

What are maritime crime and maritime security?

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Abstract

This paper explores what is meant by 'Maritime Crime' and 'Maritime Security', building on the work of Natalie Klein and Christian Bueger. The term Maritime Security means different things to different people, while Maritime Crime, whereas perhaps easier to define, has been neglected by criminologists and crime scientists whose perspective has largely remained landlocked. Given the enormous value of maritime assets – not just ships but offshore energy platforms, wind turbines, ports and harbours – this is a strange omission. The seas carry some 90 percent of world trade by volume and 70 percent by value and cover 71 percent of the earth's surface. International communication depends on undersea cables. The value of seaborne traffic, whether goods, raw materials or information, makes it supremely attractive to criminals. It also acts as a magnet for fraud. An obvious manifestation is the continuing scourge of piracy, which, while technically a crime, straddles the porous border between crime and security studies. Increasing automation also increases vulnerability to cyber-attack. The paper draws on other scholars' earlier work and identifies two different if complementary approaches. A 'negative' approach, which sees 'security' as protection against a range of threats, and a 'positive' approach which seeks to build good order at sea and on the littoral shore and to make sustainable use of the seas' and oceans' vast resources. This includes the development of the 'Blue Economy'. Although sea levels may rise with global warming, paradoxically a process of territorialisation is underway as states seek not only to exploit their Exclusive Economic Zones but even to extend them, by utilising the provisions of the 1982 UN Convention on the Law of the Sea. Thus, in a political and legal sense the 'high seas' are not rising at all but being stripped away.

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Introduction

*Roll on, thou deep and dark blue Ocean, – roll!
Ten thousand fleets sweep over thee in vain;
Man marks the earth with ruin, – his control
Stops with the shore; – upon the watery plain
The wrecks are all thy deed, nor doth remain
A shadow of man's ravage, save his own,
When, for a moment, like a drop of rain,
He sinks into thy depths with bubbling groan,
Without a grave, unknelled, uncoffined, and unknown.*

(Byron 1818: IV, 139)

When Lord Byron penned these resounding lines, more than two hundred years ago, they were pretty accurate. Then, his view that man's 'control', governance and jurisdiction over most things stopped with - or close to - the shore was a fair one. Until the UN Convention on the Law of the Sea (UNCLOS) of 1982, most states' territorial seas stopped just three nautical miles – the maximum range of a cannon of Byron's time - from the shore. By 1818 the first steam powered boats had just been constructed, but travel across the mighty oceans was still uncertain, unpredictable and extremely hazardous. Propulsion was by sail, sometimes supplemented by oars, which made maritime transport, albeit expertly aided by the very latest advances in science and technology, still completely dependent on the capricious winds, currents

and tides. Ships themselves were tiny, fragile bits of national territory, and their captain's kings within their tossing and vulnerable domains. They were, effectively, space capsules far from their parent planet.

