjoy effective and significant protection by virtue of the Convention".[88] At the same time, while World Heritage Convention obligations in relation to non-inscribed natural heritage sites may have little value as stand-alone obligations, they can complement and help to corroborate those parallel obligations that exist under the LOSC as well as under general international law.

5. Compulsory Pilotage as an Associated Protective Measure in a Particularly Sensitive Sea Area

5.1 The Torres Strait PSSA Application

Particularly Sensitive Sea Areas (PSSAs)[89] can be described as "a relatively new type of ocean zoning applying to marine areas of various sizes and within which a range of navigational safety and environmental protection tools may

[87] Email from Susan McErlain (Senior Policy Officer, Reef and Marine Heritage Division at the Australian Government Department of the Environment and Energy) to author. An independent study commissioned by the GBR Marine Park Authority in 1997 concluded that inclusion of the Torres Strait reefs into the GBR area would increase the listed Area's outstanding universal value but found that such a proposal would likely be opposed by Torres Strait Islanders and that it would impose significant additional management problems and costs. See P.H.C Lucas and others, 'The Outstanding Universal Value of the Great Barrier Reef World Heritage Area' (1997 Great Barrier Reef Marine Park Authority) <http://www.gbrmpa.gov.au/__data/assets/pdf_file/0020/4907/Outstanding_value.pdf> accessed 15/11/2018.

[88] Francesco Francioni, *The 1972 World Heritage Convention: A Commentary* (OUP 2008) 209.

[89] On PSSAs see Markus Kachel, *Particularly Sensitive Sea Areas: The IMO's Role in Protecting Vulnerable Marine Areas* (Springer 2008). For a list of PSSAs adopted by the IMO see <http://www.imo.org/en/OurWork/Environment/PSSAs/Pages/Default.aspx> accessed 21/8/2017.

be applied".[90] They are intended for instances where standard levels of protection are deemed insufficient and cover areas of particular "significance for recognized ecological, socio-economic, or scientific attributes where such attributes may be vulnerable to damage by international shipping activities".[91] As such, their significance is limited uniquely to threats that emanate from shipping activities.

Chircop traces the origins of PSSAs to 1978, when the IMO was asked to identify marine areas in need of special protection from vessel-source pollution.[92] Discussions dragged over a number of years but eventually culminated with the adoption of the PSSA Guidelines in 1991. The Guidelines were amended on several occasions, including most recently in 2005.[93] The Torres Strait PSSA application was made in accordance with the preceding set of Guidelines, adopted in 2001.[94] A notable difference between the 2001 and the 2005 PSSA Guidelines is the removal of the reference to compulsory pilotage as an example of an Associated Protective Measure (APM) in Section 6 of the PSSA Guidelines. This move followed a successful agitation to that effect on the part of US and Russian delegates at MEPC 52[95] at a time when the Torres Strait PSSA application was still under discussion.

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[90] Aldo Chircop, 'The Designation of Particularly Sensitive Sea Areas: A New Layer in the Regime for Marine Environmental Protection from International Shipping' in Aldo Chircop and others (eds), *The Future of Ocean Regime-Building: Essays in Tribute to Douglas M. Johnston* (Martinus Nijhoff 2009) 573, 574.

[91] IMO Resolution A 24/Res.982, 'Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas' (1 December 2005) ('2005 PSSA Guidelines').

[92] Chircop (n 90) 589.

[93] 2005 PSSA Guidelines (n 91).

[94] IMO Resolution A 22/Res.927, 'Guidelines for the Designation of Special Areas Under MARPOL 73/78 and Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas' (29 November 2001) ('2001 PSSA Guidelines').

[95] See MEPC 52/8 submitted by the US, 'Proposed Amendments to Assembly Resolution A.927(22) to Strengthen and Clarify the Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas' (9 July 2004) and MEPC 52/8/1 submitted by the Russian Federation, 'Proposed amendments to Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas (Annex 2 to IMO Assembly resolution A.927(22))' (6 August 2004). See also MEPC 52/8/4 submitted by WWF, 'Proposed Amendments to Assembly Resolution A.927(22) to Strengthen and Clarify the Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas (PSSAs) - Comments on MEPC 52/8' (18 August 2004).

In and of itself, PSSA designation does not carry any legal significance. It is the adoption of Associated Protective Measures (APMs)[96] that gives real legal significance to PSSAs. As such, it is invariably APMs that attract the greatest controversy in PSSA debates and, in the context of the Torres Strait PSSA application, it was Australia and PNG's attempt to have compulsory pilotage designated as an APM that proved controversial. In this context, quite aside from the question of the compatibility of compulsory pilotage with Part III of the LOSC (discussed in Section 6 of this chapter), the first question that needed answering was whether a legal basis existed for the adoption of compulsory pilotage as an APM.

The 2001 PSSA Guidelines required applicants to select a legal basis for proposed APMs from among the following:

i. any measure that is already available in an existing instrument; or
ii. any measure that does not yet exist but that should be available as a generally applicable measure and that falls within the competence of IMO; or
iii. any measure proposed for adoption in the territorial sea or pursuant to Article 211(6) of the United Nations Convention on the Law of the Sea.

Australia and PNG relied on the third option, i.e. the one designated in paragraph 7.4.2.1(a)(iii) of the 2001 PSSA Guidelines.[97] Kachel describes paragraph 7.4.2.1(a)(iii) as "the most controversial provision that arguably allows, in turn, for the most flexibility".[98] Similarly, Gjerde considers that this legal basis may prove to be a vital outlet for the otherwise growing frustration of coastal States over UNCLOS's limitations on coastal State jurisdiction".[99]

[96] APMs can be defined as "restrictions on international shipping authorised by the IMO for the proponent State to implement in a PSSA". See Chircop (n 90) 589.
[97] LEG 89/15 para 32.
[98] Kachel (n 89) 186.
[99] Kristina Gjerde, 'Protecting Particularly Sensitive Sea Areas from Shipping: A Review of IMO's New PSSA Guidelines' (Proceedings of the 12th Biennial Coastal Zone Conference, 15-19 July 2001)

As discussed in Chapter 1 Section 3.3, Article 211(6) of the LOSC allows coastal States to adopt special mandatory measures for the prevention of vessel-source pollution in relation to clearly defined areas of their EEZ. A problem for Australia and PNG was the fact that, as authors such as Beckman[100] are only too keen to point out, Article 211(6) applies only to the EEZ. Predicting such a line of argumentation, in their joint submission Australia and PNG contended that while Article 211(6) is technically restricted to the EEZ (where a coastal State does not have sovereignty), "there is little doubt that similar measures could be applied in [PSSAs] over which a State does have sovereignty [in the territorial sea]".[101] Considering that the issue under discussion was the application of a compulsory pilotage regime to an international strait, it is submitted that this argument is somewhat misleading. Even if it were to be assumed that the Australian interpretation of Article 211(6) was correct, however, the PSSA Guidelines require Member States to ensure that any APM is implemented in accordance with international law as reflected in the LOSC.[102] In the final analysis, "it is… Part III [of the LOSC]… which will supply the validity of the proposed measure, not Article 211(6) alone".[103] This vital point will be considered further in Section 6.

5.2 The PSSA Mechanism: a Moderate LOSC Reviser?

Different opinions have been expressed about whether PSSAs can expand coastal State jurisdiction beyond the LOSC's confines. Ringbom notes that while this has not particularly proved to be the case with PSSAs and APMs designated up till now "the PSSA [mechanism] has the potential to develop into a (moderate) 'LOSC reviser'".[104] Others are more reluctant to acknowledge a potential revisory role for PSSAs and argue instead that the usefulness of the PSSA mechanism lies in its ability to extend coastal State jurisdiction to the greatest extent possible *within* the LOSC's existing confines.

<http://webapp1.dlib.indiana.edu/virtual_disk_library/index.cgi/4916229/FID3790/pdf_files/gjerdek.pdf> accessed 21/8/2017.

[100] Beckman (n 49) 346.

[101] LEG 89/15 fn 20.

[102] See Section 9.2 of the 2001 and 2005 PSSA Guidelines.

[103] Caminos and Cogliati-Bantz (n 32) 428.

[104] Henrik Ringbom, 'Vessel-source Pollution' in Rosemary Rayfuse (ed), *Research Handbook on International Marine Environmental Law* (Edward Elgar 2015) 105, 123.

For Kachel, for instance, the usefulness of PSSAs boils down to the fact that "APMs adopted by IMO either unanimously or with an overwhelming majority constitute generally accepted international rules and standards [GAIRS]".[105] Given that the use of rules of reference in Part III of the LOSC is highly limited,[106] Kachel concludes that "the progressive impact of PSSA status is confined to the territorial sea and the EEZ".[107]

Kachel has a point. Insofar as expansions of coastal State jurisdiction within the limits of the LOSC are concerned, the main relevance of the PSSA/APM mechanism exists for those areas in relation to which the LOSC accords considerable significance to GAIRS. At the same time, however, it is submitted that Kachel too readily dismisses the possibility of an expansion of coastal State jurisdiction beyond the limits established by the LOSC and the potential role that may be played by PSSAs in this regard as – to appropriate Ringbom's phrase – 'moderate LOSC revisers'. Just as at UNCLOS III the delegates reached an understanding that the breach of an Under Keel Clearance requirement was to be considered as a law or regulation relating to traffic separation schemes under Article 42(1)(a), it is possible for States in terms of an IMO Resolution adopted unanimously or quasi-unanimously in the context of a PSSA discussion to 'interpret' or modify a provision to extend coastal State jurisdiction beyond the LOSC's present confines. Although they did not do so, it was effectively open for States to classify compulsory pilotage as a law or regulation relating to traffic separation schemes.

Ringbom does well, however, to refer to the PSSA mechanism as a *moderate* LOSC reviser, if at all. The balance struck in Part III of the LOSC was the result of a concerted effort to achieve an acceptable balance between different interests, including environment-protection and navigational interests. Given that these interests persist (although it could be argued that environmental interests have since gained further prominence), it cannot be

[105] Kachel (n 89) 255.
[106] In terms of prescriptive jurisdiction, the only references to GAIRS are in Articles 41(3) (requiring sea lanes and traffic separation schemes to conform to GAIRS) and 42(1)(b) (allowing coastal States to give effect to regulations regarding the discharge of oil, oily waste and other noxious substances).
[107] Kachel (n 89) 266.

envisaged that consensus will easily be reached for anything other than moderate revisions which, as such, could and would probably be classified as interpretations. The fact that States could not agree on a compulsory pilotage regime for the Torres Strait even when they recognised the proportionality of this measure and the environmental sensitivity of the area indicates just how difficult it is for agreement to be reached.

6. Compatibility with Part III of the LOSC

6.1 The Relevance (and Non-Relevance) of Article 39(2)

Article 39(2) provides that ships in transit passage shall comply with generally accepted international regulations, procedures and practices for safety at sea and for the prevention, reduction and control of pollution from ships. Australia and PNG argued that, considering its wide phrasing, this provision "would pick up action taken by [the] IMO".[108] This is not incorrect. Two important qualifying points, however, need to be made. First, in order for Australia and PNG's proposed compulsory pilotage regime to gain a 'generally accepted' status, it was necessary for Australia and PNG to secure wide backing by IMO delegates. Considering the opposition raised by a considerable number of States, this backing cannot be said to have been secured. Secondly, even where wide approval can be secured, Article 39(2) offers a basis for the exercise of flag State rather than coastal State jurisdiction and, as such, cannot constitute a legal basis for the incorporation of a compulsory pilotage requirement into the domestic law of a littoral State.[109]

6.2 The Extent of Prescriptive Coastal State Jurisdiction

Prescriptive coastal State jurisdiction under Articles 42(1)(a) and (b) is restricted to the adoption of laws and regulations in respect of: the safety of navigation and the regulation of maritime traffic, as provided in article 41;[110] and the prevention, reduction and control of pollution, by giving effect to applicable international regulations regarding the discharge of oil, oily wastes and other noxious substances in the straits.[111] At UNCLOS III, several

[108] LEG 89/15 para 26.
[109] Beckman (n 49) 344; Caminos and Cogliati-Bantz (n 32) 347.
[110] LOSC, Article 42(1)(a).
[111] LOSC, Article 42(1)(b).

proposals were made to widen the prescriptive jurisdiction afforded by Article 42 but these were all turned down.[112] The prevailing and persistent intention of the drafters appears to have been to accord very limited prescriptive coastal State jurisdiction. Nevertheless, a number of proposals (some more compelling than others) for a wider interpretation of the prescriptive jurisdiction of littoral States have been made and need to be examined.

Bateman and White suggest that "there is an argument… that the correct reading of Article 42(1)(a) is that the obligation on the border state for the "safety of navigation" is at large and that "regulation of traffic" is constrained only to sea-lanes and separation schemes".[113] There is no indication in the drafting history of Article 42 that this is what was intended. To the contrary, the dismissal of a number of proposals that would have extended the prescriptive jurisdiction conferred by Article 42 favours a restrictive approach to the article's interpretation. Accordingly, it is submitted that a proper interpretation of Article 42(1)(a) requires the entire provision to be implemented "as provided in Article 41".[114]

Article 41 allows littoral States in cooperation with the IMO to designate sea lanes and prescribe traffic separation schemes for navigation in straits. Noting that the IMO had already agreed to the designation of sea lanes in the Torres Strait, Australia and PNG argued that:

> [t]he specific and unique circumstances of the Torres Strait require a system of pilotage as a necessary adjunct to ensure the safe passage of ships through those sea lanes.[115]

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[112] See UN Division of Ocean Affairs and the Law of the Sea, *Straits Used for International Navigation: Legislative History of Part III of the United Nations Convention on the Law of the Sea Vol II* (United Nations, 1992) 107-115. Morocco, for instance, sought the incorporation of additional sub-paragraphs to cover the conservation of living resources and the protection of cables and pipelines.

[113] Bateman and White (n 75) 194.

[114] LOSC, Article 42(1)(a). Even Oxman, who argues for a wide interpretation of Article 41, considers that "the full substantive scope of the regulatory powers under Article 42(1)(a)… are to be implemented "as provided in Article 41"". Bernard Oxman, 'Environmental Protection in Archipelagic Waters and International Straits–The Role of the International Maritime Organisation' (1995) 10 IJMCL 476.

[115] LEG 89/15 para 24.

Although it is surprising that Australia and PNG chose to relegate this argument to a passing reference in a footnote, they had a point in contending that, in practice, "the term 'designating sea lanes and prescribing traffic separation schemes' in Article 41 has not been given a strict interpretation".[116] Reference was made in this regard to the understanding reached at UNCLOS III to the effect that, in the context of the Malacca and Singapore Straits, the breach of an Under Keel Clearance requirement is to be considered as a law or regulation relating to traffic separation schemes under Article 42(1)(a).[117] Australia and PNG were not the first to make this argument. In 1995, Oxman argued that:

> Article 41… should be read liberally so as to permit full implementation under Article 41 of the full substantive scope of the regulatory powers under Article 42(1)(a)… namely the adoption of any measures consistent with the Convention deemed necessary by the riparian state and IMO for the safety of navigation and the regulation of maritime traffic.[118]

It may initially be considered ironic that Oxman makes this point so forcefully when in a subsequent article he warns in very strong terms against the territorial temptation and the danger that environment protection rhetoric can be used to dress up exercises in creeping coastal State jurisdiction.[119] In that same article, however, Oxman explains that littoral and maritime States alike have an interest in adopting as wide an interpretation of Article 41(1) as necessary. In the context of Part III of the LOSC, the joint coastal State / IMO approval procedure is a high enough threshold to safeguard navigational interests. Littoral States do not have the freedom to legislate without the IMO's imprimatur. To adopt a restrictive interpretation of Article 41(1)(a)

[116] LEG 89/15 fn 16.
[117] See the reference to this understanding in Section 3.1, above.
[118] Oxman (n 114) 476. For a different view see Beckman (n 48) 345. See also John Norton Moore, 'The Regime of Straits and the Third United Nations Conference on the Law of the Sea' (1980) 74 AJIL 77, 105.
[119] Bernard Oxman, 'The Territorial Temptation: A Siren Song at Sea' (2006) 100 AJIL 830.

over and above this would be to "invite unilateral coastal State action to fill the regulatory vacuum".[120]

The problem for Australia and PNG was that their suggested 'interpretation' of Article 41(1)(a) needed to garner unanimous or near unanimous support, which did not result. Australia and PNG could perhaps have phrased their legal arguments more convincingly, bolstering their proposal by reference to the cooperation, integration and prevention principles. Much could also be said about the duty of States to negotiate in good faith, including in terms of giving genuine consideration to opposite views. Ultimately, however, the ability of littoral States to secure the adoption of measures such as compulsory pilotage at the IMO depends on the willingness of all States concerned to support the relevant proposal.

6.3 Impediment of Transit Passage

A final question that needs to be looked at is the question of whether compulsory pilotage conflicts with the obligations not to impede,[121] hamper or suspend[122] transit passage or with the obligation to ensure that laws and regulations adopted under Article 42 do not in their application have the practical effect of denying, hampering or impairing the right of transit passage.[123] At the IMO, Australia and PNG argued that the intention behind compulsory pilotage was to promote passage rather than to inhibit it and that "[a] vessel that transits the TS without a pilot creates an unacceptable risk of running aground and impeding the passage of other vessels for a substantial period of time".[124] This perspective can be contrasted with the misguided focus of those flag States that consider the navigational interests of their own vessels to the exclusion of the wider picture. Significantly, Australia and PNG sought to reassure other States that neither of them would seek to arrest ships

[120] ibid 844.
[121] LOSC, Article 38(1).
[122] LOSC, Article 44.
[123] LOSC, Article 42(2).
[124] LEG 89/15 para 29.

that failed to take a pilot on board while in transit[125] and that pilots would be made available in sufficient numbers and on the usual commercial basis.[126]

At the IMO, some delegations argued that a compulsory pilotage regime would "of itself [be] an impediment of transit passage".[127] To the present author, however, it appears too simplistic to make an across the board statement that, in and of itself, a compulsory pilotage regime impedes transit passage in a manner that is inconsistent with Part III of the LOSC. As Caminos and Cogliati-Bantz argue, Part III "rests on the assumption that internationally approved measures such as traffic separation schemes… will not qualify as measures that hamper or impede navigation, even though they impose restrictions on ships".[128] Moreover, as required by the integration principle, the obligation not to impede, hamper or impair transit passage should in the case of the Torres Strait be read in view of the environmental importance and sensitivity of the area in question and of the obligation to prevent pollution that is incumbent on all States. Unless compulsory pilotage is a disproportionate measure or is implemented in a malicious or incompetent manner (for instance by failing to provide sufficient pilots), the obligation not to impede, suspend, deny, hamper or impair transit passage should not be regarded as a legal impediment in the way of an IMO approved compulsory pilotage regime.

7. Evaluating Subsequent Practice

It has now been more than ten years since the requirement of compulsory pilotage was incorporated into Australian law in 2006. Notwithstanding some vocal opposition in the early days following its enactment, today it can not only be said that this opposition has almost entirely dissipated but also that, as a matter of practice, there is practically full compliance with Australia's

[125] ibid.
[126] ibid fn 25.
[127] LEG 89/16 para 233. See also Edwin Egede, 'International Straits, Compulsory Pilotage and The Protection of the Marine Environment' (Swansea Law School, Sixth Annual International Colloquium on New Uses of the Sea: International Shipping in the Twenty-First Century, 9-10 September 2010) 13.
[128] Caminos and Cogliati-Bantz (n 32) 234.

compulsory pilotage system.[129] This subsequent practice can be interpreted in a number of ways.[130] Two possible interpretations will be considered in this section: subsequent practice as indicating the evolution of compulsory pilotage in the Torres Strait into a generally accepted practice for safety at sea under Article 39(2)(a) of the LOSC; and subsequent practice as indicating the acceptance of a compulsory pilotage regime that is applied by Australia as a matter of port-State jurisdiction.

7.1 Compulsory Pilotage as a Generally Accepted Practice for Safety at Sea Under Article 39(2)(a)

A possible interpretation of subsequent practice is that it has resulted in a situation where compulsory pilotage in the Torres strait reflects a generally accepted practice for safety at sea under Article 39(2)(a) of the LOSC. This would mean that vessels transiting the Torres Strait are under an obligation to take a pilot on board, and that flag States must ensure that vessels flying their flag comply with this obligation.

In its study of the related concept of Generally Accepted International Rules and Standards (GAIRS), the International Law Association (ILA) Committee on Coastal State Jurisdiction Relating to Marine Pollution classified views on this concept into three categories: a restrictive view which equates the concept to customary international law or to international instruments to which a State is a contracting party; a 'middle of the road' position which equates GAIRS to conventions in force (independently of whether the relevant State is a contracting party); and a progressive view which states that, by accepting the LOSC, States accepted a standard less strict

[129] Email from Murray Widdeson (AMSA Advisor on Coastal Pilotage) to author (21 August 2017). Although no official AMSA record on non-compliant vessels seems to exist, according to Mr Widdeson a 100% carriage compliance rate would seem to be accurate (bar one ship in the first few days of the new requirements in 2006). In a separate email to the author (31 January 2018), Mr Widdeson confirmed that he is unaware of any official protests by States against the compulsory pilotage regime in recent years.

[130] See, e.g., Donald Anton, 'Making or Breaking the International Law of Transit Passage? Meeting Environmental and Safety Challenges in the Torres Strait with Compulsory Pilotage' in David Caron and Nilufer Oral, *Navigating Straits: Challenges for International Law* (Brill 2014) 49 onwards. According to Anton, subsequent practice "seems to point to a developing local or special custom of compulsory pilotage" in the Torres Strait. His arguments about how the *opinio juris* element of customary law is fulfilled, however, are not, it is submitted, entirely convincing.

than the ones suggested so far.[131] The third view is the one that was taken up by the Committee. GAIRS are "primarily based on state practice, attaching only secondary importance to the nature and status of the instrument containing the respective rule or standard".[132] The detachment from customary law means that "the high threshold required for an international custom to become established is not required".[133] Additionally, there is no need to establish *opinio juris* and there is no need for the limitation of the persistent objector doctrine be incorporated into the duty to respect GAIRS.[134] Regarding the question of how much acceptance is required before a practice can be regarded as generally accepted, the drafting history indicates that this point was intentionally kept vague.[135] Although no definite rule appears to have developed, it has been suggested that "both qualitative and functional majorities are important".[136]

To apply all this to the Torres Strait, the fact that a number of States at some point opposed compulsory pilotage does not disqualify compulsory pilotage from becoming a generally accepted practice at a later point.[137] Moreover, it has to be recalled that opposition was raised specifically in regards to the adoption of compulsory pilotage as a costal-State jurisdiction based measure, which would not be the case under Article 39. It is relevant that, from early on, there was general recognition by States of the environmental sensitivity of the Torres Strait and of the proportionality of compulsory pilotage.[138] It is also significant that there has been an extremely high compliance rate by transiting vessels. Although the action of transiting vessels cannot be equated to State practice proper, Oxman has a point in

[131] For a more detailed summary of these three outlooks and a list of authors which subscribe to the respective views see Committee on Coastal State Jurisdiction relating to Marine Pollution, 'Final Report' (London Conference, 2000) ('ILA Study on Coastal State Jurisdiction') 33 onwards.
[132] ibid Conclusion 2.
[133] ibid 36.
[134] Bernard Oxman, 'The Duty to Respect Generally Accepted International Standards' (1991) 24 International Law and Politics 109, 147-148.
[135] ILA Study on Coastal State Jurisdiction (n 131) 38.
[136] ibid. See also Oxman (n 134) 157.
[137] Caminos and Cogliati-Bantz (n 32) 308: "controversy and hesitation may… gradually subside…[and] if the standard becomes sufficiently widely accepted in practice, the fact that it was controversial when adopted should not necessarily prevent it form being regarded as 'generally accepted'".
[138] See NAV 50/19 para 3.29.14.

contending that "states may be relieved of the need to demonstrate general acceptance by government behaviour alone if the nationals… have voluntarily and uniformly implemented the standard with the express or tacit approval of their governments".[139] Considering this, it seems plausible to argue that compulsory pilotage can now be considered as a generally accepted practice for safety at sea under Article 39(2)(a). It is good to keep in mind, however, that this particular instrument "is a modest one"[140] that "will function best where its existence encourages voluntary compliance, perhaps with a gentle reminder from outsiders".[141] If Australia were to rely on Article 39 to bring a case against an actively dissenting flag State, this could encourage further dissent from other States (thereby undermining the argument that the practice of compulsory pilotage is generally accepted) as well as dissuade States from readily accepting similar practices in comparable situations in the future.

7.2 Compulsory Pilotage as a Matter of Port-State Jurisdiction

Another possible interpretation of subsequent practice is that it indicates widespread acceptance of a compulsory pilotage regime that is being applied by Australia as a matter of port-State jurisdiction.[142] This theory requires consideration of two questions: the question of whether Australia's law and policy on compulsory pilotage can be explained based on port-State jurisdiction; and the question of whether prevailing practice signifies acceptance by other States of such a wide understanding of port-State jurisdiction.

The LOSC delineates prescriptive and enforcement port-State jurisdiction in Articles 211(3) and 218 respectively. Article 211(3) limits prescriptive port-State jurisdiction to the establishment of particular requirements for the prevention, reduction and control of pollution of the marine environment as a condition for the entry of foreign vessels into ports or internal waters or for a call at off-shore terminals.[143] Article 218 limits port-

[139] Oxman (n 134) 154-155.
[140] ibid 159.
[141] ibid.
[142] Australia has repeatedly clarified that it will not stop, arrest or board ships that do not take on a pilot during their passage.
[143] LOSC, Article 211(3).

State enforcement jurisdiction to the investigation and the institution of proceedings in respect of any discharge from a vessel *outside* the internal waters, territorial sea or exclusive economic zone of that State in violation of applicable international rules and standards.[144] Since the failure to take a pilot on board cannot be classified as a discharge violation, since it would in any case occur within rather than outside Australia's maritime zones and since Australian law threatens the imposition of penalties as opposed to an outright denial of a right of entry, a restrictive literal interpretation does not allow the Australian compulsory pilotage regime to be classified under port-State jurisdiction.

On the basis of the reasoning that "who can do more can also do less",[145] it is however possible to take a wider view of port-State jurisdiction by focusing on the largely unfettered[146] right of port-States to deny entry to vessels. Following this line of reasoning, Marten considers that the concept of port entry conditions "will come to be seen as descriptive of port-State jurisdiction in general, recognising that the final resort of a state is to exercise its right to ban offending vessels from its ports".[147] Marten analyses three domestic instruments (a US security-based measure, an EU insurance Directive and an Australian employment law) which he argues could not have been implemented as a matter of coastal State jurisdiction proper but were implemented as a matter of port-State jurisdiction.[148] Although it could be said that such measures effectively circumvent LOSC rules on coastal State jurisdiction, the reply provided by Marten is a convincing one: "[if] a port-State can legitimately close its ports to foreign vessels, then there can be no complaint if it only allows access subject to certain conditions".[149]

[144] LOSC, Article 218.
[145] Erik Molenaar, 'Port-State Jurisdiction: Towards Comprehensive, Mandatory and Global Coverage' (2007) 38 Ocean Dev.& Int'l.L. 225, 228.
[146] Although largely unfettered, a port-State's right to deny entry is subject to some limitations. See Molenaar (ibid).
[147] Bevan Marten, *Port-State Jurisdiction and the Regulation of International Merchant Shipping* (Springer 2014) 110.
[148] ibid 5.
[149] ibid 234.

Insofar as Australia's compulsory pilotage regime is concerned, the greatest obstacle in the way of classification under this wide understanding of port-State jurisdiction concerns the enforcement aspect. Australia's law threatens not simply a refusal of access but the imposition of (admittedly non-custodial) penalties. Marten argues that, compared to an outright ban, the imposition of a financial penalty "is arguably more proportionate and undoubtedly more appealing for both Australia and vessel operators in economic terms".[150] This may be true where the penalty is relatively modest but not so much when it can amount to considerable sums.[151]

The question whether Australia's compulsory pilotage regime has been accepted by other States as a port-State measure is not a straightforward one. Although Singapore never formally indicated acceptance, it is significant that, for a number of years, it has not raised any official public protest. The other major opponent of a compulsory pilotage regime at the IMO – the US – signaled that its concerns about Australia's regime were 'assuaged' following the publication of Marine Notice 7/2009.[152] It seems, in fact, that the understanding of the Australian compulsory pilotage regime as a port-State measure was actually encouraged by the US, with Wikileaks revealing that, in the run-up to the publication of Marine Notice 7/2009, "[t]he key point from Canberra's perspective had been to realize that the US view of Port-State authority is significantly broader than Australia's".[153] Although matters may change were necessity to force Australia into applying penalties by way of enforcement, all in all it appears that, for the time being, subsequent practice can be taken to signal some degree of tacit acceptance of the Australian compulsory pilotage regime as a port-State measure.

8. Concluding Comments

From the Australia-PNG proposal contained in document MEPC 49/8, it is clear that the adoption of a compulsory pilotage regime under Article 42(1)(a)

[150] ibid 106.
[151] As discussed in Section 2, the master or owner of a vessel that navigates the Torres strait without a pilot will be committing a fault-based offence subject to 600 penalty units and will also be liable to a civil penalty of 6,000 penalty units. A penalty unit is presently equivalent to $210.
[152] See Section 2 of this chapter.
[153] <https://wikileaks.org/plusd/cables/08CANBERRA995_a.html> accessed 27/8/2017.

is what Australia originally had in mind for the Torres strait. The fact the unanimous or quasi-unanimous approach that was required for this did not materialise is unfortunate for a number of reasons. First, the strong opposition that was raised by some States notwithstanding a wide acknowledgment of the environmental sensitivity of the area and of the proportionality of the measure proposed jars with the Article 43 duty to cooperate. Secondly, the outcome at the IMO arguably fell short of fulfilling the obligation to prevent environmental harm, which the integration principle requires to be incorporated into the texture of the transit passage regime. Thirdly, the attitude of opposing States can be described as short-sighted. They failed to factor in the fallout in the form of unilateral coastal State action that could follow from an unsatisfactory outcome at the multilateral level.

The port-State jurisdiction based regime that Australia ultimately had to settle on is one that it could could technically have opted for unilaterally and without any need for IMO endorsement. From a marine envirionment protection perspective, however, it was clear from the outset that this was not the ideal approach. Australia noted at the IMO that "the majority of vessels transiting the Torres Strait do not make port calls in Australia or [PNG]".[154] Many of the vessels that do not call at Australian ports are apparently tankers, i.e. "exactly the vessels that Australia is most worried could be involved in an accident causing environmental damage".[155] It is unfortunate that this category of vessels, which reason dictates is the category most in need of compulsory pilotage, is the category most likely to fall outside the remit of Australia's effective control. Additionally, Australia's port-State jurisdiction based regime lies on somewhat unsteady ground. For the time being the system works well because compulsory pilotage appears to have become generally accepted. Australia has apparently never needed to resort to application of the substantial penalties envisaged in its Navigation Act. If compliance rates were to drop, however, Australia is not in a good legal position to enforce these penalties as, strictly speaking, Article 211(3) allows it only a right to deny

[154] LEG 89/16 para 236.
[155] <https://wikileaks.org/plusd/cables/08CANBERRA773_a.html> accessed 29/8/2017.

entry.[156] One must wonder, finally, about the possible consequences of reliance on port-State jurisdiction. Is it desirable that this wide understanding of port-State jurisdiction be taken up? Is there a risk that it could be used in less deserving cases? In the case of compulsory pilotage in the Torres Strait, for the time being it appears to have provided a viable solution. This said, it is difficult not to think that a wider reading of Article 41 would have been the better solution.

Considering that Part III of the LOSC already places some very considerable restrictions on the adoption of marine environment protection measures, the adoption of an overly restrictive interpretation of the relevant provisions over and above this makes compliance with the Article 192 obligation to protect and preserve the marine environment an even harder task in the context of straits used for international navigation. As Oral points out,[157] in taking measures to prevent, reduce or control pollution of the marine environment, the restriction under Article 194(4) is to "refrain from *unjustifiable* interference with activities carried out by other States in the exercise of their rights and in pursuance of their duties".[158] Where the need for marine environment protection measures is sufficiently proved, the necessary measures must be integrated into the regime of transit passage and harmonised with opposing interests. The strong protection that was allocated to navigational interests by the drafters of Part III of the LOSC must be respected. To this end, environment protection measures that are adopted need to be closely scrutinised to ensure that interference with navigational rights does not exceed the minimum level necessary. Scrutiny should extend beyond the conception of such measures to cover over also their implementation in practice over time. At the end of the day, however, and as Chircop rightly contends, "however controversial compulsory pilotage… might be, safety and

[156] Article 39(2) may provide an alternative way to secure compliance but this article would need to be relied on with great care if the perception of compulsory pilotage as a generally accepted practice is to be maintained. See Section 7.1, above.
[157] Oral (n 31) 289.
[158] LOSC, Article 194(4) – emphasis added. Proelss (n 65) 1309 : "Article 194(4) applies as a benchmark for the lawfulness of interfering environmental measures of the coastal State, who, by taking those measures, also 'performs its duties'". On the application of Article 194(4) see *Chagos Marine Protected Area Arbitration (Mauritius v UK)*, PCA Case 2011-03, Award (18 March 2015) para 540.

common sense might still dictate its usefulness in certain areas where the navigation conditions are such that its application can considerably reduce the risks sensitive ecosystems might otherwise be exposed to".[159]

The Torres Strait saga exemplifies how States can be particularly protective of navigational interests in straits used for international navigation. This point is corroborated by the next Chapter, which examines the viability of Article 234 LOSC as a legal basis for Canadian mandatory ship-reporting requirements in the Canadian Arctic. The waters that constitute the Northwest Passage (NWP), which fall within the scope of the Canadian regulations, are claimed by Canada as its internal waters. The US and a number of other States, however, contend that, like the Torres Strait, the waters of the NWP constitute a strait used for international navigation with a corresponding right of transit passage.

[159] Chircop (n 90) 605-606.

CHAPTER 4: Canada's NORDREG Regulations

1. Introduction

The Canadian regime for the Arctic, which includes the mandatory ship-reporting system under consideration in this chapter, owes its origins to growing concern in the late 1960s among the Canadian population about the need to protect the Arctic's fragile environment from vessel-source pollution. One event in particular – the 1969 crossing of the North West Passage (NWP)[160] by the *SS Manhattan* – fueled that concern and motivated the Canadian Government to take decisive action. The voyage of the *SS Manhattan*, an ice-strengthened US oil tanker, had the aim of testing the viability of the NWP as a route for shipping oil.[161] Intent on not allowing this event to turn into a precedent, the Canadian Government responded by granting permission to the expedition (when none had been requested) and by sending a Canadian icebreaker to monitor the situation.[162] The Canadian ice breaker's assistance proved necessary on several occasions[163] and ice caused considerable damage to the *Manhattan's* hull.[164] Although no oil cargo was carried by the *Manhattan* on this voyage, its crossing highlighted the potentially disastrous consequences of such endeavours.

Starting from the late 1500s, the NWP claimed countless lives and vessels as explorers valiantly sought to find a navigable route around North America to Asia. The failed exploits of William Parry, John Franklin and others are well documented, and earned the NWP its reputation as an 'Arctic Grail'.[165] Remarkably, it took Roald Amundsen a full three years to make the first successful full crossing of the NWP between 1903-1906.[166] Needless to say, the shipping industry has come a long way since then. Moreover, while

[160] The NWP is a sea route that goes through the Arctic archipelago of Northern Canada to connect the northern Atlantic and Pacific Oceans.
[161] Michael Byers, *Who owns the Arctic?: Understanding Sovereignty Disputes in the North* (Douglas & McIntyre 2010) 66.
[162] ibid.
[163] ibid.
[164] Kristin Bartenstein, 'The "Arctic Exception" in the Law of the Sea Convention: A Contribution to Safer Navigation in the Northwest Passage?' (2011) 42 ODIL 22, 25.
[165] For a historical overview see James Delgado, *Across the Top of the World: the Quest for the Northwest Passage* (Douglas & McIntyre 1999).
[166] ibid 171-180.

precise predictions about the impact of climate change on the Arctic are hard to make, recent assessments have confirmed that Arctic ice is melting and that it is doing so "more rapidly than projected by most models".[167]

Arctic ice melting has opened up tantalising new prospects for navigation.[168] Two navigational routes in particular are attracting considerable attention: the Northern Sea Route (NSR), which runs along the Russian Arctic coast, and the North West Passage (NWP) – the route travelled by the *SS Manhattan* in 1969, which traverses the Arctic Ocean to connect the northern Atlantic and Pacific Oceans. Compared to traditional routes, the NSR and the NWP can offer considerable reductions in sailing distance. McDorman, for instance, considers that, compared to the traditional route that goes through the Panama Canal, the NWP has the potential to shorten the route between Asia and Europe by a considerable 9,000 kilometers and avoids the vessel size restrictions that apply in the Canal.[169] This has attracted the shipping industry's attention. In the summer of 2013, the *Nordic Orion* became the first bulk carrier to make a successful crossing of the NWP.[170] Carrying a cargo of 73,5000 tons of coal from Vancouver to Finland, the Danish vessel shaved a significant four days off its usual transit time and saved $80,000 in fuel alone.[171] 2016, in turn, saw the first crossing of the NWP by a cruise liner – the *Crystal Serenity*.[172]

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[167] Arctic Monitoring and Assessment Programme (AMAP), *Snow, Water, Ice and Permafrost in the Arctic: Summary for Policy-makers* (10 April 2017) 12 <https://www.amap.no/documents/download/2888> accessed 6/7/2017.

[168] On shipping in the Arctic see Arctic Council, 'The Arctic Marine Shipping Assessment 2009 Report' ('AMSA 2009 Report') <http://www.pame.is/index.php/projects/arctic-marine-shipping/amsa>; Arctic Council, 'Status on Implementation of the AMSA 2009 Report Recommendations' (April 2015) <http://pame.is/images/03_Projects/AMSA/AMSA_Documents/Progress_Reports/AMSArecommendations2015_Web.pdf> both accessed 6/7/2017.

[169] Ted McDorman, *Salt Water Neighbors: International Ocean Law Relations between the United States and Canada* (OUP 2009) 231.

[170] <http://www.nordicbulkcarriers.com/services/nwp-project> accessed 6/7/2017.

[171] ibid.

[172] <https://www.highnorthnews.com/en/no-more-crystal-serenity-northwest-passage> accessed 10/11/2018. On Arctic cruise shipping see Stefan Kirchner, 'Arctic Cruise Shipping: Dreams, Development or Disaster?' in Timo Koivurova (ed), *Current Developments in Arctic Law*, vol 4 (University of Lapland 2016).

Arctic ice melting, however, does not mean that Arctic waters have become proportionately less dangerous or difficult to navigate. As noted by Canada in a document that it submitted to the IMO's Maritime Safety Committee, climate change can bring new difficulties: "potentially greater quantities of old ice will be more mobile, drifting into shipping areas and contributing to hazardous choke points".[173] Moreover, as the volume of traffic increases, so do the chances of incidents occurring with potentially devastating environmental consequences.[174] While this is always problematic, Arctic ecosystems can be especially vulnerable to pollution damage. The 2009 AMSA Report notes that "some Arctic animals are particularly sensitive to oil [pollution] because it reduces the insulating properties of feathers and fur and they can quickly die from hypothermia if affected".[175] Additionally, concerns about vessel-source pollution in the Arctic are amplified by extreme weather and ice conditions as well as by the region's remoteness, which can considerably delay the arrival of assistance and inherently limit pollution response capability.[176] The 1989 *Exxon Valdez* oil spill, residue from which remains in many areas of Prince William Sound to the present day, is often mentioned as an example. Compared to the NWP, however, "the place where the Exxon Valdez oil tanker suffered an accident… was almost an urban motorway".[177]

It would be wrong to give the impression that the NWP is about to become a major shipping route in the immediate future. Navigation in the NWP is only possible for a brief and variable period during the summer (for

[173] MSC 88/11/3 submitted by Canada, 'Comments on document MSC 88/11/2' (5 October 2010) para 2.
[174] ibid.
[175] AMSA 2009 Report (n 9) 135 onwards. See also Ocean Conservancy, 'Navigating the North: An Assessment of the Environmental Risks of Arctic Vessel Traffic' <https://oceanconservancy.org/wp-content/uploads/2017/06/Arctic-Vessel-Traffic-Report-WEB-2.pdf> accessed 6/7/2017.
[176] 'Oil Spill Prevention and Response in the US Arctic Ocean: Unexamined Risks, Unacceptable Consequences' (Report prepared by Nuka Research and Planning Group for the Pew Environment Group, November 2010) <https://www.pewtrusts.org/-/media/legacy/uploadedfiles/peg/publications/report/oil20spill20preventionpdf.pdf> accessed 8/1/2019.
[177] See Allianz, 'Shipping and the Northwest Passage – Future growth and risks' <http://www.agcs.allianz.com/insights/expert-risk-articles/northwest-passage-on-thin-ice/> accessed 2/5/2017.

commercial vessels, normally between early August and early October)[178] and, even then, it remains substantially riskier than navigation in alternative seaways.[179] For the time being, this reality has prevented the vast majority of shipping companies from pursuing the NWP as a viable shipping route and, to put things into perspective, there were 'only' 33 full transits of the NWP in 2017.[180] 2018, in turn, was characterised by heavier than usual ice concentrations in the Canadian Arctic. Only five full transits of the NWP were registered (the lowest figure in 20 years)[181] and the *Anahita*, a French flagged pleasure vessel, sank in Bellot Strait while trying to transit the passage.[182] While present volumes may seem insignificant, traffic in the NWP will increase as navigational conditions improve. Additionally, considering that even one incident can have devastating effects, pollution prevention measures need to be taken even in relation to the existing volume of traffic.

Given the country's affinity to 'the North',[183] Canada has been particularly proactive in taking marine environment protection measures. Most recently, this proactiveness manifested itself in the adoption of the 2010 Northern Canada Vessel Traffic Services Zone Regulations ('NORDREG Regulations').[184] The NORDREG ship reporting system,[185] which was made mandatory by the 2010 NORDREG Regulations, started originally as a voluntary system in 1977. Canada claims that the clearance and reporting

[178] Email from Jean-Pierre Lehnert (Officer in Charge, NORDREG Canada) to author (18/7/2017).
[179] Bartenstein (n 5) 22; Emmanuel Guy and Frédéric Lasserre, 'Commercial shipping in the Arctic: new perspectives, challenges and regulations' (2016) 52 Polar Record 294, 297.
[180] Email from Jean-Pierre Lehnert (Officer in Charge, NORDREG Canada) to author (13 November 2018). The figure includes Canadian Government ships.
[181] Email from Jean-Pierre Lehnert (Officer in Charge, NORDREG Canada) to author (7 January 2019). The five transits were made by two German pleasure craft; one Canadian tug vessel; and one Canadian Coast Guard icebreaker (the *Louis St Laurent*, which made two full transits).
[182] CBS News, 'Coast Guard rescues 2 passengers of sinking sailboat stranded on ice floe' (29 August 2018) <https://www.cbc.ca/news/canada/north/coast-guard-sail-boat-rescue-1.4804102> accessed 7/1/2019.
[183] In the words of Minister Chuck Strahl, "[t]he North is a fundamental part of our heritage and our national identity, and it is vital to our future". Ministry for Indigenous Affairs and Northern Development, 'Canada's Northern Strategy: Our North, Our Heritage, Our Future' <http://www.northernstrategy.gc.ca/cns/cns-eng.asp> accessed 6/7/2017. See also Danita Catherine Burke, 'Leading by example: Canada and its Arctic stewardship role' (2017) 13 Int. J. Public Policy 36, 37.
[184] Northern Canada Vessel Traffic Services Zone Regulations, SOR/2010-127.
[185] An extensive overview of NORDREG will be provided in Section 2.3, below.

requirements that apply under the system in relation to Canadian Arctic waters are critical to preventing accidents and enable prompt and effective reactions to pollution and search and rescue situations.[186] As will be discussed, the NORDREG Regulations were subjected to a flurry of criticism from a number of countries, led most notably by the United States. While complimenting Canada for its sustained efforts to protect the Arctic Marine environment, the US was quick to note that "the new regulations appear to be inconsistent with international law, including LOSC Article 234".[187] Although no detailed record exists in the public domain, similar protests were apparently lodged by a number of EU States such as France, Germany and the UK.[188] For its part, Canada has consistently maintained that Article 234 of the LOSC "provides a complete legal justification in international law for NORDREG".[189]

Article 234 will be analysed in Section 4. In short, however, where conditions for its application are fulfilled, Article 234 allows coastal States to unilaterally adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas within their EEZs. In contrast to the general rule set out in Article 211(5) of the LOSC, laws and regulations adopted under Article 234 can extend beyond generally accepted international rules and standards. In this way, Article 234 places considerable power in the hands of coastal States. At the same time, Article 234 has been singled out for the dubious honour of being "probably the most ambiguous, if not controversial, clause in the entire treaty"[190] and described metaphorically as "a witch's brew, a caldron of legal uncertainty which could be stirred in favour of either the coastal or shipping

[186] MSC 88/11/3, para 3.
[187] Letter from Eric Benajminson (Minister-Counselor, Embassy of the United States of America, Ottawa, Canada) to Robert Turner (Manager, Department of Transport, Ontario, Canada) (19 March 2010) <https://www.state.gov/documents/organization/179286.pdf> accessed 7/72017. See also MSC 88/11/2 submitted by the US and Intertanko, 'Northern Canada Vessel Traffic Services Zone Regulations' (22 September 2010). The US/Intertanko submission at MSC 88 was supported by Germany and Singapore. See 'Report of the Maritime Safety Committee on its Eighty-Eighth Session' (31 August 2010) MSC 88/26 para 11.35 and Annex 28 ('Statement by the Delegation of Singapore').
[188] Erik J. Molenaar, 'Options for Regional Regulation of Merchant Shipping Outside IMO, with Particular Reference to the Arctic Region' (2014) 45 ODIL 272, 278.
[189] MSC 88/11/3, para 5(1).
[190] Cynthia Lamson, 'Arctic shipping, marine safety and environmental protection' (1987) 11 Marine Policy 3, 4.

state".[191] To compound matters further, the NORDREG Regulations do not exist in a vacuum. There is a specific context to them, including a significant dispute over the legal status of the NWP.[192]

This Chapter examines whether Article 234 of the LOSC provides a legitimate basis for the Canadian NORDREG Regulations in the international law of the sea. Following this introductory section, Section 2 provides an overview of the debate about the legal status of the NWP and examines the Canadian and Russian domestic regimes for the regulation of shipping in the Arctic. Section 3 analyses the international legal framework while Section 4 examines the main elements of Article 234 in order to ascertain its viability as a legal basis for the Canadian NORDREG Regulations. Section 5 provides some concluding thoughts.

2. Further Background and Context

2.1 Legal Status of the NWP

Canada considers the waters of the NWP to be its internal waters – a claim that, if upheld, would provide Canada with full sovereignty over the area and effectively exclude any right of navigation across the passage without Canada's express consent.[193] The US, conversely, considers the NWP to be a strait used for international navigation with a corresponding right of transit passage. Although over the years a number of other States have expressed themselves on the matter, the dispute over the NWP's legal status rages primarily between Canada and the US. In 1986, the then European Community protested against Canada's drawing of straight baselines. Since then, however, it seems that the European Union has not formally repeated its

[191] Cynthia Lamson and David VanderZwaag, 'Arctic waters: Needs and options for Canadian-American cooperation' (1987) 18 ODIL 49, 81.
[192] See Section 2.1, below.
[193] Canada's claim has two possible legal bases: internal waters by historic title or, alternatively, internal waters by virtue of inclusion within straight baselines. For an overview of the Canadian position see Robert Dufresne, 'Controversial Canadian Claims over Arctic Waters and Maritime Zones' (Research Conducted for the Canadian Library of Parliament, January 2008) <https://lop.parl.ca/content/lop/researchpublications/prb0747-e.pdf> accessed 9/72017. In relation to the claim based on historic title, Pharand – possibly Canada's most prominent legal scholar on the subject – concludes that "Canada is not in a position to discharge heavy burden of proof that it has exercised exclusive jurisdiction over the Arctic waters for a sufficiently long period of time". See Donat Pharand, 'The Arctic Waters and the Northwest Passage: A Final Revisit' (2007) 38 ODIL 3, 13.

protest.[194] Russia, a country in a situation comparable to Canada's, supported the Canadian position in 1985 following the passage of the USCGC *Polar Sea*. Since that incident, no further statements have been forthcoming from Russia on the matter.[195] China – another country with claims based on historic title – has not expressed itself on the legal status of the NWP in a direct manner. Significantly, however, when China sought to test the viability of Chinese cargo ships sailing through the NWP in 2017, the *Snow Dragon* waited a full week for Canadian approval before entering the NWP.[196]

On the matter of the legal status of the NWP, it appears that strong arguments can be made on both sides[197] and it is beyond the scope of this chapter to engage in a detailed examination of the respective positions. Given the fact that a legal dispute exists, it is nevertheless prudent to keep the contested status of the NWP in mind and to question whether the primary purpose behind given environmental measures is truly that of marine environment protection. Canadian politicians are, after all, not unaware of the fact that Canadian claims in regards to the NWP – which is situated in a remote area with few inhabitants – are subject to the historical reality that "sovereignty often relies on the *realpolitik* principle of use it or lose it".[198]

In 1988 Canada and the US entered into a so-called agreement to disagree whereby – while reserving their respective positions – the US pledged that all navigation by US icebreakers within waters claimed by Canada to be internal would be undertaken with Canadian consent while Canada pledged to

[194] Michael Byers, *International Law and the Arctic* (CUP 2013) 137-138.
[195] ibid 151.
[196] Robert Fife and Steven Chase, 'China used research mission to test trade route through Canada's Northwest Passage' *The Globe and Mail* (Ottawa, 10 September 2017) <https://www.theglobeandmail.com/news/politics/china-used-research-mission-to-test-trade-route-through-canadas-northwest-passage/article36223673/> accessed 10/1/2018.
[197] Possibly two of the most convincing expositions on either side are provided by Pharand (n 34) and James Kraska, 'The Northern Canada Vessel Traffic Services Zone Regulations (NORDREG) and the Law of the Sea' (2015) 30 IJMCL 225; James Kraska, 'International Security and International Law in the Northwest Passage' (2009) 42 Vanderbilt Journal of Transnational Law 1109.
[198] Senator Dennis Patterson, 'Canada must assert sovereignty over the Arctic while there's still time' *National Post* (2 November 2017) <http://nationalpost.com/opinion/canadas-must-assert-sovereignty-over-the-arctic-while-theres-still-time> accessed 14/1/2018.

grant consent.[199] In opening up the Arctic to vessels other than ice-breakers, Arctic ice melting will increasingly serve to render this agreement insufficient. In recent years some have claimed that, in view of increased security concerns in relation to terrorism and considering NATO tensions with Russia, it may be in the US' interest to fully accept Canada's internal waters claims and to have the NWP under the control of a long-standing ally.[200] Recent policy documents[201] have however reaffirmed the US view that the NWP is a strait used for international navigation and continue to express concern that to hold otherwise would be to set a dangerous precedent for other areas around the world.[202]

2.2 Relevance of the Legal Status of the NWP

Given the complexity of the debate over the legal status of the NWP, it is surely legitimate to ask whether, insofar as the NORDREG Regulations are concerned, it really matters how the question of legal status is decided. The short answer is that, for the time being, it probably does not matter, but that, as ice-cover continues to diminish, in the not too distant future it may very well start to matter. So long as Article 234's requirement of ice-cover for most of the year can be fulfilled, Canada can rely on Article 234 as a legal basis for its NORDREG regime. Although Article 234 does not expressly address the question of its applicability to straits used for international navigation, the vast majority of commentators emphasise the fact that Article 234 is included in a

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[199] 'Agreement between the Government of Canada and the Government of the Untied States of America on Arctic Cooperation' (entered into 11 January 1988) 504 UNTS 205.

[200] See, e.g., Michael Byers, 'Negotiate the Northwest Passage, Before It's Too Late: Updating the 1988 Arctic Cooperation Agreement' in John Higginbotham and Jennifer Spence (eds), *North of 60: Toward a Renewed Canadian Arctic Agenda* (CIGI 2016) <https://www.cigionline.org/sites/default/files/north_of_60_special_report_lowres.pdf>. Similarly, during a 2007 CTV News interview, Paul Celluci, former US ambassador to Canada, argued to the effect that "[in an age of terror], it's in our security interest for the Northwest Passage to be part of Canada". A summary of the interview is available online: <http://archive.li/tkEbf>. Both websites accessed 9/7/2017.

[201] See, e.g., 'National Strategy for the Arctic Region' (10 May 2013) <https://obamawhitehouse.archives.gov/sites/default/files/docs/nat_arctic_strategy.pdf>; Department of Defense, 'Report to Congress on Strategy to Protect United States National Security Interests in the Arctic Region' (December 2016) <https://www.defense.gov/Portals/1/Documents/pubs/2016-Arctic-Strategy-UNCLAS-cleared-for-release.pdf>. Both websites accessed 9/7/2017.

[202] On the question of precedent, see Suzanne Lalonde and Frédéric Lasserre, 'The Position of the United States on the Northwest Passage: Is the Fear of Creating a Precedent Warranted?' (2013) 44 Ocean Dev.& Int'l.L. 28. Lalonde and Lasserre conclude at p 62 that "[t]here are, in fact, few cases where recognition of Canadian sovereignty over the Northwest Passage… could be invoked as a precedent".

separate Section 8 of Part XII and argue that, since the application of Section 8 is not excluded from application to straits used for international navigation by Article 233, Article 234 should trump any potential right of transit passage.[203] As Arctic ice continues to melt, however, Canada may eventually lose its ability to rely on Article 234 as an international law basis for NORDREG. With Article 234 by the wayside, insistence on its internal waters claim will effectively become the easiest way for Canada to persist with its NORDREG regime.

2.3 The Canadian Regime for the Arctic

As mentioned in Section 1, the Canadian regime for the Arctic owes its origins to growing concern among Canadians about the Arctic marine environment. The 1969 crossing of the NWP by the *SS Manhattan* in particular stands out as an important turning point that led to the unilateral adoption of the 1970 Arctic Waters Pollution Prevention Act ('AWPPA').[204] AWPPA is a 'zero discharge' act which prohibits the deposit of waste of any type in Arctic waters.[205] It allows for the designation of shipping safety control zones[206] and for the enactment of regulations relating to navigation in such zones.[207] Originally applicable up to 100nm from Canada's coast, AWPPA's geographical scope was extended to cover Canada's entire EEZ in 2009.[208] In addition to its environmental purpose, Chircop *et al* note that, in providing a basis for the exercise of Canadian jurisdiction, the AWPPA is also "a tool to support the claim to sovereignty over the waters of the Arctic archipelago".[209]

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[203] See, e.g., Molenaar (n 29) 277; Armand de Mestral, 'Article 234 of the Untied Nations Convention on the Law of the Sea' in Suzanne Lalonde and Ted McDorman (eds), *International Law and Politics of the Arctic Ocean* (Brill 2015) 111, 121; Pharand (n 34) 47; Stanley Fields, 'Article 234 of the Untied Nations Convention on the Law of the Sea: The Overlooked Linchpin for Achieving Safety and Security in the U.S. Arctic?' (2016) 55 Harv. Nat'l Sec. J. 55, 76. For the opposite view, based on a somewhat laboured analysis of Article 234's content and placement, see Ashley Roach and Robert Smith, *Excessive Maritime Claims* (Martinus Nihoff 2012) 319. Interestingly, the US has not formally expressed itself on this question. Molenaar (n 29) 277 notes that this potentially reveals the US' awareness that its position in this regard is not particularly strong.

[204] The Arctic Waters Pollution Prevention Act (R.S.C., 1985, c. A-12).

[205] AWPPA, Article 4(1).

[206] ibid, Article 11.

[207] ibid, Article 12.

[208] ibid, Articles 2 and 3(1).

[209] Aldo Chircop and others, 'Course Convergence? Comparative perspectives on the Governance of Navigation and Shipping in Canadian and Russian Arctic Waters' (2014) 28 Ocean Yearbook 291, 301.

Around the same time as AWPPA's geographic scope was extended, Canada moved to make NORDREG mandatory. The NORDREG ship reporting system had already existed as a voluntary system since 1977 and, as such, had enjoyed almost full compliance.[210] NORDREG covers all Canadian Arctic waters,[211] including the various routes that jointly constitute the NWP. It applies to vessels of 300 gross tonnage (gt) or more, to vessels towing or pushing other vessels where the combined gt is 500 or more, and to vessels of any gt carrying or towing or pushing a vessel that is carrying a pollutant or dangerous goods as cargo.[212] Any vessel entering, leaving or proceeding within the NORDREG Zone must have previously obtained a clearance under Section 126 of the Canadian Shipping Act,[213] which can only be granted if the conditions laid down in the NORDREG Regulations are fulfilled. Failure to obtain prior clearance is punishable by fine or imprisonment, along with possible detention of the vessel.[214] Canada has defended the requirement to obtain clearance by contending that this requirement ensures that the CCG "has a comprehensive picture of vessels operating in the zone, can assess the vessel's compliance with [Canadian environmental legislation], can relay relevant safety and ice information to the vessel for its transit… and [can address] any safety and environmental concerns… as early as possible".[215] Vessels subject to the NORDREG Regulations must submit a series of reports, including a sailing plan report prior to entry into the zone; a daily position report; reports of any deviations and a final report before leaving the zone.[216] Canadian authorities use the Automatic Identification System (AIS) to monitor vessel movements against the course filed with the Canadian Coast Guard (CCG).[217]

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[210] Report of the Standing Senate Committee on Fisheries and Oceans, 'Rising to the Arctic Challenge: Report on the Canadian Coast Guard' (April 2009) 52 <http://publications.gc.ca/site/eng/359977/publication.html> accessed 6/5/2017.
[211] NORDREG Regualtions, Article 2.
[212] NORDREG Regualtions, Article 3.
[213] The Canadian Shipping Act (S.C. 2001, c. 26).
[214] ibid, Article 138.
[215] MSC 88/11/3, para 7.
[216] NORDREG Regualtions, Articles 6-9.
[217] Chircop and others (n 50) 305.

Two incidents in the Canadian Arctic, one in 1996 and the other in 2010, exemplify the usefulness of NORDREG. In 1996, the *Hanseatic* – a German cruise ship – entered Canadian Arctic waters without reporting its entry through NORDREG, which existed as a voluntary system at the time. The master relied on a buoy to chart his course, not realising that the buoy had been moved about 200 metres by winter ice. The *Hanseatic* ran aground and suffered considerable damage but no pollution or casualties resulted.[218] The 2010 incident involved another passenger vessel – the *Clipper Adventurer*, which ran aground on an uncharted shoal while navigating an inadequately surveyed route. The relevant incident report notes that the shoal had been identified and reported in a Notice to Shipping (NOTSHIP) but that the bridge team was unaware of the Notice.[219] The *Clipper Adventurer* was successfully refloated with minor pollution and no injuries reported.[220]

The extension of AWPPA to 200nm and the move to make NORDREG compulsory are rooted in Canada's Northern Strategy, which encompasses the dual policy goals of protecting the marine environment and of increasingly exercising sovereignty in the region.[221] Kraska contends that the mandatory nature of NORDREG serves "primarily to strengthen [Canada's] ability to efficiently and safely manage marine traffic and better protect the unique and fragile Arctic marine environment".[222] The voluntary system admittedly enjoyed almost full compliance. By introducing the possibility of enforcement as well as the deterrent of criminal penalties, however, a mandatory NORDREG is better placed to ensure full compliance, which is important in a context where a single incident can cause devastating damage. By way of educated speculation, it is therefore quite possible that protection of the Arctic marine environment was the primary goal behind the adoption of the 2010

[218] Transportation Safety Board of Canada, 'Marine Occurence Report Number M96H0016' <http://www.bst-tsb.gc.ca/eng/rapports-reports/marine/1996/m96h0016/m96h0016.pdf> accessed 11/11/2018.
[219] Transportation Safety Board of Canada, 'Marine Investigation Report M10H0006' 25 <http://www.bst-tsb.gc.ca/eng/rapports-reports/marine/2010/m10h0006/m10h0006.pdf> accessed 11/11/2018. Since the incident, relevant procedures have been revised and require a listing of all Arctic NOTSHIPs to be appended to the NORDREG clearance message.
[220] ibid 1.
[221] Canada's Northern Strategy (n 24) 9, 12.
[222] Kraska (n 38) 232.

NORDREG Regulations. At the same time, in moving to make NORDREG mandatory, the Canadian Government saw an opportunity to assert sovereignty by pushing Canada's environmental jurisdictional powers over the region to the maximum possible limit.

2.4 The Russian Regime for the Arctic

Alongside Canada, Russia is the only other country to have adopted an extensive domestic regime under Article 234. In 2009, it published an Arctic strategy[223] which serves as "a reliable blueprint for its policies".[224] The document lists the utilisation of the NSR for international navigation "under the jurisdiction of the Russian Federation and according to international treaties of the Russian Federation"[225] as a strategic priority of Russia and lays bare Russia's intention to continue to exercise considerable jurisdiction and control over the NSR in line with its claims of historic title over the area.

Russia recently adopted two new pieces of legislation in relation to navigation in the NSR: a 2012 Federal Law[226] and the 2013 Rules of Navigation on the Water Area of the Northern Sea Route.[227] Navigation in the NSR is regulated mainly by the 2013 NSR Rules. Any vessel wishing to navigate the NSR must obtain permission from the NSR Administration.[228] Where permission is granted, this will be accompanied by information on matters such as the designated route of navigation and the need or otherwise for icebreaker assistance.[229] Similarly to the Canadian rules for the NWP, the 2013 NSR Rules require notification prior to arrival and upon completion of

[223] 'Basics of the State Policy of the Russian Federation in the Arctic For the Period till 2020 and for a Further Perspective' (30 March 2009) ('Russian Arctic Strategy') <http://www.arctis-search.com/Russian+Federation+Policy+for+the+Arctic+to+2020> accessed 15/1/2018.
[224] Lincoln E Flake, 'Navigating an Ice-Free Arctic' (2013) 158 The RUSI Journal 44, 47.
[225] Russian Arctic Strategy, Part III Section 7(d).
[226] Federal Law N 132-FZ, 'On Amendments to Certain Legislative Acts of the Russian Federation Concerning State Regulation of Merchant Shipping on the Water Area of the Northern Sea Route' ('Federal Law of 2012') (28 July 2012) <http://www.nsra.ru/en/ofitsialnaya_informatsiya/zakon_o_smp.html> accessed 12/11/2018.
[227] 'Rules of Navigation on the Water Area of the Northern Sea Route' (17 January 2013) ('2013 NSR Rules') <http://www.nsra.ru/files/fileslist/120-en-rules_perevod_cniimf-13_05_2015.pdf> accessed 12/11/2018.
[228] 2013 NSR Rules, Regulation 3.
[229] 2013 NSR Rules, Regulation 10.

navigation in the NSR.[230] As it did with Canada's NWP regime, the US has objected to Russia's authorisation-based regime for the NSR.[231] Other countries have "more or less accepted Russia's *de facto* control of the NSR waters".[232] Whether such tacit acceptance will persist as ice melts and shipping interests increase remains to be seen.

The 2013 NSR Rules fail to make any express reference to Article 234 of the LOSC. This raises the concern that Russia may be considering a shift "away from the three-decade-long reliance on international treaty law and back to a more nebulous approach to the Arctic".[233] Such a turn of events would be problematic from a navigational interests perspective. With Article 234 by the wayside and Russian insistence on the historical waters status of the NSR, it would become easier for Russia to adopt a discriminatory approach to the regulation of maritime traffic, picking and choosing, for example, "between favourable commercial traffic and undesirable military transit of its Arctic EEZ".[234] While Russia's departure from Article 234 is not a *fait accompli*,[235] a varying number of vessels have been denied permission to enter the NSR every year since the entry into force of the 2013 NSR Rules. To the NSR Administration's credit, all decisions to grant or refuse permission to transit the NSR are published online.[236] This has not stopped critics from contending that the 2013 NSR Rules may on occasion have been applied in a discriminatory

[230] 2013 NSR Rules, Regulations 14–20.
[231] The US considers that "aspects of the scheme... are inconsistent with international law, including: requirements to obtain Russia's permission to enter and transit the exclusive economic zone and territorial sea; persistent characterization of international straits that form part of the NSR as internal waters; and the lack of any express exemption for sovereign immune vessels". *2015 Digest of United States Practice in International Law* 526 <https://www.state.gov/documents/organization/258206.pdf> accessed 15/1/2018.
[232] Irinia Nossova, 'Russia's international legal claims in its adjacent seas: the realm of sea as extension of Sovereignty' (PhD Dissertation) 28 <http://dspace.ut.ee/bitstream/handle/10062/31198/nossova_irina.pdf?sequence=1&isAllowed=y> accessed 15/1/2016.
[233] Flake (n 65) 48.
[234] ibid.
[235] An explanatory note issued with the 2012 Federal Law does refer to Article 234 as a legal basis for Russian legislation. See Jacques Hartmann, 'Regulating Shipping in the Arctic Ocean: An Analysis of State Practice' (2018) 49 Ocean Dev.& Int'l.L. 276, 286. See also Jan Jakub Solski, 'Russia' in Robert Beckman and others (eds), *Governance of Arctic Shipping: Balancing Rights and Interests of Arctic States and User States* (Brill 2017) 173, 184. Solski notes that different parts of the Russian administration appear to have different views on the international legal basis for the legal regime of the NSR.
[236] <http://www.nsra.ru/en/rassmotrenie_zayavleniy/razresheniya.html> accessed 12/11/2018.

manner to suit Russia's interests. A case in point is that of the *Arctic Sunrise*, which, before opting to enter the NSR without the relevant consent, had three applications to sail the NSR refused, ostensibly on the grounds that its classification certificate was void and due to other technical reasons.[237]

2.5 Rising Chinese Interest in the Arctic

In 2016, the Chinese Government issued a document entitled 'Guidance on Arctic Navigation in the Northwest Route 2015'.[238] The document, which provides information about hydrology, meteorology, navigational dangers and service and assistance facilities in the NWP, signals increasing Chinese ambitions in relation to the NWP.[239] This was followed by the publication of a white paper outlining China's Arctic policy by the Chinese State Council Information Office in January 2018.[240] In the white paper, China defines itself as a 'Near-Arctic State' that is "closely involved in the trans-regional and global issues [of] the Arctic".[241] The white paper recognises that the melting of Arctic ice provides "opportunities for the commercial use of sea routes and [the] development of resources in the region… [which] may have a huge impact on the energy strategy and economic development of China".[242] Among its policy goals for the Arctic, China lists the protection of the Arctic's "unique natural environment".[243] No specific position is listed in relation to the NWP and the position paper acknowledges both the need to "respect the sovereignty, sovereign rights, and jurisdiction… [of] Arctic States"[244] as well

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[237] The official refusal of permission is available online: <http://www.nsra.ru/files/zayavka/20130920143952ref%20A%20S.pdf>. For Greenpeace's version of events see: <http://www.greenpeace.org/international/en/press/releases/2013/Greenpeace-ship-to-leave-Kara-Sea-under-threat-of-force-from-Russian-Coast-Guard/>. Both websites accessed 15/1/2018.

[238] An English language version of the publication is not available online. For an overview of the Guidelines see <http://www.china.org.cn/china/2016-04/22/content_38300880.htm> accessed 2/5/2017.

[239] On Chinese interests in the Arctic see Nong Hong, 'Emerging Interests of non-Arctic Countries in the Arctic: a Chinese perspective (2014) 4 The Polar Journal 271; Li Xing & Rasmus Gjedssø Bertelsen, 'The Drivers of Chinese Arctic Interests: Political Stability and Energy and Transportation Security' (2013) 2 Arctic Yearbook 53.

[240] The State Council Information Office of the People's Republic of China, 'China's Arctic Policy' (26 January 2018) <http://www.scio.gov.cn/zfbps/32832/Document/1618243/1618243.htm> accessed 26/1/2018.

[241] ibid.

[242] ibid.

[243] ibid.

[244] ibid.

as the importance of ensuring "the freedom of navigation enjoyed by all countries… and their rights to use the Arctic shipping routes".[245]

3. The International Legal Regime

3.1 The LOSC

On 28 May 2008, the Arctic Five (Canada, Denmark, Norway, Russia and the US) met in Ilulissat, Greenland where they adopted the 'Ilulissat Declaration'.[246] The five Arctic coastal States noted their continued commitment to the legal framework of the law of the sea which:

> provides for important rights and obligations concerning the delineation of the outer limits of the continental shelf, the protection of the marine environment, including ice-covered areas, freedom of navigation, marine scientific research, and other uses of the sea.[247]

Considering that this framework provides a sufficient foundation for responsible management of the Ocean, the five States concluded that they "see no need to develop a new comprehensive international legal regime to govern the Arctic Ocean".[248] The law of the sea legal framework that the five Arctic States refer to is primarily enshrined in the LOSC.[249] Article 234, the most relevant provision of the LOSC, will be analysed in detail in Section 4.

3.2 The Polar Code

In the Ilulissat Declaration the five Arctic States express their intention "to work together including through the [IMO] to strengthen existing measures and develop new measures to improve the safety of maritime navigation and prevent or reduce the risk of ship-based pollution in the Arctic".[250] Besides

[245] ibid.
[246] The Ilulissat Declaration (28 May 2008) <https://cil.nus.edu.sg/wp-content/uploads/2017/07/2008-Ilulissat-Declaration.pdf> accessed 13/11/2018.
[247] ibid.
[248] ibid.
[249] Presumably, the reference to the 'law of the sea' as opposed to the LOSC reflects the fact that one of the parties to the Ilulissat Declaration (the US) is not a party to the LOSC.
[250] Ilulissat Declaration (n 87).

being bound by the general obligation to cooperate under customary international law and under Article 197 of the LOSC, as States bordering a semi-enclosed sea Arctic coastal States are also bound by Article 123(b) of the LOSC to endeavour to coordinate the implementation of their rights and duties with respect to the protection and preservation of the marine environment.[251] Reference can also be made to Article 194(1) of the LOSC, which not only calls on States to take measures to prevent, reduce and control pollution but also requires them to harmonise their polices in this regard.

The legally binding International Code for Ships Operating in Polar Waters (the 'Polar Code'),[252] which entered into force on 1 January 2017 following the adoption of amendments to the MARPOL[253] and SOLAS[254] Conventions, is an important outcome of the multilateral cooperative process. The Polar Code covers design, construction, equipment, operational, training, search and rescue and environmental protection matters relevant to ships operating in the waters surrounding the two poles. It includes mandatory measures covering safety (part I-A) and pollution prevention (part II-A) and recommendatory provisions for both (parts I-B and II-B). As with other IMO Conventions, the Polar Code places primary responsibility for implementation of its provisions on flag States. In and of itself, this is not problematic. With the prospect of increased shipping activity in the Arctic, an increased level of flag State involvement is as necessary as it is inevitable. At the same time, however, and as McDorman rightly observes, "coastal States… are highly unlikely to see in the Code a right within their 200nm zones to enforce the Polar Code standards against foreign vessels".[255]

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[251] On the applicability of Article 123 to the Arctic see Donat Pharand, 'The Arctic Waters and the Northwest Passage: A Final Revisit' (2007) 38 ODIL 3, 53.

[252] International Code for Ships Operating in Polar Waters ('Polar Code') <http://www.imo.org/en/MediaCentre/HotTopics/polar/Documents/POLAR%20CODE%20TEXT%20AS%20ADOPTED.pdf> accessed 8/7/2017.

[253] The International Convention for the Prevention of Pollution from Ships (adopted 2 November 1973, entered into force 2 October 1983) and its Protocol of 1978 (adopted 17 February 1978, entered into force 1 October 1983) 1340 UNTS 62.

[254] The International Convention for the Safety of Life at Sea (adopted 1 November 1974, entered into force 25 May 1980) 1184 UNTS 278.

[255] Ted McDorman, 'A Note on the Potential Conflicting Treaty Rights and Obligations between the IMO's Polar Code and Article 234 of the Law of the Sea Convention' in Lalonde and McDorman (n 44) 141, 144.

As the first multilateral legally binding instrument of its nature, the Polar Code constitutes a welcome addition to the international legal framework. Concerns have however been expressed about the sufficiency of its marine environment protection measures.[256] The Code, for example, does not provide for a vessel traffic monitoring and information system as exists under Canadian law in the form of NORDREG. Neither does it provide for the presence of an experienced ice pilot on board.[257] The fact that the Code was drafted "[u]nder pressure to find a common denominator within an established timeline"[258] accounts for some of its omissions and leaves considerable scope for improvement, including in view of experience gained in the Code's application over the coming years. For the time being, however, a situation results where certain domestic requirements clearly exceed Polar Code requirements.[259]

Given the gaps in the existing Polar Code, and considering the prescriptive and enforcement jurisdiction that is conferred upon them by Article 234 but not by the Polar Code, Canada and Russia were keen to safeguard Article 234 powers. In this regard, Chircop notes that "Canada and [Russia] will find comfort in saving clauses in SOLAS and MARPOL"[260] that give precedence to the LOSC. For good measure, in July 2016 Canada reaffirmed the declaration that it had made upon becoming a signatory to MARPOL to protect its rights under Article 234 of the LOSC.[261] In view of all this, it seems safe to conclude that Canada and Russia successfully managed to

[256] See e.g., MEPC 68/INF.37 submitted by Friends of the Earth and others, 'Consideration and Adoption of Amendments to Mandatory Instruments: Environmental protection in the Polar Code' (6 March 2015).
[257] This in contrast to Russian and Canadian domestic approaches. See Aldo Chircop, 'Jurisdiction over Ice-covered Areas and the Polar Code: An Emerging Symbiotic Relationship?' (2016) 22 JIML 275, 285.
[258] ibid 284.
[259] Chircop (ibid 285) concludes that "[o]n mandatory reporting and ice navigation requirements alone, there is good reason for [Canada and Russia] to maintain existing unilateral safety requirements".
[260] ibid 287. See also Dorottya Bognar, 'The elephant in the room: article 234 of the Law of the Sea Convention and the Polar Code as an incompletely theorised agreement' (2018) 8 The Polar Journal 182.
[261] See 'Status of Multilateral Conventions and Instruments in Respect of which the International Maritime Organization or its Secretary-General Performs Depository or Other Functions' <http://www.imo.org/en/About/Conventions/StatusOfConventions/Pages/Default.aspx> accessed 8/11/2017.

protect their rights under Article 234. This is not to say that that there can be no interplay between Article 234 and the Polar Code.

On the one hand, it would be incorrect to suggest that the Polar Code sets a normative maximum for the adoption of domestic legislation under Article 234. Article 234 makes no reference to Generally Accepted International Rules and Standards (GAIRS) and any such suggestion would defeat the rationale for Article 234's existence. On the other hand, it seems reasonable to suggest that, where domestic rules go over and above GAIRS as incorporated in the Polar Code, a greater burden of proof is incumbent on the coastal State to show fulfillment of Article 234 conditions.[262] While every effort should be made to harmonise the regulation of navigation in the Arctic, Chircop convinicingly argues that "[m]ultilateral regulation and Article 234 unilateral regulation should be viewed as a continuum… [since both] have complementary aims of maritime safety and environment protection".[263] Article 234, after all, assumes the existence of multilateral standards and imbues coastal States with the jurisdiction to better those standards so long as its several requirements can be fulfilled.[264]

3.3 Other Conventions of Relevance

While the LOSC and the Polar Code are the most directly relevant international instruments for the purposes of this Chapter, a wide variety of international environmental treaties apply to the Arctic.[265] Reference can for example be made to: the MARPOL and SOLAS Conventions; the 1971 Convention on Wetlands of International Importance especially as Waterfowl Habitat ('Ramsar Convention');[266] the 1972 Convention on the Prevention of

[262] Tore Henriksen, 'Protecting Polar Environments: Coherency in Regulating Arctic Shipping' in Rosemary Rayfuse (ed), *Research Handbook on International Marine Environmental Law* (Edward Elgar 2015) 363, 381; Øystein Jensen, 'The International Code for Ships Operating in Polar Waters: Finalization, Adoption and Law of the Sea Implications' (2016) 7 Arctic Review on Law and Politics 60, 78.
[263] Chircop (n 98) 288.
[264] ibid 283.
[265] For a comprehensive overview see Linda Nowlan, 'Arctic Legal Regime for Environmental Protection' (IUCN Environmental Policy and Law Paper No. 44, 2001) <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.539.6377&rep=rep1&type=pdf> accessed 13/11/2018.
[266] Convention on Wetlands of International Importance especially as Waterfowl Habitat (adopted 2 February 1971, entered into force 21 December 1975).

Marine Pollution by Dumping of Wastes and Other Matter;[267] the 1972 World Heritage Convention;[268] and the 1992 Convention on Biological Diversity.[269] While a detailed examination of these instruments would be beyond the scope of the present work, the Ramsar Convention and the World Heritage Convention stand out in view of recent efforts to extend their practical application to the Arctic marine environment.

In 2017, the International Union for Conservation of Nature and Natural Resources (IUCN) published a scientific study of globally significant ecosystems in the Arctic Ocean that may be of Outstanding Universal Value with respect to the natural criteria for World Heritage status under the World Heritage Convention.[270] Seven zones were identified as illustrative examples, including one located in the area of the Northwest Passage: the Northern Baffin Bay Ecoregion.[271] The study notes that Arctic ice melting is opening up these areas to new threats and considers that "protection through the [World Heritage Convention] is one crucial way to secure these places for generations to come".[272]

The Ramsar Convention has the objective "to stem the progressive encroachment on and loss of wetlands now and in the future".[273] It seeks to promote the wise use of all wetlands and provides special protection for wetlands included in the List of Wetlands of International Importance established pursuant to Article 2 of the Convention.[274] In October 2018, the

[267] Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (adopted 29 December 1972, entered into force 30 August 1975) and its Protocol of 1996 (adopted 7 November 1996, entered into force 24 March 2006) 1046 UNTS 120.
[268] Convention Concerning the Protection of the World Cultural and Natural Heritage (adopted 23 November 1972, entered into force 15 December 1975) 1037 UNTS 151.
[269] Convention on Biological Diversity (adopted 5 May 1992, entered into force 29 December 1993) 1760 UNTS 79.
[270] Lisa Speer and others, 'Natural Marine World Heritage in the Arctic Ocean' (IUCN 2017) <https://portals.iucn.org/library/sites/library/files/documents/2017-006.pdf> accessed 15/11/2018. For an overview of the World Heritage Convention see Chapter 3, Section 4.
[271] ibid 7.
[272] ibid 8.
[273] Ramsar Convention, Preamble.
[274] For a general overview see Michael Bowman et al, *Lyster's International Wildlife Law* (2nd edn, CUP 2010) Chapter 13. For a brief examination of obligations that relate to all wetlands and obligations that relate only to listed wetlands see Edward Goodwin, *International Environmental Law and the Conservation of Coral Reefs* (Routledge 2011) 140-142.

13th meeting of the Conference of Contracting Parties to the Ramsar Convention adopted a resolution which notes the occurrence of several wetland types in the Arctic and sub-Arctic that contain unique biodiversity and that are of global importance.[275] Considering that Arctic and sub-Arctic wetland types are under-represented on the Ramsar List, the Resolution encourages contracting parties to obtain sufficient data about Arctic and sub-Arctic wetlands in order to take necessary measures for the conservation and sustainable use of such wetlands[276] and to designate new Ramsar Sites when appropriate.[277]

4. NORDREG and Article 234

4.1 Introducing Article 234

Although Canada can now claim that both AWPPA and NORDREG have Article 234 of the LOSC as their legal basis, when originally adopted in 1970, the AWPPA – which at the time extended to 100 nm – was contrary to prevailing international law. This much was implicitly acknowledged by Canada when it entered a specifically tailored reservation to its acceptance of the ICJ's compulsory jurisdiction.[278] Whether Canada would thenceforth be in a permanent status of infringement of international law or whether its actions would ultimately prove constitutive of new international law then depended on the international community's reaction.[279]

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[275] 'Resolution on Wetlands in the Arctic and sub-Arctic' (RAMSAR COP13 Doc.18.25 Rev.1) para 3 <https://www.ramsar.org/sites/default/files/documents/library/cop13doc.18.25_rev1_arctic_wetlands_e.pdf> accessed 15/11/2018.

[276] ibid para 20.

[277] ibid para 23.

[278] 'Canadian Declaration Concerning the Compulsory Jurisdiction of the International Court of Justice' (7 April 1970) reproduced in 9 I.L.M. 598 1970. Explaining the decision to enter the reservation on 8 April 1970, Prime Minister Trudeau acknowledged the "very grave risk that the World Court would find itself obliged to find that coastal States cannot take steps to prevent pollution" and noted that "[s]uch a legalistic decision would set back immeasurably the development of law in this critical area". Reproduced in Richard Bilder, 'The Canadian Arctic Waters Pollution Prevention Act: New Stresses on the Law of the Sea' (1970) 69 Michigan Law Review 1, 29. The reservation was eventually withdrawn in view of the legal basis provided by Article 234.

[279] Louis Henkin, 'Arctic Anti-Pollution: Does Canada Make—or Break—International Law?' (1971) 65 AJIL 131.

At UNCLOS III Canada convinced the international community to include Article 234 in the LOSC – a legitimate, even if *a posteriori*, basis for the AWPPA. Canadian diplomats played a major role in the negotiation of Article 234, which is "one of the few provisions in the Convention the terms of which were negotiated directly between the States concerned",[280] i.e. Canada, the USSR and the US. Although the US is not a party to the LOSC, it has accepted the customary law status of the article.[281]

In full, Article 234 reads as follows:

> Coastal States have the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone, where particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance. Such laws and regulations shall have due regard to navigation and the protection and preservation of the marine environment based on the best available scientific evidence.

4.2 Interpreting Article 234

This section will not provide an exhaustive analysis of each and every element of Article 234. The intention is, rather, to determine whether Article 234 can provide a legitimate basis for NORDREG now and in the future, as climate change increasingly leaves its mark on the Arctic. It is with this mindset that the most relevant elements of Article 234 will now be examined.

[280] Myron Nordquist and others (eds), *United Nations Convention on the Law of the Sea, 1982: A Commentary* (Vol IV, Martinus Nijhoff 2002) 393.
[281] Brian Hoyle, 'The United States Government Perspective', in Lawrence Juda (ed), *The United States Without the Law of the Sea Treaty: Opportunity and Costs* (Times Press 1983) 133, 135.

4.2.1 Laws and Regulations for the Prevention, Reduction and Control of Pollution

Article 234 enables Arctic coastal States to adopt and enforce "non-discriminatory laws and regulations for the prevention, reduction and control of pollution".[282] Notwithstanding the placement of Article 234 in Part XII of the LOSC, it is generally accepted that the Article's wording – which refers also to "obstructions or exceptional hazards to navigation"[283] – allows coastal States to take not only purely environmental but also safety measures.[284] Beyond this, McDorman notes that "it is uncertain whether a law or regulation must be necessary, important or simply useful to accomplishing the purpose of Article 234".[285] The only qualifier which the first sentence of Article 234 establishes in regards to potential laws and regulations is that they be 'non-discriminatory'. This suggests that, if it acts in a non-discriminatory manner,[286] a coastal State can adopt laws and regulations so long as these fulfil the basic criterion of usefulness in achieving prevention, reduction and control of marine pollution. Such a broad interpretation is to be preferred over interpretations that tend towards rendering Article 234 ineffective. Moreover, as McDorman suggests, increased environmental awareness on the international level makes it possible to argue that "a broad interpretation of any provision that enhances protection of the environment is to be favoured based on international public policy".[287]

To turn to NORDREG, a number of countries have questioned how the mandatory NORDREG regulations "[tie] in with the fundamental purpose of Article 234… to allow for the prevention, reduction and control of marine

[282] LOSC, Article 234.
[283] ibid.
[284] See, e.g., Alexander Proelss (ed), *United Nations Convention on the Law of the Sea: A Commentary* (Hart 2017) 1574; Agustín Blanco-Bazán, 'Specific Regulations for Shipping and Environmental Protection in the Arctic: The Work of the International Maritime Organisation' (2009) IJMCL 24 381, 383; Bartenstein (n 5) 38; Fields (n 44) 87. See also para 5 of the Polar Code's Preamble.
[285] Ted McDorman, 'National Measures for the Safety of Navigation in Arctic Waters: NORDREG, Article 234 and Canada' in Myron Nordquist and others (eds), *The Law of the Sea Convention: US Accession and Globalization* (Martinus Nijhoff 2012) 409, 419.
[286] The other requirements of Article 234, including the need for measures adopted to have due regard to navigation and to be based on the best available scientific evidence, must also be fulfilled. See discussion below in relation to these.
[287] McDorman (n 126) 419.

pollution".[288] Canada responded to these remarks in its submission to the 88th session of the Maritime Safety Committee, where it convincingly linked NORDREG with persistent navigational dangers.[289] As a system that enables better monitoring of vessel traffic and responsiveness to emergencies (including prompt pollution response), it is submitted that there can be little doubt that the mandatory NORDREG regulations can be classified as at least useful for the purpose of preventing, reducing and controlling marine pollution.