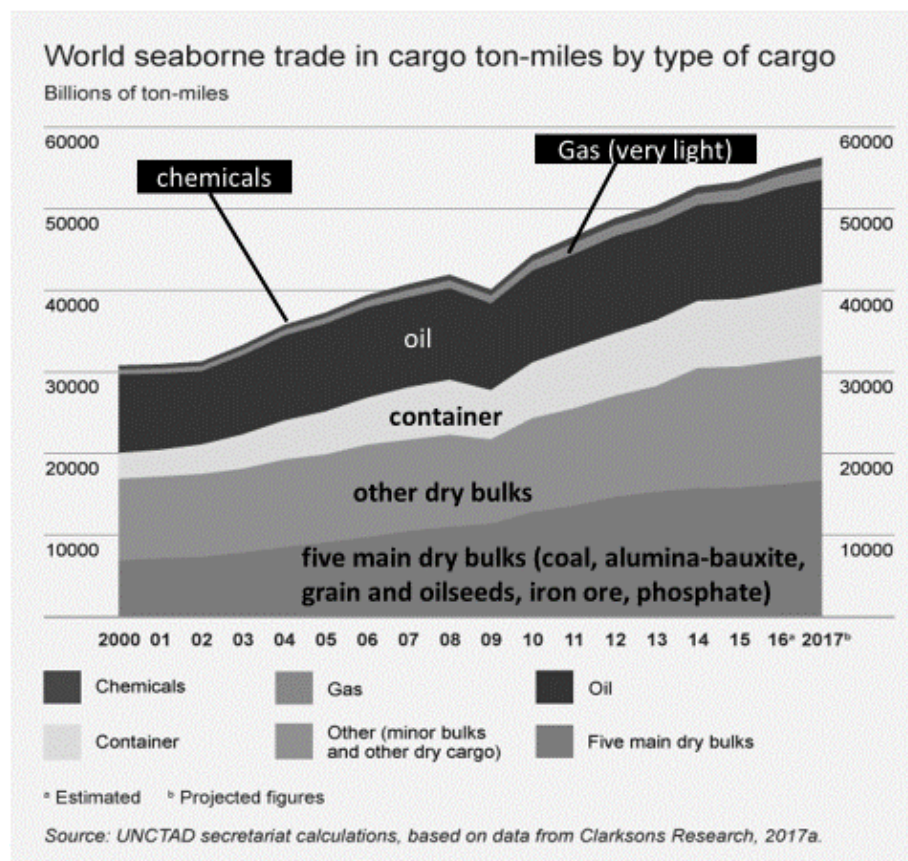
Two hundred years on, powerful mechanically powered ships, made even more supremely efficient by information technology, have largely – but by no means entirely – overcome the capricious command of the elements. Furthermore, since 1982, states may claim all the resources – animal, vegetable and mineral – within Exclusive Economic Zones (EEZs) stretching out to a maximum of 200 nautical miles. That is assuming no-one else's EEZ coincides, in which case the sea between is split according to a determination of the Commission on the Limits of the Continental Shelf (CLCS) (see below). Where the earth's configuration so permits, States may even stake claims, as the Russians have as far as the North Pole, to their Outer (see below) – or Extended – Continental Shelves and the waters above, out to 350 miles. And, finally, modern technology has enabled technologically sophisticated powers to enhance, expand and build up natural features, such as sandbanks and reefs, to create artificial islands which can then be claimed as 'their' territory. China has clearly been doing this in the South China Sea (Island Building in South China Sea 2015). Therefore, what were once the 'global commons' – the high seas – have been, and are being, increasingly territorialised.

Yet, perversely, ironically and counter-intuitively, the study of maritime crime and security has remained, like Byron's ruinous reign of man, largely landlocked. That applies to the scientific study of crime, in particular, an omission that was noted more than 30 years ago (Mueller and Adler 2018: 18). This is covered in Section 3, below.

Globalisation, the sea, crime and security

The seas and oceans cover 71 percent of the earth's surface, and 90 percent of world trade by volume and 70 percent by value travels by sea (ICS 2018, IMO 2019, George 2013). In 2018 the volume of goods carried, multiplied by how far, reached the staggering figure of more than 50,000 billion ton-miles (ICS 2018) (See Figure 1).

Figure 1.



Source: <http://www.ics-shipping.org/shipping-facts/shipping-and-world-trade/world-seaborne-trade> accessed 4 November 2018. Annotated by author (original in colour).

When UK airspace was closed for six days in April 2010 following the Eyjafjallajökull (Iceland) volcano eruption, no UK supermarkets ran out of food, and there was no shortage of fuel. Yet a reputable source later told the author that 100,000 people had contacted the Government asking whether there would be. That is an illustration of the lack of 'ocean awareness' in this, my island nation. That was because all, but the very highest value commodities are brought to the UK by sea or through the Channel Tunnel. In early 2015 maritime security hit the headlines again as tens of thousands of economic migrants and asylum seekers from the Maghreb and other parts of the Middle East attempted the hazardous crossing of the Mediterranean hoping for refuge in the European Union. Furthermore, the vulnerability of the Channel Tunnel has been underlined by the events of summer 2015 when hundreds of migrants attempted to storm its French end, at Calais, or to obtain illicit passage across the Channel aboard trucks. The position of Calais as a vital bridgehead for commodities to cross the Channel further emphasizes the importance of Port Security as a subset of Maritime Security. More recently, in early 2016, some migrants attempted to cross the Channel in small boats, mirroring widespread practice in the Mediterranean. Whilst these incursions were clearly a matter for national and regional security, they were also aspects of, resulted from, and were facilitated by, maritime crime.