4.2.2 Within the Limits of the Exclusive Economic Zone

Article 234 allows coastal States to take measures "within the limits of the exclusive economic zone".[290] Some doubt exists about whether measures can be taken only in relation to the EEZ proper (literal interpretation) or whether measures can be taken in relation to all waters landward of the outer EEZ limit, i.e. including in relation to territorial and internal waters (broad interpretation). Since NORDREG applies also in relation to territorial and internal waters, it is necessary to decipher how the phrase 'within the limits of the exclusive economic zone' should be interpreted. Although it is possible to articulate reasonably convincing arguments on both sides of the divide, it is submitted that the broad view is the correct one.[291]

Proponents of the narrow view[292] argue that the broad view appears to conflict with Article 55 of the LOSC which, in defining the EEZ as "an area beyond and adjacent to the territorial sea", recognises an inner limit to the zone. They contend that the narrow interpretation is clearly the ordinary meaning of the phrase and should be preferred to any special meaning (which

[288] Statement by the Delegation of Singapore (n 28). See also Letter from Eric Benjaminson (n 28).
[289] MSC 88/11/3, paras 2-3.
[290] LOSC, Article 234.
[291] Tellingly, the narrow interpretation was not directly invoked in any of the formal oppositions raised to the NORDREG Regulations. Additionally, the broad view finds the support of a number of US authors. See, e.g., Fields (n 44) 72.
[292] McRae and Goundrey are often referenced as the principal proponents of the narrow interpretation. Interestingly, however, they seem to take the narrow interpretation as a given and do not provide much in the way of reasoning. See Donald M. McRae and D. J. Goundrey, 'Environmental Jurisdiction in Arctic Waters: the Extent of Article 234' (1982) 16 U. Brit. Colum. L. Rev. 197, 219.

should be given to a term only if it is established that the parties so intended).[293] Proponents of the opposite view consider that there are some good indications that the drafters intended the broader interpretation. In the absence of *travaux préparatoires*, Pharand relies on the opinions voiced by Leonard Legault and Bernard Oxman, two delegates (one a Canadian the other a US delegate) who were involved in the negotiation of Article 234 and who both contend that the broader interpretation was intended.[294] There is also a secondary argument in favour of the broad interpretation. Although at first she appears to prefer the narrow interpretation,[295] when examining the question of the extent of coastal State power under Article 234 Bartenstein reaches the conclusion that this is greater than the powers available under the regimes of innocent and transit passage. Basing herself on the logical assumption that the drafters cannot have intended greater powers to apply in the EEZ than in the territorial sea, Bartenstein concludes that the broad interpretation must be the correct one.[296]

4.2.3 Particularly Severe Climatic Conditions and the Presence of Ice Covering Such Areas for Most of the Year

The scope of Article 234 is restricted to areas characterised by "particularly severe climatic conditions and the presence of [ice-cover] for most of the year".[297] The ambiguous phrase 'ice-covered areas' is left undefined by the LOSC. While the reference to 'most of the year' hints that ice-cover must be present for 6 months or more of a calendar year, it has been argued that the phrasing used by Article 234 suggests a binary division between ice-covered areas and open water that "is neither geophysically tenable nor operationally practical".[298] Geoscientists typically distinguish between areas of 'sea-ice

[293] VCLT, Article 31(1) and 31(4).
[294] Pharand (n 34) 47. Oxman notes that the political sensitivity of Article 234 meant that "little if any attention was paid to technical drafting questions" and that it was this – not the express intention of the drafters – that resulted in the difference in wording between Articles 66 ("in all waters landward of the outer limits of the [EEZ]") and Article 234 ("within the limits of the [EEZ]"). See Bernard Oxman, 'Observations on Vessel Release under the United Nations Convention on the Law of the Sea' (1996) 11 IJMCL fn 15.
[295] Bartenstein (n 5) 29.
[296] ibid 45.
[297] LOSC, Article 234.
[298] Philip Steinberg and Berit Kristoffersen, 'The ice edge is lost… nature moved it': mapping ice as state practice in the Canadian and Norwegian North' (2017) 42 Transactions 1, 7.

extent' and 'open water'. Then still, however, "there is no standard for defining the ice concentration threshold used to distinguish 'sea-ice extent' from 'open water'".[299] Steinberg and Kristoffersen observe, for example, how Canadian Ice Service uses a threshold of 10 percent whereas the US' National Snow and Ice Data Centre uses a threshold as high as 30 percent.[300] The Polar Code contains no definition of ice-covered waters but defines open water as "a large area of freely navigable water in which sea ice is present in concentrations less than 1/10".[301] While most (legal) commentators tend to side-step this issue, Koroleva defines ice-covered areas as "those Arctic areas that are covered by ice 'for most of the year' with an average ice cover for six months or more".[302] This may be contrasted with another view of ice-covered areas as those areas that are characterised by "the presence of ice concentrations of more than 5/10th for more than eight months a year".[303] The question of what exactly is to be understood by the requirement of ice-cover for most of the year is set to become an increasingly pressing one as Arctic ice continues to melt over the coming years.

Some commentators suggest that a technical interpretation of the ice-cover requirement is not required. Tanaka argues that "it is generally agreed that the Arctic can be regarded as an 'ice-covered area'".[304] Similarly, Dremliuga considers that "[t]he ordinary meaning of "ice-covered area" held during the UNCLOS negotiations… was that it is synonymous with the Arctic Ocean area".[305] On this basis, and on the basis of the argument that the object and purpose of the article was to create a legitimate basis for AWPPA, Dremliuga concludes that shrinking Arctic ice does not threaten domestic

[299] ibid 5.
[300] ibid.
[301] Polar Code, Regulation 2.10.
[302] Natalia Koroleva and others, Pravovoi rezhim sudochodstva v Rossiiskoi Artktike [Legal Regime of Navigation in the Russian Arctic] (Soiuzmorniiproekt 1995) 4, 74 as quoted in Willy Østreng (ed), *The Natural and Societal Challenges of the Northern Sea Route* (Springer 1999) 331.
[303] René Besnault, 'Souverainetés et Stratégies dans l'Arctique' as quoted in Erik Franckx, *Maritime Claims in the Arctic: Canadian and Russian Perspectives* (Springer 1993) 225 fn 474.
[304] Yoshifumi Tanaka, *The International Law of the Sea* (CUP 2015) 320.
[305] Roman Dremliuga, 'A Note on the Application of Article 234 of the Law of the Sea Convention in Light of Climate Change: Views from Russia' (2017) 48 Ocean Dev.& Int'l.L. 3.

regimes adopted on the strength of Article 234.[306] Such an interpretation has considerable appeal in that it would ensure the long-term usefulness of Article 234 notwithstanding Arctic ice melting. It is also a flawed interpretation. What can be achieved by interpretation is properly restricted by the confines of the text and interpretations such as Tanaka's and Dremligua's are difficult to reconcile with the text of Article 234. If the drafters' intention was simply to have Article 234 apply to the Arctic region, a geographic delineation of the Article's scope would have sufficed.[307] Alternatively, reference could have been made simply to 'severe climatic conditions', with reference to 'the presence of ice covering such areas for most of the year' being omitted. Tanaka's and Dremliuga's proposed interpretations would render the latter element of Article 234 redundant when it is clear that "[t]he use of the conjunction "and" makes the two conditions [in this part of Article 234] cumulative".[308]

A more appropriate interpretation of Article 234 would respect the drafters' intention by according due significance to the requirement of ice-cover for most of the year. This is in line with the prevailing view that the melting of Arctic ice will eventually threaten the ability of coastal States to rely on Article 234. Molenaar, for instance, notes that "[d]ecreasing ice coverage will mean that, gradually, fewer states will be able to rely on Article 234 in fewer areas".[309] Byers, a Canadian legal scholar, considers that "[t]he rights accorded under Article 234 are not vested in any particular maritime area… but flow from the character of the ocean's surface there".[310] Other academics have expressed similar opinions.[311]

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[306] ibid 4.
[307] This is what was done by the drafters of the Polar Code, which restricts the scope of its applicability to 'Arctic Waters' and to the 'Antarctic Area' – two phrases that are both clearly defined in geographic terms.
[308] Suzanne Lalonde, 'The Arctic Exception and the IMO's PSSA Mechanism: Assessing their Value as Sources of Protection for the Northwest Passage' (2013) 28 IJMCL 401, 411.
[309] Molenaar (n 29) 276.
[310] Byers (n 35) 165.
[311] See, for example, Erik Franckx, 'Should the Law Governing Maritime Areas in the Arctic Adapt to Changing Climatic Circumstances?' (2010) 41 California Western International Law Journal 397, 425; Marcus Matthias Keupp (ed), *The Northern Sea Route: A Comprehensive Analysis* (Springer 2015) 45.

The strongest indication that an interpretation of Article 234 should give relevance to the requirement of ice-cover for most of the year comes from official US and Canadian comments on the article. In comments submitted to Canada in March 2010, the US expressed interest in knowing "what information [had] been used to determine how [the condition of ice-cover for most of the year] [had] been met throughout the entire area covered by the NORDREG Zone".[312] That the US asked for clarification on this matter indicates that it does not consider Article 234 as automatically applicable to the whole Arctic Ocean area.[313] Canada itself implicitly acknowledged that the requirement is an operative one when it pointed out in one of its IMO submissions in 2010 that "[d]espite the changing ice conditions, [NORDREG] reporting areas still satisfy the condition under Article 234 that ice cover be present for most of the year which creates exceptional hazards to navigation".[314] No details were provided as to how this conclusion was reached, but Canadian Ice Service officials have since revealed in an interview that, following US protests in relation to NORDREG, they were "once again called on to verify the presence of ice, based on the 10 per cent ice-extent thereshold".[315]

One can only speculate about why Canada did not provide a more direct answer to the US' request. It is quite possible that, since the question did not arise in a formal dispute settlement context, the Canadian Government did not wish to expose itself to unnecessary overly detailed scrutiny on this point, especially in a context where the meaning of 'ice-covered areas' remains ambiguous. For the time being, it could well be that NORDREG reporting areas still satisfy the requirement of ice-cover for most of the year.[316] Going forward, however, it appears to be a matter of when not if ice free passage will

[312] Letter from Eric Benjaminson (n 28).
[313] Note, however, the contrasting 1994 opinion of J. Roach (US State Department, Office of Ocean Affairs) to the effect that "Arctic waters within the EEZ are what are intended [by 'areas covered by ice for most of the year'] regardless of seasonal ice fluctuations". As quoted in Østreng (n 143) 331.
[314] MSC 88/11/3, para 3.
[315] Steinberg and Kristoffersen (n 139) 12.
[316] This is backed up by a 2012 Canadian Coast Guard publication which concludes that "[in] northern Canadian waters, ice is normally present in many areas throughout much of the year". See Canadian Coast Guard, 'Ice Navigation in Canadian Waters' (2012) <http://www.ccg-gcc.gc.ca/folios/00913/docs/ice-navigation-dans-les-galces-eng.pdf> 67 accessed 14/7/2017.

be available through the NWP. Lalonde goes so far as to contend that "[t]hough such a forecast would have been dismissed as ludicrous ten years ago, there is today an increasing likelihood that at some point in the 21st century, the Northwest Passage may not be ice-covered for most of the year".[317] Once ice-cover is no longer present for most of the year, it will no longer be possible for Canada to rely on Article 234 for the adoption of domestic legislation that goes over and above GAIRS.

4.2.4 Due Regard to Navigation and the Protection and Preservation of the Marine Environment

Article 234 requires laws and regulations adopted under it to have due regard to navigation and the protection and preservation of the marine environment. In comments to Canada, the US insisted that any regulation requiring permission to enter the NORDREG Zone would not meet the Article 234 obligation of having due regard to navigation and would "constitute a sweeping infringement of freedom of navigation with the [EEZ] and the right of innocent passage within the territorial sea".[318] As Canada was right to suggest, however, acceptance of this US interpretation of the requirement to have due regard to navigation would effectively nullify the very purpose of Article 234 by requiring application of those very standards which Article 234 is meant to allow derogation from.[319]

As a minimum, the requirement to have due regard to navigation implies that *some* navigation must be allowed. Following a lengthy analysis, Bartenstein is also able to convincingly conclude that the phrase 'due regard to navigation' has a *sui generis* meaning that is distinct from the navigational regimes outlined in the LOSC.[320] Although it is helpful to know that 'due regard to navigation' in Article 234 is not to be equated with, say, freedom of navigation in the EEZ or innocent passage in the territorial sea, knowing that the phrase has a *sui generis* meaning does not clarify what exact balance Article 234 requires to be found between navigation and environment

[317] Lalonde (n 149) 412. See also Vyacheslav Khon, 'Perspectives of Northern Sea Route and Northwest Passage in the twenty-first century' (2010) 100 Climatic Change 757.
[318] Letter from Eric Benjaminson (n 28).
[319] MSC 88/11/3, para 5.2. See also McRae and Goundrey (n 133) 221; Proelss (n 125) 1579.
[320] Bartenstein (n 5) 45.

protection. In this regard, it is submitted that the reason why the precise meaning of the requirement to have due regard to navigation is so difficult to pin down is because the drafters intended it to have a variable meaning which is subject to evolutionary interpretation according to changing circumstances. This position is adopted by Franckx, who argues that "if shipping increases… "due regard" will have to be interpreted in a context of increased navigation and not in that of the sporadic journeys as they existed in 1982".[321]

The fact that the phrase 'due regard to navigation' is subject to evolutionary interpretation should not be looked at in dismay for the uncertainty that it creates but should be welcomed for the adaptability to changing circumstances that it enables. At present, given the continuing risks of Arctic navigation, the lack of adequate charts, the sensitivity of the Arctic environment and the remoteness of assistance in the case of incident, it is submitted that a mandatory NORDREG strikes an acceptable balance between navigation and environment protection.[322] This conclusion is corroborated by the high degree of compliance which NORDREG enjoyed as a voluntary system. If the future brings a substantial change in the prevailing circumstances – say less dangerous navigational conditions, more readily available facilities and assistance and improved navigational charts – then it may be that this conclusion will need to be revaluated. If at any point it is felt by an interested State that rules adopted under Article 234 *or* the way that they are enforced in practice does not comply with the requirement to have due regard to navigation, it is always an option for the interested State to initiate dispute settlement proceedings.[323] If the court or tribunal finds that the way a coastal State's rights under Article 234 have been exercised constitutes a breach of good faith or an abuse of right,[324] for instance because of unjustified or disproportionate interference with navigation, it will be an option for the said court or tribunal to itself determine the balance that should be struck.

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[321] Franckx (n 152) 424. Similarly, at p 422 McDorman (n 126) contends that "the "due regard" wording… suggests a practical, on-the-water sense of navigation".
[322] McDorman (n 126) 423 reaches the same conclusion.
[323] Robert Beckman, 'UNCLOS Dispute Settlement Regime and Arctic Legal Issues' in Myron Nordquist and others (eds), *Challenges of the Changing Arctic: Continental Shelf, Navigation and Fisheries* (Brill 2016) 573, 584.
[324] On good faith and Article 300 of the LOSC see Chapter 2, Section 7.

4.2.5 Based on the Best Available Scientific Evidence

Article 234 requires laws and regulations to be based on the best available scientific evidence. This requirement is intended as "a bulwark against arbitrary restrictions on international navigation"[325] and can be considered as a fair trade-off for coastal States not having to seek IMO approval for their regulations.[326] It is not entirely clear, however, what level of relationship must exist between scientific evidence and domestic legislation adopted under Article 234.[327] The fact that reference is made to the best *available* scientific evidence indicates that there is no need for studies to be specifically undertaken by the coastal State into each and every aspect of regulations adopted by it.[328] It may be tempting for opponents of domestic regimes to adopt a somewhat different position on this point. Although in the aftermath of the adoption of the NORDREG Regulations Singapore and the US both raised questions on this aspect of Article 234, the relatively mild question raised by the US can be contrasted with the more demanding one raised by Singapore. The US simply noted that it would be "interested [in knowing] the scientific evidence that was considered in the development of [the proposed NORDREG Regulations]".[329] Singapore, however, noted that "it would be useful if empirical data could be provided to demonstrate how making NORDREG mandatory would materially help to achieve this end".[330]

For its part, in its submission to the IMO Canada listed a number of ongoing hazards to navigation that present themselves throughout the NORDREG Zone and, without referring to any particular studies, expressly linked the establishment of a mandatory system with these hazards.[331] One can only speculate about why Canada chose not to reference specific scientific evidence on which it considers NORDREG to be based. Notably, Article 234

[325] Bartenstein (n 5) 40.
[326] Aldo Chircop, 'The Growth of International Shipping in the Arctic: Is a Regulatory Review Timely?' (2009) 24 IJMCL 355, 372.
[327] McDorman (n 126) 421.
[328] Fields (n 44) 92. See also Knut Einar Skodvin, 'Arctic Shipping—Still Icy' in Nordquist and others (n 164) 155.
[329] Letter from Eric Benjaminson (n 28).
[330] Statement by the Delegation of Singapore (n 28).
[331] MSC 88/11/3, para 5.2.

requires adopted regulations to be based on the best available scientific evidence but does not postulate any requirement for the scientific evidence relied on to be notified or publicised to any degree. It is therefore arguably sufficient for Canada that, should the question arise in a dispute settlement context, it will be in a good position to reference tangible scientific evidence to back up its claims of unique hazards and potential environmental harm as well as to explain, at least in a general terms but always on the basis of scientific evidence, how measures adopted by it can minimise risk in a proportionate and reasonable manner. In not citing specific evidence, the Canadian Government may have had in mind the risk of prematurely (i.e. before the potential institution of dispute settlement proceedings) citing specific scientific evidence about conditions that are prone to change in the dynamic environment that is the Arctic region.

Kraska describes the NORDREG Regulations as "broadly precautionary".[332] Where there is a reasonable threat of serious environmental damage, the precautionary principle allows the taking of protection measures notwithstanding the presence of (greater than usual) scientific uncertainty about the probability, nature and/or extent of the environmental harm at stake.[333] Given that increased shipping activity in the Arctic region is a relatively new phenomenon, it can be envisaged that some degree of uncertainty about these factors will remain, at least for the foreseeable future. The Article 234 requirement for coastal States to have due regard to the best *available* scientific evidence ensures the lawfulness of precautionary approaches that may be adopted under the provision.[334]

[332] Kraska (n 38) 241.
[333] On the precautionary principle see Chapter 2, Section 5.
[334] In relation to Article 61(2) of the LOSC, which adopts roughly similar wording in the context of the conservation of living resources, Trouwborst notes that the phrase 'best scientific evidence available' captures situations from zero scientific evidence "just as much as it captures situations of exhaustive scientific evidence – and everything in between the two". Needless to say, where scientific evidence is considerably lacking and the impact on navigational interests is significant, an obligation subsists for the coastal State to seek to remedy the deficit in scientific evidence as much as possible. See Arie Trouwborst, *Precautionary Rights and Duties of States* (Martinus Nijhoff 2006) 144.

4.2.6 Absence of an International Review Process

Once its other conditions are fulfilled, Article 234 permits coastal States to enact laws and regulations *without* the need for IMO approval.[335] Although this is clearly the situation that obtains under Article 234, in its reaction to the NORDREG Regulations the US looked beyond Article 234 towards SOLAS Regulations V.11 and V.12 to argue that Canada was under an obligation to submit its mandatory systems to the IMO for adoption.[336] In its reply to this point, Canada quite rightly noted that Regulations 11 and 12 both contain sections that give precedence to coastal States' rights under Article 234.[337] Regulation 11.4 provides that "[s]hip reporting systems not submitted to the [IMO] for adoption do not necessarily need to comply with this regulation".[338] Moreover, while Regulation 12.3 provides (*inter alia*) that "[t]he use of VTS may only be made mandatory in sea areas within the territorial seas of a coastal State",[339] Regulation 12.5 contains a saving clause which ensures that Canada's rights under Article 234 prevail over the 12nm limitation.[340]

It is certainly possible to argue that Canada should have sought to employ a less unilateralist approach by submitting its mandatory NORDREG system for consideration at the IMO. The IMO constitutes the usual route for the adoption of marine safety and environmental regulations in regards to vessel-source pollution and, given the international nature of shipping, there are good reasons for this preference. Had Canada chosen to do so, however, it would have had to contend with the real possibility that a multilateral approach would fail to secure an endorsement of the proposed system. Australia's failed attempt to secure IMO endorsement of the compulsory pilotage system that it proposed for the Torres Strait – notwithstanding the clearly demonstrated need

[335] Bartenstein (n 5) notes at p 37 that Canada eventually prevailed over the US (which, at the early stages of negotiations, preferred an international review process for coastal State measures in relation to Arctic waters) at UNCLOS III and that "[t]he absence of an international review process is one of the few certitudes of Article 234".
[336] Letter from Eric Benjaminson (n 28). Summing up the discussion on NORDREG at the 88th session of the MSC, the Committee's chairman noted that "a majority of delegations had expressed appreciation for Canada's efforts while a number expressed the view that Canada should have submitted its proposal to the [IMO]". See MSC 88/26 para 11.39.5.
[337] MSC 88/11/2, para 5.1.
[338] SOLAS, Chapter V, Regulation 11.4.
[339] SOLAS, Chapter V, Regulation 12.3.
[340] SOLAS, Chapter V, Regulation 12.5 provides that "[n]othing in this regulation… shall prejudice the rights and duties of Governments under international law…"

for such a measure – is indicative in this regard[341] and goes to show that Canada's decision to act unilaterally may well have been an intelligent and a necessary move.

4.3 The Viability of Article 234 as a Basis for NORDREG

Article 234's points of ambiguity present several interpretative choices. How these choices are made can determine not only the compatibility of NORDREG with Article 234 but also the general usefulness or redundancy of this important provision. As has been observed by one commentator – a US author and a Lieutenant Commander of the US Navy – the official US position on Article 234 "posits an invincible international straits regime that would eviscerate any meaningful interpretation of Article 234".[342] The US views Article 234 as subservient to navigational interests and insists that, since the NWP is an international strait, any regime such as NORDREG would need to be submitted to the IMO for approval.[343] The official US position is not shared by the majority of commentators.[344] On the contrary, and as discussed in the preceding parts of this section, the prevailing view favours a broad interpretation of the geographical scope of Article 234 and considers that the requirement to have due regard to navigation does not automatically rule out possible qualifications of the navigational rights that otherwise apply in the respective maritime zones.

The ultimate test of the viability of Article 234 as a basis for NORDREG would be one played out in a dispute settlement context. If this possibility were to materialise, on the basis of what was discussed and for the time being, Canada appears to be in a good position to defend its contention that Article 234 constitutes a legitimate basis for its NORDREG Regulations. The requirement of ice-cover for most of the year is certainly the most problematic element of Article 234. As discussed in Section 4.2.3, Canada has

[341] Lalonde (n 149) 430 notes that "the Torres Strait IMO saga reveals… that for many countries, particularly maritime powers like the United States, international straits are sacrosanct and the right of transit defined in the LOSC is an absolute which will always trump other values, whether environmental or cultural".
[342] Fields (n 44) 75.
[343] Letter from Eric Benjaminson (n 28).
[344] By way of exception see Raul Pedrozo, 'Arctic Climate Change and the U.S. Accession to the United Nations Convention on the Law of the Sea' (2013) 89 Int'l L. Stud. 757.

claimed that the NORDREG zone continues to satisfy the condition of ice-cover for most of the year notwithstanding changing climatic conditions. To reach this conclusion, Canada appears to have relied on a 10 per cent ice-extent threshold. Considering that there is no general agreement on what percentage of ice concentration is required to establish ice-extent, a court or tribunal that is seised of the matter may establish a different threshold than that utilised by Canada. In any case, and independently of what ice-concentration threshold is utilised, compliance with Article 234's requirement of ice-cover for most of the year is set to become increasingly harder as climate change continues to take its toll.

5. Concluding Comments

To say that Canada was within its rights and probably right to approach the adoption of NORDREG as a unilateral matter is not to say that there is no scope for cooperation. To the contrary, cooperation is not only an obligation but, heading into the future, also appears to be a practical necessity. The Polar Code is an important outcome of cooperation and, in a sense, amounts to a recognition on the part of Arctic States that, as the frequency of shipping in the Arctic increases, a purely unilateral approach to regulation will not suffice. As is the case with practically any newly enacted piece of legislation, the Polar Code has much scope for improvement and, going forward, it is crucial for the Code to be revised and strengthened. The motivation for doing so is twofold: stronger standards will not only better protect the Arctic marine environment but will also contribute to the cause of harmonisation of regulations by reducing the need and justification for unilateral action under Article 234.

The importance of the Polar Code notwithstanding, for as long as the unique dangers to shipping in the Arctic persist, it makes sense to retain the possibility of unilateral coastal State action under Article 234 alongside the Polar Code for a number of reasons. First, unilateral regulations can be enacted faster than multilaterally agreed ones, enabling prompt responses to changing circumstances. Secondly, since there is no need for compromise among States with a wide variety of interests, unilaterally enacted rules can be stricter than multilaterally agreed ones. This is demonstrated by the fact that

some of the standards set in Canadian and Russian legislation are actually stricter than those that apply under the Polar Code.[345] Thirdly, it has to be recalled that coastal States do not enjoy any enforcement powers under the Polar Code in relation to foreign vessels. The enforcement jurisdiction that is enjoyed by Arctic coastal States under Article 234 significantly improves the chances of the Code being complied with.[346]

Besides the actual usefulness of unilateral action, it is also the case that Canada and Russia have both shown a considerable inclination towards unilateralism in the regulation of Arctic shipping. Since it is not likely that either of them will desist from their unilateral approach any time soon, this also becomes a question of how best to deal with the prospect of unilateral action. To look at the example of Canada and the NWP in particular, it is evident that unilateral action can be approached in two ways. First, on the basis of the Canadian claim that the relevant waters are internal waters, endowing Canada with the same extent of jurisdiction as it enjoys over its land territory. Suzanne Lalonde, a prominent Canadian scholar, argues convincingly that Canada should persist with its internal waters claim since, considering the continued melting of Arctic ice, it is this claim that can best secure the application of NORDREG in the long run.[347] Alternatively, it is possible to argue that Article 234 provides the best framework for unilateral action because, in laying down a number of requirements (such as the requirement for regulations not to be discriminatory and to have due regard to navigation), Article 234 makes it possible to avoid the prospect of an unmitigated unilateral approach to marine environment protection in the Arctic. From a neutral and an objective perspective, it is submitted that the second approach is the preferable one.

The requirement of ice-cover for most of the year is an obvious obstacle in the way of continued utilisation of Article 234. In the short to

[345] See Section 3.2, above.
[346] Chircop (n 98) 8.
[347] Lalonde (n 149). Similarly, considering that the 2013 NSR Rules do not make express reference to Article 234, Flake (n 65) argues at p 48 that there are "subtle signs that Moscow may be preparing for life after Article 234 by looking beyond UNCLOS to a legal argument of stewardship not restricted by the presence of ice".

medium term, it is possible to continue utilising Article 234 by not adopting an overly restrictive interpretation of the ice-cover requirement. At some point, however, ice-cover will no longer be present for most of the year and it will no longer be possible to rely on Article 234 in its present format. A modification of Article 234 to remove the requirement of ice-cover for most of the year will ultimately be required. One option is a formal amendment to Article 234. As outlined in Chapter 1, however, this particular mechanism has never been utilised and it is highly unlikely that it will be used for this purpose. A second and perhaps more realistic option entails the informal modification of Article 234 by subsequent practice to remove the requirement of ice-cover for most of the year while retaining the Article's other conditions, including the condition that particularly severe climatic conditions create obstructions or exceptional hazards to navigation.[348] Treaty modification by subsequent practice is admittedly a controversial practice,[349] but it is possible to argue that Article 234 can be modified in the eventuality that States widely show their express or tacit consent to continued application of Article 234 when ice-cover is no longer present for most of the year.

Given strong US opposition to the NORDREG Regulations, it may be questioned whether a modification of Article 234 to remove the requirement of ice-cover for most of the year is a realistic possibility. This is a fair question, and such a modification would certainly be no easy or straightforward matter. At the same time, a number of other factors need to be considered. To begin with, it has to be kept in mind that the US is not a party to the LOSC. Additionally, although there are admittedly no indications to this effect, it is possible that there will be a turnaround in US policy if the usefulness of the limits inherent in Article 234 is actually recognised. States other than the US and Singapore have not been as vocal in their opposition of legislation adopted under Article 234. This may be an indicator of their potential willingness to accept the continued utilisation of Article 234 as long as certain limitations are

[348] Some models forecast that – even as Arctic ice melts – climatic conditions are set to "become more extreme with a hitherto unexperienced Arctic hurricane season". Hannes Gerhardt and others, 'Contested Sovereignty in a Changing Arctic' (2010) 100 Annals of the Association of American Geographers 992, 994.
[349] See Chapter 1, Section 4.2.2.2.

respected and navigational interests are adequately safeguarded. Although it does not amount to State practice proper, the compliance of vessels with the NORDREG Regulations is a significant factor to consider in this regard. Additionally, one commentator has pointed to the practice of creeping coastal State jurisdiction in the EEZ as effectively barring some States that have made excessive claims in relation to their EEZs from protesting domestic legislation adopted under Article 234.[350]

Admittedly, talk of modification of LOSC provisions tends to elicit suspicion and apprehension. In this case, however, the modification that is being proposed is arguably a moderate one for two reasons. First, it has to be recalled that some commentators have actually suggested, admittedly wrongly, that the requirement of ice-cover for most of the year should not be considered as an operative one.[351] Secondly, all the other requirements of Article 234 would continue to apply. Laws and regulation will still need to be non-discriminatory, there will still need to be severe climatic conditions, and regulations will still need to have due regard to navigation as well as be based on the best available scientific evidence.

A modification of Article 234 to remove the requirement of ice-cover for most of the year would allow coastal States to retain the ability to unilaterally adopt measures to protect the unique environment of the Arctic from vessel-source pollution for as long as such measures are required. Compared to unilateral coastal State action based on claims that the relevant waters are internal waters, coastal State action under Article 234 is moderated by important requirements that are geared to safeguard navigational interests. Additionally, removal of the ice-cover requirement makes it possible to avoid the highly impractical task of assessing ice-cover conditions on a rolling year-by-year basis. As indicated by the difficult ice conditions encountered in the NWP in 2018, ice-cover in the Arctic is not likely to diminish in a straightforwardly linear manner over the coming years. Rather than precariously latching the legality of coastal State action under Article 234 to

[350] Hartmann (n 76) 289-291.
[351] See Section 4.2.3.

ever-fluctuating ice-cover conditions, logic dictates that the focus should be placed instead on the "general characteristic of the climate and its relation both to the ecology and to navigation in the region concerned".[352]

Following on from this analysis of coastal State jurisdiction under Article 234, the next case-study chapter examines the extent of coastal State jurisdiction in relation to offshore bunkering and Ship-to-Ship (STS) oil transfers in the EEZ.

[352] Nordquist (n 121) 397

CHAPTER 5: Bunkering and Ship-to-Ship (STS) Oil Transfer Operations in the EEZ

1. Introduction

Coastal State regulation of bunkering and Ship-to-Ship (STS) oil transfers in the EEZ is a contentious matter. The *Saiga*[1] and the *Virginia G*[2] cases, decided by ITLOS in 1999 and in 2014 respectively, offered some limited clarifications. Most notably, in the *Virginia G* judgment ITLOS concluded that the requirement for bunkering vessels to obtain authorisation prior to bunkering fishing vessels could be considered as a legitimate exercise of the jurisdiction to conserve and manage living resources under the LOSC.[3] Beyond this, however, the question of coastal State jurisdiction in relation to the bunkering of non-fishing vessels and in regards to STS oil transfers in the EEZ was left wide open to contention by the Tribunal.[4] Determination of the exact extent of coastal State jurisdiction over such operations is no easy task and requires the interpretation of some of the more ambiguous provisions of the LOSC (namely Articles 56, 58 and 59).

Bunkering and STS operations both entail a transfer of some sort between ships. A STS operation entails the transfer of *cargo* between two seagoing vessels strategically positioned alongside each other.[5] STS transfers first became a routine practice in the 1960s in the US Gulf of Mexico and Delaware Bay with the increased use of very large tankers which were too

[1] The dispute concerning the arrest of the M/V *Saiga* was heard in two stages. The *Saiga I* dealt with the issue of prompt release whereas the *Saiga II* dealt with the substantive question of whether Guinea was entitled to apply its customs laws to its EEZ. *The M/V "Saiga" (Saint Vincent and the Grenadines v Guinea)* (Judgment) ITLOS No. 1 (4 December 1997) ('Saiga I'); *M/V "SAIGA" (No.2) (Saint Vincent and the Grenadines v Guinea)* (Judgment) ITLOS No. 2 (1 July 1999) ('Saiga II').

[2] *M/V "VIRGINIA G" (Panama v. Guinea-Bissau)* (Judgment) ITLOS Case No. 19 (14 April 2014).

[3] *Virginia G*, para 217. The *Saiga* and the *Virginia G* cases will be discussed in Section 4.

[4] The *M/V Norstar Case*, decided by ITLOS on 10 April 2019, dealt with the question of bunkering on the high seas rather than in the EEZ. The tribunal decided that "bunkering on the high seas is part of the freedom of navigation to be exercised under the conditions laid down by the Convention and other rules of international law". See *The M/V "NORSTAR" Case (Panama v Italy)* (Judgment) ITLOS No. 25 (10 April 2019) para 219.

[5] The vessels can be stationery or underway.

deep and too wide to enter most US ports safely.[6] Although several types of cargo can be transferred in this way (including liquefied gases such as LPG and LNG and dry cargoes such as iron ore), STS oil transfers are the most common.[7] Offshore bunkering entails the replenishment of a ship's fuel bunkers with *fuel intended for the operation of the recipient ship's engines*. It can be considered as "a lesser form of ship to ship transfer with usually much smaller volumes being transferred".[8]

As noted by Judge Anderson in the *Saiga II*, "[offshore] bunkering is [today] conducted under all manner of different circumstances and may involve distinct types of recipient vessels, including passenger vessels, warships, cargo ships and fishing vessels".[9] At the time of bunkering, recipient vessels may be engaged in activities ranging from simple transit to activities as diverse as offshore oil storage and fishing. Given that bunkering in the EEZ can be more dangerous than bunkering within port limits (which are more sheltered and where assistance is more readily available), it must be asked what advantages can be garnered by conducting bunkering offshore. As will be discussed in Section 4, the two main cases of relevance decided by ITLOS both related to the offshore bunkering of fishing vessels off the coast of West Africa, an area where many foreign fishing vessels operate at a considerable distance from their home ports. Lagoni notes that, by bunkering at sea such vessels are able to save money (by avoiding port fees and taxes), the fuel required to make the journey to and from port, as well as time, which in turn enables them to intensify their fishing efforts.[10] Similar motivations exist for the offshore bunkering of non-fishing vessels. Added to these may be a reluctance to enter port or territorial waters because of concerns about arrest of the ship or the prospect of an ill-timed inspection by port-State control

[6] Committee on Oil Spill Risks from Tank Vessel Lightering, *Oil Spill Risks From Tank Vessel Lightering* (National Academy Press 1998) 9.
[7] 'Explanatory Memorandum to the Merchant Shipping (Ship-to-Ship Transfers) Regulations 2010' ('UK STS Regulations Explanatory Memorandum') para 2 <http://www.legislation.gov.uk/uksi/2010/1228/memorandum/contents> accessed 24/9/2017.
[8] ibid para 1.2.
[9] Separate Opinion of Judge Anderson in the *Saiga II*, p 137.
[10] Rainer Lagoni, 'Offshore Bunkering in the Exclusive Economic Zone' in Tafsir Ndiaye and Rüdiger Wolfrum (eds), *Law of the Sea, Environmental Law and Settlement of Disputes* (Martinus Nijhoff 2007) 613, 615.

officers. In some cases, it may also be that port facilities are limited or lacking. This is apparently the case with certain sections along the west African shipping route.[11] In the case of navy vessels, offshore bunkering can ensure their ability to operate autonomously and independently of the cooperation of other countries.

As with offshore bunkering, reasons for the conduct of STS oil transfers in the EEZ are not lacking. First, although it is more cost-efficient for oil to be transported in larger tankers, it is not always possible to use large oil tankers for a journey's entire duration. The UK, for instance, attributes increased STS operations in its waters to an increase in trade of Russian crude oil and heavy fuel oil through European waters.[12] The shallowness of the Baltic Sea and of some of the approaches to the Northern Maritime Corridor ports require relatively small tankers to be utilised for the first leg of the journey. Once this stage is completed, oil cargo is transferred to larger tankers that make their way to the cargo's final destination in America or the Far East.[13] Secondly, an STS oil transfer may be necessitated by a change in ownership of the cargo or of part of the cargo during its carriage or offshore storage.[14] Offshore oil storage is a phenomenon that happens with increased frequency when oil markets are in a situation referred to as 'contango'.[15] In such a situation, oil traders may choose to buy and store oil in oil tankers at sea, effectively betting that the price of oil will rise quickly and highly enough to enable them to make a profit by selling it on at a later stage. The margins need to be substantial as significant expenses related to the offshore storage of oil, such as vessel chartering expenses, would first need to be covered.

[11] *The Duzgit Integrity Arbitration (Malta v. São Tomé and Príncipe)*, PCA Case 2014-07, Award (5 September 2016) paras 53-54.
[12] UK STS Regulations Explanatory Memorandum (n 7) para 1.4.1. See also a Danish Maritime Authority Note on STS operations <https://www.dma.dk/Documents/Safety%20at%20sea/STS%20operations%20are%20not%20a%20new%20concept.pdf> accessed 24/9/2017. Like the UK, Denmark considers that "[t]he increasing number of STS operations in Danish waters is primarily caused by exportation of Russian oil".
[13] UK STS Regulations Explanatory Memorandum (ibid).
[14] The conduct of such operations in the EEZ as opposed to in the territorial sea or within port limits has the potential to save time as well as money in the way of port and taxation fees.
[15] In technical terms, contango is "[a] situation in which the futures price or forward price of a commodity is higher than the spot price". See John Black and others, *A Dictionary of Economics* (OUP 2017).

Besides the fact that there can be a shortage of land-based storage,[16] in such circumstances the offshore storage of oil in oil tankers enables traders to supply oil at short notice to wherever it is required in an expedient manner. Thirdly, STS oil transfers have allegedly been utilised for the illegal smuggling of fuel[17] and as part of complex mechanisms to circumvent international sanctions.[18] Such transfers are harder to track than transfers conducted in port as the vessels involved can switch off their tracking beacons. Multiple subsequent STS transfers can further conceal the real origins of the oil cargo. Fourthly, STS oil transfers can perform a pollution prevention role, through the transfer of cargo to another vessel from oil tankers involved in collisions, groundings or other accidents.

There are, therefore, several reasons and motivations for the conduct of offshore bunkering and STS oil transfers in the EEZ. At the same time, these activities pose a degree of risk to the marine environment. The International Tanker Owners Pollution Federation (ITOPF) maintains an oil spill database for tankers which includes information on oil spills from 1970 to date and categorises oil spills by size (as small, medium or large).[19] Forty percent of small and 29% of medium spills occurred during loading and discharge operations.[20] 7% of small and 2% of medium spills occurred during bunkering operations.[21] Insofar as large spills are concerned, 9% took place during

[16]Keith Wallis and Roslan Khasawneh, 'Crude tanker storage fleet off Singapore points to stubborn oil glut' (19 May 2016) <https://www.reuters.com/article/us-asia-oil-storage/crude-tanker-storage-fleet-off-singapore-points-to-stubborn-oil-glut-idUSKCN0YA129> accessed 9/10/2017.

[17] A 2018 report by the UN Panel of Experts on Libya notes the occurrence of STS transfers in areas just outside Malta's territorial waters of illegaly smuggled Libyan oil. See 'Final report of the Panel of Experts on Libya established pursuant to Resolution 1973(2011)' (S/2018/812, 5 September 2018) 43-44.

[18] Jonathan Saul, 'Exclusive: Iran said to deploy aging foreign tankers, avoiding sanctions' *Reuters* (26 February 2013) <http://www.reuters.com/article/us-iran-sanctions-tankers/exclusive-iran-said-to-deploy-aging-foreign-tankers-avoiding-sanctions-idUSBRE91P0FB20130226>; Guy Faulconbridge, 'Russian tankers fuelled North Korea via transfers at sea' *Reuters* (29 December 2017) <https://www.reuters.com/article/us-northkorea-missiles-russia-oil-exclus/exclusive-russian-tankers-fueled-north-korea-via-transfers-at-sea-sources-idUSKBN1EN1OJ> both websites accessed 30/1/2018.

[19] ITOPF, 'Oil Tanker Spill Statistics 2018' <https://www.itopf.org/fileadmin/data/Documents/Company_Lit/Oil_Spill_Stats_2019.pdf> accessed 19/2/2019.

[20] ibid 12.

[21] ibid.

loading and discharge operations while 4% occurred during bunkering.[22] With regard to STS transfers, the possibility of incidents is further highlighted by notices issued by Protection and Indemnity (P&I) clubs[23] to their members outlining potential risks and noting the increasing number of claims received for damage sustained during such operations.[24] Admittedly, ITOPF statistics include incidents that happened within port limits. If anything, however, when bunkering and STS transfers are conducted offshore the risk of incident and pollution damage increases rather than decreases in view of harsher conditions and the relative remoteness of pollution response assets.

In the majority of cases, bunkering and STS oil transfers are conducted without incident of any sort. As illustrated by the preceding paragraph, however, the possibility of accidents cannot be excluded. When things go wrong, consequences can include collision damage, marine pollution and even loss of life. A Chinese author notes that "disasters caused by transfer of liquid cargoes occur often [in China]".[25] The same author makes reference to a March 2003 incident in China's EEZ which occurred during a STS oil transfer between a Singapore flagged oil tanker and a Maltese flagged tanker. As a result of the explosion which ensued, a death and three injuries were caused and a quantity of oil spilled into the sea.[26] GISIS, the IMO's Global Integrated Shipping Information System, contains a 'Marine Casualties and Incidents' module with a publicly accessible database of incidents reported by flag States.[27] Although the database is not comprehensive,[28] a search conducted on

[22] ibid 13.
[23] A P&I Club is "an association of commercial shipowners and charterers and other associated parties, which provides protection against a number of risks inherent in industrial ship operation". David Semark, *P&I Clubs: Law and Practice* (Informa 2010) 1.
[24] See, e.g., West of England, 'Safety Alert: STS Transfer Operations – Incidents Resulting in Contact Damage' (9 November 2015) <http://www.westpandi.com/globalassets/loss-prevention/loss-prevention-safety-alerts/west-of-england---loss-prevention-safety-alert---sts-transfer-operations---incidents-resulting-in-contact-damage.pdf> accessed 24/9/2017. Following a review of incidents, West of England concluded that the "majority of these cases took place in conditions that may have been unsuitable".
[25] Kuen-chen Fu, 'Military Survey and Liquid Cargo Transfer in the EEZ: Some Undefined Rights of the coastal State' (2006) 2 China Oceans Law Review 2, 15.
[26] ibid.
[27] The database is available online: <https://gisis.imo.org/Public/Default.aspx> accessed 20/10/2017.
[28] Relatively minor pollution incidents may not be detected by the relevant authorities and not all IMO member States follow reporting requirements properly. This said, GISIS remains "by far the most international and comprehensive database on maritime casualties". See Jens

1 September 2018 for 'offshore bunkering' and 'Ship-to-Ship transfer' returned a number of results. Insofar as incidents related to offshore bunkering are concerned, results included an accident off the coast of Nigeria that resulted in the death of a seafarer who was hit by a mooring line that parted.[29] For accidents related to STS transfers results included a collision in the Red Sea between a Liberian and a Maltese flagged vessel which resulted in minor damage to one of the vessels[30] and another collision between a Liberian tanker and a Panamian vessel off the coast of the United Arab Emirates, which resulted in an admittedly minor oil spill of about 20 litres.[31]

Given the risk of marine environment pollution, it is understandable that coastal States might wish to regulate bunkering and STS operations when these occur in their EEZs. In January 2015 Angolan authorities arrested (and following the payment of a fine released) the *MT San Padre Pio* for the alleged conduct of unauthorised bunkering operations in the country's EEZ.[32] As will be seen in Section 5, Angola has since adopted strict legislation to regulate offshore bunkering and STS oil transfers in its EEZ. Nigeria has similarly arrested and – as per a March 2016 Federal High Court judgment – confiscated a vessel (the *MT Anuket Emerald*) it accused of having engaged in unauthorised offshore bunkering within "Nigerian waters".[33] Monjasa, the company supplying the bunkers, has claimed that the arrested vessel was in fact conducting its activities outside Nigerian territorial waters, in the country's EEZ.[34] Reference can also be made to the September 2016 award in the *Duzgit Integrity* arbitration, which concerned the arrest of a Malta-registered vessel by São Tomé and Príncipe for the unauthorised conduct of a STS oil transfer. Although the transfer was conducted in archipelagic waters

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Schröder-Hinrichs and others, 'Accident Investigation reporting deficiencies related to organizational factors in machinery space fires and explosions' (2011) 43 Accident Analysis & Prevention 1187, 1189.