The second oldest security problem in the world, after wild animals, other anthropoids and other modern humans raiding your settlements, is probably maritime piracy. (Bellamy 2011: 78-83). The very word 'pirate', from the Greek *peirates*, meaning an outlaw, either land-based or sea-borne, highlights the issue. Ever since mankind started carrying hugely valuable goods by sea, predation followed, much as it had on land. Piracy is not technically war, although it might look very much like it, certainly through the violent and terrorist methods used. Piracy is, to quote the UN Convention on the Law of the Sea, again, is 'an act of depredation ... committed for *private gain*' (UNCLOS 1982 Clause 101, emphasis added). So, it is *crime*. Piracy is crime committed for private gain. However, throughout history, pirates, buccaneers and, of course, privateers who may have been and may become again pirates, have been and remain almost indistinguishable. Privateers, outlawed since the Treaty of Paris in 1856, were essentially 'pirates' employed as violent actors – mercenaries – on behalf of states. Whatever the legal niceties that surround their definitions in law, it is, in practice, sometimes difficult to differentiate between pirates, maritime terrorists, privateers, private military companies, and state forces.

Whereas the 1982 UNCLOS definition made sense at the time, modern circumstances have merged and fused those categories. That is behind the creation of the present Journal, addressing Maritime Crime and Maritime Security together and recognising their interconnectedness. We shall look at this in Section 3, below.

The nexus of Crime and Security

The Latin-derived English word 'security' means literally, the 'absence of care' or 'worry'. *Se cura*. That highlights a key point, that it is as much about perception as real, physical threats. The Russian *bezopasnost'*, in contrast, means 'absence of danger'. For centuries, the phrase 'maritime security' has been largely synonymous with requirements of national defence and navies, but recent events have prompted Governments, including that of the UK, to recognise a wider concept of 'maritime security'. The UK published its first *National Strategy for Maritime Security* in May 2014; the European Union its Maritime Security Strategy the same year. (UK National Maritime Strategy 2014; EU Maritime Strategy 2014). The UK National Strategy lists security issues including illegal immigration by sea, smuggling of all kinds, Illegal, Unreported and Unregulated (IUU) fishing, the risk of pollution, the sea as a source of food, and its increased importance for the provision of energy, whether for extracting fossil fuels or renewable energy, and the mining of minerals and metals. These issues all make a wider and more comprehensive understanding of maritime crime and security essential.

Further unexpected uncertainties followed the 8-9 November 2016 US election result. Donald Trump's unexpected US Presidential victory has unexpectedly placed trans-Atlantic and, perhaps, even more importantly, trans-Pacific and trans-Arctic relations at their most uncertain since the Second world war. Trump has questioned free trade – and, as noted above – most freight goods are transported by ships. Maritime shipping is truly global, but the 11 September attacks on the United States and subsequent US Presidential and Congress election results have raised questions about globalisation. Nevertheless, President Trump has also promised to open up cooperation with all states, including rising powers,

including India, and also radically revised relations between the US, Russia, China and the EU. Such developments potentially change the international security land – and, perhaps even more importantly, sea – scape. These developments will have consequences for the fields of maritime crime and security, whether they lead to more or fewer tensions. Many of today's most potential conflicts play out in the maritime global commons (such as the Pacific, the Atlantic, the Arctic and the South China Sea).

The growing nexus between crime and more conventional national security concerns is not confined to the oceans. At the end of 2018 some 7,000 men, women, and children from countries in Central America – mainly Honduras and Guatemala – who had travelled in a 'caravan' through Mexico attempted to cross the Mexico-US border without permission. The US President, Donald Trump, who had made securing US borders a key election issue, had repeatedly warned the migrants to turn back. But these migrants were not fleeing inter-state or internecine political and religious wars like those in Syria and Yemen. They were fleeing criminal violence in their own communities. Gangster wars were having the same effect as 'proper' wars. By 2018 there were twice as many civil conflicts as there had been in 2001. And, as we have already seen, the number of nonstate armed groups participating in the bloodshed had multiplied.

Many 'political' warring factions are just as likely to relate to drug cartels, mafia groups, criminal gangs, militias, and terrorist organizations as to armies or organized rebel factions.

The cocktail of criminality, extremism, and rebellion exists worldwide, but in Central and South America is mostly criminal. There are also strong criminal tendencies in sub-Saharan and North Africa, the Middle East, and Central Asia. These conflicts defy conventional international responses, such as formal cease-fire negotiations, peace agreements, and peacekeeping operations. Diplomats, military planners, and relief workers are unsure how best to respond. While the insecurity generated by these new wars is real, there is still no common legal framework for dealing with them (Crime and forced migration 2017).

Parked at the nexus of organized crime and outright war, these 'new wars' raise tricky legal, operational, and ethical questions about how to intervene, who should be involved, and the requisite safeguards to protect civilians – 'innocent bystanders'. Cartels and gangs do not necessarily aim to displace recognized governments, although they profit from weak government control, but the fact is that they do. Whereas typical, 'old fashioned' gang warfare and mafia activity tended to be localised and could be contained by police forces, this extended gang warfare cannot. Thousands of refugees and Internally Displaced Persons (IDPs) have fled these 'gangsterilla' conflicts, if I may coin a new word. International law on refugees and IDPs has been designed to deal with political conflicts, not organised crime.

Returning to *maritime* crime, it is a growth area, both in terms of its profitability in a world where the volume of maritime trade is increasing year-by-year, but also a subject for professional and academic study. However, of all disciplines, the study of crime, Criminology, has neither actively presented itself as relevant for, nor has it been paid attention to by maritime (security) studies, whereas their intersection makes total sense. To recall Byron, above, criminology and crime science seem to have stopped at the waterline. (Byron 1818). As a notable exception, in their pioneering work *Outlaws of the Ocean* (1985), criminologists Gerhard O.W. Mueller and Freda Adler explored 'criminality on the water' (Mueller and Adler 1985). By this, they mean whatever criminality typically takes place in the maritime domain, including piracy, drug smuggling, human trafficking, killing of whales and other marine life, ocean pollution, marine insurance fraud and vessel theft. They state:

'For reasons beyond our comprehension, the explanation of crime has remained landlocked, as if there were no crime on the waters. Criminologists have neglected the criminality of that far greater portion of the world called oceans!' (Mueller and Adler 1985: 18).

Mueller and Adler's claim were a legitimate one more than 30 years ago and is even more relevant today. Drug smuggling, human trafficking and environmental crime are topics scrutinised by criminologists. However, criminology overall has remained slow to develop explorations of the maritime features of maritime crime, still treating the aforementioned forms of crime as landlocked phenomena.

The significant lack of analytical interest in maritime crime is problematic given the ongoing (ISIS related) conflicts in the Middle East and North-Africa, which have resulted in an exponential increase in (human trafficked) boat refugees, demanding a lot from naval patrols in the Mediterranean Sea and Europe's border control, especially at South European ports. (Eski 2016). The refugee crisis has produced

an influx of people attempting to find a better life, particularly in Northwest Europe and the UK, which will have an impact on the maritime domains of European ports. These developments of maritime-related crimes and safety issues, in particular immigration, human trafficking and maritime terrorism, will have their impact on maritime security, policing, and crime control in the future. Hence, maritime crime and maritime criminology as key areas demand much more analytical scrutiny and scholarship than what they have received thus far (Albahari 2015: 1-2).

So, in addition to experts from the fields of (maritime) security studies, maritime and trade law, political sciences and policing studies, we also need criminologists and crime scientists to help analyse maritime occupational hazards. These are: Illegal, Unregulated and Unreported (IUU) fishing; container and cargo theft; human trafficking; drug smuggling; illegal arms trade; fraud and corruption; murder at sea, in particular stowaways thrown overboard; seafarer suicide; piracy; cybercrime; and maritime terrorism (Chalk 2008; Konstantinos and Antonopoulos 2010; Liss 2011; Zaitch 2002).

Maritime security therefore embraces large elements of Economic Security, Energy Security and Food Security, as well as Human Security, Environmental security and the more traditional 'security' areas of National and International security. Yet, although we have been going down to the sea in ships for thousands of years, the Oceans remain inscrutable. The disappearance of Malaysian Airlines Flight MH 370 in early 2014 and the enormity of the quest to find it underline the vastness and opacity of the oceans, which have an *average* depth of six kilometres. Maritime security research must therefore draw from a multitude of disciplines, including environmental science, biology, geology, engineering, mathematics, and social sciences, as well as law, politics, international relations and other branches of the humanities.