[29] GISIS Incident Ref. C0009163.

[30] GISIS Incident Ref. C0009040.

[31] GISIS Incident Ref. C0010284.

[32] <https://shippingwatch.com/suppliers/article7788229.ece> accessed 26/9/2017.

[33] <https://shipandbunker.com/news/emea/254984-bunkering-vessel-cargo-forfeited-and-jail-terms-handed-down-in-illegal-bunkering-case> accessed 20/10/2017. "Nigerian waters" – presumably a reference to Nigeria's territorial waters – is the phrase utilised by the referenced article.

[34] ibid. Notwithstanding this author's best efforts, it has not proved possible to obtain direct access to the relevant judgments.

rather than in the EEZ, the *Duzgit Integrity* arbitration serves as yet another reminder of the sensitivity of coastal States to the conduct of such operations in the vicinity of their coast lines. This level of coastal State proactiveness highlights the increasingly pressing need to ascertain the extent of coastal State jurisdiction in relation to offshore bunkering and STS oil transfers.

Following this introduction, Section 2 analyses the LOSC provisions that constitute the applicable jurisdictional framework while Section 3 examines relevant international rules and guidelines. Section 4 looks at the *Saiga* and the *Virginia G* cases whereas Section 5 undertakes an examination of relevant State practice. Sections 6 and 7 propose interpretations of the extent of coastal State jurisdiction over offshore bunkering and STS oil transfers in the EEZ. Section 8 lays out some concluding thoughts

2. The LOSC Jurisdictional Framework

Offshore bunkering and STS oil transfers in the EEZ can be classified in three ways: under Article 56(1) (which deals with rights, jurisdiction and duties of coastal States in the EEZ); under Article 58 (which deals with rights and duties of other States); or, failing both, under Article 59 (which provides a basis for the resolution of conflicts regarding unattributed rights and jurisdiction).

2.1 Article 56(1)

The relevance of Article 56(1) in the present context is twofold. First, under Article 56(1)(a) the coastal State has sovereign rights for the purpose of conserving and managing the natural resources of the EEZ. As will be seen in Section 4, in the *Virginia G* case ITLOS decided that Guinea-Bissau had the competence to regulate the bunkering of fishing vessels in its EEZ in accordance with Article 56(1) when this is read in light of Article 62(4).[35] Secondly, and as highlighted by Judges Kelly and Attard in a joint declaration appended to the *Virginia G* judgment, "bunkering in general falls under the jurisdiction of the coastal State as provided for in [Article 56(1)(b)(iii)]".[36]

[35] *Virginia G*, para 217. Article 62(4) requires nationals of other States fishing in the EEZ of a coastal State to comply with conservation measures established in the coastal State's law. Article 62(4) also sets out a non-exhaustive list of topics to which such coastal State rules and regulations may relate.
[36] Joint Declaration of Judges Kelly and Attard in the *Virginia G* case.

Article 56(1)(b)(iii) confers jurisdiction on the coastal State to protect and preserve the marine environment of the EEZ. As discussed in Chapter 1, however, the jurisdiction conferred by Article 56(1)(b)(iii) is actually very limited. Article 211(5) limits prescriptive jurisdiction to the adoption of legislation that gives effect to Generally Accepted International Rules and Standards (GAIRS). Moreover, although by way of enforcement the coastal State technically has the power to detain vessels, this is only possible where there is clear objective evidence that a vessel has committed a violation resulting in a discharge causing major damage or threat of major damage to the coastal State's coastline, resources or related interests.[37]

2.2 Article 58

Rights of *other* states in the EEZ are laid out in Article 58, which determines that:

> In the exclusive economic zone, all States… enjoy, subject to the relevant provisions of this Convention, the freedoms referred to in article 87 of navigation and overflight and of the laying of submarine cables and pipelines, and other internationally lawful uses of the sea related to these freedoms, such as those associated with the operation of ships… and compatible with the other provisions of this Convention.[38]

Since neither offshore bunkering nor STS oil transfers can of themselves be considered as activities that amount to navigation, the central question is whether they can be classified as 'other internationally lawful uses of the sea related to [the freedom of navigation]'. This phrase is ambiguous and Article 58(1) does "not clarify how closely related to the high seas freedoms the activity concerned has to be".[39] Apart from a reference to activities 'associated with the operation of ships', no further interpretative assistance is provided.

[37] LOSC, Article 220(6). For further details on the enforcement jurisdiction of coastal States in the EEZ see Chapter 1, Section 3.4.
[38] LOSC, Article 58(1).
[39] Alexander Proelss (ed), *United Nations Convention on the Law of the Sea: A Commentary* (Hart 2017) 452.

Proelss convincingly suggests that "much will depend on whether the conduct… is considered… as an activity that is a regular, common or even necessary requirement for the exercise of the freedoms".[40] If the phrase 'other internationally lawful uses of the sea related to these freedoms' is interpreted too liberally, practically any sort of activity conducted in the EEZ could potentially be subsumed under it. This would frustrate the will of the drafters by infringing upon the field of operation that they chose to reserve for Article 59.[41]

2.3 Article 59

Article 59 provides that:

> In cases where this Convention does not attribute rights or jurisdiction to the coastal State or to other States within the exclusive economic zone, and a conflict arises between the interests of the coastal State and any other State or States, the conflict should be resolved on the basis of equity and in the light of all the relevant circumstances, taking into account the respective importance of the interests involved to the parties as well as to the international community as a whole.[42]

By providing a formula for the resolution of conflicts in relation to residual rights and jurisdiction, Article 59 reinforces the *sui generis* nature of the EEZ. It clarifies that, where EEZ rights are left unattributed by the LOSC, there is no obvious presumption in favour of coastal States (as there is in the territorial sea) or flag States (as in the high seas).[43] Although to the present author's knowledge Article 59 has not yet been expressly utilised as a basis for a

[40] ibid.
[41] Syméon Karagiannis, 'L'article 59 De La Convention Des Nations Unies Sur Le Droit De La Mer (Ou Les Myestères De La Nature Juridique De La Zone Économique Exclusive)' (2004) 2 Revue Belge De Droit International 325, 354.
[42] LOSC, Article 59.
[43] Ambassador Castañeda, the original sponsor of Article 59, contended that the matter of residual rights "[w]ould not arise had the zone been characterized, either as a territorial sea or as high seas, since in one case or the other the coastal State or the third state would have been respectively favoured…" Jorge Castañeda, 'Negotiations on the Exclusive Economic Zone at the Third United Nations Conference on the Law of the Sea' in Jerzy Makarczyk (ed), *Essays in International Law in Honor of Judge Manfred Lachs* (Martinus Nijhoff 1984) 615.

judicial decision, in the forthcoming sections it will be argued that this provision is relevant to the present context.[44] Since Article 59 has a subsidiary character to Articles 56 and 58, it should not be invoked before those provisions have been properly considered. At the same time, exceedingly expansive interpretations of Articles 56 and 58 must be avoided if the ordinary sense of terms such as 'navigation' is not to be denatured.[45]

Should offshore bunkering and STS oil transfers be adjudged to fall under Article 59, coastal State competence would have to be determined in line with the formula enshrined in this article, i.e "on the basis of equity and in the light of all the relevant circumstances, taking into account the respective importance of the interests involved to the parties as well as to the international community".[46] Equity "refer[s] to what is fair and reasonable in the administration of justice".[47] Given the generality of the concept, Franck notes that "equity is sometimes derided as a 'contentless' norm amounting to little more than a license for the exercise of judicial caprice".[48] International courts and tribunals have sought to clarify the normative content of the concept, primarily through reliance on general principles of equity.[49] In the *Case Concerning the Continental Shelf*, for instance, the ICJ noted that:

> the justice of which equity is an emanation, is not abstract justice but justice according to the rule of law; which is to

[44] In this regard, see Eli Lauterpacht, 'The First Decision of the International Tribunal for the Law of the Sea: the *M/V Saiga*' in Gerhard Hafner and others (eds), *Liber Amicorum: Professor Ignaz Seidl-Hohenveldern* (Kluwer 1998) 395, 414; David Anderson, 'Coastal State Jurisdiction and High Seas Freedoms in the EEZ in the Light of the *Saiga* Case' in Clive Symmons (ed), *Selected Contemporary Issues in the Law of the Sea* (Martinus Nijhoff, 2011) 105, 108. While Anderson notes that the Article 59 formula can be elusive, both Lauterpacht and Anderson agree on the potential usefulness of Article 59 in the context of offshore bunkering in the EEZ. More generally, Nordquist notes that Article 59 can "[serve] as a guide for the diplomatic settlement of "conflicts" as much as for the judicial settlement of "disputes"". See Myron Nordquist and others (eds), *United Nations Convention on the Law of the Sea, 1982: A Commentary* (Vol II, Martinus Nijhoff 2002) 569.

[45] Karagiannis (n 41) 378. Article 31(1) VCLT requires interpretation "in good faith and in accordance with the ordinary meaning".

[46] LOSC, Article 59.

[47] Francesco Francioni, 'Equity in International Law' in *Max Planck Encyclopedia of Public International Law* <http://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e1399?> accessed 29/9/2017.

[48] Thomas Franck, *Fairness in International Law and Institutions* (OUP 1995) 47.

[49] ibid 49.

> say that its application should display consistency and a degree of predictability; even though it looks with particularity to the peculiar circumstances of an instant case, it also looks beyond it to principles of more general application.[50]

Equity encompasses concepts such as unjust enrichment, estoppel, good faith and acquiescence.[51] As will be seen, accumulating State practice in the area of bunkering and STS oil transfers means that the principle of acquiescence may prove to be of particular relevance.

Besides requiring conflicts to be resolved on the basis of equity, Article 59 mandates a balancing of the different interests that may pertain to (i) the coastal State; (ii) the State entertaining a dispute with the coastal State; and (iii) the international community. By way of general preliminary analysis,[52] it is suggested that the interests involved can include the following. First, the coastal State has an interest in protecting the marine environment adjacent to it from the risk of pollution. It also has a financial interest in terms of the port fees and taxation revenues that are foregone when vessels can avoid entering its ports and when they can conduct their activities beyond the outermost geographic reach of its tax regime. Secondly, the flag State has a jurisdictional interest in the unhindered navigation and operation of its vessels and an economic interest in terms of the registration fees which it recuperates from vessels flying its flag.[53] Thirdly, the international community has an interest in the protection and preservation of the marine environment. It will be recalled that marine environment protection is an *obligation* for all States under customary international law as well as under Article 192 of the LOSC. Its relative importance in relation to the other interests at play increases in

[50] *Case Concerning the Continental Shelf (Libyan Arab Jamahiriya v Malta)* (Judgment) (1985) ICJ Rep 13 para 45.
[51] Franck (n 48) 47-54.
[52] There are limits to what can be achieved by an analysis in the abstract. As Lagoni (n 10) notes at p 623, "in different situations the relevant facts and the interests involved, as well as their relative importance, are different". This is so even where the activity that is being conducted is superficially the same.
[53] Lagoni (n 10) 624. Lagoni notes that the flag State's economic interest will be even greater when the bunkering company is based in the flag State's territory and pays taxes there.

proportion to the amount of environmental risk involved.[54] The international community also has an interest in the expedient conduct of international trade, which could be hampered by overzealous coastal State regulation.

If offshore bunkering and STS oil transfers are adjudged to fall under Article 59, this provision could come to constitute an additional jurisdictional basis for marine environment protection measures by the coastal State. As discussed, the extent of coastal State jurisdiction would have to be ascertained by application of the formula laid out in Article 59, and much would depend on the specifics of the case at hand. This said, it is technically possible (and not at all unforeseeable) for any jurisdictional competence to protect and preserve the marine environment that may be allocated to the coastal State in this way to exceed the very limited competence that is available under Article 56(1)(b)(iii).

3. Relevant International Rules and Guidelines

Besides the provisions of the LOSC that have just been analysed, the main international rules of relevance are contained in the legally binding MARPOL[55] Annex I Chapter 8, which deals with the prevention of pollution during the transfer of oil cargo between oil tankers at sea and which was adopted at the 59th session of the Marine Environment Protection Committee (MEPC) in July 2009.[56] Chapter 8 applies to oil tankers of 150 gross tons and above engaged in the transfer of oil cargo between oil tankers at sea[57] but does not apply to bunkering operations.[58]

[54] See Chapter 2, Section 4.2 on the prevention principle as an obligation to act with due diligence.
[55] The International Convention for the Prevention of Pollution from Ships (adopted 2 November 1973, entered into force 2 October 1983) and its Protocol of 1978 (adopted 17 February 1978, entered into force 1 October 1983) 1340 UNTS 62.
[56] Resolution MEPC.186(59), adopted 17 July 2009.
[57] MARPOL Annex 1 Chapter 8, Regulation 40.
[58] ibid. Neither does it apply to STS operations where either of the ships involved is a warship, naval auxiliary or other ship owned or operated by a State and used only on government non-commercial service. The original proposal for MARPOL Annex I Chapter 8 covered both STS oil transfer *and* bunkering operations. See MEPC 53/20 submitted by Spain and Mexico, 'Amendments to Annex I of MARPOL 73/78 intended to prevent the risk of pollution during oil transfer operations between ships at sea' (23 November 2004).

MARPOL Annex I Chapter 8 introduced two main substantive requirements. First, it requires any oil tanker planning to be involved in a STS operation to have on board and to comply with a pre-prepared STS operations plan.[59] Each oil tanker's STS operations plan must be developed in view of the best practice guidelines for STS operations and must be approved by its flag State's administration.[60] Secondly, and more controversially, Chapter 8 requires any oil tanker planning to be involved in STS operations within the territorial sea or the EEZ of a MARPOL State party to notify that State not less than 48 hours in advance of the scheduled STS operation.[61] Notification must *inter alia* specify the date, time and geographical location of the planned STS operations, whether STS operations are to be conducted at anchor or underway and the type and quantity of oil to be transferred.[62] This information allows the coastal State to take such preventive measures as it may deem fit in light of the circumstances. As such, the requirement to provide notification enables compliance with the prevention principle on the part of the coastal State.

Introduction of the notification requirement was strongly contested by the US on the grounds that "an advance notification requirement beyond the territorial sea [does] not provide sufficient protection of the marine environment to justify the repeal of a traditional and customary high seas freedom of navigation by amendment to MARPOL".[63] In a vote on the matter, 20 of the 31 States present disagreed with the US and supported retention of the notification requirement.[64] This decision was entirely in compliance with relevant international law. Since the EEZ is a *sui generis* regime, the fact that States enjoy unobstructed freedom to engage in STS transfers on the high seas does not automatically mean that they are entitled to the exact same freedom in the EEZ. As noted in a legal opinion prepared by the IMO Secretariat, in the EEZ Article 56(1)(b)(iii) confers on coastal States jurisdiction with regard to

[59] MARPOL Annex 1 Chapter 8, Regulation 41.
[60] ibid.
[61] MARPOL Annex I Chapter 8, Regulation 42.
[62] ibid.
[63] BLG 12/17 submitted by Sub-Committee on Bulk Liquids and Gases, 'Report to the Maritime Safety Committee and the Marine Environment Protection Committee' (20 February 2008) para 8.14.
[64] ibid para 8.13.

protection and preservation of the marine environment.[65] Although this jurisdiction is limited to the adoption of laws and regulations that give effect to GAIRS, since Resolution MEPC.186(59) was adopted by the widely-representative MEPC, and since the respective amendment was made to a widely subscribed MARPOL Convention, it is safe to say that MARPOL Annex I Chapter 8 fulfils this criterion.

The decision to exclude bunkering from the scope of Chapter 8 was a contentious one. During the drafting process, China and a number of other States expressed the view that bunkering should be included because of the "high pollution risks".[66] Unlike China, however, a majority of States wanted bunkering excluded on the basis that the differences between bunkering and STS transfers impeded the text of Chapter 8 from being readily applicable to bunkering.[67] That there are differences between STS transfers and bunkering is undeniable.[68] This said, the two operations also have a lot in common and, from a regulatory perspective, it is submitted that the differences are not drastic. Portions of Chapter 8, and the requirement of prior notification in particular, could arguably easily have been extended to cover bunkering as well.

Chapter 8 enshrines the maximum level of regulation that could be agreed to multilaterally by States. Since it applies to all oil tankers of 150 gross tons and above whose flag States are parties to the MARPOL Convention,[69] its relevance is beyond doubt. This said, there is no general consensus among States that Chapter 8 constitutes the maximum acceptable level of regulation. To the contrary, and as will be seen in Section 5, at least one country (Belgium) has actually had stricter rules in place than those

[65] IMO Secretariat, 'Legal opinion on certain issues concerning draft amendments to MARPOL Annex I' (BLG 12/WP.4, 4 February 2008) para 4.
[66] BLG 12/17, para 8.10.
[67] ibid para 8.9.
[68] In bunkering, unlike in STS transfers, one of the vessels involved is usually not an oil tanker. Moreover, fuel quantities transferred in bunkering are usually smaller.
[69] As of 12 January 2019, 157 States representing over 99% of world tonnage are parties to the MARPOL Convention. See: <http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/StatusOfTreaties.pdf> accessed 12/1/2019.

applicable under Chapter 8 from even before the adoption of Resolution MEPC.186(59) in 2009. A number of other countries have since followed suit. The question of whether and to what extent coastal States can adopt rules that are stricter than those contained in MARPOL Annex I Chapter 8 must be answered by looking beyond MARPOL, in line with the LOSC jurisdictional framework discussed in the preceding section, and in light of relevant State practice and decisions of international courts and tribunals.

To conclude this brief overview of the regulatory framework, a brief mention must be made of the relevant guidelines, i.e. of Section I of the IMO's Manual on Oil Pollution,[70] which deals with both bunkering and STS transfers, as well as of the STS Transfer Guide for Petroleum, Chemicals and Liquefied Gasses.[71] While relevant, these documents are not legally binding. Moreover, since they deal primarily with the procedure and the technical steps that must be followed, they have only indirect bearing on the question of coastal State jurisdiction.

4. The *M/V Saiga* and the *M/V Virginia G Cases*

The intention in this section is not to provide a comprehensive criticism of the *Saiga* and the *Virginia G* cases[72] but to highlight and comment upon aspects of these cases that may help to shed light on the extent of coastal State jurisdiction in relation to bunkering and STS oil transfers in the EEZ.

4.1 The *M/V Saiga* Case

The case of the M/V *Saiga* arose following the arrest and detention by Guinean authorities of the M/V *Saiga*, an oil tanker flying the flag of St Vincent and the Grenadines, as it was bunkering fishing vessels in the EEZ of the West African nation. The arrest was effected on the basis of a Guinean customs law that prohibited the unauthorised distribution of fuel in Guinea.[73] ITLOS decided the case in two stages. The *Saiga I* case, decided on 4 December 1997, dealt

[70] IMO, *Manual on Oil Pollution* (IMO 2011).
[71] Oil Companies International Marine Forum (OCIMF) and others, *Ship to Ship Transfer Guide for Petroleum, Chemicals and Liquefied Gases* (Witherby 2013).
[72] For comprehensive reviews see Louise de la Fayette, 'ITLOS and the Saga of the Saiga: Peaceful Settlement of a Law of the Sea Dispute' (2000) 15 IJMCL 355; Bernard Oxman and Vincent Cogliati-Bantz, 'The M/V Virginia G' (2014) 108 AJIL 769.
[73] *Saiga I*, para 64.

with the question of prompt release. The *Saiga II* case, decided on 1 July 1999, dealt with the substantive question of whether Guinea was entitled to apply its customs laws to its EEZ.

In the *Saiga I* judgment, by way of an *obiter dicta* comment and without committing itself one way or the other, ITLOS considered that the classification of offshore bunkering can be approached in two ways. First, it is possible to argue that "refuelling is by nature an activity ancillary to that of the refueled ship".[74] According to this line of reasoning, the bunkering of fishing vessels is to be considered as "an activity the regulation of which can be assimilated to the exercise by the coastal State of its sovereign rights to explore, exploit, conserve and manage the living resources in the [EEZ]".[75] Secondly, ITLOS noted that offshore bunkering in the EEZ could alternatively be classified "as an independent activity whose legal regime should be that of the freedom of navigation"[76] or as an activity that should be governed by Article 59 of the LOSC.[77]

Although ITLOS was here merely pointing out the available options, it is submitted that – considered in disassociation from the broader conduct of the refuelled ship – EEZ bunkering cannot correctly be regarded as an activity to be governed by the freedom of navigation regime. As an activity in its own right, offshore bunkering is not contemplated by Article 58. As noted by Lagoni, the term 'navigation' in the phrase 'freedom of navigation' "means only the movement of the ship, not any other commercial operation".[78] If bunkering in the EEZ is to be considered as falling under the freedom of navigation regime, then this can only be in view of its being, to use the language of Article 58, "related to the freedom of navigation". Such a relation can arguably be established only by way of association with the ancillary activities of the recipient vessel and not in isolation.[79]

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[74] ibid para 57.
[75] ibid.
[76] ibid para 58.
[77] ibid.
[78] Lagoni (n 10) 621.
[79] For a similar perspective see para 3 of the Separate Opinion of Judge Zhao in the *Saiga II*. For a contrary perspective see para 17 of the Separate Opinion of Judge Vukas in the *Saiga II*.

In the *Saiga II* case ITLOS decided that, in the EEZ, the coastal State does not have jurisdiction to apply its customs laws and regulations other than in respect of artificial islands, installations and structures.[80] Although both parties invoked ITLOS to make a declaration about the rights of coastal and other States in regards to offshore bunkering, since it was able to decide the case on the basis of the non-applicability of customs laws and regulations in the EEZ, ITLOS chose not to pronounce itself on the matter.[81] It is nevertheless relevant to consider a number of arguments put forward by the respective parties to the case as well as by various judges in their separate opinions. The main argument of St Vincent and the Grenadines' was that bunkering in the EEZ constitutes an exercise of the freedom of navigation[82] and that, should coastal State authorisation be required prior to bunkering, "[i]nternational trade would be subject to restrictions, and there would be de facto limits imposed on distance which vessels could travel across maritime areas".[83] While not incorrect, this argument holds validity mainly in relation to situations where the recipient vessel is in transit. The vessels bunkered in the M/V *Saiga* were fishing vessels that at the time of bunkering were actively operating as such within Guinea's EEZ. Any delay that may have been caused by the requirement to obtain authorisation would have primarily effected the fishing operations of these vessels rather than their navigation.

Guinea suggested that "different considerations might apply, for example, to bunkering of ships operating in the zone, as opposed to the supply of oil to ships that are in transit".[84] This point was echoed and expanded upon by Judge Anderson in his Separate Opinion where, in view of the different considerations that may apply in specific cases, he endorsed the Tribunal's decision not to make any general findings on the question of bunkering in the EEZ.[85] Anderson suggests (rightly, in the present author's view) that no general rule can be postulated for the classification of offshore bunkering since

[80] *Saiga II*, para 127.
[81] ibid para 138.
[82] ibid para 137.
[83] Memorial of SVG in the *Saiga II*, para 120.
[84] *Saiga II*, para 137.
[85] Separate Opinion of Judge Anderson in the *Saiga II*.

this depends on the specifics of the case at hand. The offshore bunkering of a vessel that immediately before and after receiving fuel is exercising the right of freedom of navigation, for example, "could well amount to an "internationally lawful use of the sea" related to the freedom of navigation".[86] In the case of bunkering of a fishing vessel, on the other hand, "the accent is not so much on the navigation of the fishing vessel as upon its efficient exploitation of the stocks".[87] Bunkering may also have a safety and a humanitarian dimension if the recipient vessel has unexpectedly run out of fuel.[88]

4.2 The *Virginia G* case

Like the M/V *Saiga* in the *Saiga* case, at the time of its arrest the Panama-registered oil tanker M/V *Virginia G* was bunkering fishing vessels in the EEZ of a West African State (Guinea-Bissau). Unlike Guinea in the *Saiga* case, however, Guinea-Bissau did not arrest the vessel on the basis of its customs legislation. Rather, Guinea-Bissau considered that the *Virginia G* infringed the country's fisheries regulations when it engaged in the "repeated practice of fishing related activities in the form of unauthorized sale of fuel to ships fishing in [Guinea-Bissau's] EEZ".[89] Panama argued that Guinea-Bissau's actions "violated the rights of Panama and the vessel to enjoy the freedom of navigation and/or other internationally lawful uses of the sea related to the freedom of navigation".[90]

ITLOS decided that the requirement for bunkering vessels to obtain authorisation prior to bunkering fishing vessels could be considered a legitimate exercise of the jurisdiction to conserve and manage living resources conferred by Article 56 when this is read in light of Article 62(4).[91] ITLOS was here breaking new ground[92] but was at the same time careful to limit the

[86] ibid.
[87] ibid.
[88] ibid.
[89] *Virginia G*, para 64.
[90] ibid para 48.
[91] ibid para 217. Article 62(4) requires nationals of other States fishing in the EEZ of a coastal State to comply with conservation measures established in the coastal State's law. Article 62(4) also sets out a non-exhaustive list of topics to which such coastal State rules and regulations may relate.
[92] ITLOS departed somewhat from an earlier, more restrictive decision on the interpretation of Article 62(4) by the Arbitral Tribunal in the *Dispute concerning Filleting within the Gulf of St.*

wider implications of its ruling by expressly stating that the coastal State "does not have such competence with regard to other bunkering activities, unless otherwise determined in accordance with the Convention".[93] Before reaching its conclusion, ITLOS specifically considered whether the fees charged for authorisation were in fact being utilised as a mechanism to circumvent the non-applicability of customs laws to the EEZ. Guinea-Bissau was careful to point out that the amount charged for the refuelling licence "is well below what it would obtain by way of tax revenue if the refuelling had taken place on land"[94] and that "the underlying objective is strictly of an environmental nature".[95] ITLOS was "satisfied that the charging of fees was not guided by Guinea-Bissau's fiscal interests but was in fact for services rendered in connection with the authorization of bunkering".[96]

In reaching its decision in this case, ITLOS took note of the facts that several States had opted to regulate the bunkering of fishing vessels in their EEZs in their national legislation and that there had not been any manifest objection to such legislation.[97] ITLOS' willingness to take State practice into account is significant and points to the importance of giving careful consideration to State practice more generally, i.e. in relation to the offshore bunkering of non-fishing vessels as well as in relation to STS oil transfers. Should these activities come to be considered in a dispute-settlement context, it is highly likely that relevant State practice will be examined before any decision on the question of coastal State jurisdiction is reached.

The *Virginia G* judgment received a varied reception. Scovazzi welcomed the decision as "well grounded and persuasively explained".[98] At the opposite end of the spectrum, the decision was considered as one that signals "the launching of a new attack on the right to the freedom of

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Lawrence (Canada v France) (1986) 82 ILR 590. See paras 214-215 of the *Virginia G* case for further information on this point.

[93] *Virginia G*, para 223.

[94] ibid para 204.

[95] ibid para 201.

[96] ibid paras 234-235.

[97] ibid para 218.

[98] Tullio Scovazzi, 'ITLOS and Jurisdiction over Ships' in Henrik Ringbom (ed), *Jurisdiction over Ships: Post-UNCLOS Developments in the Law of the Sea* (Brill 2015) 382, 398.

navigation".[99] Given that what was at issue in the *Virginia G* case was the bunkering of fishing vessels that were engaged in fishing activity as opposed to navigation, and given the lengths to which ITLOS went to limit its decision to the case at hand, it may be unfair and inaccurate to characterise the *Virginia G* decision in this manner. This said, coastal States, as well as international courts and tribunals, would arguably do well to guard against such observations becoming more pertinent when they approach, for example, the question of coastal State jurisdiction in relation to the offshore bunkering of vessels in transit.

5. State Practice

It is clear that several States have chosen to regulate bunkering and/or STS oil transfers in their territorial seas.[100] The concern in the present chapter, however, is specifically with the regulation of such activities in the EEZ. Legislation dealing with bunkering and STS transfers in the territorial sea will therefore not be considered. Moreover, since the matter was largely settled by the judgment in the *Virginia G* case, domestic legislation regulating the bunkering of vessels that are fishing in the EEZ will similarly be excluded from this analysis. The focus will instead be placed on more contentious legislation that purports to regulate the EEZ bunkering of vessels that are not fishing, as well as on legislation that seeks to regulate STS oil transfers in the EEZ in a manner that goes over and above the internationally applicable rules contained in MARPOL Annex 1 Chapter 8.

5.1 Belgium

To the present author's knowledge, the first country to regulate bunkering and STS oil transfers in its EEZ was Belgium when, by virtue of an April 2001 Ministerial Order,[101] it incorporated offshore bunkering into an existing

[99] Clayton Vignocchi, 'ITLOST? The International Tribunal for the Law of the Sea Sounds the Charge to Expand Coastal State Jurisdiction' (2015) 39 Tulane Maritime Law Journal 791, 797.

[100] See e.g., the UK's 'Merchant Shipping (Ship-to-Ship Transfers) Regulations 2010' (as amended); 'Denmark's Order on the transfer of bunker oil between ships in Danish territorial waters' (Order no. 733 of 25 June 2007) and 'Order on the transfer of liquid cargo between ships in Danish and Greenland Territorial waters' (Order no. 570 of 4 June 2014); and Malta's 'Bunkering (Authorisation) Regulations' (7 May 2010).

[101] Ministerial Order of 18 April 2001 designating the procedure to be followed for applications for permits and authorisations required for the activities of offshore bunkering

framework of detailed environmental legislation for the regulation of certain activities in marine areas under its jurisdiction. The ministerial order defined 'offshore bunkering' as "the transfer of hydrocarbons from one ship to another carried out for a commercial purpose".[102] Given that the definition does not require hydrocarbons transferred to be utilised by the recipient vessel for its own propulsion and operation, the April 2001 Ministerial Order covers also STS oil transfers. Since the Order refers to operations conducted for a commercial purpose, bunkering and STS operations between two navy vessels appear to be excluded. This said, it is not at all clear that bunkering and STS operations between a navy vessel and a commercial vessel are likewise excluded.[103]

The basis for the adoption of the Ministerial Order of April 2001 was a 1999 piece of legislation[104] which, amongst other things, made commercial undertakings in Belgian maritime areas subject to prior authorisation[105] and determined that other activities can subsequently be made subject to prior authorisation in order to meet the needs of marine environment protection.[106] This is exactly what was done by the 2001 Ministerial Order, which determined that offshore bunkering activities must be pre-authorised in accordance with a relatively detailed consultation procedure that is provided for under Belgian law.[107] Notably, according to the 1999 law, navigational activities are not subject to any requirement of prior authorisation.[108] The fact that Belgium subsequently chose to subject bunkering and STS transfers in its

('Belgian Ministerial Order of 18 April 2001'). Available online (in French): <http://reflex.raadvst-consetat.be/reflex/pdf/Mbbs/2001/04/27/71125.pdf> accessed 8/10/2017.

[102] ibid.

[103] Cf Regulation 40 of MARPOL Annex 1 Chapter 8, which excludes "STS operations *where either of the ships involved* is a warship, naval auxiliary or other ship owned or operated by a State and used only on government non-commercial service" (emphasis added).

[104] Law on the Protection of the Marine Environment of 20 January 1999 ('1999 Law'). Available online (in French): <http://www.ejustice.just.fgov.be/cgi_loi/loi_a.pl?language=fr&caller=list&cn=1999012033&la=f&fromtab=loi&sql=dt=%27loi%27&tri=dd+as+rank&rech=1&numero=1> accessed 8/10/2017.

[105] 1999 Law, Article 25(1)(vi).

[106] 1999 Law, Article 25(2).

[107] The most recent reiteration of the consultation procedure can be found in a Royal Decree of 7 September 2003. Available online (in French): <http://www.ejustice.just.fgov.be/cgi_loi/change_lg.pl?language=fr&la=F&cn=2003090732&table_name=loi> accessed 8/10/2017.

[108] 1999 Law, Article 25(3).

EEZ to just such a requirement indicates that Belgium does not consider these two activities as navigational activities or as activities sufficiently related to navigation to merit exclusion from the requirement of prior authorisation.

A request for the authorisation of bunkering activities must be accompanied by an Environmental Impact Assessment.[109] In considering the application the Minister must *inter alia* take into account the prevention principle and the precautionary principle[110] and any authorisation granted may be made subject to a requirement of taking out insurance to cover the risk of marine pollution.[111] The entire process can last a maximum of 145 days.[112] According to Maes *et al*, no authorisation for the conduct of bunkering and STS oil transfers in Belgium's EEZ had been granted by June 2005.[113] One company apparently submitted an application but, following a rejection of its Environmental Impact Assessment and a request for a new Assessment to be carried out, the company opted to move its activities to nearby British waters.[114]

5.2 Angola

Besides Belgium, as observed in an advisory note issued by Skuld[115] in 2015, "West African countries have started to take a keener interest in [STS] transfer operations that may be taking place in national waters or in their EEZ".[116] The advisory note makes reference to two countries in particular. The first is the Republic of Congo, where it appears that approval must be sought from local authorities prior to the conduct of any STS operation in the country's EEZ.[117] The second reference is to Angola. In terms of an Executive Degree published in the Government Gazette of 4 May 2017, Angola has recently adopted

[109] Royal Decree of 7 September 2003, Article 13(1)(5).
[110] ibid, Article 24.
[111] ibid, Article 31.
[112] ibid, Article 23(1).
[113] Frank Maes and others, 'Towards a Spatial Structure Plan for Sustainable Management of the Sea' (June 2005) <http://www.belspo.be/belspo/organisation/publ/pub_ostc/MA/MA02A_en.pdf> accessed 31/10/2017.
[114] ibid.
[115] Skuld is a leading marine insurance provider headquartered in Oslo.
[116] Skuld Member Advisory, 'West Africa: STS Operations' (3 March 2015) <https://www.skuld.com/topics/voyage--port-risks/port-news/africa/west-africa-sts-operations/> accessed 8/10/2018.
[117] ibid. The approval process entails a fee of about 7,600 Euros.

detailed rules on bunkering and STS transfers.[118] The Angolan Rules prescribe in considerable technical detail how bunkering and STS transfers are to be conducted and require that any vessels planning to be involved in such operations have spill-containing equipment on board.[119]

A number of requirements indicate that a desire to protect Angola's marine environment was not the only or even the main motivation behind the enactment of the rules. The Rules, for instance, determine that any bunkering or STS operations in the country's EEZ can only be conducted by companies registered in Angola.[120] Such companies need to apply for and be granted a licence from Angolan authorities and must inform the country's tax administration of the planned operation at least 3 days in advance.[121] The fact that notification must be provided to the country's tax administration, as opposed to a maritime authority or an environment protection agency, indicates that the primary motivation behind the requirement of prior notification was not environmental in orientation. For good measure, Article 8(2) requires a representative from the country's tax authority to be present during all such operations. It is submitted that, insofar as foreign-flagged vessels are concerned, these requirements are incompatible with the LOSC and amount to a blatant attempt to circumvent the finding in the *Saiga II* case to the effect that, in the EEZ, coastal States only have jurisdiction to apply customs laws and regulations in regards to artificial islands, installations and structures.[122]

5.3 Sri Lanka and Dubai

Finally, a brief reference can be made to the domestic law of Sri Lanka and Dubai. Sri-Lankan legislation adopted in 2011 requires any bunkering activity "in the territorial waters of Sri Lanka or any other Maritime Zone… of Sri Lanka… [to be carried out under] a valid bunkering licence issued… by the

[118] 'Regulation of the supply of marine fuels and lubricants in Angola' (4 May 2017). Available online (in Portuguese): <http://www.governo.gov.ao/VerLegislacao.aspx?id=1100> accessed 8/10/2017.
[119] ibid, Article 34.
[120] ibid, Article 1(3).
[121] ibid, Article 8(1).
[122] *Saiga II*, para 127. This finding was reaffirmed in para 232 of the *Virginia G* case.

Marine Environment Protection Authority".[123] Anyone applying for a bunkering licence must submit a certificate of insurance for pollution liability.[124] An application fee of roughly 6 euros and an annual licence fee of around 850 euros apply.[125] In 2011 the Dubai Maritime City Authority (DMCA) adopted anchorage regulations that cover bunkering and STS operations.[126] The geographical applicability of these Regulations is not entirely clear, with Section 1 of the Regulations referring to "the use of Dubai's waters out to the EEZ" and the attached advisory note providing that the Regulations apply "[to] vessels in Dubai waters which extends to the Exclusive Economic Zone".[127] The Regulation lists the need to "address evolving security, safety and environmental challenges"[128] among its main objectives. According to Section 7 of the Regulation, ships wishing to engage in STS and bunkering operations must submit a request to the DMCA at least two days in advance.[129] Only authorised vendors can conduct bunkering and STS transfers in the relevant area.[130]

The foregoing paragraphs show that a number of States have – to varying extents, and with different motivations – opted to regulate the conduct of bunkering and/or STS oil transfers in their EEZs. At the same time, this author has not been able to trace any sign of public protest by other States with flag State and/or naval interests.[131] Admittedly, the Angolan Rules (which in a sense are the most provocative) were only adopted in 2017 and not enough

[123] Bunkering (Marine Environmental Protection) Regulations No. 02 of 2011, available online <http://www.mepa.gov.lk/web/images/pdf/regu/1741_19e.pdf> accessed 8/10/2017.
[124] ibid, Regulation 4(a).
[125] ibid, Schedule V.
[126] Dubai Maritime City Authority, 'Dubai Anchorages Regulations' (Maritime Bulletin of 29 May 2011) <https://www.green4sea.com/wp-content/uploads/2014/09/pdf/2011.6.3-MSAdvisory_68-11.pdf> accessed 8/10/2011.
[127] ibid. An email request for clarification sent to the Dubai Maritime City Authority remained unanswered.
[128] ibid, Section 2.3.
[129] ibid.
[130] Dubai Maritime City Authority, 'Dubai Anchorages: STS and Bunkering Operation Update' (Maritime Bulletin of 19 July 2011 <http://www.iss-shipping.com/Microsites/Document%20Library/DMCA%20-%20Update%20on%20STS%20tranfer%20at%20Dubai%20anchorage.pdf> accessed 8/10/2017.
[131] Besides the usual online searches, a detailed search was conducted of the relevant volumes of the 'Digest of United States Practice in International Law'. Reference was also made to Ashley Roach and Robert Smith, *Excessive Maritime Claims* (Martinus Nihoff 2012).

time may have passed for other States to react to them. This said, Belgian legislation has now been in place for over a decade and the general interest of West African States in the regulation of bunkering and STS operations in their EEZs has been well known for a while. Given all this, it is surprising that the US, for instance, has not been vocal on this matter notwithstanding its recorded opposition to the inclusion of a prior notification requirement in regards to STS oil transfers in MARPOL Annex I Chapter 8.[132] In not voicing their opposition, the most interested States are arguably running the risk of being deemed to have acquiesced to the legislation in question. Considering that all of the aforementioned pieces of legislation were traced through online searches and given the notifications that have been issued by marine insurance societies, it is unlikely that the most prominent flag and naval States are entirely unaware of these developments.

6. Assessment of Coastal State Jurisdiction over Bunkering in the EEZ

The question of coastal State jurisdiction in relation to bunkering in the EEZ can be settled in one of three ways. First, as ITLOS found in relation to the bunkering of fishing vessels in the *Virginia G* case, it might be argued that the coastal State should have competence under Article 56 of the LOSC. Secondly, it is possible to argue that bunkering is as an activity related to a freedom guaranteed under Article 58 and that, as such, it properly falls under the competence of other States. In these two instances Article 59 will have no role to play. Thirdly, the conclusion might be that offshore bunkering is an activity in relation to which the LOSC does not expressly attribute competence one way or the other. In this case, the matter will fall to be determined in line with Article 59.

In seeking to ascertain the extent of coastal State jurisdiction in relation to bunkering it is not possible to adopt a one-rule-fits-all approach. Although such an approach would be easier to apply in practice, the present author subscribes to the view that bunkering is a service and that this makes it an activity with a nature ancillary to that of the vessel served. As such, the legal

[132] See Section 3.

regime for EEZ bunkering depends on the circumstances of each case so that, for example, "when [bunkering] serves navigation, the rules of navigation in the EEZ apply; when it serves fishing, the rules on fishing and fisheries operations in the EEZ apply".[133] Rather than conducting this brief analysis of coastal State jurisdiction over EEZ bunkering in the abstract, it is therefore proposed to conduct it in a more contextualised manner by looking at a number of specific scenarios.

To begin with the bunkering of vessels in transit, it is submitted that this activity should be classified as an activity related to the freedom of navigation in the sense intended by Article 58.[134] Accordingly, any coastal State regulation of this type of bunkering that goes over and above GAIRS would be incompatible with the LOSC. As discussed in Section 2, the wording of Article 58 is ambiguous. This said, of all the different types of bunkering that can be envisaged, the bunkering of vessels that are in transit is surely the type that is most closely related to the freedom of navigation. The bunkering of fishing vessels that at the time of bunkering are in transit rather than engaged in fishing activity should arguably be included under this category. The fact that this may give rise to evidentiary difficulties does not affect the issue of principle involved.

The freedom of all States to lay submarine cables and pipelines in the EEZ is guaranteed in the same unequivocal manner as navigation under Article 58. Consequently, the bunkering of vessels engaged in the laying of submarine cables and pipelines and associated activities such as maintenance needs to be treated in the same way as the bunkering of vessels in transit. In such cases, bunkering effectively amounts to an internationally lawful use of the sea related to the freedom of laying submarine cables and pipelines. Any coastal State regulation that exceeds GAIRS would be incompatible with the LOSC.

The same cannot be said regarding the bunkering of vessels involved in oil exploration and exploitation activities. Under Article 56, in the EEZ the

[133] Anderson (n 44) 114.
[134] Anderson (ibid) reaches the same conclusion at p 113.

coastal State has exclusive sovereign rights for, *inter alia*, exploring and exploiting the natural resources of the seabed and its subsoil.[135] If bunkering is to be regarded as an activity with a nature ancillary to that of the refuelled ship, the bunkering of vessels involved in oil exploration and exploitation should be regarded as an activity that falls under coastal State jurisdiction. In the *Virginia G* case ITLOS decided that the requirement for bunkering vessels to obtain authorisation prior to bunkering fishing vessels could be considered as a legitimate exercise of the jurisdiction to conserve and manage living resources conferred by Article 56.[136] By analogy, coastal State regulation of the bunkering of vessels engaged in oil exploration and exploitation activities should be regarded as a legitimate exercise of the jurisdiction to explore and exploit the natural resources of the EEZ under Article 56.