The concept of 'maritime security' has evolved since the 1982 UN Convention on the Law of the Sea and was heavily influenced by the growth of Somali-based piracy(crime) in the early 2000s and also by the broadening of security studies which followed the end of the Cold War (Buzan 1998; Collins 2018). The current concept of Maritime Security can probably be dated back to Natalie Klein, in her 2011 book *Maritime Security and the Law of the Sea* (Klein 2011). While the protection of sovereignty and national interests remain fundamental to maritime security and the Law of the Sea, there is increasing acceptance of a common interest that exists among states when seeking to respond to a variety of modern Maritime Security threats. Klein argues that security interests should be given greater scope in our understanding of the law of the sea in light of the changing dynamics of exclusive and inclusive claims to ocean use. More flexibility may be required in the interpretation and application of the UN Convention on the Law of the Sea if appropriate responses to ensure maritime security are to be allowed. Klein points out that the term 'Maritime Security' has different meanings, depending upon who is using the term or in what context it is used. She argues that it is best understood from two key viewpoints: traditional security - interstate - concerns, and responding to wider, often non-conventional, security threats including the newer 'soft security' concerns of the 2000s. The latter include environmental, energy security, human security and food security. The former, she says, include primarily refers to border protection, and preventing incursions into states' sovereign territory, as well as power projection and using traditional naval, air and amphibious military power in concert with other states. The latter involves the 'new' Maritime Security, including actions by states - which are still mainly responsible - to reduce the risk posed by activities - often criminal - which would prejudice states' and their societies' interests. These could well include all aspects of Maritime Crime including piracy, pollution, environmental degradation and IUU fishing.

In a relatively recent and seminal article Dr Christian Bueger opined that 'Maritime security is a buzzword' (Bueger 2015: 159-64). He continues, and he was right, echoing Klein, 'it has no definite meaning. It achieves its meaning by actors relating the concept to others, by attempts to fill it with different issues and by acting in the name of it.' As already noted, State and Supra-State actors have started to add Maritime Security to their official mandates. However, as Klein and Bueger both noted, there is no consensus on what 'maritime security' means. This is not necessarily a bad thing. Christian Bueger's article proposed three overlapping frameworks within which maritime security can be understood:

In a matrix of its relations with other concepts such as marine safety, sea-power, blue economy and resilience, the securitization framework allows us to study how maritime threats are made and which divergent political claims these entail in order to cover political interests and divergent ideologies.

Security practice theory enables us to study what actors actually do when they claim to enhance maritime security.

Together these frameworks allow for the mapping of maritime crime and security. A more practical definition is presented in Dr Dave Sloggett’s 2013 book *The Anarchic Sea*, (Sloggett 2013) in which he provides seven dimensions of maritime security:

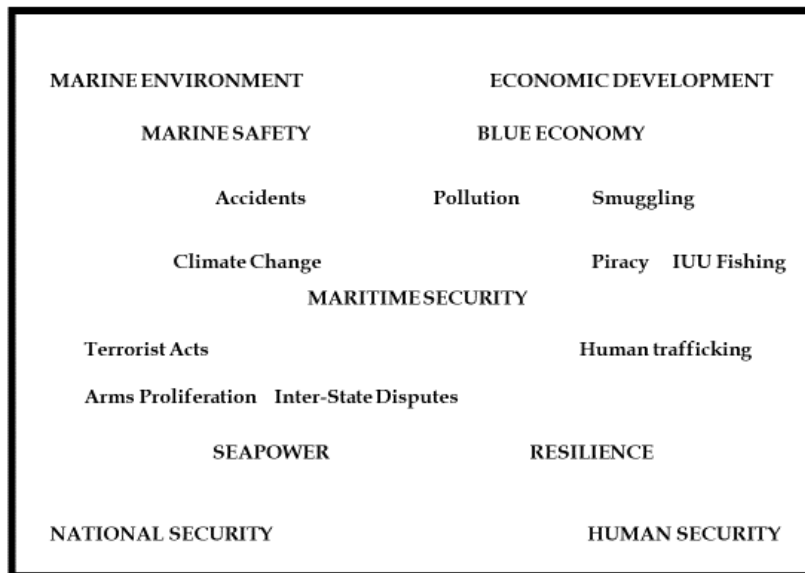
- State on State
- Trade Protection
- Resource Management
- Smuggling
- Terrorism
- Disaster (man-made and natural)
- Oceanography