Insofar as vessels conducting marine scientific research in the EEZ are concerned, Article 56(1)(b) confers jurisdiction (but not 'sovereign rights') upon the coastal State. This jurisdiction is further elaborated upon in Article 246 of the Convention. Article 246(1) determines that the coastal State has the right to regulate marine scientific research in the EEZ while Article 246(2) clarifies that such research can only be conducted with the consent of the coastal State. At the same time, Article 246(3) provides that "[c]oastal States shall, in normal circumstances, grant their consent for marine scientific research projects"[137] and that they "must to this end establish rules and procedures ensuring that such consent will not be delayed or denied unreasonably".[138] Other than this, the LOSC does not expressly restrict the extent of coastal State regulation of marine scientific research.[139] It therefore appears to be within the remit of coastal State jurisdiction to adopt reasonable measures consonant with Article 246(3) to regulate the bunkering of vessels engaged in marine scientific research.

[135] LOSC, Article 56(1)(a).
[136] *Virginia G*, para 217.
[137] LOSC, Article 246(3).
[138] LOSC, Article 246(3).
[139] Florian Wegelein, *Marine Scientific Research: The Operation and Status of Research Vessels and Other Platforms in International Law* (Martinus Nijhoff 2005) 186.

As discussed in Section 1, oil tankers are sometimes utilised for the offshore storage of oil. Depending on the period of time that they spend at sea, such vessels may need to receive bunkers offshore. In such cases, the association between bunkering and freedom of navigation is arguably not as immediate as it is in the case of bunkering of vessels in transit. Just as the bunkering of vessels fishing in the EEZ contributes to fishing activities (so that the rules on fishing apply in preference to those on navigation), in the case of vessels being utilised for the offshore storage of oil, bunkering contributes to storage, not navigation. For this reason, it is submitted that bunkering of this type in the EEZ falls not under Article 58 but under Article 59 as an activity in relation to which the LOSC does not attribute rights or jurisdiction to the coastal State or to other States. In the absence of a definite ruling as to the application of Article 59, one may only speculate as to the precise extent of coastal State jurisdiction. Amongst other, account would have to be taken of the flag State's interest in the unimpeded operation of its vessels. It can certainly be envisaged, however, that in a dispute settlement context the coastal State would be adjudged to have a right to take at least some reasonable and proportionate environment protection measures as long as these are applied in good faith. By way of example, coastal State legislation requiring notification prior to the conduct of bunkering operations in its EEZ should arguably be considered as an acceptable application of the prevention principle that would allow the coastal State to take such preventive measures as it may deem fit, including in terms of ensuring that it has the requisite pollution response capability in place. A requirement to obtain a licence may also be viewed as an acceptable way for the coastal State to ensure that vessels conducting bunkering operations in its EEZ will in fact be in a position to comply with the relevant guidelines and industry standards.

Finally, in light of the foregoing analysis it is perhaps pertinent to make a few brief remarks about the examples of coastal State legislation considered in Section 5. First, it has to be noted that none of the examples of domestic legislation considered make a distinction between different types of bunkering. This is problematic. While the regulation of certain types of bunkering may be regarded as acceptable, the regulation of other types may not. Secondly,

certain States have included considerably burdensome requirements in their legislation. The requirement in Angola's legislation that bunkering services in Angola's EEZ may only be provided by Angolan registered companies seems intended to circumvent the non-applicability of customs rules to foreign vessels in the EEZ and appears to be quite clearly in breach of the LOSC. Belgian legislation (with its approval process that can last a maximum of 145 days), although more clearly motivated by environment protection considerations, also tests the boundaries of acceptable coastal State regulation.

7. Assessment of Coastal State Jurisdiction over STS Oil Transfers in the EEZ

Bunkering and STS operations have a lot in common. This said, and as noted in Section 1, there are a number of important distinctions between the two, including distinctions that can be of relevance in the determination of coastal State jurisdiction. While in the case of bunkering oil is transferred with the intention of being utilised as fuel for the recipient vessel's propulsion and operation, hydrocarbons transferred in STS operations are received by the recipient vessel with the intention of being further carried as cargo. Additionally, as a general rule, greater volumes of oil are transferred in STS transfers than in bunkering operations. The type of hydrocarbons transferred can also be different. Although there are no hard and fast rules in this regard, there is a considerable difference between the bunkering of fishing vessels with gas oil (typically) and STS operations involving the transfer of considerable volumes of heavy fuel oil.[140] Owing to differences in volatility,[141] while spills of refined products such as kerosene and gas oil "may evaporate completely within a few hours",[142] spills of heavy fuel oils "[may] undergo little, if any, evaporation".[143] Needless to say, the quantity of oil involved in a transfer and the persistence of a potential spill are two factors that influence the amount of risk to the marine environment.

[140] This difference was alluded to by Panama in para 182 of the *Virginia G* case to assuage environmental concerns related to the bunkering of fishing vessels. At the same time, it has to be pointed out that, like STS operations, bunkering operations (especially those involving larger recipient vessels) can entail the transfer of heavy fuel oil.
[141] Volatility refers to a substance's tendency to evaporate.
[142] ITOPF, 'Fate of Marine Oil Spills' <http://www.itopf.com/knowledge-resources/documents-guides/document/tip-2-fate-of-marine-oil-spills/> accessed 15/10/2017.
[143] ibid.

Like bunkering, STS oil transfers in the EEZ can be classified in one of three ways: under Article 56, under Article 58 or under Article 59. To begin with Article 56, since in the context of STS oil transfers there can be no question of conservation and management of living resources, the relevance of Article 56(1)(a) can be excluded. Article 56(1)(b)(iii), on the other hand, is somewhat more meaningful in the context of STS transfers than it is in the context of bunkering operations. This provision, it will be recalled, confers (limited) jurisdiction on coastal States to protect and preserve the marine environment of the EEZ by giving effect to GAIRS. As discussed in Section 3, MARPOL Annex I Chapter 8 establishes a number of relevant rules. Beyond this, however, Article 56 holds no further relevance.

Insofar as Article 58 is concerned, it is submitted that, in the case of STS oil transfers, the link with freedom of navigation that is required for classification under this provision does not exist. Classification of STS oil transfers under Article 58 would require an artificial extension (or a "denaturing")[144] of the ordinary meaning of the term 'navigation'. The fact that STS oil transfers can enable the more expedient conduct of trade in oil cargo, or that they can make the carriage of oil cargo more economically feasible by enabling the utilisation of bigger vessels, are perhaps relevant considerations to be taken into account under Ander 59. Such facts do not, however, establish a connection between STS oil transfers and the freedom of navigation concept as it is enshrined in Article 58.

Given the non-applicability of Articles 56 and 58, it is submitted that the proper classification of STS oil transfers is under Article 59 of the LOSC. In line with this finding, any commentary on the extent of coastal State jurisdiction will need to be in the form of a tentative application of the Article 59 formula. Correct application requires careful consideration of the specifics of the case at hand. Generally speaking, however, it can be pointed out that where STS operations involve the transfer of considerable quantities of

[144] Karagiannis (n 41) 378.

hydrocarbons, especially hydrocarbons with a low volatility such as heavy fuel oil and crude oil, the amount of risk involved will be considerable. As the risk of marine environment pollution increases, so does the relative importance of the coastal State's interest in taking environment protection measures to counter the said risk.

Alongside the coastal State's and the international community's environment protection interests, account would have to be taken of other interests. These too will depend on the specifics of the case at hand but, generally speaking, reference can be made to the flag State's interest in the unimpeded operation of its ships and to the international community's interest in the expedient conduct of trade in oil cargo. Coastal State regulation may well have a negative impact from this point of view. Such impact, however, needs to be considered in its wider context. Given the absence of a direct link to freedom of navigation, and given also the possibility of increased environmental risk, it is quite possible that in an international dispute settlement context there will be greater tolerance for coastal State regulation of STS transfers than of bunkering operations. This is not to say that coastal State regulation will be blindly accepted. To take just one example, an international court or tribunal is unlikely to consider in favourable light the requirement in Angolan legislation to the effect that only companies registered in Angola can engage in STS oil transfers.

Insofar as more environmentally oriented legislation is concerned, it is hard to predict to what extent international courts and tribunals would be disposed to accept rules that go beyond MARPOL Annex I Chapter 8 requirements. From the examples analysed in Section 5, Belgian legislation is the most drastic. It entails an authorisation process that can last a full 145 days and requires applicants to conduct a detailed EIA. In balancing the relevant interests, the fact that the Belgian authorisation process can last a maximum of 145 days is unlikely to be considered positively. On the other hand, however, the benefits that can be derived from an EIA are undeniable. The fact that Belgian legislation has been in place and apparently unopposed for a

considerable number of years would also have to be taken into consideration in reaching a decision on this point.

8. Concluding Comments

Determining the extent of coastal State jurisdiction over bunkering and STS oil transfers in the EEZ requires a nuanced approach. No rule of general application exists. In Section 6 it was argued that the bunkering of vessels engaged in oil exploration and exploitation activities and of vessels engaged in marine scientific research should be classified under Article 56; that the bunkering of vessels in transit and of vessels engaged in the laying of submarine cables and pipelines should be classified under Article 58; and that the bunkering of vessels being utilised for offshore oil storage falls under Article 59 of the LOSC. In Section 7 it was argued that coastal State jurisdiction in regards to STS oil transfers in the EEZ needs to be determined in line with the complex formula that is contained in Article 59.

Considering the lack of express clarity in the LOSC, it is perhaps only natural for States to be tempted to push for the interpretation of the Convention that favours their interests and to take that interpretation to the extreme. Such an approach would be wrong and short-sighted. Although admittedly ambiguous and indirect, the LOSC clearly has something to say about the matter of coastal State jurisdiction *vis-à-vis* bunkering and STS oil transfers in the EEZ. In regard to the vast majority of bunkering activities (i.e. bunkering of vessels in transit; of vessels engaged in the laying of submarine cables and pipelines; of fishing vessels; of vessels engaged in marine scientific research; and of vessels engaged in oil exploration and exploitation activities) the LOSC allocates jurisdiction either to coastal or to flag States. In regards to STS oil transfers and to the bunkering of vessels beign utilised for offshore oil storage Article 59 does not confer unfettered jurisdiction upon coastal States. Neither does it afford flag States the same liberties as on the high seas.

As seen in Section 5, a number of coastal States have been proactive in the adoption of rules and regulations on bunkering and STS oil transfers. Such

rules and regulations do not appear to be entirely consistent with the LOSC. In view of their questionable legality, it is important for interested States to protest against the excessive aspects of such legislation. The question of the precise extent of coastal State jurisdiction must be resolved, ideally through the adoption of new legally binding international rules and standards on offshore bunkering and by further refining MARPOL Annex 1 Chapter 8. Such a development would help to reduce the need, scope and motivation for unilateral coastal State measures of the type analysed in Section 5. Alternatively, it appears to be a matter of time before further clarification is provided through the settlement of a specific dispute by an international court or tribunal.

Like this chapter, the next case-study chapter focuses on the EEZ and examines coastal State jurisdiction in relation to the carriage of ultra-hazardous nuclear cargo.

CHAPTER 6: Carriage of Nuclear Cargo in the EEZ

1. Introduction

Cargo associated with the nuclear fuel cycle amounts to a mere five percent of the 20 million consignments of radioactive material that are estimated to be transported annually by road, rail and sea.[1] Besides their application in the nuclear fuel industry, radioactive materials are in fact utilised extensively in medicine, manufacturing, mineral exploration, agriculture and in a variety of other sectors.[2] What makes the carriage of nuclear fuel cargo particularly noteworthy is the fact that "it accounts for the largest share by quality or volume of radioactivity".[3] Pacific Nuclear Transport Limited (PNTL), a major company in the sector,[4] is on its own estimated to have successfully completed around 200 shipments of nuclear cargo during the last 40 years, carrying more than 2,000 casks[5] of nuclear material in the process. Over the years, the company has been involved in shipments of Spent Nuclear Fuel (SNF)[6] from Japan to Europe; vitrified high-level waste (HLW)[7] from Europe to Japan; and

[1] World Nuclear Association, 'Transport of Radioactive Materials' <http://www.world-nuclear.org/information-library/nuclear-fuel-cycle/transport-of-nuclear-materials/transport-of-radioactive-materials.aspx> accessed 27/11/2017.

[2] World Nuclear Association, 'The Many Uses of Nuclear Technology' <http://www.world-nuclear.org/information-library/non-power-nuclear-applications/overview/the-many-uses-of-nuclear-technology.aspx> accessed 28/11/2018.

[3] Robert Nadelson, 'After MOX: The Contemporary Shipment of Radioactive Substances in the Law of the Sea' 15 IJMCL (2000) 193, 198. Nadelson makes reference to a 1991 US Department of Energy study indicating that, in 1991, irradiated nuclear fuel and reprocessed waste accounted for 1% of the volume but over 95% of the total radioactivity of all radioactive waste.

[4] PNTL is owned by International Nuclear Services (68.75%), Orano (12.5%) and a consortium of Japanese nuclear companies (18.75%). International Nuclear Services (INS) is a wholly-owned subsidiary of the UK's Nuclear Decommissioning Authority (NDA) while Orano (formerly Areva) is majority owned by the French State. See <https://www.pntl.co.uk/about-us/> accessed 28/11/2018.

[5] Sea shipments of nuclear cargo are typically carried in robust 'Type B' casks which can weigh up to 110 tonnes when empty and hold anywhere from 6 to 24 tonnes of nuclear material. The larger ones cost around $1.6 million each. See World Nuclear Association (n 1).

[6] SNF refers to used fuel assemblies that are removed from a reactor after several years of use and treated as waste. A useful glossary of relevant terms is available on the World Nuclear Association's website: <http://www.world-nuclear.org/nuclear-basics/glossary.aspx> accessed 28/11/2018.

[7] HLW consists in extremely radioactive fission products and transuranic elements in used nuclear fuel that may be separated by reprocessing used fuel.

mixed oxide fuel (MOX)[8] from France and the UK to Japan, as well as from France to the US.[9]

Radioactive material associated with the nuclear fuel cycle can be related to 'front-end' or to 'back-end' operations. Front-end operations include operations from the mining of uranium to the manufacturing of fuel assemblies.[10] Back-end operations comprise all operations concerned with the SNF that leaves reactors.[11] Transportation associated with the latter typically entails the transportation of SNF to reprocessing plants, the return of reprocessed fuel (generally in the form of MOX fuel) and of HLW which is extracted during reprocessing.[12] While front-end materials such as freshly mined uranium and new fuel assemblies are "relatively benign",[13] irradiated materials from the back-end of the fuel cycle are extremely radioactive.[14] This explains the greater controversy surrounding their transportation and this Chapter's focus on the EEZ transportation of such materials.

The World Nuclear Association considers transportation to be "an integral part of the nuclear fuel cycle",[15] frequently necessitated by the fact that a number of centralised facilities have been developed in various locations around the world.[16] Countries that have opted to reprocess portions of their SNF but that do not have their own reprocessing facilities must export their spent fuel to reprocessing facilities abroad. Once SNF is reprocessed, MOX fuel and HLW are generally returned to the country of origin, requiring further transportation. By way of example, Orano's[17] 'La Hague' facility in France is

[8] MOX is reactor fuel that consists of uranium and plutonium oxides.
[9] <https://www.pntl.co.uk/2011/01/pntl-overview-2/> accessed 28/11/2018.
[10] World Nuclear Transport Institute, 'Nuclear Fuel Cycle Transport' <http://www.wnti.co.uk/media/45365/IP3_EN_MAR13_V2.pdf> accessed 26/11/2017.
[11] ibid.
[12] World Nuclear Association (n 1).
[13] World Nuclear Transport Institute (n 10).
[14] ibid.
[15] World Nuclear Association (n 1).
[16] ibid.
[17] Orano (formerly AREVA) is a company that specialises in nuclear power and renewable energy that is majority-owned by the French Government. The rebranding from AREVA to Orano followed a years-long restructuring exercise. See Geert De Clercq, 'France's Areva rebrands to Orano in dire uranium market' *Reuters* (23 January 2018) <https://www.reuters.com/article/us-areva-strategy/frances-areva-rebrands-to-orano-in-dire-uranium-market-idUSKBN1FC25H> accessed 28/11/2018.

a major SNF reprocessing site[18] that has reprocessed over 34,000 tons of fuel since 1976.[19] While France is its main customer, the facility also works with other countries such as Germany, Japan, Switzerland, Belgium, the Netherlands and Italy.[20]

Following a reduction in reliance on nuclear power in the aftermath of the Fukushima disaster, and the development of plans for the domestic reprocessing of nuclear fuel, Japanese shipments of nuclear cargo are no longer as numerous as used to be the case.[21] This does not mean that maritime transportation of nuclear cargo is no longer going to be an issue. Although Japanese shipments have hitherto been the most frequent and controversial for a considerable period of time, they are by no means the only shipments of nuclear cargo being undertaken or envisaged to be undertaken in the future. Australia, for example, operates a nuclear research reactor.[22] In 2015 the Australian Government entered into a long-term agreement with Orano to have the reactor's spent fuel reprocessed at their La Hague facility in France.[23] For a number of years, Russia has been working on the development of transportable nuclear power plants.[24] The uptake of such technology by other

[18] Reprocessing of spent nuclear fuel separates reusable products (around 97%) from waste (around 3%), reducing the amount of waste that needs to be stored and providing energy security to countries by lengthening the life of the resource that they utilise for electricity generation. See: World Nuclear Association, 'Processing of Used Nuclear Fuel' <http://www.world-nuclear.org/information-library/nuclear-fuel-cycle/fuel-recycling/processing-of-used-nuclear-fuel.aspx> accessed 27/11/2017.

[19] <https://www.orano.group/en/expertise/facilities/recycling-spent-fuel/la-hague> accessed 28/11/2018

[20] ibid.

[21] World Nuclear Association, 'Nuclear Power in Japan' <http://www.world-nuclear.org/information-library/country-profiles/countries-g-n/japan-nuclear-power.aspx> accessed 27/11/2017. This is not to say that Japanese shipments of nuclear cargo have come to a complete halt. In October 2018, Orano signed a contract with the Japanese Atomic Energy Agency (JAEA) for preparatory works in relation to the future shipment of 11 tonnes of nuclear materials. See <https://www.orano.group/en/group/all-news/news-group/2018/novembre/orano-signs-preparatory-works-contract-transport-recycling-used-fuel-from-japan> accessed 28/11/2018.

[22] See <http://www.ansto.gov.au/AboutANSTO/OPAL/> accessed 27/11/2017.

[23] Lubi Dimitrovski, 'Nuclear Status and Management of Spent Fuel in Australia' <https://www.inmm.org/INMM/media/Documents/Presenations/Spent%20Fuel%20Seminar/2017%20Spent%20Fuel%20Seminar/Dimitrovski_NuclearStatusAndManagementOfSpentFuelInAustralia.pdf> accessed 27/11/2017.

[24] Rüdiger Tscherning, 'Transportable Nuclear Power Plants – An Update on Regulatory Responses in International Nuclear Law' in Christian Raetzke (ed), *Nuclear Law in the EU and Beyond* (Nomos 2014) 175.

countries (the Philippines has already expressed interest)[25] could lead to further transportation by sea of nuclear cargo. China is similarly keen to commercially exploit its growing nuclear expertise and the Chinese Government has encouraged Chinese firms to become involved in infrastructural energy projects in southeast Asia, Europe and Africa.[26] In this context, China's attempts at establishing significant nuclear fuel reprocessing capacity are "seen as vital both for management of domestic used fuel and as a service export in connection with selling reactors overseas".[27]

Ocean transportation of nuclear cargo enjoys a practically unblemished safety record. Although there have been a few transportation accidents over the years,[28] none has ever resulted in a breach of or leak from a type B transportation cask.[29] Type B casks, in which sea shipments of nuclear cargo are carried, are extremely robust containers that offer a high level of protection. In order for nuclear material to leak out of them, "the ship's hold (inside double hulls) would need to rupture, the 25cm thick steel cask would need to rupture, and the stainless steel flask or the fuel rods would need to be broken open".[30] Accordingly, the chances of a transportation incident resulting in a release of nuclear material into the marine environment are quite low.[31]

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[25] Carl E, 'Floating Nuclear Power Plant a solution to Philippine Energy Crisis' (27 July 2017) <https://www.manilalivewire.com/2017/07/envoy-floating-nuclear-power-plant-a-solution-to-philippine-energy-crisis/> accessed 27/11/2017.

[26] Eric Ng, 'China's nuclear plant makers seek new markets along the ancient Silk Road into Asia, Europe, Africa and the Middle East' *South China Morning Post* (4 April 2016) <http://www.scmp.com/news/china/economy/article/1933488/chinas-nuclear-plant-makers-seek-new-markets-along-ancient-silk> accessed 27/11/2017.

[27] World Nuclear Association, 'Chinas Nuclear Fuel Cycle' <http://www.world-nuclear.org/information-library/country-profiles/countries-a-f/china-nuclear-fuel-cycle.aspx> accessed 27/11/2017.

[28] Kevin Connolly and Ronald Pope, 'A Historical Review of the Safe Transport of Spent Nuclear Fuel' (report prepared for the US Department of Energy, 31 August 2016) <http://wcsstorage.com/wp-content/uploads/2017/03/2016-08-ORNL-Report-on-Historical-Spent-Fuel-and-HLW-Safe-Transport.pdf> accessed 28/11/2017. Hereinafter 'SNF Historical Review'. The Review refers to a 1971 incident where a truck transporting a loaded SNF cask overturned. The cask separated from the trailer but was only superficially damaged and successfully contained all radioactive material. The only ship-related transportation incident that the Review refers to (at p 41) is a November 1991 incident where an SNF cask was dropped onto a docked ship (the cask suffered superficial damage and no radiological consequences ensued).

[29] World Nuclear Association (n 1).

[30] ibid.

[31] See IAEA, 'Severity, probability and risk of accidents during maritime transport of radioactive material: Final report of a co-ordinated research project 1995-1999' (July 2001)

However, account also has to be taken of the sheer scale of the risk at hand and of the potentially disastrous consequences that could ensue from a serious accident.[32]

Several risk scenarios can be envisaged.[33] There is the possibility of a collision as well as that of a fire developing in its aftermath. A vessel carrying nuclear cargo could sink, and retrieval from certain depths and locations might prove to be impossible. Vessels carrying nuclear cargo might also be tempting targets for terrorists.[34] Although no significant incidents are known to have occurred during the sea transportation of cargo related to the nuclear fuel cycle, there have been a number of incidents involving radioactive cargo. One example is the 1997 sinking of the Panama-flagged MSC *Carla*, 70 nautical miles off the Azores.[35] The vessel was carrying 11 tons of cesium destined for hospitals in the US when it sank,[36] but no effort was made to recover it due to the depth of the waters in question and because it was assumed that any impact on the environment would be minimal.[37]

Given the risk presented by the carriage of nuclear cargo, it is scarcely surprising that coastal States have expressed concerns about nuclear cargo shipments and that, in certain cases, they have sought to regulate their passage through waters under their jurisdiction (including, *inter alia*, their EEZs). Questions about coastal State jurisdiction in this regard must be determined in line with the LOSC. The Convention's text is, however, disappointingly

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<http://www-pub.iaea.org/MTCD/publications/PDF/te_1231_prn.pdf> accessed 28/11/2017. Hereinafter '2001 IAEA Study'.

[32] To put things into perspective, some shipments of nuclear cargo "could easily be converted to provide the materials needed to build dozens of nuclear weapons". Jon Van Dyke, 'Ocean Transport of Radioactive Fuel and Waste' in David Caron and Harry Scheiber (eds), *The Oceans and the Nuclear Age: Legacies and Risks* (Martinus Nijhoff 2010) 150.

[33] The 2001 IAEA Study (n 31) on risk during maritime transportation of radioactive material focused on fire accidents, collisions, foundering and sinking of vessels carrying radioactive cargo.

[34] According to one commentator, however, "the actual risk that terrorists might… [successfully] contrive the dispersal of nuclear material into the environment… is extremely small". See Ron Smith, 'Terrorism and the Maritime Shipment of Nuclear Material' <https://www.pntl.co.uk/2006/09/terrorism-and-the-maritime-shipment-of-nuclear-material/> accessed 28/11/2018.

[35] 2001 IAEA Study (n 31) 15.

[36] Nadelson (n 3) 202.

[37] ibid. This assumption was later described as 'unacceptable' by the IMO's Secretariat. See Note by the Secretariat (MEPC 40/15, 20 June 1997) as quoted in Nadelson at p 229.

uninformative[38] and the term 'nuclear' features only in two provisions that deal with innocent passage through the territorial sea.[39] This should not be interpreted as a *carte blanche* for shipowners, flag States and other actors involved in the EEZ transportation of nuclear cargo. To the contrary, it will be seen in Section 2 that there are a number of relevant LOSC provisions that need to be taken into account alongside general principles and rules of international environmental law.[40]

Following this introduction, Section 2 analyses relevant provisions of the LOSC that constitute the applicable jurisdictional framework. Section 3 examines the relevance and implications of the duty to cooperate in the prevention of environmental harm. Section 4 considers a range of relevant international instruments, while Section 5 analyses State practice in relation to the EEZ carriage of nuclear cargo. Finally, Section 6 proposes a compromise solution for balancing coastal and flag State rights.

2. The LOSC Jurisdictional Framework

The term 'nuclear' features in only two LOSC provisions. According to Article 22, nuclear-powered ships and ships carrying nuclear cargo through the territorial sea may be required to confine their passage to sea lanes designated by the coastal State. Article 23 requires such ships to carry documents and observe special precautionary measures established by international agreements when exercising the right of innocent passage. Part V of the LOSC makes no express reference to nuclear-powered ships or to ships carrying nuclear cargo. Articles 56 and 58 are the most relevant provisions. Article 58(1) establishes the right of all vessels (including, since they are not excluded, vessels carrying nuclear cargo) to freedom of navigation in the EEZ. Under Article 56(1)(b)(iii), coastal States have jurisdiction to protect and preserve the marine environment.

[38] This may be related to the fact that, while SNF shipments have been ongoing since at least the 1960s, controversial Japanese shipments of vitrified HLW started in earnest after the drafting of the LOSC in the 1990s. See SNF Historical Review (n 28) 37.
[39] LOSC, Articles 22 and 23.
[40] On the relevance of principles and rules of international environmental law in this context see Tulio Treves, 'Navigation of Ships with Nuclear Cargoes: Dialogue between Flag and Coastal States as a Method for Managing the Dispute' in Caron and Scheiber (n 32) 217, 230; Laura Pineschi, 'The Transit of Ships Carrying Hazardous Wastes through Foreign Coastal Zones' in Francisco Francioni and Tullio Scovazzi (eds), *International Responsibility for Environmental Harm* (Graham & Trotman 1991) 299, 311.

Articles 56(2) and 58(3) respectively require coastal and other States to have 'due regard' to each other's rights and duties. Where the rights and freedoms of coastal and flag States clash, the principle of equivalence and reasonableness of competing uses requires an assessment to be undertaken "of the relative importance of the interests involved".[41] Since the importance attached to given interests may vary, so too may the outcome of any balancing exercise that is carried out. It is not just that perceptions about the importance of preventing environmental damage have changed but that, as will be argued in the subsequent sections of this Chapter, developments in international environmental law may today require a different balance to be struck between the respective rights under Articles 56 and 58 than would have been considered as an acceptable interpretation of the relevant provisions until only a few years ago. While the right of vessels carrying nuclear cargo to freedom of navigation in the EEZ is beyond question, this right needs to be harmonised and reconciled not only with coastal State jurisdiction to protect and preserve the marine environment under Article 56(1)(b)(iii) but also with the general obligation in Part XII to protect and preserve the marine environment.[42]

Articles 198 and 199 are two other relevant provisions in Part XII of the LOSC. Article 198 requires States that become aware of cases of imminent or actual damage to the marine environment by pollution to notify States likely to be effected by such damage.[43] Article 199 has two elements. The first (an obligation to cooperate in the elimination of the effects of pollution and in the prevention or minimisation of the damage) becomes operative upon the materialisation of imminent or actual damage to the marine environment as envisaged under Article 198. The second (an obligation to jointly develop and promote contingency plans for responding to pollution incidents) applies prior to and independently of the actual materialisation of damage as envisaged by Article 198. While the LOSC does not specify what the obligation to develop

[41] Barbara Kwiatkowska, *The 200 Mile Exclusive Economic Zone in the New Law of the Sea* (Martinus Nijhoff 1989) 213. On the principle of equivalence and reasonableness of competing uses see Chapter 1, Section 2.3.
[42] LOSC, Article 192.
[43] LOSC, Article 198.

and promote contingency plans entails, it has been suggested that "the level of contingency planning required will turn on the nature of the pollution threat".[44] Given the exceptional and ultra-hazardous nature of nuclear cargo, its carriage calls for an especially concerted effort to prevent environmental harm, which should encompass not only the States that are most directly involved in the carriage (such as the sending State, the receiving State and the flag State) but also those States along the planned navigational route that may be affected by potential pollution damage.

Where States have reasonable grounds for believing that planned activities under their jurisdiction or control may cause substantial pollution of or significant and harmful changes to the marine environment, Article 206 requires them to, as far as practicable, assess the potential effects of such activities on the marine environment.[45] Reports of the results of such assessments must be communicated "in the manner provided in Article 205",[46] i.e. either through publication or by providing them to the competent international organisations, which should make them available to all States.[47] The purpose of Article 206 is "to ensure that such activities may be effectively controlled, and to keep other States informed of the potential risks and effects of such activities".[48]

Finally, it is pertinent to mention that a number of States have made declarations concerning the carriage of nuclear cargo by sea upon ratification or accession to the Convention under Article 310.[49] Seven States (Bangladesh, Egypt, Malaysia, Oman, Saudi Arabia, Yemen and Ecuador) have claimed a right of prior authorisation before the passage of ships carrying nuclear cargo through their territorial sea while one State (Malta) has claimed a right of prior

[44] Alexander Proelss (ed), *United Nations Convention on the Law of the Sea: A Commentary* (Hart 2017) 1341.
[45] On the duty to conduct an Environmental Impact Assessment see Chapter 2, Section 4.4. See also Section 3 of this Chapter.
[46] LOSC, Article 206.
[47] LOSC, Article 205.
[48] Myron Nordquist and others (eds), *United Nations Convention on the Law of the Sea, 1982: A Commentary* (Vol IV, Martinus Nijhoff 2002) 122.
[49] For a list of declarations under Article 310 of the LOSC see <https://www.un.org/Depts/los/convention_agreements/convention_declarations.htm> accessed 1/12/2017.

notification. Argentina considered that "measures to prevent… pollution of the sea by noxious and potentially dangerous substances and highly active radioactive substances must be supplemented and reinforced".[50] Ecuador is the only State to have made a declaration concerning the passage of vessels carrying nuclear cargo through its EEZ and requires prior notification as well as authorisation before such passage.[51] The fact that only one State has made a declaration concerning the passage of nuclear cargo through its EEZ should not be regarded as indicative of a passive attitude on the part of coastal States. As will be seen in Section 5, several coastal States have actively opposed such shipments through their EEZs, and the relative scarcity of declarations under Article 310 may relate more to the fact that a majority of States ratified the LOSC at a time when shipments of highly radioactive nuclear cargo were in their relative infancy and had not yet achieved a degree of prominence on the international level.[52]

3. The Duty to Cooperate in the Prevention of Environmental Harm

Cooperation and prevention are two fundamental principles of international environmental law that were examined as such in Chapter 2. The present section focuses on the practical relevance of the duty to cooperate in the prevention of environmental harm. More specifically, it considers two important aspects of the cooperation principle, namely the duty to conduct an Environmental Impact Assessment (EIA) and the duties of notification and consultation.

As discussed in Chapter 2 Section 4.4, compared to Principle 17 of the Rio Declaration, Article 206 of the LOSC establishes a noticeably lower threshold of foreseeability of environmental harm for the conduct of EIAs:

[50] Declaration by Argentina upon ratification of the LOSC (1 December 1995).
[51] Declaration by Ecuador upon ratification of the LOSC (4 September 2012). The declaration refers to passage through Ecuador's 'maritime spaces'. This presumably covers passage through Ecuador's EEZ.
[52] While SNF shipments from Japan to Europe have been made since 1969, shipments of vitrified HLW from Europe to Japan started 'only' in 1995. See SNF Historical Review (n 28) 37.

> When States have reasonable grounds for believing that planned activities under their jurisdiction or control may cause substantial pollution of or significant and harmful changes to the marine environment, they shall, as far as practicable, assess the potential effects of such activities on the marine environment and shall communicate reports of the results of such assessments in the manner provided in article 205.[53]

Maritime transportation of nuclear cargo cannot be said to be *likely* to cause environmental damage in any given instance, as is required by Principle 17 of the Rio Declaration. To use the language of Article 206, however, it is certainly the case that, as unlikely as it may be, a major accident during the transportation of nuclear cargo *may* cause substantial pollution of or significant and harmful changes to the marine environment.

States have considerable discretion in determining the content of an EIA.[54] At the same time, international courts and tribunals will typically examine the content of an EIA to evaluate whether it at least meets those basic characteristics which can be considered as inherent in the nature of an EIA. Based on the ILC's Draft Articles on Transboundary Harm,[55] *ad hoc* judge Dugard has considered that, as a minimum, an EIA should:

> relate the risk involved in an activity "to the possible harm to which the risk could lead", contain "an evaluation of the possible transboundary harmful impact of the activity", and include an assessment of the "effects of the activity not only

[53] LOSC, Article 206. On EIAs generally see Neil Craik, *The International Law of Environmental Impact Assessment: Process, Substance and Integration* (CUP 2008). On the development of the obligation to conduct an EIA see Maria Gavouneli, 'Protection standards for the marine environment: Updating Part XII of the Law of the Sea Convention?' <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3073263> accessed 29/5/2018.

[54] *Case Concerning Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Judgment) (2010) ICJ Rep 14 para 205.

[55] ILC, 'Draft articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries' (2001) <http://legal.un.org/ilc/texts/instruments/english/commentaries/9_7_2001.pdf> accessed 20/7/2017.

on persons and property, but also on the environment of other States".[56]

Similarly, while acknowledging State discretion in the determination of the exact content of an EIA, in *Pulp Mills* the ICJ considered that an EIA must have "regard to the nature and magnitude of the proposed development and its likely adverse impact on the environment as well as to the need to exercise due diligence in conducting such an assessment".[57] In another indication that Article 206 does not confer unlimited discretion, in the recent *South China Sea arbitration* the arbitral tribunal found that the statements and reports published by the Chinese authorities fell short of domestic criteria and were "far less comprehensive than EIAs reviewed by other international courts and tribunals".[58]

According to Article 206, an assessment of the potential effects of activities that fall under the Article's remit is to be undertaken "as far as practicable".[59] This phrase has been described as a "typical relic of the 1970s"[60] that is intended to account for the needs of developing States.[61] Given that the ICJ has found due diligence to be the applicable standard for the conduct of EIAs,[62] and considering also ITLOS' swift dismissal of a varied approach to responsibility and liability of developed and developing States in the *Responsibilities in the Area Opinion*,[63] the discretion that courts and tribunals may deem implicit in the phrase 'as far as practicable' in Article 206 is unlikely to be particularly broad and may be judged to relate more to the limits of present day technology than to the level of development of the State in question.

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[56] Separate Opinion of Judge *ad hoc* Dugard in *Construction of a Road in Costa Rica along the San Juan River (Nicaragua v Costa Rica)* (Judgment) (2015) ICJ Rep 665 para 18.
[57] *Pulp Mills*, para 204.
[58] *The South China Sea Arbitration (Philippines v. China)*, PCA Case 2013-09, Award (12 July 2016) para 990.
[59] LOSC, Article 206.
[60] Gavouneli (n 53) 8.
[61] Proelss (n 44) 1377.
[62] *Pulp Mills*, para 204.
[63] *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (Advisory Opinion) ITLOS No. 17 (1 February 2011) para 158.

To the extent that the carriage of nuclear cargo falls under their jurisdiction and control, the flag State, the sending and receiving States are all responsible for the conduct of an adequate EIA. In order to meet the basic standards that have come to be expected of an EIA in international law, assessments arguably need to be tailored specifically to the route intended to be adopted by the vessel. In line with the ILC's Draft Articles on Transboundary Harm, the EIA would need to relate risk to the possible harm which might occur[64] and consider the potential effects of the activity on not only persons and property but also on the environment.[65] Additionally, the requirement to exercise due diligence in the conduct of EIAs[66] requires assessments undertaken to reflect the latest in scientific and technical knowledge. While it is difficult to trace details about whether and what type of EIAs are presently being undertaken in relation to shipments of nuclear cargo, it is quite clear that some of those undertaken in relation to past shipments do not meet the criteria that have come to be associated with EIAs in the international context.[67]

The obligation to undertake an adequate EIA is not only an obligation in its own right. It amounts to "a particular application of the obligation on States, enunciated in article 194, paragraph 2 [of the LOSC]"[68] to ensure that activities under their jurisdiction and control do not cause damage by pollution to other States and their environment. The conduct of an EIA is also a necessary prelude to fulfilment in good faith of the obligation to notify and consult relevant States prior to undertaking activities that may cause significant environmental harm. In the words of Birnie, Boyle and Redgwell, the duty "is not merely to notify what is known but to know what needs to be notified".[69]

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[64] Draft Articles on Transboundary Harm, Commentary to Article 7, para 6.
[65] Draft Articles on Transboundary Harm, Commentary to Article 7, para 8.
[66] *Pulp Mills*, para 204.
[67] Van Dyke reviews a number of Japanese EIAs undertaken in relation to shipments of nuclear cargo in the 1990s. In relation to one EIA, he observes that "[t]he report presents no detailed description of its methodology or assumptions, nor does it analyse the accident that could present a much greater danger – a collision followed by an intense fire on the vessel". Jon M. Van Dyke, 'Applying the Precautionary Principle to Ocean Shipments of Radioactive Materials' (1996) 27 Ocean Dev.& Int'l.L. 379, 381.
[68] Nordquist (n 48) 122.
[69] Patricia Birnie and others, *International Law and the Environment* (OUP 2009) 169.

The obligation to notify and consult with potentially affected States is enshrined in Principle 19 of the Rio Declaration:

> States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith.[70]

It is the prevailing view that Principle 19 restates customary international law.[71] Moreover, insofar as activities that pose a risk of significant environmental harm are concerned, notification and consultation are in any case required for compliance with the no harm and prevention principles.[72] There can be little doubt that the carriage of nuclear cargo *may* have a significant adverse transboundary environmental effect. The probability threshold that is established by the term 'may' is not a high one and risk in this context has been defined to include both "risks taking the form of a high probability of causing significant transboundary harm [as well as] a low probability of causing disastrous transboundary harm".[73]

Generally speaking, consultation in good faith requires the consulting State "to take into consideration the various interests involved, to seek to give them every satisfaction compatible with the pursuit of its own interests, and to show that… it is genuinely concerned to reconcile the interests of the [other State] with its own".[74] Similarly to the more onerous duty of negotiation, which requires a more concerted effort to arrive at an agreed solution, the duty of consultation cannot be met where the consulting State simply "insists upon its own position without contemplating any modification of it".[75] Neither can

[70] Rio Declaration, Principle 19.
[71] See, e.g., Laurence Boisson de Chazournes and Komlan Sangbana, 'Principle 19' in Jorge E. Viñuales (ed), *The Rio Declaration on Environment and Development: A Commentary* (OUP 2015) 493, 502; Birnie and others (n 69) 138.
[72] Birnie and others (ibid).
[73] Draft Articles on the Prevention of Transboundary Harm (n 55), Article 2(a).
[74] *Lac Lanoux Arbitration (France v Spain)* (1957) 24 ILR 101 para 22.
[75] *North Sea Continental Shelf Cases (Federal Republic of Germany/Denmark; Federal Republic of Germany/Netherlands)* (1969) ICJ Rep 3 para 85.

it be met where a party "withholds essential information from the other or insists on acting before there has been a reasonable opportunity to gather essential information".[76] What consultation does not require is the consent of the State being consulted. This much clearly emerged from the *Lac Lanoux* arbitration where the arbitral tribunal found that, once Spain's interests had been reasonably taken into consideration, it was perfectly within France's rights "to give preference to the solution contained in its own scheme".[77]

4. Specialised International Instruments of Relevance

At the international level, competence regarding the carriage of nuclear cargo by sea is shared between two organisations: the International Atomic Energy Agency (IAEA)[78] and the IMO. Instruments adopted by these two organisations can overlap rather significantly. Roughly speaking, however, while instruments adopted by the IAEA deal with the safe utilisation and transportation of radioactive materials in a general manner, IMO instruments approach the transportation of nuclear cargo from a shipping perspective.

Before addressing these instruments, brief reference will first be made to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.[79] Adopted on 22 March 1989, the Basel Convention obliges exporting States to notify and receive authorisation from States of receipt *and* transit[80] prior to any transboundary movement of hazardous waste.[81] Radioactive wastes are excluded from its purview,[82] but it

[76] Frederic Kirgis, *Prior Consultation in International Law: A Study of State Practice* (University Press of Virginia 1983) 12.
[77] *Lac Lanoux*, para 23.
[78] Based in Austria and founded in 1957, the IAEA is the international centre for cooperation in the nuclear field. It works to promote the safe, secure and peaceful use of nuclear technologies. See <https://www.iaea.org/about> accessed 3/12/2017.
[79] The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (adopted 22 March 1989 entered into force 5 May 1992) 1673 UNTS 126.
[80] 'State of transit' is defined by Article 2(12) as "any State, other than the State of export or import, through which a movement of hazardous wastes or other wastes is planned or takes place".
[81] Basel Convention, Article 6.
[82] Basel Convention, Article 1(3). Work on the IAEA Code of Practice on Transboundary Movements of Radioactive Wastes had already commenced at the time of the Basil Convention's drafting and the exclusion of radioactive wastes from the scope of the Basel Convention was intended to avoid regulatory conflict or overlap. See Katharina Kummer, *International Management of Hazardous Wastes: The Basel Convention and Related Legal Rules* (OUP 1995) 51.

remains relevant to consider how this international instrument deals with the question of passage of vessels carrying hazardous wastes through the EEZ. The key provision in this regard is Article 4(12):

> Nothing in [the Basel] Convention shall affect in any way… the sovereign rights and the jurisdiction which States have in their [EEZs]… in accordance with international law, and the exercise by ships and aircraft of all States of navigational rights and freedoms provided for in international law and as reflected in relevant international instruments.