While 'security' is traditionally defined negatively, as absence of a range of threats, a fundamental principle is to promote maritime security and the study of maritime crime and its causes in a positive way, as a 'good' or 'stable' order at sea. A key issue is the conflict between the traditional view of the seas as the 'global commons', and freedom of the seas and of navigation, and, conversely, the increasing tendency for the seas to become territorialised. That has come about with the declaration of Exclusive Economic Zones (EEZs) out to 200 nautical miles (nm) and, potentially, further, onto the 'Outer [or Extended] Continental Shelf', out to 350 nm. These issues are a potential cause of conflict, notably in the relatively shallow Arctic Ocean, which will become more accessible as the Arctic ice melts.

The importance of maritime crime and security, however defined, can only increase. Maritime Industry is a growth industry, growing at between 4 and 4.3 percent year on year. Maritime trade and commerce will further increase in importance as the economic centre of gravity shifts to the Asia-Pacific region. As Robert Kaplan points out in *Asia's Cauldron*, 'the South China Sea is the *Mitteleuropa* of the 21st century'. Maritime security issues are also increasingly the focus of interstate territorial conflict amongst existing and emerging powers – the South East China Sea and the Arctic being amongst the most obvious examples (Kaplan 2014: 182).

Bueger (2015) represented key constituent parts of the maritime crime and security field can be represented diagrammatically as in the matrix in Figure 2.

Figure 2. Maritime Crime and Security Matrix. Source: Bueger 'What is Maritime Security?' p. 5 (pre-print).



As Christian Bueger noted, the exact meaning of 'maritime security' will always vary, depending on the actors involved, time and space, and environmental and geographical factors. The above matrix provides a most useful framework for positioning other categories on which one intends to focus.

Maritime cyber-security could be placed as a separate category below the central Maritime Security block, for example, since it addresses 'Terrorist Acts' and 'Inter-State Disputes' to the left and 'Piracy', to the right. Below 'Human Trafficking', one might insert Stowaways, as stowaways have always been a problem and not all stowaways are 'trafficked'.

Different countries and organisations vary greatly in how they move these components of Maritime Security around the board. Nato's *Alliance Maritime Strategy* (Nato 2011), for instance, defines Maritime Security as one of four categories, along with 'Deterrence and collective defence'; 'Crisis management'; and 'Cooperative security: Outreach through partnerships, dialogue and cooperation'. It therefore excludes the bottom left-hand corner - what has been called traditional security', from its understanding of maritime security. It argues that that these are separate so called 'high end' tasks, and then primarily focusses on issues related to the blue economy and human resilience (Bueger 2015). The African *Integrated Maritime Strategy of the AU* (AIM 2014), which looks forward to 2050, in contrast centres on the blue economy. It argues that maritime security challenges are primarily relevant because they hamper economic growth. Starting out from the upper right corner the AU strategy largely excludes traditional considerations of inter-state disputes or state rivalry. Other strategies, such as those of the EU or UK, embrace all four corner concepts and argue for a holistic approach emphasizing the interconnectedness of all points of the compass. (EU 2014, UK 2014).

As noted, a framework can be drawn from the security studies developed since the 1990s. One of the major frameworks was 'securitisation', which was originally proposed by the 'Copenhagen School' - Barry Buzan, Japp de Wilde and Ole Wæver (Buzan 1998). 'Securitisation', as framed by Buzan et al., suggests that 'threats' are constructed - or legitimised - by a series of escalating claims. In this process, an issue, such as maritime piracy, is presented to be an 'existential' threat to a certain 'referent object'. The term 'existential' has little to do with Jean-Paul Sartre (1905-1980). Sartre promoted 'existentialism', which was a theory that takes as its starting point the experience of the human subject – not merely the thinking subject, but the acting, feeling, living human.