This is an ambiguous and unhelpful provision, which, in referring to the sovereign rights and jurisdiction of coastal States as well as to the navigational rights and freedoms of other States, "embraces and tries to preserve everything".[83] Rather than seeking to settle the controversial question of notification and/or authorisation in the Basel Convention itself, the drafters skirted the issue and simply left the question to be settled in accordance with general international law and the LOSC. Upon ratification of the Convention, a group of coastal States (Chile, Colombia, Mexico, Uruguay and Venezuela) made declarations emphasising their jurisdiction to protect the marine environment while a number of flag States (Germany, Japan, Singapore, the UK and Italy) made declarations emphasising navigational rights.[84] Although no requirement of notification and/or authorisation in relation to vessels carrying hazardous cargo through the EEZ emerges from the Basel Convention, the Convention remains significant because it forms part of a trend towards more careful control of the transboundary movements of hazardous waste.[85]

[83] Pineschi (n 40) 302.
[84] For a list of declarations see <http://www.basel.int/Countries/StatusofRatifications/PartiesSignatories/tabid/4499/Default.aspx> accessed 3/12/2017.
[85] Pineschi (n 40) 313.

Starting from 1961, the IAEA has published Regulations for the Safe Transport of Radioactive Material ('IAEA Regulations')[86] that contain detailed rules on the design, operation and maintenance of packages containing radioactive cargo.[87] Although non-binding, the Regulations serve as a basis for national as well as international requirements for the transportation of nuclear cargo. Their basic philosophy is that safety and protection are ensured primarily by package design, independently of the mode of transportation.[88] For this reason, the IAEA Regulations do not contain any rules that deal specifically with the carriage of nuclear cargo by sea.

Motivated by concerns about unauthorised transboundary movements of radioactive waste (especially to developing countries), in 1990 the IAEA adopted an Advisory Code of Practice on International Transboundary Movement of Radioactive Waste ('1990 IAEA Advisory Code').[89] Paragraph 5 of Section III of the Code determines that:

> …*subject to the relevant norms of international law* [emphasis added], the international transboundary movement of radioactive waste takes place only with the prior notification and consent of the sending, receiving and transit States…[90]

The obligations to provide prior notification and consent in relation to the transboundary movement of radioactive waste are therefore clearly subjected to 'the relevant norms of international law'. Additionally, a footnote in Section I of the Code expressly provides that nothing in the Code prejudices (*inter alia*) the exercise by ships of freedom of navigation as reflected in customary international law and in the LOSC.

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[86] The present reiteration of these Regulations is the 2018 version: <https://www.iaea.org/publications/12288/regulations-for-the-safe-transport-of-radioactive-materiall> accessed 3/12/2018.
[87] IAEA Regulations, para 104.
[88] Ian Hore-Lacy, *Nuclear Energy in the 21st Century* (Academic Press 2010) 84.
[89] The Code is available online: <https://www.iaea.org/sites/default/files/infcirc386.pdf> accessed 4/12/2017.
[90] 1990 IAEA Advisory Code, Section III para 5.

The main provisions of the 1990 IAEA Advisory Code were given the force of law by Article 27 of the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management ('1997 Joint Convention').[91] Following disagreements at the drafting stage, the express reference to the obligation in the Code to obtain the prior consent of transit States was omitted. Instead, Article 27(1)(ii) provides simply that "transboundary movement through States of transit shall be subject to those international obligations which are relevant to the particular modes of transport utilized".[92] A New Zealand proposal to amend Article 27 to require prior informed consent before EEZ transit was closely defeated by a vote of 28 against and 25 in favour.[93] Birnie, Boyle and Redgwell note that the text of the Convention as agreed gives the impression that "in the view of the bare majority of states who supported [it], international law does not require prior notice and consent for transit through the… EEZ".[94] The close vote indicates that this view is not one that enjoyed particularly wide support.

Insofar as IMO instruments are concerned, the SOLAS Convention[95] makes mandatory two formerly soft law Codes: the 1965 International Maritime Dangerous Goods Code ('IMDG Code') and the 1993 International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes ('INF Code'). The IMDG Code regulates the packing and stowage of dangerous goods. The parts of the Code that deal with the carriage of radioactive materials (Class 7 substances) are largely based on the IAEA Regulations. The INF Code, on the other hand, regulates the design of ships that transport radioactive material and addresses issues such as

[91] 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (adopted 5 September 1997, entered into force 18 June 2001) 2153 UNTS 303. As of December 2018, the 1997 Joint Convention has 80 State parties (including France, Japan, the UK and the US).
[92] 1997 Joint Convention, Article 27(1)(ii).
[93] Glen Plant, 'Maritime Shipments of Highly Radioactive Material between Europe and Japan' (2011) 30 International Journal of the Society for Underwater Technology 43, 52. France and Japan strongly opposed the proposal.
[94] Birnie and others (n 69) 505.
[95] The International Convention for the Safety of Life at Sea (adopted 1 November 1974, entered into force 25 May 1980) 1184 UNTS 278. As of December 2018, the SOLAS Convention has 164 State parties that represent over 99% of the world's tonnage.

stability after damage, fire protection and structural resistance.[96] It deals specifically with the carriage of packaged irradiated nuclear fuel, plutonium and high-level radioactive wastes.[97] Depending on the level of radioactivity that they are certified to carry, ships carrying INF Cargo are classified as INF 1, INF 2 or as INF 3, with INF 3 ships being the ones certified to carry cargo with the highest amount of radioactivity.[98] The INF Code provides for notification in the event of an incident involving INF Cargo but contains no requirement for the flag State to obtain notification or authorisation from transit States prior to EEZ passage.

The key point that emerges from the foregoing is that none of the relevant instruments establishes an express obligation of notification and/or authorisation prior to the EEZ carriage of nuclear cargo. The Basel Convention requires notification and authorisation from States of receipt and transit, but it does not apply to radioactive wastes and has a saving clause to safeguard the exercise of navigational rights and freedoms as provided for in international law. The 1990 IAEA Advisory Code requires notification and consent from the sending, receiving and transit States prior to the transboundary movement of radioactive waste, but subjects this obligation to 'the relevant norms of international law' and has a saving clause in relation to navigational rights as reflected in international law. The question of notification and/or authorisation is effectively deferred for settlement in accordance with general international law and the LOSC.

While flag State refusal to recognise a formal obligation of notification and/or authorisation has persisted, in recent years it has been possible to witness a relative softening in their stance. A number of flag States have been willing to concede that "there are mutual benefits to be gained through the sharing of information in confidence on a voluntary basis at a Government to

[96] <http://www.imo.org/en/ourwork/safety/cargoes/dangerousgoods/pages/inf-code.aspx> accessed 4/12/2017.
[97] INF Code, Section 1.1.1.3.
[98] INF Code, Section 1.1.2.

Government level".[99] At the 56th General Conference of the IAEA, the Coastal and Shipping States Informal Meeting tasked permanent representation officers in Vienna of interested States with drafting Guidelines for Government-to-Government Communications on the Transport of MOX Fuel, High Level Radioactive Waste and Irradiated Nuclear Fuel by Sea ('2014 Government-to-Government Communication Guidelines'). The relevant Working Group held seven meetings and the 19 States that participated were able to adopt the final report by consensus.[100]

Best practice for voluntary and confidential government-to-government communications on the transportation of nuclear cargo was considered to include communication around 10 days before departure of information including: the type, flag, age and name of the ship on which the shipment is to be made; type of material planned to be transported and type of package to be used; expected approximate routes that the ship may follow and whether the country concerned is on the proposed route; list of relevant points of contact in case of emergency; and a generic summary on emergency preparedness and response.[101] While there is much to be said about the voluntary nature of this commitment on the part of flag States, the Working Group's report should be recognised as a step in the direction of meaningful cooperation between coastal States and States involved in the transportation by sea of nuclear cargo.[102] Despite reluctance to expressly recognise any legally binding obligation to notify and/or obtain authorisation prior to EEZ shipments of nuclear cargo, the traditional flag State position against practically any form of meaningful cooperation may no longer be as intransigent as used to be the case.

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[99] IAEA Information Circular 863, 'Communication dated 15 April 2014 received form the Resident Representative of Norway to the Agency regarding the Working Group on Best practices for Voluntary and Confidential Government-to-Government Communications on the Transport of MOX Fuel, High Level Radioactive Waste and, as appropriate, Irradiated Nuclear Fuel by Sea' (5 May 2014) Annex 3, Para 2 (hereinafter 'Report of the Working Group on Best Practice Guidelines')
<https://www.iaea.org/sites/default/files/publications/documents/infcircs//infcirc863.pdf> accessed 4/12/2017.

[100] ibid, Chairman's presentation. Among the 19 States were a number of prominent coastal States (including Argentina, Chile and South Africa) as well as flag States (Japan, the UK and the US which participated as an observer).

[101] ibid, Part 4 of the report.

[102] Günther Handl, 'Preventing transboundary nuclear pollution: a post-Fukushima legal perspective' in Jayakumar and others (eds), *Transboundary Pollution: Evolving issues of International Law and Policy* (EE 2015) 190, 231.

5. State Practice

Protests have accompanied shipments of nuclear cargo from the very beginning. When the *Akatsuki Maru* was used to ship 2200 pounds of plutonium from France to Japan in November 1992, for instance, it faced requests from Portugal and South Africa to stay out of their EEZs.[103] Following an inquiry from Australia, Japan apparently indicated that the *Akatsuki Maru* would in principle stay out of the EEZ of all States.[104] In the same period, the Heads of Government of the Caribbean Community (CARICOM)[105] issued a joint statement expressing their view that "shipments of plutonium and other radioactive or hazardous material should not traverse the Caribbean Sea".[106] Similar statements were issued by CARICOM in subsequent years, including most recently in 2011 and 2012.[107] The statements call for a nuclear-free Caribbean with a view to preserving the fragile ecology of the Caribbean Sea as an indispensable economic and social asset for the region.

In 1995 Chile reacted to the passage of the *Pacific Pintail* through its EEZ by sending a navy vessel to intercept and escort the nuclear cargo ship out of its EEZ.[108] The precautionary principle was expressly invoked as a basis for this action which ultimately saw the *Pacific Pintail* change its course so as to comply with the Chilean Navy's request.[109] In 2002, Chile amended its legislation so as to require authorisation for (*inter alia*) transit through its EEZ of vessels carrying radioactive or nuclear material.[110] The US was quick to protest this development, arguing that the requirement of authorisation prior to

[103] Van Dyke (n 32) 150.
[104] ibid 151.
[105] CARICOM is a grouping of twenty Caribbean countries which came into being on 4 July 1973. See <http://caricom.org/about-caricom/who-we-are/> accessed 11/12/2017.
[106] Declaration by the Special Meeting of the Conference of Heads of Government on Shipments of Plutonium (31 October 1992) <http://caricom.org/communications/view/declaration-by-the-special-meeting-of-the-conference-of-heads-of-government> accessed 1/12/2017.
[107] All relevant statements are accessible via the search function on CARICOM's website.
[108] Van Dyke (n 32) 151.
[109] A full transcript of the communication between the Chilean Navy vessel and the *Pacific Pintail* is reproduced in: Duncan Currie, 'The Right to Control Passage of Nuclear Transport Vessels Under International Law' (1996) 4 Global Environmental Law Annual 54, 89.
[110] The amendment was adopted in terms of Chilean Law No. 19, 825, published in the Diario Oficial on 1 October 2002.

transiting a country's EEZ "clearly exceeds the provisions of international law as reflected in the [LOSC]".[111] This was not the first time that the US Government had protested against domestic measures of this sort. It had been similarly quick to react when, in 1988, Haiti sent a *note verbale* to the UN informing all concerned that entry into Haiti's maritime zones was prohibited "to any vessel transporting wastes, refuse, residues or any other materials likely to endanger the health of the country's population and to pollute the [marine environment]".[112] On that occasion, the US recalled how "[d]uring the [Basel] negotiations the United States… opposed attempts to extend that notice and consent regime for passage of ships carrying hazardous wastes through the… EEZ of a party".[113]

New Zealand is another country that has repeatedly expressed concern about nuclear cargo shipments. In a 1999 statement, New Zealand's then foreign minister is reported to have argued that "there should be recognition in international law of the right of potentially affected coastal States to prior notification, and, ideally, prior informed consent for shipments of nuclear material".[114] In May 2000, New Zealand's Green party introduced a Bill seeking to prohibit the transit of nuclear fuel and waste through the country's EEZ.[115] The Bill failed to secure the necessary support in the country's parliament. Notwithstanding the country's green credentials and its diplomatic efforts over the years to ensure that nuclear shipments avoid New Zealand waters, the Government of New Zealand ultimately considered that the formal

[111] Sally Cummins and David Stewart (eds), *2003 Digest of United States Practice in International Law* <https://www.state.gov/s/l/c14625.htm> accessed 12/12/2017, 758.
[112] Note verbale dated 18 February 1998 communicated to the United Nations by a letter dated 29 February 1988, reproduced in the *Law of the Sea Bulletin* (No. 11, July 1988) <http://www.un.org/depts/los/doalos_publications/LOSBulletins/bulletinpdf/bulE11.pdf> accessed 12/12/2017.
[113] Margaret Pickering and others (eds), *1989-1990 Digest of United States Practice in International Law* <https://www.state.gov/documents/organization/139393.pdf> accessed 12/12/2017, 445.
[114] Van Dyke (n 32) 154.
[115] New Zealand Nuclear Free Zone Extension Bill (2000, No. 32—1). The Bill is reproduced as Appendix 2 in Grant Hewison, 'New Zealand's Nuclear Free Zone Extension Bill' (2001) 119 Maritime Studies 17, 22.

establishment of a nuclear-free zone in its EEZ would be incompatible with the LOSC.[116]

As a final example of State practice, mention must be made of the February 2004 decision by the US Government to abandon a controversial plan to ship a decommissioned nuclear reactor from San Onofre in California around Cape Horn at the tip of South America and on to South Carolina, where it was supposed to be buried.[117] Logic would arguably have dictated that the nuclear plant be buried *in situ* or, at the very least, transported by land so as to avoid the treacherous waters of Drake's passage. These options were, however, barred by domestic laws on nuclear waste disposal and by liability issues.[118] The planned shipment faced two main hurdles which ultimately led to its cancellation. The first was the above-discussed legislation adopted by Chile in 2002, while the second arose following an Argentine Court decision which concluded that passage of the reactor through Argentina's EEZ would be illegal.[119] Following the decision, the Argentine Government affirmed its willingness to intercept and escort any shipment of nuclear cargo out of Argentina's waters.[120] The US decision to abandon the planned shipment is significant not only because it avoided possible confrontations but also because it "reinforced the view that countries can act to protect their coastal [area]… by preventing passage of particularly dangerous cargoes".[121]

From the examples just discussed it is possible to discern some general trends in State practice. Coastal States can be sensitive about the passage of nuclear shipments through their EEZs. Many have made it known that they do not welcome such shipments, a number have adopted legislation requiring

[116] Phil Goff, then New Zealand's Foreign Minister, noted that New Zealand had been successful in securing agreements with nuclear transport states to avoid the country's EEZ and argued that "to [seek] to pass legislation which we have neither the legal right nor the power to enforce... may only succeed in provoking the opposite result". See Phil Goff, 'Nuke-free zone extension bill breaches Law of the Sea' <https://www.beehive.govt.nz/node/14148> accessed 4/12/2018.
[117] Van Dyke (n 32) 156.
[118] ibid.
[119] Dan Weikel and Hector Tobar, 'Argentina Draws Line for Reactor' *Los Angeles Times* (LA, 16 January 2004) <http://articles.latimes.com/2004/jan/16/local/me-onofre16> accessed 4/12/2018.
[120] Van Dyke (n 32) 158.
[121] ibid 159.

notification and/or authorisation, and some have gone as far as to escort ships carrying nuclear cargo out of their EEZs. States responsible for nuclear cargo shipments consider that "there is no obligation on any shipping state to provide any information regarding the cargo, route or timing of vessels transiting the high seas and EEZ to any coastal State".[122] Even as some of them have opened up to the *voluntary* sharing of information prior to shipments, flag States have continued to maintain the position that prior notification and authorisation are not and should not be mandatory requirements under international law. This mirrors their position during the negotiation of the international instruments discussed in the preceding section. Nonetheless, there have been a number of notable instances where States responsible for nuclear shipments have complied with requests to avoid EEZ areas or, having entered EEZ areas, complied with requests to exit them.

Any inferences from the above need to be carefully drawn. While coastal States can derive encouragement from the instances of compliance with their requests or demands for EEZ areas to be avoided, it would be incorrect to argue that a customary international rule has developed that requires authorisation to be obtained prior to nuclear cargo shipments.[123] Although an element of (ambiguous) State practice exists, this does not appear to be matched by the "belief that [such] practice is rendered obligatory by the existence of a rule of law requiring it".[124] Similarly, given the continuing lack of consensus among States parties, it cannot correctly be said that the LOSC has been modified by subsequent practice so that prior authorisation is now required.

6. A Duty of Notification and Consultation as a Compromise Solution

Considering the State practice that has accumulated over the years, Treves discerns an "intent [on both sides] to influence the evolution of customary

[122] Report of the Working Group on Best Practice Guidelines (n 99) Annex 3 paragraph 2.
[123] For a similar perspective see Handl (n 102) 223 and Treves (n 40) 226. For a contrary view see Luis Rodríguez-Rivera, 'Transportation of Radioactive Materials through the Caribbean Sea: The Development of a Nuclear-Free Zone' in Caron and Scheiber (n 32) 169.
[124] North Sea Continental Shelf Cases (n 75) para 77.

international law".[125] In his view, only this can explain the position of flag States that have decried the incompatibility not only of prior authorisation but also of prior notification with the LOSC; the concerted efforts of coastal State groupings such as CARICOM; and the strong unilateral positions of some coastal States.[126] The desire of States to influence the process of customary international law formation in their favour is understandable. Given the extent to which opposing views are entrenched, however, it is unlikely that the battle to influence customary law formation will be a productive one for either side.

A more productive strategy arguably entails two main elements. First, a greater willingness for compromise is required on both sides. Secondly, there is a need for recognition of the impact that international environmental law can have on the interpretation of rights and duties under the LOSC. With this perspective in mind, it is submitted that a duty of notification and consultation (without authorisation) prior to EEZ shipments of nuclear cargo is the most viable and legally appropriate solution. Such a cooperation-based approach is mandated by international law, would result in a higher standard of marine environment protection and would arguably also strike an equitable balance between the "conflicting but equally respectable rights"[127] pertaining to coastal and flag States. Although the IAEA has not pronounced itself directly on the matter, a cooperation-based solution requiring consultation without prior authorisation appears to be in line with the spirit of some of its most recent resolutions. A September 2017 resolution, for instance, recalls the obligation of States to protect and preserve the marine environment, recalls navigation rights and freedoms, and stresses the need for international cooperation to enhance safety and security in the international transportation of nuclear cargo.[128] In the same resolution, the IAEA "welcomes the practice of some shipping States and operators of providing timely information and responses to relevant coastal States in advance of shipments".[129]

[125] Treves (n 32) 226.
[126] ibid.
[127] ibid 230.
[128] IAEA GC(61)/RES/8, 'Measures to strengthen international cooperation in nuclear, radiation, transport and waste safety' (21 September 2017) Preamble paras n, o, q.
[129] ibid para 87.

In a sense, the foundations for the proposed compromise solution have already been laid by the 2014 Government-to-Government Communication Guidelines. The Guidelines, however, suffer from three considerable defects. First, the voluntary nature of the commitment to communicate information stands in conflict with the obligatory nature of the duty to notify and consult. Secondly, no mention is made of an obligation to undertake an EIA. Thirdly, the Guidelines fail to allocate any scope for a genuine *consultation* process. The shipping State's 'duty' is restricted to notifying the relevant coastal States of the impending shipment. There is no concomitant duty to take cognisance of any possible concerns that the relevant coastal State(s) may wish to raise. This when a genuine consultation process is not due as a discretionary favour to coastal States but is, rather, a well-framed obligation under international law. As discussed, Principle 19 of the Rio Declaration imposes a clear obligation to consult with States that may be affected by activities with a potentially significant adverse transboundary environmental effect. While the LOSC does not expressly provide for a similar consultation obligation, it does give prominence to the principle of cooperation. Moreover, the obligation to develop contingency plans for responding to potential pollution incidents under Article 199 cannot be adequately fulfilled without a proper degree of consultation.[130]

States responsible for nuclear cargo shipments have traditionally relied on variations of two main arguments in their battle against a compulsory consultation requirement. One argument is that such a requirement would interfere with flag States' right to freedom of navigation.[131] This is an important right but, in exercising their right to freedom of navigation in the EEZ, States "[must] have due regard to the rights and duties of the coastal State and shall comply with the laws and regulations adopted by the coastal State in accordance with the [LOSC] and other rules of international law insofar as they are not incompatible with [Part V of the LOSC]".[132] An obligation to notify and consult admittedly entails some additional

[130] See Section 2.
[131] Jon Van Dyke, 'The Legal Regime Governing Sea Transport of Ultrahazardous Radioactive Materials' (2002) 33 Ocean Dev.& Int'l.L. 77, 84.
[132] LOSC, Article 58(3).

administrative burden but shipments of highly radioactive nuclear cargo are not as frequent as shipments of radioactive cargo generally. States such as the UK, France and Japan have already showed willingness to provide notification of nuclear cargo shipments.[133] Any additional administrative burden associated with an obligation to consult needs to be balanced against the fact that, subject to dispute settlement procedures, under the proposed regime flag States would retain the last word on whether and how nuclear cargo shipments should proceed.

A second argument that is invoked against the sharing of information is the argument that an information leak could facilitate the planning of terrorist attacks against scheduled shipments.[134] This danger can be largely surmounted by subjecting particularly sensitive aspects of government-to-government exchanges to a strict principle of confidentiality. Coastal States recognise that "information supplied… as part of advance information exchange would be subject to appropriate protection and confidentiality".[135] As one commentator observes, coastal States ultimately have the same interests as States shipping nuclear cargo when it comes to the protection of information that could jeopardise the safety of the cargo or of the vessel.[136] So long as coastal States can maintain confidentiality, there remains very little justification for the adoption of a stance of non-disclosure to coastal States potentially affected by nuclear cargo shipments.[137]

If the obligation to consult is to be complied with, States responsible for nuclear cargo shipments cannot aim simply to go through the motions. Adequate methodology needs to be developed and closely complied with in each case. Genuine consultation would presumably entail two principal steps.

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[133] Report of the Working Group on Best Practice Guidelines (n 99).
[134] Van Dyke (n 131) 84.
[135] Report of the Working Group on Best Practice Guidelines (n 99) Annex 4.
[136] Julian Ludbrook, 'Government to Government Communication Concerning the Transportation of Radioactive Material: Routine and Crisis' (Conference on the Safe and Secure Transport of Radioactive Material, Austria, October 2011) para 25 <https://inis.iaea.org/search/search.aspx?orig_q=RN:47104566> accessed 5/12/2018.
[137] Tulio Scovazzi, 'The Evolution of International Law of the Sea: New Issues, New Challenges' in *Collected Courses of the Hague Academy of International Law* (Vol 286, Brill 2000) 160: "[i]n this field, secrets and mysteries are likely to bring about undesirable consequences". Similarly, Pineschi (n 40) 315.

First, the consulting State must disclose all relevant information about the planned shipment and the envisaged risks. At a minimum, detailed information would need to be provided about the route selected, the cargo to be carried and any contingency measures in place.[138] As mentioned earlier, besides being an obligation in its own right, an EIA would appear to be "a logical way to fulfil this obligation".[139] Secondly, the consulting State must consider any concerns or suggestions raised by the consulted State. While no right of veto pertains to the State(s) being consulted, the consulting State must make a genuine effort to integrate coastal State interests with its own.

When consultation is genuinely conducted, one would hope that, in the majority of cases, coastal States can be sufficiently content with the flag State's decision on whether and how to proceed with nuclear cargo shipments. In the eventuality of continuing disagreement, two main options subsist. One is for the States concerned to resort to dispute settlement proceedings to clarify the precise position under international law. A second option is the possibility of resort to mediation proceedings. The IMO and the IAEA could both offer their offices and assistance for this purpose. Reference can here be made to a short lived IMO-IAEA initiative that was developed in 2006 to facilitate shipments of radioactive cargoes.[140] The initiative centred around a Denial of Shipments Database that received voluntary reports of instances of shipments of radioactive cargo that were delayed or denied by States or port authorities. On the basis of reports received, the IMO conducted investigations and offered its services to facilitate dispute resolution with a view to enabling smoother journeys for future shipments of radioactive cargo. Notwithstanding some notable successes,[141] the initiative was ultimately discontinued as the database

[138] Treves (n 40) suggests at 234 that "[the IAEA could] develop a check-list of items to be addressed in discussion between the flag and the coastal State". The list of items that need to be communicated in line with the 2014 Government-to-Government Communication Guidelines could serve as useful starting point.
[139] Van Dyke (n 131) 84.
[140] FAL 34/11/2 submitted by Canada, 'Facilitation of shipments of dangerous cargoes: Difficulties encountered with shipment of class 7 radioactive materials – Report of the Correspondence Group' (22 December 2006).
[141] G. Malkoske and others, 'Addressing Concerns about Denial of International Shipment of Radioactive Sources' <http://www.wmsym.org/archives/2010/pdfs/10357.pdf> accessed 15/12/2017.

fell out of use.[142] This notwithstanding, it can still serve as a model for similar initiatives in the future.

7. Conclusion

The fact that the LOSC does not expressly pronounce upon the carriage of nuclear cargo through the EEZ has resulted in a somewhat ambiguous situation with coastal and flag States emphasising those general aspects of the Convention that best suit their interests. While coastal States emphasise the right and obligation to protect and preserve the marine environment, flag States highlight the right to freedom of navigation and the fact that this is not qualified in relation to vessels carrying nuclear cargo. Although this trend persists, in more recent years it has been possible to detect an increased willingness on the part of States responsible for nuclear cargo shipments to communicate relevant information prior to shipments. As encouraging as the adoption of the 2014 Government-to-Government Communication Guidelines was, in their voluntary nature and in their failure to provide for an adequate consultation mechanism the Guidelines fall significantly short of reaching the level of cooperation that is mandated by a correct reading of the LOSC.

It is quite possible that, at the time of the LOSC's drafting and in the early years following its entry into force, prior notification on a voluntary basis would have sufficed for flag States to comply with the LOSC. Since then, however, international law has moved on rather significantly, and a reading of the LOSC in light of wider developments can leave little doubt that compliance with the LOSC today requires notification and consultation prior to shipments of nuclear cargo through the EEZ of a coastal State. A good faith interpretation of the LOSC requires the significance of developments in international environmental law on the interpretation of the LOSC not to be exaggerated. A requirement of consultation *without* prior authorisation is sufficient to comply with the level of cooperation that is mandated by the Convention and is arguably an adequate and equitable compromise between flag and coastal State interests.

[142] Email from Nancy Capadona (Transport Safety Specialist, International Atomic Energy Agency) to author (27 November 2018).

PART III: ORIENTATION FOR FUTURE DEVELOPMENT

Part III is divided into two chapters. Chapter 7 draws overarching conclusions about the evolution and development of the LOSC and about the impact of such development on coastal State jurisdiction to prevent accidental vessel-source pollution. Chapter 8 examines the development of the LOSC in the context of marine environment protection more generally. It addresses important questions about whether it is possible and ideal to continue working within the confines of the LOSC, about limits that need to be respected in the Convention's development, and about the enduring relevance of the LOSC.

Chapter 7: Assessing Coastal State Jurisdiction

Chapter 7 looks back at the case-studies considered in Part II. It examines the increasing willingness on the part of coastal and other States to take marine environment protection action (Section 1) and assesses the catalytic role of increased environmental consciousness and of developments in international environmental law in this regard (Section 2). Section 3 examines the legitimacy of the coastal State measures reviewed in Part II whereas Section 4 considers the question of unilateral coastal State conduct. The legitimacy of flag State reactions to coastal State marine environment protection measures is analysed in Section 5. Section 6 assesses the relevance of interpretation and modification, whereas Section 7 considers the importance of adjudication and arbitration. Finally, Section 8 asks whether, in the specific context of the case-studies analysed, it is possible to speak of evolution and development of the LOSC.

1. An Increasing Willingness to Protect the Marine Environment

The case-studies analysed in Part II indicate an active coastal State interest to prevent accidental vessel-source pollution that is manifested in several ways. First, coastal States have issued strongly worded political and diplomatic statements reflecting their concerns about potentially harmful activities in waters adjacent to their coasts. Statements can be made unilaterally by individual States or jointly by groupings of similarly interested States, as exemplified by the several statements issued by CARICOM in regards to the carriage of nuclear cargo through the Caribbean sea.[1] The joint issuing of statements may be a simple case of States seeking strength in numbers but could also indicate an underlying desire to influence customary law formation or to create impetus for preferred interpretations of the applicable law.

[1] Chapter 6, Section 5.

Secondly, coastal States have been willing to adopt marine environment protection measures unilaterally.[2] From the several examples considered, the 2010 Northern Canada Vessel Traffic Services Zone Regulations ('NORDREG Regulations')[3] are the only ones that can be linked to a LOSC provision (Article 234) that expressly envisages the purely unilateral adoption of laws and regulations by coastal States.

Recognition of the fact that coastal States have been willing to act unilaterally should not eclipse another important role that they may play. In particular, a third indicator of coastal State willingness to protect the marine environment is their activism at the international level (most relevantly at the IMO) towards the multilateral adoption of environment protection measures. Several examples can be mentioned: before resorting to unilateral action, Australia sought endorsement of its planned compulsory pilotage measure at the IMO;[4] the Polar Code can trace its origins to initiatives taken several decades ago by Canada along with a number of other States;[5] and, in the context of STS oil transfers, the adoption of MARPOL Annex I Chapter 8 followed a joint Spanish-Mexican initiative at the IMO.[6]

A fourth indicator of coastal State willingness to protect the marine environment is resort to enforcement action. While high compliance rates mean that this has hardly been necessary in the case of the NORDREG and the Torres Strait compulsory pilotage regulations, several instances of enforcement action, sometimes without any obvious foundation in domestic and/or international law, have been referenced in Part II. In the context of bunkering and STS oil transfers, reference was made to the 2015 arrest by Angolan authorities of the *MT San Padre Pio* and the 2016 arrest by Nigeria of the

[2] See Section 4 below for an assessment of unilateral coastal State action in the case-study contexts.
[3] Northern Canada Vessel Traffic Services Zone Regulations, SOR/2010-127.
[4] Chapter 3, Section 2.
[5] <https://arcticyearbook.com/commentaries2014/139-the-developing-international-maritime-organization-polar-code> accessed 12/5/2018.
[6] MEPC 53/20 submitted by Spain and Mexico, 'Amendments to Annex I of MARPOL 73/78 intended to prevent the risk of pollution during oil transfer operations between ships at sea' (23 November 2004).

Anuket Emerald.[7] In Chapter 6, reference was made to the interception and eviction from EEZ waters by the Chilean Navy of the *Pacific Pintail*, a nuclear cargo carrying vessel.[8]

The case-studies, therefore, reveal a clear proactive willingness on the part of coastal States to protect the marine environment. To provide an accurate and comprehensive account, it is, however, necessary to place the case-studies in their proper, wider context. To begin with, the case-study scenarios are not the only instances of coastal State action to prevent accidental vessel-source pollution. Since the first PSSA was designated in the Great Barrier Reef region in 1990, for instance, a total of 17 PSSA applications have been approved by the IMO.[9] In the context of straits used for international navigation, in 2011 Turkey unilaterally adopted legislation which, in limiting the passage of certain types of vessels through the Bosphorus and Dardanelles Straits to the daytime,[10] is arguably even more restrictive than compulsory pilotage.

Increasing coastal State willingness to protect the marine environment can also be detected outside the context of accidental vessel-source pollution. One notable development is the recent move by the Seychelles Government to declare two Marine Protected Areas (MPAs) covering 210,000 square kilometres of ocean space.[11] The first MPA restricts practically all human activity whereas the second imposes several conditions with a view to balancing economic activity with the need to safeguard environmental resources.[12]

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[7] Chapter 5, Section 1.
[8] Chapter 6, Section 5.
[9] See <http://www.imo.org/en/OurWork/Environment/PSSAs/Pages/Default.aspx> accessed 18/12/2018.
[10] 'Turkish Straits Maritime Traffic Order Regulations of 15 November 2011' <https://www.westpandi.com/globalassets/news/120110-turkish-straits-maritime-trafffic-order-regulations-enforcement-directives.pdf> accessed 13/5/2018. This measure arguably violates the Montreux Convention requirement that merchant vessels be allowed to enjoy freedom of transit day or night. See Ashley Roach and Robert Smith, *Excessive Maritime Claims* (Martinus Nihoff 2012) 288.
[11] See <https://www.nature.org/ourinitiatives/regions/africa/seychelles-msp-phase-1-final.pdf> accessed 13/5/2018.
[12] ibid.

Finally, it has to be remarked that coastal States have not been alone in their push for enhanced marine environment protection. By way of example, two recent developments at the international level would certainly not have been possible without flag State cooperation. In April 2018, the IMO adopted a climate change strategy for shipping that plans to reduce total annual Greenhouse Gas (GHG) emissions from international shipping by at least 50% by 2050 compared to 2008.[13] Mention must also be made of the January 2018 UNGA decision to convene an intergovernmental conference to elaborate the text of an international legally binding instrument under the LOSC on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction ('BBNJ Instrument').[14] The long road towards development of this instrument started formally in June 2015 when the UNGA established a preparatory committee to make substantive recommendations to it on the elements of a draft text.[15] The Preparatory Committee ('PrepCom') met four times between 2016 and 2017. Its report[16] and the Chair's non-paper on the elements of a draft text[17] provided a starting point for discussions at the intergovernmental conference.[18]

The BBNJ instrument will apply to areas beyond national jurisdiction and is envisaged to address the conservation and sustainable use of marine biological diversity of such areas, in particular, together and as a whole, marine genetic resources, including questions of access to resources and the sharing of benefits, measures such as area-based management tools, including marine protected areas, environmental impact assessments and capacity-building and the transfer of marine technology.[19] There was convergence among most

[13] Resolution MEPC.304(72), 'Initial IMO Strategy on Reduction of GHG Emissions from Ships' (13 April 2018).
[14] UNGA Res 72/249 (19 January 2018).
[15] UNGA Res 69/292 (19 June 2015).
[16] Report of the Preparatory Committee established by General Assembly Resolution 69/292 (A/AC.287/2017/PC.4/2, 31 July 2017) ('BBNJ PrepCOM Report').
[17] <http://www.un.org/depts/los/biodiversity/prepcom_files/Chair_non_paper.pdf> accessed 13 May 2018.
[18] The intergovernmental conference held its first session in September 2018. See the 'Statement by the President of the Conference at the Closing of the First Session' (A/CONF.232/2018/7, 20 September 2018). The second session was held between 25 March and 5 April 2019. For a summary of proceedings at the second session see <http://enb.iisd.org/oceans/bbnj/igc2/> accessed 10/4/2019.
[19] BBNJ PrepCom Report, p 8.

delegations at the PrepCom on the desirability of including a savings clause to the effect that nothing in the BBNJ instrument will prejudice the rights, jurisdiction and duties of States under the LOSC.[20] Near-convergence was achieved also on the desirability of including in the instrument both principles and approaches already included in the LOSC (e.g. due regard; good faith; cooperation) as well as newer or more refined ones (e.g. sustainable development; precautionary approach).[21]

Most States at the BBNJ PrepCom agreed on the need to include an obligation to conduct Environmental Impact Assessments (EIAs) where appropriate and there appears to be a common aspiration for the BBNJ instrument to elaborate on the procedural aspects of the obligation.[22] The intention to go into this level of detail reflects the transition of the duty to conduct an EIA from the time of its inclusion in the LOSC in a rather minimalistic form to its full-fledged development into a composite obligation under general international law.[23] At the same time, the first two sessions of the intergovernmental conference have revealed that disagreement subsists about the extent to which the EIA process should be internationalised. While some States appear happy for the EIA process to be subjected to an international review process, other States have expressed a preference to retain control over the entire EIA process.[24]

Another controversy concerns the applicability or otherwise of the Common Heritage of Mankind (CHM) and the freedom of the high seas.[25] On the one hand, China and the G77 have argued that application of the CHM principle to marine genetic resources will ensure that "the interests and needs of humankind as a whole, especially those of developing countries will be

[20] ibid 8-9.
[21] ibid 9-10.
[22] ibid.
[23] On the development of the duty to conduct an EIA see Maria Gavouneli, 'Protection standards for the marine environment: Updating Part XII of the Law of the Sea Convention?' <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3073263> accessed 29 May 2018. See also Chapter 2, Section 4.4 and Chapter 6, Section 3 of this thesis.
[24] Statement by the President of the Conference on the Closing of the First Session (n 18) 18; Summary of the Second Session (n 18) 8-11.
[25] BBNJ PrepCom Report, p 9.

fairly addressed".[26] On the other hand, the US, Canada, Japan and Russia argue that the principle of freedom of the high seas applies.[27] The CHM regime in Part XI of the LOSC is technically limited to activities entailing the exploration for and exploitation of seabed *mineral* resources. Application of the freedom of the high seas principle, on the other hand, would result in an unacceptable free-for-all regime that would operate on an unacceptable first-come-first-served basis. The LOSC here 'suffers' from a legal lacuna that must be remedied in terms of an evolutionary process, and the creation of a new *sui generis* regime that is compatible with the LOSC appears to be the most practical solution.[28] At the same time, inspiration can be sought from the general principles and aspirations[29] of the LOSC as well as from its Part XI.[30]

2. Environmental Consciousness and Developments in International Environmental Law as Instigators of Marine Environment Protection Action

Genuine environmental consciousness on the part of governments is an important motivating factor behind coastal State marine environment protection. At the same time, it is equally clear that several of the coastal State measures analysed in Part II reflect the environmental concerns of the citizens of the respective States. It was the strong reaction of Canadian citizens to the passage of the *SS Manhattan* in 1969, for example, that prompted the development of the 1970 Arctic Waters Pollution Prevention Act (AWPPA)[31] as the first in a series of measures that ultimately led to the mandatory

[26] Chair's non-paper, p 4.
[27] ibid 24.
[28] As Finland is recorded to have proposed at p 24 of the Chair's non-paper on the elements of a draft text, "[g]iven that [neither the CHM nor the freedom of the high seas principle] seem to be directly applicable, a practical, possibly hybrid, definition and solution needs to be found".
[29] See, in particular, paragraph 5 of the Convention's preamble.
[30] Tulio Scovazzi, 'The negotiations for a binding instrument on the conservation and sustainable use of marine biological diversity beyond national jurisdiction' (2016) 70 Marine Policy 1, 3. Scovazzi contends that "the legal condition of the Area has an influence on the regulation of activities which, although different from minerals... are also located in that space" and argues that "bioprospecting activities are already likely to fall under the UNCLOS regime of marine scientific research [in the Area]". See also Yoshifumi Tanaka, 'Reflections on the conservation and Sustainable Use of Genetic Resources in the Deep Seabed Beyond the Limits of National Jurisdiction (2008) 39 Ocean Dev.& Int'l.L. 129, 141.
[31] The Arctic Waters Pollution Prevention Act, S.C. 1970, c.47 and amended at R.S.C. 1985, c. A-12 ('AWPPA').

NORDREG system.[32] A strong sense of responsibility for the Arctic is ingrained in the Canadian national psyche[33] and Canadians rank environmental security among their highest concerns for the region.[34] It should not come as a surprise, then, if a democratically accountable government should feel compelled to cater for such preoccupations. Needless to say, political sensitivity to citizens' environmental concerns is not endemic to the Canadian context. To cite just one other example, diplomatic correspondence between Australia and the US regarding the Torres Strait compulsory pilotage regime made public by WikiLeaks reveals that, while the Rudd Government claimed to understand US concerns, it was at the same time troubled that "if there were to be an oil spill after [it] weakened the environmental protections imposed by the Howard Government… the political cost would be immense".[35]

Developments in international environmental law are another catalyst for coastal State marine environment protection action. The case-studies reveal how coastal State environment protection measures can develop over time not only to reflect changing circumstances but also in a manner that appears to match the enhanced standards being set in international jurisprudence and in international environmental law for the prevention of environmental harm. Canada's approach to the regulation of Arctic shipping is a case in point. Viewed on a continuum, the process leading to today's regulations started in 1970 with the enactment of the AWPPA. In 2009, the applicability of this Act was extended from 100 to 200nm and, in the same year, NORDREG – a ship reporting system which existed as a voluntary system since 1977 – was made mandatory.[36] Defending the newly mandatory nature of NODRREG at the IMO, Canada based its arguments primarily on the notion of increased risk, arguing that "[t]he probability of an incident and the

[32] Chapter 4, Section 2.3.
[33] Danita Burke, 'International Dispute and Cultural Ideas in the Canadian Arctic: Arctic Sovereignty in the National Consciousness' (Palgrave Macmillan 2018) 137.
[34] 'Rethinking the Top of the World: Arctic Security Public Opinion Survey Volume 2' (Walter & Duncan Gordon Foundation, 2015) <http://gordonfoundation.ca/app/uploads/2017/03/APO_Survey_Volume-2_WEB.pdf> accessed 14 May 2018.
[35] <https://wikileaks.org/plusd/cables/08CANBERRA773_a.html> accessed 14 May 2018.
[36] Chapter 4, Section 2.3.

associated risk of environmental damage increases with traffic"[37] and that "[a] mandatory system reflects… ongoing hazards".[38] The notion that an increased level of risk calls for stronger preventive action recalls the finding in the *Responsibilities in the Area* opinion that the standard of due diligence has to be more severe for riskier activities.[39] The development of Canada's Arctic regime over the years is also consistent with the finding in the *Pulp Mills* case that the obligation to prevent pollution is an obligation to act with due diligence that entails "not only the adoption of appropriate rules and measures, but also a certain level of vigilance in their enforcement".[40] Similar remarks can be made in relation to Australia's transition from a voluntary to a compulsory system of pilotage in the Torres Strait. That move, prompted by a considerable decline in the take-up of voluntary pilotage services,[41] is indicative of a Government willing to act "pre-emptively to avert environmental catastrophe, rather than following the disaster-led approach that has characterised other developments in international environmental law".[42]

Given that certain coastal State measures reflect a refined understanding of duties under international environmental law, one would expect frequent invocation of international environmental law principles by coastal States in their defence of measures proposed or adopted. Several cases can be cited from Part II to confirm this expectation. Belgian legislation on bunkering and STS oil transfers, for instance, makes express reference to prevention and precaution,[43] while Chile expressly invoked the precautionary principle in its exchange with the *Pacific Pintail* as a basis for its demand that the nuclear-cargo carrying vessel exit the country's EEZ.[44] In other cases,

[37] MSC 88/11/3, para 2.
[38] ibid.
[39] *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (Advisory Opinion) ITLOS No. 17 (1 February 2011) para 133.
[40] *Case Concerning Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Judgment) (2010) ICJ Rep 14 para 197.
[41] Chapter 3, Section 1.
[42] Natalie Klein, 'Litigation over Marine Resources: Lessons for Law of the Sea, International Dispute Settlement and International Environmental Law' in Donald Rothwell and Kim Rubenstein (eds), *Australian Yearbook of International Law* (Vol 28, 2009) 131, 159.
[43] Chapter 5, Section 5.
[44] Chapter 6, Section 5.

however, it appears that the advocacy function of environmental principles[45] could have been better utilised. When citing international law authority for the implementation of NORDREG, at the IMO Canada made reference to Article 234 and to the general obligation to protect and preserve the marine environment under Article 192 of the LOSC.[46] Yet, Canada's argument would have been strengthened by express reference to the prevention principle and to the understanding of prevention as an obligation of due diligence. The same could be said in relation to Australia's invocation of Article 194 in defence of its compulsory pilotage proposal at the IMO.[47]

To conclude this analysis of motivating factors, it is pertinent to make some brief comments about motivations that are unrelated to protection of the marine environment *per se*. In the case of the Canadian NORDREG Regulations, for instance, it is possible to detect not only a genuine intention to protect the marine environment but also a distinct intention to assert sovereign control over a contested space.[48] Such situations are not particularly problematic, as long as the LOSC's jurisdictional rules are respected. Potentially more problematic are regulations that purport to protect the marine environment but that appear in reality to be motivated *primarily* by non-environmental considerations. A good example is the Angolan legislation on bunkering and STS oil transfers which, in providing that bunkering and STS operations in the country's EEZ can only be conducted by companies registered in Angola, seeks to circumvent the non-applicability of customs rules to foreign-flagged vessels in the EEZ.[49] A genuine intention to protect the marine environment is naturally not a guarantor of LOSC compatibility. Inasmuch as they seek to circumvent LOSC provisions or seek a jurisdictional basis when there is none, however, regulations in environmentally oriented legislation that are motivated primarily by non-environmental considerations are more likely to fall foul of the LOSC's jurisdictional rules.

[45] On the advocacy function of principles see Chapter 2, Section 1.
[46] MSC 88/11/3, para 5.1.
[47] MEPC 49/8, para 5.16.
[48] Chapter 4, Sections 2.1 and 2.3.
[49] Chapter 5, Section 5.

3. The Legitimacy of Coastal State Measures

It is difficult to generalise about the tendency of coastal State measures to respect the jurisdictional limits set by the LOSC and, when it comes to the evaluation of specific instances, it is important that each of these be examined in its own right and on its own merits. The present section begins with a brief overview of the legitimacy of the respective coastal State measures analysed in Part II and concludes with some general observations.

Although compulsory pilotage in the Torres Strait was widely considered as an "operationally feasible and largely proportionate measure",[50] once Australia failed to secure the necessary support for its proposal at the IMO, the unilateral implementation of a mandatory compulsory pilotage regime as a coastal State measure was incompatible with the LOSC.[51] Moreover, and notwithstanding the support received by Australia in this regard from the US, the re-characterisation of compulsory pilotage as a port-State measure possibly violates the LOSC's rules on port-State jurisdiction.[52]

In the case of the 2010 NORDREG Regulations, it is possible to maintain that these comply with the LOSC. While Canada could certainly elaborate further on certain elements, especially on the question of sufficient ice-cover, the Canadian contention that Article 234 conditions are presently fulfilled appears to be quite tenable,[53] at least for the time being.[54] This conclusion is not uncontested but, as contended by Canada, a mandatory NORDREG system matches the increased risk that comes with increased traffic and ongoing hazardous conditions.[55]

The limits of coastal State jurisdiction are arguably more ambiguous and harder to determine in the case of bunkering and STS oil transfers than in

[50] NAV 50/19, para 3.27.14.
[51] Chapter 3, Section 6.
[52] Chapter 3, Section 7.2.
[53] Chapter 4, Section 4.3.
[54] Given the Article 234 requirement of ice-cover for most of the year, if Arctic ice continues to melt it is inevitable that, at some point, it will no longer be possible to cite Article 234 in its present format as a basis for NORDREG.
[55] MSC 88/11/3, para 2.

the case of the NORDREG Regulations or of compulsory pilotage in the Torres Strait. As discussed, it is variously possible to contend that bunkering and STS oil transfers fall under Articles 56, 58 or even under Article 59 of the LOSC. In the case of bunkering specifically, the extent to which a coastal State can (or cannot) regulate depends on the activity of the vessel being bunkered, with jurisdiction falling to be determined in line with Article 56 (bunkering of fishing vessels, vessels engaged in oil exploration and exploitation activities, vessels conducting marine scientific research), Article 58 (bunkering of vessels in transit, vessels laying submarine cables and pipelines), or Article 59 (bunkering of vessels being utilised for offshore oil storage).[56] This scenario makes life quite difficult for a coastal State intent on regulating bunkering in its EEZ. Such problems, however, provide no license to engage in unfettered regulation and, in failing to differentiate between different types of bunkering, and in adopting disproportionate requirements, some coastal States have arguably acted in part outside of the LOSC's jurisdictional framework.[57]

Finally, in the context of coastal State regulation of vessels carrying nuclear cargo through the EEZ, it is possible to detect a mixture of legitimate and illegitimate coastal State measures. Coastal State statements expressing concern about nuclear cargo shipments or demanding prior notification and consultation are compatible with the LOSC. The forceful eviction of vessels carrying nuclear cargo and coastal State legislation banning the EEZ entry of such vessels is incompatible with the LOSC. The decision by New Zealand's parliament to refrain from enacting such legislation on the grounds that it would be incompatible with the LOSC indicates that, even as they push for marine environment protection measures, coastal States can remain respectful of the Convention's limits.[58]

It emerges quite clearly that, insofar as the case-study contexts are concerned, it is not possible to speak of a trend for coastal State measures to be

[56] Chapter 5, Section 6.
[57] Chapter 5, Sections 5, 6 and 7.
[58] Chapter 6, Section 5.

compatible or incompatible with the LOSC. Some measures are compatible with the LOSC, others are incompatible, and others still contain mixed elements. This reinforces the importance of assessing every proposal individually and objectively rather than adopting an *a priori* bias in favour of or against coastal State marine environment protection measures.

A point of general relevance in assessing the legitimacy of coastal State measures is proportionality. One way to assess this is by considering the extent to which measures are complied with. The 2010 NODREG Regulations and the Torres Strait compulsory pilotage measures, for instance, both enjoy practically full compliance, notwithstanding the fact that both were subject to considerable criticism from flag States at their inception. By contrast, the fact that following the adoption of Belgian legislation on bunkering and STS oil transfers there has been only one (failed) application to conduct STS oil transfers in Belgian waters indicates that the applicable requirements may be overly burdensome. Besides the greater risk of such measures infringing the LOSC due to their excessiveness, there is the additional problem of the undesirable activity being 'exported' to adjacent waters under the jurisdiction of other States. This can result in an infringement of Article 195 of the LOSC which provides that "[i]n taking measures to prevent, reduce and control pollution of the marine environment, States shall act so as not to transfer, directly or indirectly, damage or hazards from one area to another or transform one type of pollution into another".[59]

4. A Penchant for Unilateral Action

The question of whether there is any role for unilateralism in the context of the LOSC's evolution and development will be tackled in Chapter 8. Looking at the case-studies analysed in Part II, it is, however, hardly possible to deny a penchant for unilateral action on the part of coastal States: compulsory pilotage in the Torres Strait was introduced by Australia unilaterally following its failed initiative at the IMO; the AWPPA was unilaterally enacted by Canada in 1970 without any particular basis in international law whereas NORDREG was made mandatory on a unilateral basis, arguably as allowed by Article 234 of

[59] LOSC, Article 195.

the LOSC; Belgium unilaterally adopted bunkering regulations in 2001 and, even after the IMO adopted rules on STS transfers in 2009, other States unilaterally chose to adopt legislation that goes over and above the multilaterally agreed MARPOL Annex I Chapter 8; at least one country (Chile) has unilaterally adopted legislation banning the carriage of nuclear cargo through its EEZ.

While unilateral action may not be the most ideal course of action, pragmatically speaking a distinction needs to be drawn between instances where unilateral action is permitted (in line, for instance, with Article 234 or Article 56(1)(a)) or possibly permitted (Article 59) under the LOSC and those instances where unilateral action is not permitted (the introduction of compulsory pilotage in the Torres strait and the regulation of some forms of bunkering are examples). A distinction also needs to be made between unilaterally adopted coastal State measures that are widely accepted or ignored by other States and those measures that are protested and that, notwithstanding the passage of time, continue to be opposed. The case-study scenarios show that several unilaterally adopted marine environment protection measures that initially attracted strong opposition eventually came to be either expressly accepted (the AWPPA is an example) or passively tolerated to varying extents (NORDREG and the Torres Strait compulsory pilotage regime are examples). Some unilateral coastal State measures, such as the Belgian legislation on bunkering, were never objected to, which might variously indicate a lack of publicity of the measures in question, acceptability of the measures or simple lack of interest on the part of other States.

The fact that coastal States have a penchant for unilateral action should not be mistaken for a disregard on their part of multilateral action through cooperation at the international level. On several occasions, coastal States have shown awareness of the value of international endorsement of their measures and, as discussed in Section 1, activism at the IMO level is a major way in which coastal States have demonstrated their willingness to protect the marine environment.

5. The Legitimacy of Flag State Reactions

Flag State opposition to coastal State marine environment protection measures is a factor that features in practically all of the case-studies analysed in Part II. Particularly strong flag State reactions were forthcoming in regard to the Torres Strait compulsory pilotage regime and in relation to the NORDREG mandatory reporting system, indicating a tendency on the part of flag States to be particularly protective of navigational interests in international straits. This is understandable. As discussed in Chapter 1, international straits are of high strategic importance from a military perspective and play a crucial role in the expedient conduct of international trade.[60] At the same time, the sensitivity of straits does not justify a failure on the part of flag States to objectively consider each coastal State marine environment protection proposal on its own merits and in light of all applicable obligations and considerations.

Against this background, the reaction of flag States to the Torres Strait compulsory pilotage proposal at the IMO can be considered as problematic. While flag States were technically correct in arguing that no obvious ready-made legal basis existed in Part III of the LOSC for the implementation of a compulsory pilotage regime, the failure to see the broader picture (including the risk of unilateral action, eventually realised) is worrying, especially when considering that the reasonableness and proportionality of the measure in question was widely recognised.[61] In sticking to their restrictive interpretation of Article 41 and in steadfastly opposing the adoption of a compulsory pilotage regime, flag States were failing in their obligation to cooperate in the prevention of environmental harm.[62]

The official US position on Article 234 of the LOSC is similarly problematic. There is clearly nothing wrong with the US and similarly interested States overseeing the application of this provision and monitoring that coastal State regulations continue to fulfil its conditions as circumstances in the Arctic change. To propose interpretations of Article 234 that nullify the

[60] Chapter 1, Section 2.4.
[61] Chapter 3, Section 2.
[62] Chapter 3, Section 3.2.

very purpose of this provision by excluding practically any interference with navigational interests is, however, certainly not a legitimate approach to its application.[63]

While the NORDREG and the Torres Strait case-studies show that flag State reactions can be problematic, they also indicate that, in practice, it is sometimes possible to detect a conciliatory attitude on the part of flag States. The high compliance rate enjoyed by NORDREG is indicative of such an attitude. A conciliatory attitude can likewise be detected in the transformation of Australia's compulsory pilotage regime from a coastal State measure to a port-State measure which is fully compliled with in practice.[64] As discussed in Chapter 3, the US effectively encouraged a wide interpretation of port-State jurisdiction – even wider, it seems, than Australia's own understanding of this form of jurisdiction.[65] The fact that Australia never felt the need to resort to enforcement action may partly explain the non-reaction of flag States to the characterisation of compulsory pilotage as a port-State measure. This said, such passivity on the part of flag States that had been quick to denounce the adoption of compulsory pilotage and even threaten the institution of dispute settlement proceedings remains significant.

To turn to the bunkering and STS oil transfers case-study, MARPOL Annex I Chapter 8 indicates a measure of willingness on the part of flag States to cooperate in the adoption of marine environment protection measures, including measures that give increased rights to coastal States (in this case a right of notification prior to the conduct of STS operations in EEZ waters). Yet two further observations must be made which somehow dampen this first impression. First, MARPOL Annex I Chapter 8 as adopted by the IMO is a considerably weakened version of what was proposed by Spain and Mexico.[66] Bunkering is excluded from its ambit and the LOSC jurisdictional framework arguably allows for considerably stronger measures to be adopted by coastal

[63] Chapter 4, Section 4.3.
[64] Chapter 3, Section 7.
[65] Chapter 3, Section 7.2.
[66] Chapter 5, Section 3.

States.[67] Secondly, even the relatively modest measures actually adopted by the IMO were not all uncontested. The introduction of a notification requirement was contested by the US, which wanted to preserve the EEZ's freedom of navigation from this new requirement. While the US' defence of navigational interests is understandable, as a State with extensive coastal interests of its own it is surprising that it is not more alert to such considerations as the obligation to protect and preserve the marine environment and the obligation to cooperate in the prevention of environmental harm. Taking cognisance of all relevant circumstances may also help flag States to pick their battles more wisely. A number of unilaterally adopted coastal State measures regarding bunkering and STS oil transfers[68] – including aspects of Belgian legislation already in force when MARPOL Annex 1 Chapter 8 was being discussed at the IMO – are in this author's opinion considerably more deserving of protest than the modest, reasonable and proportionate measures that were incorporated in MARPOL.

The final case-study provides yet another example of a partly promising attitude on the part of flag States. As discussed in Chapter 6, in 2014 flag and coastal States were able to agree on the adoption of Guidelines for Government-to-Government Communications on the Transport of MOX Fuel, High Level Radioactive Waste and Irradiated Nuclear Fuel by Sea ('2014 Government-to-Government Communication Guidelines').[69] In not being mandatory and in not expressly providing for a requirement to engage in consultation, the Guidelines fall short of meeting the relevant obligations under the LOSC.[70] This notwithstanding, they remain a positive starting point and are indicative of a willingness to cooperate on the part of flag States.

An important factor in assessing the legitimacy of flag State reactions is the extent to which flag States are complying with their obligation to cooperate in the prevention of environmental harm. On the one hand, it is certainly possible to detect a degree of cooperation. This enabled, for instance, the adoption of the Polar Code, the adoption of MARPOL Annex I Chapter 8

[67] Chapter 5, Sections 6 and 7.
[68] Chapter 5, Section 5.
[69] Chapter 6, Section 4.
[70] Chapter 6, Sections 4 and 7.

in relation to STS oil transfers and of the 2014 Government-to-Government Communication Guidelines in relation to the carriage of nuclear cargo by sea. On the other hand, it has to be questioned whether this degree of cooperation is sufficient to fulfil the general obligation to cooperate (under customary international law and under Article 197 of the LOSC) as well as the invocations to cooperate under the more specific provisions of the Convention (namely Article 43 in relation to straits used for international navigation and Article 123(b) in relation to States bordering enclosed or semi-enclosed seas). As discussed in the relevant chapters, there is much room for improvement in this regard. To mention the most obvious example, a genuine good faith fulfilment of the obligation to cooperate in the prevention of environmental harm would arguably have required a better reception of the Australian compulsory pilotage proposal at the IMO.

Enhanced cooperation on the part of flag and coastal States alike could greatly facilitate the reaching of compromises in relation to certain disputes. Should both sides be willing to take a step back from their rigid positions, for instance, agreement on a mandatory notification and consultation requirement in relation to the carriage of nuclear cargo may be within reach. Similarly, in regards to the regulation of bunkering and STS oil transfers, it could well be possible to build upon MARPOL Annex I Chapter 8 through multilateral agreement, thereby increasing the applicable level of marine environment protection and reducing the scope for unilateral coastal State action.

6. What Role for Interpretation and Modification?

Focusing on the case-study contexts, this section examines the role – both actual and potential – of treaty interpretation and modification in the determination of coastal State jurisdiction. Insofar as interpretation is concerned, two mechanisms in particular (systemic integration and evolutionary interpretation – both discussed in Chapter 1) are worth singling out for their relevance across all of the case-study scenarios. As will be recalled, systemic integration requires that, together with the context, account

is taken of any relevant rules applicable in the relations between the parties.[71] Evolutionary interpretation is a form of interpretation where the meaning allocated to a term changes over time.[72]

Interpretation plays a crucial role in all of the case-study contexts. It is a wide interpretation of Article 234, for instance, that is cited and utilised by Canada as a legal basis for its 2010 NORDREG Regulations. As discussed in Chapter 4, the Canadian interpretation is largely reflected in the literature where, *inter alia*, the prevailing view favours a broad interpretation of Article 234's geographic scope; considers that having due regard to navigation does not equate to respecting the standard navigational rights in the respective zones; and assumes that once the Article's conditions are fulfilled a coastal State can act unilaterally without any need for IMO approval.[73] While the US and, less prominently, other shipping States have contested aspects of this interpretation, no State has opted to institute dispute settlement proceedings in regards to NORDREG and the system is largely complied with in practice. Interpretation also plays a prominent role in the context of the Torres Strait case-study. After shipping States successfully objected to a wide interpretation of the relevant provisions of Part III of the LOSC, a wide interpretation of port-State jurisdiction was utilised by Australia (with the express encouragement and approval of the US and, arguably, with the tacit approval of non-objecting States) as a basis for its compulsory pilotage regime.

In the context of STS oil transfers, the inclusion of a notification requirement in MARPOL Annex I Chapter 8 required an interpretation of the relevant LOSC provisions in light of States' environmental obligations. Rather than choosing to preserve freedom of navigation in the EEZ, as the US suggested was appropriate, the majority of States chose to introduce a notification requirement by making use of the Convention's mechanism of Generally Accepted International Rules and Standards (GAIRS).[74] Also

[71] Chapter 1, Section 4.3.1.3.
[72] Chapter 1, Section 4.3.1.2.
[73] Chapter 4, Section 4.
[74] Chapter 5, Section 3.

worthy of mention is ITLOS's *Virginia G*[75] decision, which dealt with the bunkering of fishing vessels in the EEZ. By finding that this activity fell under coastal State jurisdiction to conserve and manage living resources under Article 56 rather than under Article 58 (as suggested by Panama), ITLOS was detracting from a wider perception of EEZ freedoms with a view to giving full effect to the coastal State's rights to conserve and manage living resources under Article 56(1)(a) when read in light of Article 62(4). It is submitted that, just a few years ago, when freedom of navigation in the EEZ was considered as more of a trump card than it is today, with a slight modification in its reasoning ITLOS could easily have adopted Panama's line of argumentation. In this way it would have been following the precedent set by the arbitral tribunal in the *Dispute Concerning Filleting within the Gulf of St. Lawrence between Canada and France*, where the arbitral tribunal adopted a restrictive interpretation of Article 62(4).[76] By going down the alternative route that it did, ITLOS prioritised the goal of marine environment protection.[77]

While interpretation has therefore played an important role in the determination of coastal State jurisdiction to protect the marine environment, the same cannot be said in regards to modification. Only one possible instance of modification of a LOSC provision arose in the case-studies: the modification of prescriptive port-State jurisdiction as outlined in Article 211(3) to allow for the imposition of a penalty in the place of an outright denial of entry into port. It is, however, highly doubtful whether the characterisation of Australia's compulsory pilotage regime as a port-State measure can be considered to have modified the LOSC in this way. On the basis of the adage that 'who can do more can do less', it could be viewed as an innovative *interpretation* of Article 211(3). Furthermore, even if Australia's action is considered as incompatible with port-State jurisdiction as defined under the LOSC, it is highly doubtful whether Australia's compulsory pilotage regime

[75] *M/V "VIRGINIA G" (Panama v. Guinea-Bissau)* (Judgment) ITLOS Case No. 19 (14 April 2014).
[76] *Dispute concerning Filleting within the Gulf of St. Lawrence (Canada v France)* (1986) 82 ILR 590 para 50.
[77] Chapter 5, Section 4.

has attracted the widespread consent necessary to have secured a modification.[78]

Having considered the actual roles played by interpretation and modification, it is now pertinent to consider also the potential role that might yet be played by these two mechanisms. Here too, the potential role for interpretation is considerably greater than that reserved for modification. An important potential role for interpretation exists, for instance, in the context of the Torres Strait case-study. As Oxman contends, Article 41(1) should arguably be read liberally so as to permit full utilisation of the right under Article 42 for coastal States to adopt laws and regulations for the safety of navigation.[79] This would provide an adequate LOSC jurisdictional basis to implement measures considered necessary by littoral States *and* the IMO for protection of the marine environment and, indeed, for compliance with international environmental law obligations that apply to all States. Additionally, the principle of systemic integration has a potential role to play in answering the question of whether given measures hamper navigation contrary to Article 44. The obligation not to hamper navigation should be read in light of the obligation to prevent pollution and in view of the fact that the drafters seem to have assumed that an internationally approved measure should not be regarded as one that hampers navigation in the sense intended by Article 44, even if it imposes restrictions.[80]

Turning to the 2010 NORDREG Regulations, in Chapter 4 it was argued that there is no interpretative way around the requirement of ice-cover for most of the year.[81] The requirement in Article 234 for coastal States to have "due regard to navigation" is however subject to evolutionary interpretation.[82] It will be recalled that due diligence is a variable concept the implications of which may change, *inter alia*, as the risks involved in a given

[78] Chapter 3, Section 7.2.
[79] Bernard Oxman, 'Environmental Protection in Archipelagic Waters and International Straits–The Role of the International Maritime Organisation' (1995) 10 IJMCL 476.
[80] Chapter 3, Section 6.3.
[81] Chapter 4, Sections 4.2.3 and 5.
[82] Chapter 4, Sections 4.2.4 and 5.

activity change.[83] If the risk associated with Arctic navigation decreases, having due regard to navigation may require facilitation of navigation and a corresponding reduction of preventive measures. This indicates that it is not only the cause of marine environment protection that can benefit from evolutionary interpretation.

In the case of bunkering and STS oil transfers in the EEZ, an important potential role for interpretation exists in the application of Article 59 to the scenarios of STS oil transfers and bunkering of vessels being utilised for offshore oil storage.[84] As discussed in Chapter 5, a court or tribunal that finds itself in the unenviable position of having to ascertain the extent of coastal State jurisdiction will have plenty of discretion within the confines of the formula set out in Article 59 in balancing the relevant interests of the parties and of the international community as a whole. The phrase "in the light of all the relevant circumstances" is subject to evolutionary interpretation and invites application of the principle of systemic integration, requiring the adjudicator to consider the scenario under consideration in light of all applicable international law, including international environmental law obligations. Similarly, insofar as the carriage of nuclear cargo is concerned, the fact that the LOSC does not expressly pronounce itself on the matter means that there is considerable scope for interpretation. The right to freedom of navigation under Article 58 needs to be read in light of the obligations of prevention and cooperation in the prevention of environmental harm. In Chapter 6 it was suggested that such a reading entails an obligation of notification and consultation prior to the carriage of nuclear cargo by sea.[85]

The potential role that can be played by interpretation is, therefore, significant. A much more limited potential role exists for modification. The only such role envisaged in Part II was in Chapter 4 *vis-à-vis* the ice-coverage condition contained in Article 234. As ice melts, coastal States such as Canada and Russia are not likely to be in a rush to repeal domestic legislation enacted

[83] *Responsibilities in the Area*, para 117.
[84] Chapter 5, Sections 5 and 6.
[85] Chapter 6, Section 6.

under Article 234. Instead, they may argue that the relevant waters are internal and that it is not necessary for them to rely on Article 234. In Chapter 4 it was suggested that it would be preferable if the longevity of Article 234 could be secured in terms of an informal modification by subsequent practice of Article 234 to remove the requirement of ice-cover for most of the year while retaining the Article's other conditions, including those conditions that are geared to safeguard navigational interests.[86]

7. What Role for Adjudication and Arbitration?

This section reflects on the role of adjudication and arbitration in the case-study contexts. The role of courts and tribunals in the LOSC's evolution and development on a more general basis will be discussed in Chapter 8.

The LOSC deals with compulsory dispute settlement procedures entailing binding decision in Section 2 of Part XV. Article 286 sets the general rule that:

> Subject to section 3, any dispute concerning the interpretation or application of this Convention shall, where no settlement has been reached by recourse to section 1, be submitted at the request of any party to the dispute to the court or tribunal having jurisdiction under this section.[87]

Section 3 of Part XV of the LOSC outlines limitations to compulsory dispute settlement. The most relevant article in that section is Article 297(1) which specifies (*inter alia*) that disputes regarding (a) allegations that a coastal State has acted in contravention of the Convention's provisions on internationally lawful uses of the sea;[88] and (b) disputes regarding allegations that a State exercising freedoms, rights or uses of the sea has acted in contravention of the Convention, or domestic or international laws in conformity with the

[86] Chapter 4, Section 5.
[87] LOSC, Article 286.
[88] LOSC, Article 297(1)(a).

Convention[89] *are* subject to compulsory dispute settlement as provided for in Section 2 of Part XV of the Convention.

The inclusion of a compulsory dispute settlement mechanism in the LOSC at UNCLOS III was and remains a rather remarkable feat.[90] States recognised the important connection between their acceptance of substantive provisions and the possibility of having a judge or arbitrator ascertain the meaning of the same provisions in a decisive manner.[91] The US in particular considered the availability of compulsory dispute settlement as a non-negotiable requirement and indicated that "[it] could not agree to many of the things [the US had] proposed for a new law of the sea convention in the absence of a general system of compulsory dispute settlement".[92] As Anderson notes, there is some "irony in the fact that the principal architect of the dispute settlement arrangements has not yet become a party to the Convention".[93] There is also irony in the fact that, notwithstanding the push by several States to include compulsory dispute settlement at UNCLOS III, a lack of willingness can now be detected to institute dispute settlement proceedings.

Although Australia faced several threats of legal action in regards to the Torres Strait compulsory pilotage regime, the bunkering / STS oil transfers case-study is the only one in the context of which there was actual resort to binding dispute settlement, leading to the useful *Saiga*[94] and *Virginia G*[95] judgments analysed in Chapter 5. Both of these cases were instituted by the respective flag States, with the arrest of the vessels presumably having played

[89] LOSC, Article 297(1)(b).
[90] Commenting on Article 286 in Alexander Proelss (ed), *United Nations Convention on the Law of the Sea: A Commentary* (Hart 2017), Treves notes at p 1845 that "[t]he adoption of compulsory settlement of disputes as a rule in the Convention is remarkable if compared with provisions on the settlement of disputes set out in other conventions of the UN".
[91] ibid 1846.
[92] Speech of Ambassador Stevenson, Head of the US Delegation, Main Committee of the Seabed Committee, 22 August 1973, Department of State Bulletin 69 (1973) 412, 414.
[93] David Anderson, 'Peaceful Settlement of Disputes under UNCLOS' in Jill Barrett and Richard Barnes (eds), *Law of the Sea: UNCLOS as a Living Treaty* (BICL 2016) 383, 388.
[94] *The M/V "Saiga" (Saint Vincent and the Grenadines v Guinea)* (Judgment) ITLOS No. 1 (4 December 1997); *M/V "SAIGA" (No.2) (Saint Vincent and the Grenadines v Guinea)* (Judgment) ITLOS No. 2 (1 July 1999).
[95] *Virginia G* case.

a major part in the decisions to institute legal action. The reluctance to institute proceedings elsewhere in the case-study scenarios mirrors the general trend. Churchill notes that, although the LOSC suffers from "widespread systemic noncompliance",[96] and despite the fact that instances of non-compliance are regularly protested by other States, these protests are "hardly ever… followed up by recourse to the compulsory dispute settlement procedures".[97] Reflecting on the same situation, Tommy Koh notes that "States should be less reluctant to protest against such actions by other States and be more willing to refer such disputes to dispute settlement".[98]

The general reasons for State reluctance to resort to dispute settlement are well-known. Once a dispute is submitted to adjudication or arbitration, the respective parties lose control over the outcome. Adjudication and arbitration can be expensive and protracted exercises and the initiation of such proceedings can be considered as an 'unfriendly' act. In the specific context of the case-study scenarios, a further possible reason for reluctance is the ambiguity of most of the relevant provisions. While this positively imbues the LOSC with a flexibility and an ability to evolve with the times, it also makes the outcome of dispute settlement proceedings harder to predict. Unless there is an overwhelming motivation to obtain clarity about interpretation or a particularly pressing need to take action (as with the arrested vessels in the *Saiga* and *Virginia G* cases), States may prefer to retain the (ambiguous) *status quo* rather than risk an unfavourable outcome.

By failing to resort to binding dispute settlement, States are missing out on a number of possible benefits. Adjudication and arbitration can help to clarify the interpretation of contested LOSC provisions and, in doing so, can play a part in the Convention's development. Dispute settlement proceedings can also help settle protracted disputes by confirming the legality (fully or partially) of controversial coastal State measures to protect the marine

[96] Robin Churchill, 'The General Dispute Settlement System of the UN Convention on the Law of the Sea: Overview, Context and Use' (2017) 48 Ocean Dev.& Int'l.L. 216, 226.
[97] ibid.
[98] Tommy Koh (untitled), in *United Nations Convention on the Law of the Sea at Thirty: Reflections* (UN 2013) 105, 106.

environment (as ITLOS did in the *Virginia G* case) or, alternatively, by putting a stop to coastal State action that is incompatible with the LOSC. The institution of dispute settlement action is particularly important in regards to coastal State measures that clearly infringe the LOSC and that can considerably jeopardise navigational interests.[99] Freedom of navigation is not a "cost-free public good that will persevere on the strength of its own logic".[100] While protesting coastal State measures is an important step to signal disagreement, the institution of dispute settlement proceedings is the surest and most forceful way to challenge excessive coastal State measures and to move away from the "uneven and lackadaisical approach"[101] that States can sometimes take to freedom of navigation.

8. Evolution and Development of the LOSC

Focusing on the case-studies analysed in Part II, this section considers whether and to what extent it is possible to speak of evolution and development of the LOSC. It begins with an overview of developments registered in each of the respective case-studies and goes on to draw a number of overarching findings and conclusions.

The Torres Strait case-study reveals a static approach to coastal State marine environment protection jurisdiction in the context of straits used for international navigation. Flag State stubbornness resulted in a failure to adopt a wide interpretation of Article 41 and, given the rejection of Australia's compulsory pilotage proposal at the IMO, no development of coastal State jurisdiction to protect the marine environment of straits used for international navigation can be said to have resulted. At the same time, it is notable that, in practice, a high level of compliance exists with the compulsory pilotage regime that Australia has gone on to implement in the guise of a port-State measure.

[99] By way of example, reference can be made to Angolan legislation on bunkering and STS oil transfers (analysed in Chapter 5, Section 5) as well as to Chilean legislation on the carriage of nuclear cargo (analysed in Chapter 6, Section 5).
[100] James Kraska and Raul Pedrozo, *The Free Sea: The American Fight for Freedom of Navigation* (Naval Institute Press 2018) 282-283.
[101] ibid.

In Chapter 3 it was argued that this high level of compliance may indicate a widening in the understanding of port-State jurisdiction under the LOSC.[102]

For the 2010 NORDREG Regulations, Canada made use of the maximum environmental jurisdictional powers available to it under Article 234. While it is not possible to speak of a modification of Article 234, recourse to it as a basis for the 2010 NORDREG Regulations can be considered as a development in the practical application of this provision, even if this is partly contested and not crystallised in terms of a judgment of an international court or tribunal confirming the legality of the Regulations. It is submitted that this development in the practical application of Article 234 falls within the confines of the LOSC's jurisdictional framework (at least if and for as long as the requirement of ice-cover can be fulfilled) and can be considered as a development the possibility (but not the exact nature) of which was indirectly envisaged by the drafters of Article 234. Canada's ability to rely on Article 234 in the way that it did is indicative of the intrinsic flexibility of the LOSC which, in this case, enabled Canada to comply with its developing environmental obligations in an Arctic characterised by persistent navigational dangers and increasing navigational activity.

In the context of bunkering and STS oil transfers, ITLOS's judgment in the *Virginia G* case widened the understanding of coastal State jurisdiction to conserve and manage living resources under Article 56(1)(a) of the Convention.[103] Additionally, the adoption of MARPOL Annex I Chapter 8 developed coastal State jurisdiction under Article 56(1)(b)(iii) through the mechanism of Generally Accepted International Rules and Standards.[104] As discussed in Chapter 5, the *Virginia G* decision and MARPOL Annex I Chapter 8 do not represent the full limits of coastal State jurisdiction, and there is, in fact, room for further development of the express multilateral recognition of coastal State jurisdiction in this context.[105]

[102] Chapter 3, Section 7.2.
[103] Chapter 5, Section 4.
[104] Chapter 5, Section 3.
[105] Chapter 5, Sections 6 and 7.

Finally, when it comes to the carriage of nuclear cargo by sea, in Chapter 6 it was argued that, while prior notification on a voluntary basis may have sufficed for flag States to comply with the LOSC in the past, a reading of the LOSC in the light of international environmental law can leave little doubt that compliance with the Convention today requires notification as well as consultation prior to shipments of nuclear cargo through the EEZ of a coastal State.[106] While no satisfactory agreement has yet been reached at the multilateral level, the 2014 Government-to-Government Communication Guidelines constitute a good starting point towards such an agreement.

Building on the observations just made, it is now possible to reach some general conclusions. First, on the basis of the case-studies presented, it is possible to discern a modest but welcome evolution and development of the LOSC that, in certain instances, has resulted in enhanced coastal State jurisdiction to prevent accidental vessel-source pollution. Reference can be made to: the liberal understanding of port-State jurisdiction to accommodate the application of Australia's compulsory pilotage regime;[107] the (partly contested) wide interpretation of Article 234 used by Canada as a basis for its compulsory NORDREG regime;[108] the broad interpretation of coastal State jurisdiction to conserve and manage living resources by the *Virginia G* judgment;[109] the widening of coastal State jurisdiction to protect and preserve the marine environment under Article 56(1)(b)(iii) by MARPOL Annex I Chapter 8;[110] and to the (as yet unconfirmed) impact of international environmental law on the balancing of flag and coastal State rights in relation to the carriage of nuclear cargo in the EEZ.[111] These instances of evolution and development are mainly a result of interpretative approaches to the LOSC that do not appear to threaten the Convention's stability or its wider acceptability. Admittedly, and as argued in the relevant chapters, some unilateral coastal State measures, especially in regard to bunkering / STS oil transfers and the carriage of nuclear cargo by sea, clearly infringe the LOSC's

[106] Chapter 6, Sections 3, 6 and 7.
[107] Chapter 3, Section 7.3.
[108] Chapter 4, Section 4.3.
[109] Chapter 5, Section 4.
[110] Chapter 5, Section 3.
[111] Chapter 6, Sections 3, 6 and 7.

jurisdictional rules. Such measures, which need to be considered separately from legitimate coastal State action to protect the marine environment, are problematic and the failure to protest some of them, let alone institute dispute settlement proceedings, is a cause for concern.

Secondly, proceedings at the IMO[112] have not always resulted in acceptable outcomes. Given the various interests at stake, it is to be expected that coastal State proposals will not always be adopted in their original form. At the same time, the treatment of Australia's compulsory pilotage proposal left much to be desired and fell short of meeting environmental obligations. A stubborn attitude on the part of flag States in the face of proposals widely considered as reasonable and proportionate invites unilateral action and may dissuade coastal States from seeking IMO endorsement of marine environment protection measures in the future, thereby resulting in missed opportunities to reasonably moderate, where necessary, coastal State proposals at their inception.

Thirdly, while flag States have been forthcoming with their opposition to coastal State measures that they consider to be incompatible with navigational interests, in practice they have been willing to live with some of these same measures. They have failed to resort to dispute settlement proceedings (e.g. in relation to Australia's compulsory pilotage regime in the Torres Strait and in relation to the 2010 NORDREG Regulations) and they have entered into working arrangements or compromises (e.g. the transformation of Australia's compulsory pilotage regime into a port-State measure and the willingness to avoid certain EEZs in the context of the carriage of nuclear cargo by sea). This approach suggests a measure of recognition by flag States of the merits of particular coastal State perspectives. For instance, although they were not willing to acknowledge the legality of a compulsory pilotage proposal at the IMO, perhaps for fear of setting a precedent, flag States may nevertheless recognise that, in the particular context of the Torres Strait, compulsory pilotage is a proportionate measure that is

[112] On the role of the IMO as an actor in the LOSC's development see Chapter 8, Section 2.

mandated by the obligation to prevent pollution. While a formal endorsement of Australia's IMO proposal would have been ideal, flag State failure to institute dispute settlement proceedings against Australia's compulsory pilotage legislation (or against Canada's NORDREG regime) and the willingness to find workable arrangements in practice should not be lamented. Conversely, in failing to protest and to institute dispute settlement proceedings against coastal State measures that clearly violate the LOSC,[113] flag States are doing a disservice to the international community, including themselves.

In his work on evolution of the international law of the sea, Scovazzi considers it as a starting premise and a basic assumption that evolutionary trends in the last decades "have been increasingly eroding the traditional principle of freedom of the sea".[114] He also considers that "the progressive erosion of the traditional principle of freedom of the sea can lead to a more equitable international regime of the oceans and seas".[115] The case-study scenarios indicate three important points in this regard. First, they indicate the existence of what can arguably be described as a modest erosion process of navigational rights in favour of environmental interests that seems to occur largely within the jurisdictional framework established by the LOSC. Secondly, they indicate the existence of instances where limitations on navigational rights in the light of environmental obligations should have been recognised but were not. The Torres Strait compulsory pilotage scenario is an example. Thirdly, and at the same time, the case-study scenarios indicate the existence of instances of unlawful and unreasonable coastal State measures that undermine navigational interests. These clearly need to be tackled and the fact they are not always adequately reacted against is problematic.

It is the present author's view that modest erosion of navigational rights *can* be a sustainable aspect of the Convention's natural evolutionary

[113] By way of example, reference can be made to Angolan legislation on bunkering and STS oil transfers (analysed in Chapter 5 Sections 5) as well as to Chilean legislation on the carriage of nuclear cargo (analysed in Chapter 6 Section 5).
[114] Tulio Scovazzi, 'The Evolution of International Law of the Sea: New Issues, New Challenges' in *Collected Courses of the Hague Academy of International Law* (Vol 286, Brill 2000) 54.
[115] ibid.

process.[116] In a 2008 conference on freedom of the seas an interesting question was put to Tommy Koh, President of UNCLOS III. Koh was asked whether interpretation of the LOSC should be seen as governed by the delicate balance struck at UNCLOS III or as a more dynamic process regulated by things not necessarily foreseen in that forum.[117] Koh's reply to this question is as instructive as it is insightful. The LOSC, he replied, is a Convention that "belongs to the world community, and for all time".[118] As such, the authoritative interpretation is not necessarily the opinion held by the drafters based on their memories of a relatively distant negotiation process, but one that "will come eventually when there is a difference of opinion which results in a dispute which then is taken to arbitration or adjudication".[119] The erosion of navigational rights may well be a natural aspect of the Convention's evolutionary process, but requires a structured approach which could be assisted by the referral of important disputes to arbitration or adjudication.

[116] On the important limits that need to be respected in the Convention's development see Chapter 8, Section 4.
[117] Nordquist and others (eds), *Freedom of Seas, Passage Rights and the 1982 Law of the Sea Convention* (Martinus Nijhoff, 2009) 97.
[118] ibid 98.
[119] ibid.

Chapter 8: Protection and Preservation of the Marine Environment: A central role for the LOSC

Following on from the overarching analysis of the case-study scenarios undertaken in Chapter 7, Chapter 8 examines the LOSC's evolution and development in the context of marine environment protection more generally. It asks: how possible and how ideal is it to continue working within the LOSC's confines to achieve marine environment protection goals? Section 1 examines the characterisation of the Convention as a living instrument and assesses a number of mechanisms which enable the Convention to evolve and develop. Section 2 examines the respective roles of the main actors involved in the LOSC's development, whereas Section 3 asks whether unilateral coastal State action can ever play a constructive role in the Convention's development. Section 4 applies Baroness Hale's 'living tree' metaphor to the LOSC and considers a number of important limitations that need to be respected if development of the Convention is to be adequate and acceptable. Section 5 reaches the conclusion that the LOSC can and should continue to occupy a central role in the context of marine environment protection.

1. The LOSC as a Living Instrument

Alongside the traditional conceptualisation of the Convention as a constitution for the oceans exists a relatively new but increasingly utilised[1] characterisation of it as a living instrument.[2] This highlights the fact that the LOSC, perhaps not unlike domestic constitutions,[3] was designed as a flexible instrument with an inbuilt predisposition to evolution and development over time. The

[1] See, e.g., Jill Barrett and Richard Barnes (eds), *Law of the Sea: UNCLOS as a Living Treaty* (BICL 2016). See also Daniel Moeckli and Nigel D. White, 'Treaties as 'Living Instruments' in Michael Bowman and Dino Kritsiotis, *Conceptual and Contextual Perspectives on the Modern Law of Treaties* (CUP 2018) 136.

[2] The phrase 'living treaty' is traditionally associated with the European Convention on Human Rights (ECHR). The first reference to the ECHR as a living instrument by the European Court of Human Rights (ECtHR) was in the *Tyrer* case. See *Tyrer v UK*, Application No. 5856/72, Judgment, 25 April 1978 para 31. For subsequent references and for an analysis of the ECtHR's approach in this regard see Alastair Mowbray, 'The Creativity of the European Court of Human Rights' (2005) 5 Human Rights Law Review 57.

[3] Vicki Jackson, 'Constitutions as "Living Trees"? Comparative Constitutional Law and Interpretive Metaphors' (2006) 75 Fordham Law Review 921.

assertion that a legal instrument is a living one is a statement that can have negative as well as positive connotations. Wood warns, for example, that living instruments "tend to bite the hands of those who negotiated [them]".[4] While such an outcome cannot be entirely excluded for the LOSC,[5] the present author subscribes to the view that the LOSC is a living treaty in a positive sense. It did not become a living instrument by accident or because of some overenthusiastic approach to it by courts and tribunals. It was *intentionally* designed as such by its drafters.

The description of the Convention as a living treaty that is capable of dealing with changing circumstances and demands is corroborated by the case-studies,[6] but this same dynamism is equally evident from a consideration of the field of marine environment protection at a more general level. The Convention has been able to evolve and develop through several mechanisms and pathways. Purely by way of example, the present section will consider how three such mechanisms (judicial interpretation; the Convention's rules of reference; and implementing agreements) have contributed to the Convention's development and to the realisation of its potential as a living instrument.

1.1 Judicial Interpretation

It has been contended that decisions of courts and tribunals have contributed relatively little to the Convention's development[7] and that, given the inevitable need for State initiative, such development will typically be sporadic and reactionary.[8] It is also the case that there are considerable limits to the creativeness of judges and arbitrators in their interpretative endeavours, foremost among which is their obligation to remain faithful to the text of the Convention's provisions. These are valid points and significant limitations.

[4] Michael Wood, 'Reflections on the UN Convention on the Law of the Sea' in Barrett and Barnes (n 1) lxxvii, lxxviii.
[5] Discussing the jurisdiction conferred by the LOSC upon coastal States to protect and preserve the marine environment, Gavouneli concludes that "the vastness of powers thus accrued to the coastal State was not fully understood at the time… the world community at large considered the notion of protection and preservation of the marine environment merely related to the oil pollution instruments already adopted in the IMO context". Maria Gavouneli, *Functional Jurisdiction in the Law of the Sea* (Martinus Nijhoff 2007) 64.
[6] Chapter 7, Section 8.
[7] Catherine Redgwell, 'The Never Ending Story: The Role of GAIRS in UNCLOS Implementation in the Offshore Energy Sector' in Barrett and Barnes (n 1) 167, 171.
[8] Richard Barnes, 'The Continuing Vitality of UNCLOS' in Barrett and Barnes (n 1) 459, 462.

Judicial interpretation can however secure clarification and development of LOSC provisions when these are unlikely to be forthcoming from other routes that typically require wide State consent. Courts and tribunals can also play a useful role in the integration of international environmental law developments into the LOSC regime.

The usefulness of judicial interpretation in this sense is exemplified by the development of Article 192 over the years,[9] with the provision's generality[10] having left judges and arbitrators plenty of room for manoeuvre. The recent *South China Sea* arbitration[11] is illustrative in this regard. The tribunal: restated the characterisation of the obligation under Article 192 as an obligation of due diligence;[12] confirmed the earlier finding in the *Southern Blue Fin Tuna case* to the effect that conservation of living resources of the sea is an element in protection and preservation of the marine environment;[13] and noted that "the content of the general obligation in Article 192 is further detailed in the subsequent provisions of Part XII... as well as by reference to specific obligations set out in other international agreements".[14] On the basis of this reasoning, the arbitral tribunal integrated the definition of 'ecosystem' from the Convention on Biological Diversity[15] as well as aspects of the CITES Convention[16] into its reasoning, enabling it to reach the conclusion that "Article 192 includes a due diligence obligation to prevent the harvesting of species that are recognised internationally as being at risk of extinction and requiring international protection".[17] By utilising Article 192 in this manner,

[9] Gavouneli notes in relation to Article 192 that "international courts and tribunals have added to the regulatory depth of the principle and expanded its scope of application". Maria Gavouneli, 'Protection standards for the marine environment: Updating Part XII of the Law of the Sea Convention?' 3 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3073263> accessed 29/5/2018.
[10] Article 192 provides simply that "States have the obligation to protect and preserve the marine environment".
[11] *South China Sea Arbitration (Philippines v China)*, PCA, Award on the Merits, 12 July 2016.
[12] ibid para 944.
[13] ibid para 956.
[14] ibid para 942.
[15] Convention on Biological Diversity (adopted 5 June 1992, entered into force 29 December 1993) 1760 UNTS 79.
[16] Convention on International Trade in Endangered Species of Wild Fauna and Flora (adopted 3 March 1973, entered into force 1 July 1975) 993 UNTS 243.
[17] *South China Sea Arbitration*, para 956.

courts and tribunals can play an important role not only in developing the LOSC but also in maintaining the systemic integrity of the wider marine environment protection regime.

1.2 Rules of Reference

Rules of reference effectively incorporate external rules and standards in the LOSC, ensuring that, as such rules and standards develop, the LOSC regime is updated accordingly, even as LOSC provisions themselves remain technically unchanged.[18] By way of example, reference can be made to MARPOL Annex I Chapter 8, which introduced a requirement of prior notification from ships wishing to conduct STS oil transfers in the EEZ.[19] In that instance, the generally accepted rule was incorporated in the International Convention for the Prevention of Pollution by Ships ('MARPOL').[20] The concept of Generally Accepted International Rules and Standards (GAIRS), however, is not limited to rules contained in international instruments. In Chapter 3 it was argued that, following several years of practice to that effect, compulsory pilotage in the Torres Strait can potentially be considered as a generally accepted practice for safety at sea under Article 39(2)(a).[21]

1.3 Implementing Agreements

As recognised by the arbitral tribunal in the *South China Sea* arbitration,[22] the potential importance to the LOSC of external multilateral marine environment protection instruments was envisaged by the Convention's drafters in Article 237.[23] Article 237's inclusion in the LOSC was necessitated by the expanding tapestry of international and regional marine environment protection instruments – a phenomenon which is certainly more prominent now, but which was already noticeable at the time of the Convention's drafting. But the LOSC goes beyond simply laying down rules on the relationship between the LOSC and other international instruments. It actually *encourages*, at several

[18] Chapter 1, Section 3.2. See also Redgwell (n 7).
[19] Chapter 5, Section 3.
[20] The International Convention for the Prevention of Pollution from Ships (adopted 2 November 1973, entered into force 2 October 1983) and its Protocol of 1978 (adopted 17 February 1978, entered into force 1 October 1983) 1340 UNTS 62.
[21] Chapter 3, Section 7.1.
[22] *South China Sea* arbitration, para 942.
[23] Article 237 regulates the relationship between agreements relating to protection and preservation of the marine environment and Part XII of the LOSC. See Chapter 1, Section 3.2.

junctures, the development of external rules and agreements.[24] In Article 194, for instance, the Convention encourages the adoption of measures designed to minimise pollution from vessels.[25] Similar calls for cooperation can be found outside the context of Part XII. As discussed in Chapter 3, for example, in the context of straits Article 43 encourages States to cooperate by agreement for (*inter alia*) the prevention, reduction and control of pollution from ships.[26] Given this approach, it should not be surprising that a considerable network of instruments has developed[27] which already includes two implementing agreements (the Part XI and Fish Stocks Agreements)[28] and may shortly incorporate a third, concerning the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction ('BBNJ Instrument').[29] Being designed specifically to implement the LOSC, these agreements have an especially close relationship to the Convention. As discussed in Chapter 1, the term 'implementing' can be somewhat misleading in this context: both the Part XI and the Fish Stocks Agreement go beyond mere interpretation to effectively modify the Convention. Insofar as the BBNJ instrument is concerned, much remains to be seen but it is clear from the outset that there is considerable potential for development even as States remain adamant that nothing in the instrument will prejudice the rights, jurisdiction and duties of States under the LOSC.[30]

To conclude this Section, it is evident that the LOSC has evolved and developed through a variety of ways and mechanisms. It would be difficult and not necessarily useful to rank the different mechanisms by order of importance as it is precisely the combination of the different mechanisms that together makes the LOSC the living instrument that it is. It is nevertheless

[24] Bernard Oxman, 'Tools for change: The amendment procedure' in UN Division for Ocean Affairs and the Law of the Sea (DOALOS), *Proceedings of the Twentieth Anniversary Commemoration of the Opening for Signature of the United Nations Convention on the Law of the Sea* (UN 2003) 195, 199.
[25] LOSC, Article 194(3)(b).
[26] LOSC, Article 43(b).
[27] For an extensive list of multilateral treaties dealing with protection and preservation of the marine environment see Alexander Proelss (ed), *United Nations Convention on the Law of the Sea: A Commentary* (Hart 2017) 1602.
[28] Chapter 1, Section 4.2.2.2.
[29] Chapter 7, Section 1.
[30] ibid.

possible to make some general observations and conclusions about the usefulness of the different mechanisms. In Chapter 7 Section 6 it was concluded that the actual role played as well as the potential role that can be played by interpretation in the development of the LOSC is significantly greater than the role that is reserved for modification. Additionally, it is also evident that, in the context of shipping, rules of reference have proved to be a particularly practical and effective way to develop and add further layers of detail to the LOSC's general provisions. As is evident from the case-study scenarios, however, different situations may well entail or require development of the Convention through a variety and a combination of mechanisms and it is certainly not possible to exclude the potential relevance and importance of any of the available mechanisms for the Convention's development.

2. Actors Involved in the LOSC's Development

As open to development as the LOSC has shown itself to be, were it not for the important role that is played by a number of actors in its development, it would not be possible to speak of the Convention as a living instrument, or at least not to the extent that can be conceived today. Being the Convention's main target audience, and the ones that apply it on a day-to-day basis, States are clearly well placed to influence the Convention's development.[31] Alongside States, Courts and tribunals, international and regional organisations such as the IMO and the EU, as well as (to a lesser extent) academic commentators[32] can all play an important role.

2.1 International Courts and Tribunals

International courts and tribunals perform two distinct functions. Their primary function is to settle disputes in a peaceful manner, but another important role revolves around the application of the abstract legal rule to the

[31] States are also in a good position to influence development of the Convention by other actors. The ability of courts and tribunals to shape the Convention's development, for instance, is influenced by State decisions to institute (or not to institute) dispute settlement proceedings. States also have discretion in choosing dispute settlement fora and in appointing individual arbitrators.

[32] Barnes (n 8) notes at p 470 that "[d]ebates about the law, what it is and what it should be, are played out on a large scale in the literature. This fertile literature nourishes the law creation process".

individual case.[33] The solution to disputes needs to be found in the applicable law. In many cases, however, the applicable law will not easily lend itself to mechanical application and dispute settlement may require a creative process of extrapolation on the part of judges and arbitrators. This is true of law generally and of international law in particular:

> In international law the scope [for the creative exercise of judicial activity] is much wider; for, in international society, conscious law-making by legislation is in a rudimentary stage... and, in consequence, the field of detailed concrete regulation is small, and that of general principles of law wide and elastic.[34]

Given the generality and ambiguity of some of the LOSC's provisions and the Convention's framework nature, Lauterpacht's observation about the scope for the creative exercise of judicial activity in international law is *especially* true of the LOSC. The case-study scenarios corroborate this conclusion. If any of them were to come before an international court or tribunal, it is highly unlikely that a decision or award could be arrived at on some straightforward, purely mechanical computation of the relevant LOSC provision(s). By way of example, reference could be made to questions about the extent of coastal State jurisdiction in relation to STS oil transfers in the EEZ under Article 59. If a court or tribunal were to find itself in the unenviable position of having to decide on this point, the application of this provision would require a significant element of subjective judicial reasoning. Article 59 admittedly presents a level of abstraction and ambiguity that stands out even by LOSC standards but the conclusion that a mechanical approach is not a very useful one applies to LOSC provisions generally.

[33] Hersch Lauterpacht, *The Function of Law in the International Community* (OUP 2011) 110: "judicial activity is essentially the last link in the chain of the crystallization of the rule of law, that is to say, it is the bridge between the necessarily abstract legal rule and the necessarily individual nature of the particular case..."
[34] ibid 264.

The decisions and direction that judges choose to take when they have room for judicial manoeuvre in the application of the LOSC to specific cases can influence the Convention's evolution and development. Technically, the judgments of international courts and tribunals are binding only between the parties to the relevant case. Moreover, courts and tribunals are often careful to limit their decisions and awards to the immediate matter(s) at hand.[35] At the same time, in deciding a given case courts and tribunals perform a wider function that "speaks to the broader functioning and stability of the international legal system".[36] Their decisions can set the tone for subsequent decisions, will likely be monitored closely by other interested States and, in all this, can play an important role in calibrating the trajectory for the Convention's future development.

2.2 The International Maritime Organisation

The IMO's role[37] as an actor in the LOSC's development is in a sense prescribed by the LOSC which, at several junctures, refers to 'the competent organisation' in connection to the adoption of rules on shipping matters.[38] Article 211(1), for instance, carves out a central role for the IMO in the establishment of international rules and standards for the prevention, reduction and control of pollution of the marine environment from vessels. Given that the consent of the organisation's member States is ultimately required for the adoption of IMO treaties and resolutions, it may be asked whether there is any point in considering the IMO as an actor its own right, in contradistinction from States. States certainly play a crucial and even a determinative role in the

[35] In the *Virginia G*, for instance, ITLOS expressly clarified that the conclusions reached in relation to the bunkering of fishing vessels do not necessarily apply to other forms of bunkering. *The M/V "VIRGINIA G" Case (Panama v. Guinea-Bissau)*, ITLOS Case No. 19, Judgment (14 April 2014) para 223.

[36] Sean Murphy, 'International Judicial Bodies for Resolving Disputes Between States' in Cesare Romano and others (eds), *The Oxford Handbook of International Adjudication* (OUP 2013) 182, 197.

[37] Dorota Lost-Sieminska, 'The International Maritime Organization' in Bowman and Kritsiotis (n 1) 907; Rosalie Balkin, 'The IMO and Global Ocean Governance: Past, Present and Future' in David Attard and others (eds) *The IMLI Treatise on Global Ocean Governance: IMO and Global Ocean Governance* (OUP 2018) 1; Aldo Chircop, 'The IMO's Work on Environmental Protection and Global Ocean Governance' in Attard and others (n 37) 172.

[38] IMO Secretariat, 'Implications of the United Nations Convention on the Law of the Sea for the International Maritime Organisation' Leg/Misc.8 (2014). At p 7 it is noted that, when used in the singular, "the expression competent international organization… applies exclusively to the IMO".

IMO's functioning.[39] At the same time, and as Barnes observes, it is a reality of institutional decision-making that this is "sometimes done at one stage removed from the control of individual States, or at least in a way that mediates between different interests of individual States".[40] The constant striving for compromise-based unanimity sets decision making at the IMO apart from more 'direct' forms of State practice.

In and of itself, compromise-based decision making is not problematic. Just like flag State interests, environment protection interests cannot ride roughshod over all other considerations and, in the ordinary course of events, it would be unrealistic to imagine that coastal State proposals can be adopted *tale quale*, without any dilution or attempt at dilution. The problem with compromise-based unanimity is that, in relying on the good faith of States to cooperate, the IMO process is exposed to potential lapses in its outcomes. In some instances, the lowest common denominator may not be suitable from a marine environment protection perspective and may be insufficient to fulfil the relevant obligations of States. As discussed in Chapters 3 and 7, the Resolution that was adopted by the IMO's Marine Environment Protection Committee (MEPC) to regulate transit passage through the Torres Strait can arguably be classified in this category.

2.3 The European Union

The EU has become an increasingly important actor in the law of the sea.[41] Given the Union's vast and longstanding interests in seaborne trade, one might expect its policy approach to be shaped primarily by flag State interests. In his analysis of the EU's position, however, Churchill notes that, following the *Erika* and the *Prestige* disasters, "the EU appears now to have more the

[39] Chircop (n 37), in fact, notes at p 204 that shortcomings in the IMO's environmental mission "are not central to the idea, structure, and operationalization of the IMO, but rather speak to the conduct of member states that falls short of their maritime obligations".
[40] Barnes (n 8) 470.
[41] Robin Churchill, 'The European union as an Actor in the Law of the Sea, with Particular Reference to the Arctic' (2018) 33 IJMCL 1; Tulio Treves, 'Law of the Sea in the European Union and in the Mediterranean' in Harry Scheiber and Jin-Hyun Paik, *Regions, Institutions and Law of the Sea* (Martinus Nijhoff 2013) 313.

interests of a coastal and port State than a flag State".[42] While this form of classification may be too rigid, it seems fair to classify the EU as an entity increasingly concerned with marine environment protection.

The EU can influence the LOSC's development in at least two ways. First, although it is not a member of the IMO,[43] in designated areas of EU competence individual EU MS "can normally participate in the work of the organization only in accordance with any EU common position that has been agreed to".[44] Secondly, the EU has not held back from adopting legislation related to the law of the sea on a regional level but with an international outlook. By way of example, reference could be made to the EU MRV (Monitoring, Reporting, Verification) Regulation,[45] adopted in 2015 amid EU dissatisfaction with IMO progress in tackling Greenhouse Gas (GHG) emissions from ships. From 1 January 2018, the MRV Regulation has required shipowners to annually monitor, report and verify CO_2 emissions for vessels that are larger than 5,000 gross tons (GT) and calling at an EU port. The EU MRV Regulation is today paralleled by a similar IMO system which entered into force on 1 March 2018 following an amendment to the MARPOL Convention.[46] It is evident that the adoption or the threat of adoption of legislation at EU level can impact the rule development process at the IMO, including by acting as an additional driving force where sufficient motivation to take marine environment protection measures is otherwise lacking. Not wanting to place themselves at a disadvantage in relation to non-EU flag States, when it comes to marine environment protection measures EU Member States with flag State interests will typically push for an equal level of regulation at the international and regional level.

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[42] ibid 14. For a more drastic assessment of the EU's approach see James Kraska, *Maritime Power and the Law of the Sea: Expeditionary Operations in World Politics* (OUP 2011) 351: "The European Community seeks to reshape the navigational regime of the EEZ in order to accommodate more progressive environmental regulation".

[43] The EU cannot be a full member since the IMO's founding instrument only allows for State membership. The European Commission has observer status.

[44] Churchill (n 41) 19.

[45] Regulation (EU) 2015/757 of the European Parliament and of the Council of 29 April 2015 on the Monitoring, Reporting and Verification of Carbon Dioxide Emissions from Maritime Transport, and Amending Directive 2009/16/EC (OJL 123, 19.5.2015, p. 55-76).

[46] Resolution MEPC.278(70) (adopted 28 October 2016, entered into force 1 March 2018).

3. A Role for Unilateral Action?

The 1970 Arctic Waters Pollution Prevention Act (AWPPA),[47] the 2010 Northern Canada Vessel Traffic Services Zone Regulations ('NORDREG Regulations')[48] and the Torres Strait compulsory pilotage system were all adopted unilaterally and are often referenced as examples of unilateral action. Instances of unilateral action in regards to bunkering, STS oil transfers and the carriage of nuclear cargo were also cited in Chapters 5 and 6. A common denominator to all these instances and a defining feature of unilateral action is the factor of independent action by a single State with an impact that extends to other States. The prevalence of unilateral coastal State action in the prevention of accidental vessel-source pollution requires an important and difficult question to be addressed: can unilateral action ever play a constructive role in the Convention's development?

In international law, unilateralism is a tainted concept. If multilateralism is desirable and a goal to be strived for, unilateralism is to be derided – almost without exception:

> A little as in football, the state regarded as guilty of unilateralism is the one that does not play the collective game; the one that 'plays personally'; in short, the one that puts the triumph of its interests before that of the collective interest, without even speaking of the 'common good'.[49]

Given the choice between unilateralism and multilateralism, there can be no doubt that cooperation based multilateralism is the preferable option and the one that is most likely to secure uniformity. As Bodansky puts it, however, the unfortunate reality is that in several instances the "choice [will not be] between unilateralism and multilateralism, but between unilateralism and inaction".[50]

[47] The Arctic Waters Pollution Prevention Act (R.S.C., 1985, c. A-12).
[48] Northern Canada Vessel Traffic Services Zone Regulations, SOR/2010-127 (1 July 2010).
[49] Pierre-Marie Dupuy, 'The Place and Role of Unilateralism in Contemporary International Law' (2000) 11 EJIL 19, 20.
[50] Daniel Bodansky, 'What's so bad about Unilateral Action to Protect the Environment?' (2000) 11 EJIL 339.

The case-studies support this assessment. Canada adopted the AWPPA following several failed attempts to secure multilateral action. The Torres Strait compulsory pilotage system was introduced by Australia following the adoption of an IMO resolution which, in *recommending* the utilisation of pilotage services, practically re-affirmed the *status quo*. Besides filling possible voids left unaddressed by multilateral action, unilateral action can act as a decisive catalyst for multilateral action. As discussed in Chapter 3, for instance, the adoption of the AWPPA ultimately resulted in the inclusion of Article 234 in the LOSC. Additionally, the threat of unilateral action can help to raise the bar insofar as the least common denominator in multilateral negotiations is concerned.

There are a number of factors against which unilateral actions can be measured to determine whether they may have a constructive role to play in the Convention's development, or whether, to the contrary, they are ultimately likely to cause more harm than good. First, it is important to consider compatibility with the LOSC. Where unilateral action is permitted there can be no legitimate objection to the unilateral nature of the conduct in question. The unilateral adoption of NORDREG is an example. Questions can be raised about whether Article 234 conditions are fulfilled but, if it is concluded that they are, there can be no debate about Canada's right to act unilaterally under that provision. Conversely, where unilateral action is *not* permitted by the LOSC, it will be harder to justify. The unilateral adoption by Australia of a compulsory pilotage regime for the Torres Strait, for example, was incompatible with the LOSC. As discussed in Chapter 3, however, while Australia received threats of legal action, no State ultimately took the decisive step to institute legal proceedings and Australia's compulsory pilotage regime for the Torres Strait is now potentially applicable as a generally accepted practice for safety at sea under Article 39(2)(a).[51] This indicates that States can be more tolerant of unilateral action than may at first be assumed.

[51] Chapter 3, Section 7.2.

Secondly, it is important to consider the relationship of unilateral conduct to the multilateral setting.[52] First, a State considering unilateral action should assess the chances of appropriate action being taken at the multilateral level. The multilateral process needs to be given adequate space and time to succeed. In some cases, however, it will be clear that a multilateral approach is unlikely to bear fruit. It was mentioned in Chapter 4, for instance, that the outcome of Australia's attempt to secure the adoption of a compulsory pilotage regime for the Torres Strait at the IMO is unlikely to have encouraged Canada to follow a multilateral approach in regards to NORDREG. Secondly, where unilateral action is taken, the reasonableness and proportionality of the conduct in question must be assessed. The more reasonable and proportionate a measure, the more likely it is to prove acceptable to other States who may even endorse the unilateral act with their compliant conduct. It is important to ask, for instance, whether the unilateral conduct seeks to protect some important community interest or whether it seeks simply to protect a parochial interest of the acting State. The clear goal of marine environment protection behind measures such as the AWPPA, NORDREG and the Torres Strait compulsory pilotage regime did not eliminate the controversy surrounding these measures but certainly helped to make them more palatable to other States. By contrast, the parochial focus of Angolan bunkering legislation (seeking to circumvent the rule that in the EEZ coastal States only have jurisdiction to apply customs laws and regulations in regards to artificial islands, installations and structures) served only to highlight the illegitimacy on Angola's conduct.[53] Similarly, the exaggerated nature of Chilean legislation on the carriage of nuclear cargo (excluding outright any such carriage through the country's EEZ) practically eviscerates any chance of wide acceptability.[54]

A third factor to consider is the urgency with which regulatory action may be required. The ability to quickly respond to changing circumstances is a major benefit of unilateral action over multilateral action. In Chapter 4 it was argued that the ability to respond quickly is a primary reason why the facility

[52] Michael M'Gonigle, 'Unilateralism and International Law: The Arctic Waters Pollution Prevention Act' (1976) 34 University of Toronto Faculty of Law Review 180, 196.
[53] Chapter 5, Section 5.
[54] Chapter 6, Section 5.

for coastal States to resort to unilateral action under Article 234 should be safeguarded in the dynamic environment of the Arctic.[55]

In the context of marine environment protection, a multilateral approach is always preferable to a unilateral one. This position must however be qualified by a number of considerations. First, successful multilateral action will not come easily or at no expense. If States are serious about the desirability of avoiding resort to unilateral action, they must be prepared to strive for multilateralism, including particularly by being open to compromise in multilateral negotiations.[56] Unfortunately, and as the Torres Strait case-study exemplifies, such flexibility has not always been forthcoming. Secondly, where the choice is between no or inadequate action and unilateral action, the viability of unilateral action should not be outrightly excluded without further assessment. Thirdly, the final judgment on unilateral action can ultimately only be passed retrospectively, on a case-by-case basis, and in view of the relevant reactions by impacted States.[57]

4. Important Limitations

If the Convention's long-term survival is to be secured, any development which takes place must respect certain important limitations. In discussing the concept of the LOSC as a living treaty,[58] Barrett makes an interesting reference to the UK Supreme Court's Justice Baroness Hale's discussion of the European Convention on Human Rights (ECHR) as a living instrument.[59] Speaking about interpretation of the ECHR by the European Court of Human Rights (ECtHR), Baroness Hale notes that:

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[55] Chapter 4, Section 5.
[56] Bernard Oxman, 'The Territorial Temptation: A Siren Song at Sea' (2006) 100 AJIL 830, 851: "[m]aking [multilateralism] work requires some accommodation of substantive preferences to the broader interests in the success of the multilateral process…"
[57] Gregory Shaffer and Daniel Bodansky, 'Transnationalism, Unialteralsim and International Law' (2011) 1 Transnational Environmental Law 31, 41: "[t]he impact of unilateral action ultimately depends on whether it is persuasive in shaping norms of behaviour".
[58] Jill Barrett, 'UNCLOS: A "Living" Treaty?' in Barrett and Barnes (n 1) 3, 36.
[59] Baroness Hale, 'Beanstalk or Living Instrument? How tall can the European Convention on Human Rights Grow?' (Gresham College, 16 June 2011) <http://www.gresham.ac.uk/lecture/transcript/download/beanstalk-or-living-instrument-how-tall-can-the-european-convention-on-human/> accessed 28 July 2018.

> [t]he image of a 'living tree' may be more helpful than the image of a 'living instrument'… A tree has a life of its own, but it can only grow and develop within its natural limits.[60]

These cautionary words are equally pertinent in the context of the LOSC – a Convention which, as discussed in Section 1, is itself increasingly referred to and treated as a living instrument. It is only appropriate, therefore, to question what type of growth is adequate and within the LOSC's natural limits. Answering this question in relation to judicial interpretation of the ECHR, Baroness Hale assigns key importance to predictability[61] and states that development must not contradict the Convention's express language and must be consistent both with established jurisprudence and with other relevant international instruments.[62] These observations apply also to the LOSC's development and will be utilised as a starting point for the following analysis of limitations that need to be respected if the Convention's development is to be adequate. The analysis will unfold in two parts: the first dealing with what respecting limitations involves, the second with what respecting limitations should *not* involve.

It is interesting that Baroness Hale focuses on the predictability of development. As discussed in Chapter 2, the protection of legitimate expectations is a main facet of the good faith principle; good faith, it was argued, favours that interpretation which is most in accordance with the legitimate expectations of the parties to the treaty.[63] The desire for a stable and predictable regulatory framework was one of the main motivations behind the codification exercise that led to the LOSC, and one of the main benefits that followed. Unpredictable development would erode this benefit, reduce the Convention's attractiveness to States and directly undermine it. From this perspective, the best 'growth' consists in development that happens gradually, with solid foundations in the LOSC and in wider international law, including

[60] ibid 1.
[61] ibid 8: "The key element, it seems to me, is that the development should be a predictable one".
[62] ibid.
[63] Chapter 2, Section 7.

international environmental law. The development of Article 192 along the lines outlined in Section 1 of this Chapter exemplifies this ideal sort of development. As further developments in international environmental law are registered and consolidated, Article 192 will gradually allow for further (predictable) development of the LOSC. No one should be entirely surprised, for instance, if in some future judgment ITLOS were to expressly recognise the customary law status of the precautionary principle, and if it were to incorporate the said principle into the LOSC regime by reference to Article 192. International environmental law has been developing in this direction[64] and a highly indicative pronouncement was delivered by ITLOS in the *Responsibilities in the Area* opinion.[65]

As a rule, development should not contradict the express language of the Convention. Generally speaking, and as evidenced by the case-studies,[66] the Convention is flexible enough to accommodate development through interpretation. On rare occasions, interpretation will not be sufficient to secure necessary development and what can be described as slight or modest modifications of certain provisions may be required. The only such instance encountered in the case-study scenarios was in relation to the requirement of ice-cover for most of the year under Article 234.[67] Even if this potential modification of Article 234 can be considered as relatively moderate,[68] the express or tacit support of all State parties to the LOSC would be required to secure it.[69] More drastic modifications can be dangerous to the Convention's stability and may seriously undermine its continued acceptability.[70] Substantial modifications should therefore be based on a firm and irrefutably clear foundation of collective State willingness and support that is best achieved through more formal mechanisms such as implementing agreements

[64] Chapter 2, Section 5.
[65] Chapter 2, Section 4.3.
[66] Chapter 7, Section 6.
[67] Chapter 4, Section 5.
[68] ibid.
[69] On modification through subsequent practice see Chapter 1, Section 4.2.2.2.
[70] Wood (n 4) argues at p lxxviii that development of the LOSC must "go with the "grain" of the Convention; [it must] cleave to the fundamental principles of the Convention, such as freedom of navigation and innocent passage".

and the amendment procedures contained in Articles 312-316 of the Convention.[71]

Although there is no rule of *stare decisis* in international law, predictability in the LOSC's development requires also consistency with previous decisions of international courts and tribunals. At the same time, it cannot be excluded that occassional departures from previous decisions will be inevitable and acceptable. This can especially be the case where departure from precedent is supported by wider developments, including developments in international environmental law. ITLOS's decision in the *Virginia G* case, where ITLOS took an alternative route to that previously taken in the *Dispute Concerning Filleting within the Gulf of St. Lawrence*, provides a good example of just such an instance.[72] Even though the relevant cases were separated by almost 15 years, ITLOS took care to recognise the departure from precedent and provided detailed reasoning to support its decision, which it grounded firmly in the LOSC.[73]

Finally, predictable development of the LOSC requires consistency with other international instruments and with customary international law. It will be recalled that, in interpreting LOSC provisions, the principle of systemic integration requires account to be taken of any other relevant rules of international law applicable in the relations between the parties.[74] Interestingly, the need for consistency with international law can not only serve as a boundary to development but may also act as a catalyst for development. In the context of the present thesis, it is amply clear that developments in international environmental law have had this effect on the LOSC.

Having discussed what respecting limitations involves, it is important to consider also what respecting limitations for development of the LOSC

[71] Robin Churchill, 'The Impact of State Practice on the Jurisdictional Framework Contained in the LOS Convention' in Alex Oude Elferink (ed), *Stability and Change in the Law of the Sea: The Role of the LOS Convention* (Brill 2005) 91, 142.
[72] Chapter 7, Section 6.
[73] *Virginia G*, paras 214-215.
[74] Chapter 1, Section 4.2.1.3.

should *not* involve. Several authors have voiced their concern about the need to safeguard navigational rights under the Convention. Kraska, for instance, has warned that:

> …if the navigational regimes in the Convention do not remain stable, the Convention's attraction as a "package deal" could diminish for the US, other maritime powers, states operating large or open commercial vessel registries, and national economies dependent on global trade. If that occurred, the grand bargain struck between the coastal states and the maritime states would be placed at risk…[75]

Kraska makes an important point in stating that the stability of navigational regimes needs to be maintained. At the same time, it is submitted that the maintenance of stability does not require an outright exclusion of *any* development of the LOSC in the context of the navigational regimes.

The Convention's framework character[76] means that the package deal which it encompasses does not expressly regulate every possible conceivable scenario of conflict between navigational and environmental interests that can arise in practice. As witnessed in the case-study scenarios, resolution of specific conflicts may well entail an interpretative process that requires the balancing of general and possibly conflicting provisions. As such, contemporaneous interpretation of the Convention in light of developing international law can result in different interpretative outcomes or 'balances' of navigational and environmental interests than may have been reached following application of the very same provisions at some point in the past.[77]

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[75] James Kraska, 'The Law of the Sea Convention: A National Security Success—Global Strategic Mobility Through the Rule of Law' (2008) 39 George Washington International Law Review 543, 555.

[76] Chapter 1, Section 1.2.

[77] Klein notes that "the 'continued manifestations' of the freedom of navigation could require that its scope be modified in light of developments in international law, especially in relation to environmental concerns". Natalie Klein, 'Litigation over Marine Resources: Lessons for Law of the Sea, International Dispute Settlement and International Environmental Law' in Donald Rothwell and Kim Rubenstein (eds), *Australian Yearbook of International Law* (Vol 28, 2009) 131, 167.

Although the overall trend appears to be one of modest erosion of navigational rights in favour of marine environment protection interests, interpretative outcomes can also favour navigational interests.[78]

When navigational and environmental interests clash, they need to be harmonised in line with the LOSC and in view of wider international law. As long as this is done adequately and in good faith, any subsequent development of the LOSC need not undermine the Convention's stability or its attraction as a package deal. Thus, MARPOL Annex I Chapter 8, which introduced a requirement for vessels to notify the coastal State prior to the conduct of STS oil transfers in the EEZ, modified the EEZ regime but not in a way that could in any sense be perceived as having destabilised it. Conversely, coastal State regulation of the bunkering of vessels in transit in the EEZ interferes with freedom of navigation in a more substantial manner and exemplifies the sort of development that exceeds appropriate limits. Other examples can be mentioned. In Chapter 3 it was argued that the adoption of a compulsory pilotage regime for the Torres Strait at IMO level would have been an acceptable restriction.[79] More drastic measures such as the exclusion of passage are incompatible with the Convention and, in substantially undermining the package deal, would contribute to destabilising it.

Respecting the aforementioned limitations is ultimately a matter of respecting the Convention's importance in international relations:

> There are some who think that the Convention is infinitely malleable, or that it can even just be ignored when politics so dictate. One of the tasks of lawyers in this field is to tell people that the Convention does mean something, that it has a value in itself, and that its basic principles should be upheld.[80]

[78] See Chapter 4, Section 4.2.4 on the evolutionary interpretation of the requirement to have due regard to navigation under Article 234.
[79] Chapter 3, Section 8.
[80] Wood (n 4) lxxviii.

By ensuring that development of the LOSC happens in line with the above-mentioned limits, it should be possible not only to maintain wide acceptability of the Convention but also to ensure that it continues to play an important role over years to come. It is important not to give the impression that there is a need for some sort of siege mentality where marine environment protection measures are subjected to a form of opposition by default. Interestingly, in his 2006 assessment of creeping coastal State jurisdiction, Oxman laments the lack of 'sources of resistance' to what he describes as the territorial temptation.[81] On the one hand, it is truly disappointing that some coastal State measures that are clearly incompatible with the LOSC (e.g. regulation of the bunkering of vessels in transit in the EEZ) can go unchallenged, especially when maritime powers such as the US have been only too willing to challenge measures that are arguably compatible with the LOSC (e.g. NORDREG). On the other hand, the sense of tempered enthusiasm to challenge marine environment protection measures which Oxman hints at may also be the result of a partial shift in perspective, whereby traditional maritime States are no longer as single-mindedly focused on the absolute preservation of navigational interests at all costs.

5. A Central Role for the LOSC

That Coastal States find themselves in a jurisdictionally better position to protect the marine environment against accidental vessel-source pollution is evident from the case-studies: from the extended interpretation of port-State jurisdiction utilised to accommodate Australia's compulsory pilotage regime; from the wide interpretation of Article 234 utilised by Canada as a basis for NORDREG; and from the adoption of MARPOL Annex 1 Chapter 8 to regulate STS oil transfers in the EEZ. Additionally, there is clear scope for the recognition of increased coastal State rights in regards to the regulation of certain types of bunkering and STS oil transfers, as well as in regards to the carriage of nuclear cargo through EEZs. Two main factors were identified as having contributed to the LOSC's development in this direction: developing international environmental law and an increasing willingness on the part of

[81] Oxman (n 56) 850: "Although one would normally expect the maritime powers to be the main source of resistance to such a trend, some facts suggest otherwise".

coastal States (and, in a sense, on the part of States generally) to take marine environment protection action.[82] These two factors will likely persist and continue to act as catalysts for the LOSC's development for years to come. As is evidenced by the case-studies and the negotiation of the new BBNJ instrument, the LOSC's development journey is – very much in the nature of a living instrument – an ongoing one.

The trend of allocating increasing importance to marine environment protection has had and will continue to have some consequences on navigational interests. Measures such as the 2010 NORDREG Regulations, the Australian compulsory pilotage system in the Torres strait and MARPOL Annex I Chapter 8 all have a modest limiting effect on navigation. Even outside the case-study context, measures such as the introduction of sulphur fuel limits[83] and proposed Greenhouse Gas (GHG) reduction targets[84] all affect navigational interests.

At the same time, it is important not to exaggerate the extent of development of the LOSC or the impact on navigational interests. It is submitted that the potential danger envisaged by Oxman of a 200nm territorial sea being created[85] is nowhere close to materialising. As Oxman noted in 2006, "after all is said and done, what really separates the EEZ from the territorial sea is that the former… is not in principle subject to comprehensive coastal State jurisdiction".[86] While coastal States have found themselves in an enhanced position to protect and preserve the marine environment in the EEZ, qualifications to freedom of navigation have generally been very specific and extend only as far as necessary to achieve marine environment protection goals required by the LOSC itself. Nothing close to comprehensive coastal State jurisdiction in the EEZ can be said to have been established. The days of

[82] Chapter 7, Section 2.
[83] The IMO has set a global limit for sulphur in fuel oil used on board ships of 0.5% from 1 January 2020, down from the current limit of 3.5%. See: <http://www.imo.org/en/mediacentre/hottopics/pages/sulphur-2020.aspx> accessed 26 December 2018.
[84] Chapter 7, Section 1.
[85] Oxman (n 56) 840.
[86] ibid 839.

Grotius' freedom of the seas may be long gone, but to state that "freedom of the seas is becoming the exception and controlled access by the coastal State is becoming the norm"[87] does not provide an accurate representation of the current state of affairs, at least insofar as the Convention's development in the area of marine environment protection is concerned.

The fact that the main developments of the LOSC referred to in Chapter 7 consist in legitimate *interpretations* of the Convention provides a good idea of the nature and scale of the development in question.[88] Instances of illegitimate unilateral coastal State action were mentioned and certainly exist.[89] These need to be adequately protested and reacted against. They should not, however, be considered as indicative of the LOSC's development trajectory. Churchill's 2005 conclusion that no State practice that is inconsistent with the LOSC "is sufficiently widespread or uniform to amount to an agreed interpretation of the Convention or to have given rise to a new rule of customary international law modifying or supplementing [it]"[90] is corroborated by the case-study findings. The LOSC accord is not being re-written. It continues to determine the course of developments in a major way. It is difficult to make precise predictions about the future nature of the LOSC's development. Nonetheless, from what can be envisaged at this stage, it appears that the relatively modest nature of present developments will be maintained. Given the need for wide State consent, it will not become any easier for the LOSC to be developed and courts and tribunals are unlikely to start engaging in some revolutionary exercise of judge-made law.[91]

So, how possible and ideal is it to continue working within the LOSC's confines to achieve marine environment protection goals? As with any other international instrument, if the Convention does not develop it risks becoming a redundant instrument. But it is not in the nature of the LOSC to fossilise.

[87] Kraska (n 42) 225.
[88] See Chapter 7, Section 6.
[89] Reference can be made, for instance, to Angolan legislation on bunkering and STS oil transfers (discussed in Chapter 5, Section 5) and to Chilean legislation on the EEZ carriage of nuclear cargo (discussed in Chapter 6, Section 5).
[90] Churchill (n 71) 140.
[91] For a similar outlook see Barnes (n 8) 487.

The LOSC is an instrument with a capability to shape developments in the law of the sea context. It provides the basic vocabulary utilised by States in their actions and reactions, and is the main source of law relied upon by international courts and tribunals in this area.[92] The Convention is also utilised as a primary reference point when it comes to the negotiation of new instruments of relevance to the law of the sea context. Moreover, in addition to its ability to influence external developments, the LOSC also has an ability to internalise them, with rules of reference and broad provisions such as Article 192 playing an important role in ensuring that the Convention remains 'updated'.

The case-studies show that it is possible to achieve adequate levels of marine environment protection by working within the Convention's confines. The Convention's inherent flexibility ensures this much. Yet whether, how and to what extent this flexibility is utilised ultimately depends essentially upon States. If adequate multilateral solutions are to be found, a true spirit of cooperation and a greater willingness to compromise – be it on 'flag State' or on 'coastal State' interests – is required. A stubborn attitude and an aversion to compromise will only serve to propel States down a possibly vicious cycle of unilateral action with a potential to undermine the LOSC's authority.

In assessing how well the LOSC fits into the mould of a living treaty, Barrett argues that "[a] key practical test of how effectively UNCLOS lives is its ability to address major new challenges that were not foreseen at the time it was negotiated".[93] It has already been concluded that, with the right attitude on the part of States, solutions to the problems that arise in the case-study scenarios can be found and developed within the Convention's framework.[94] Even beyond the case-study scenarios, the Convention's generality and flexibility means that it is in a good position to contribute to the resolution of new challenges as they arise. At the same time, detailed and comprehensive solutions cannot be expected from the Convention for every situation. The

[92] Barnes (ibid) notes that the LOSC "is part of the language and grammar of international law, and we cannot but help use it and be influenced by it".
[93] Barrett (n 58) 5.
[94] Chapter 7, Section 6.

Convention's claim to longevity lies in its generality (to be developed by States as required) and not in the exhaustive regulation of all the topics that it directly or indirectly touches upon.[95] In the context of the BBNJ instrument, for example, the Convention clearly has much to contribute, including by acting as a source of inspiration for principles and approaches. At the same time, the new high seas regime to an extent will need to be 'created' over and above what already exists in the Convention.[96] A similar conclusion can be reached in regards to climate change. While clearly relevant, the LOSC only provides a partial framework for addressing some of the causes and consequences of climate change.[97] To recognise these limitations is not to detract from the Convention's status. Limitations are very much an intrinsic part of its nature as a living instrument.

Besides being possible, it is also *ideal* to continue working with the LOSC and within its confines. As a widely accepted codification of the law of the sea, the LOSC enables a high degree of predictability,[98] even if occasionally diminished by its at times ambiguous nature. If this useful function is to be preserved, States must comply with the Convention and act within the jurisdictional limits established by its provisions. In developing the LOSC, it is crucial for the right balance to be found. Non-development of the Convention is clearly a non-option if its relevance is to be maintained, but unruly development is just as dangerous, if not even more so. What development is undertaken must therefore occur within the demarcation lines outlined in Section 4.

Reflecting on the text of the LOSC shortly after its drafting, Tommy Koh questioned whether the drafters had managed to achieve their "fundamental objective of producing a comprehensive constitution for the

[95] Chapter 1, Section 1.2.
[96] Chapter 7, Section 1.
[97] Barnes (n 8) 487. See also Alan Boyle, 'Climate Change, Ocean Governance and UNCLOS in Barrett and Barnes (n 1) 211; Catherine Redgwell, 'UNCLOS and Climate Change' (2012) 106 ASIL Proceedings 406.
[98] Kraska (n 75) at p 568 notes that "[i]f the Convention did not exist, the international community would have incentives to create it... when states disagree about excessive maritime claims... the Convention reduces the terms of the debate to a common framework and lexicon, thereby promoting the peaceful resolution of the dispute".

oceans which will stand the test of time".[99] He considered the answer to this question to be in the affirmative for a number of reasons, including in view of the important compromises reached on navigational regimes and considering the new rules that were agreed for protection and preservation of the marine environment.[100] Legitimate development of the LOSC in a direction that results in enhanced protection of the marine environment improves its quality and relevance for the present as well as the future. The Convention's stability should not be threatened as long as the effective substance of the important compromises relating to navigational interests is maintained and adequately safeguarded, within reason. To paraphrase Article 311(3), development must not be incompatible with the effective execution of the Convention's object and purpose.[101] It is only through development, however, that the LOSC can continue to fulfil its potential as a constitution for the oceans which will stand the test of time.

[99] Tommy T.B. Koh, 'A Constitution for the Oceans', Remarks at the final session of the Conference at Montego Bay xxxiii <http://www.un.org/depts/los/convention_agreements/texts/koh_english.pdf> accessed 15 March 2017.

[100] ibid.

[101] The Convention's object and purpose "is to be elucidated from the Convention as a whole... with the preamble serving as the guide". See Myron Nordquist *et al* (eds), *United Nations Convention on the Law of the Sea, 1982: A Commentary* (Vol V, Martinus Nijhoff 1989) 242. Paragraph 4 of the Convention's preamble clarifies that the facilitation of navigation and the protection and preservation of the marine environment both form part of the Convention's object and purpose.

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