In the security context, however, an 'existential threat' is, much more simply, a threat to one's existence and independence. Apart from the 'referent objects' of my house, my mortgage, my credit rating, my health, my family and my job, the 'referent objects' in international relations are bigger. For example, the nation state and its existing political system, including democracy, or international trade. In the case of piracy, to the human security of the ships' crews, to economic and energy security, and, if it got too bad, to maritime trade itself. Such claims are only successful if they are presented by actors who have the authority to speak about security and if a relevant target audience accepts such threats. Threat construction usually comes along with a proposal for measures that should be taken to protect the referent object from the threat, publicly proclaimed. In other words, what Buzan, Wæver and de Wilde call a 'speech act'. For Buzan, Wæver and de Wilde (1998) it is a specific characteristic of security, that countermeasures are extraordinary and often extreme, and violate political and legal norms. They might involve military instruments up to the scale of military conflict or a significant cut-back of civil rights and liberties. We are all familiar with that odious aspect of 'securitisation' every time we pass through an airport.

The 'Blue Economy'

The 'Blue Economy', a term coined in 2004, (Blue Economy 2004), is an emerging concept. It encourages better stewardship of our ocean or 'blue' resources, which extend across 70 percent of the planet. There is still some slight scepticism about the term 'Maritime Security', as in this eponymous Journal, the fact that the 'Blue Economy' has been widely accepted as a concept, 'Maritime Security' should therefore have no problems. There are various definitions of the 'Blue Economy' from the World Bank (Blue Economy World Bank 2017), and the UN, which first publicly espoused the concept, together with the 'Green Economy', in 2012, (UN 2012). The UN notes that the 'Blue Economy' will aid in achieving the UN, the Commonwealth (Blue Economy 2018), and the European Commission's development goals. According to the World Bank, the 'Blue Economy' is the 'sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem.' (Blue Economy World Bank 2017).

However, these organisations *all* stress that the 'Blue Economy' comprises a range of economic sectors and related policies that together determine whether the use of ocean resources is sustainable. An important challenge of the Blue Economy is to understand and better manage the many aspects of oceanic sustainability, ranging from sustainable fisheries to ecosystem health to preventing pollution. Secondly, the blue economy challenges us to realize that the sustainable management of ocean resources will require collaboration across borders and sectors through a variety of partnerships, and on a scale that has not been previously achieved. This is a big deal, particularly for Small Island Developing States (SIDS) and Least Developed Countries (LDCs) who face significant limitations. The UN notes that the Blue Economy will aid in achieving the UN Sustainable Development Goals of which one - 14 - is 'Life below water'. The Commonwealth Blue Charter (Blue Economy 2018), highlights in particular the close linkages between the ocean, climate change, and the wellbeing of the people of the Commonwealth. The worldwide ocean economy is valued at around US\$1.5 trillion per year. The UN's goals include the following facts:

- Eighty per-cent of global trade by volume is carried by sea.
- 350 million jobs worldwide re linked to fisheries, most of them by small fisheries in developing countries.
- By 2025 it is estimated that 34% of crude oil production will come from offshore fields.
- Aquaculture is the fastest growing food sector and provides about 50% of fish for human consumption. (UN 2012)

The European Commission defines the 'Blue Economy' as 'All economic activities related to oceans, seas and coasts. It covers a wide range of interlinked established and emerging sectors.'

The Commonwealth of Nations considers the 'Blue Economy' as 'an emerging concept which encourages better stewardship of our ocean or 'blue' resources.'

Conservation International adds that 'blue economy also includes economic benefits that may not be marketed, such as carbon storage, coastal protection, cultural values and biodiversity.' The Centre for the Blue Economy says 'it is now a widely used term around the world with three related but distinct meanings- the overall contribution of the oceans to economies, the need to address the environmental and ecological sustainability of the oceans, and the ocean economy as a growth opportunity for both developed and developing countries.'

A UN representative recently (2017) defined the Blue Economy as an economy that

'comprises a range of economic sectors and related policies that together determine whether the use of ocean resources is sustainable. An important challenge of the blue economy is to understand and better manage the many aspects of oceanic sustainability, ranging from sustainable fisheries to ecosystem health to preventing pollution. Secondly, the blue economy challenges us to realize that the sustainable management of ocean resources will require collaboration across borders and sectors through a variety of partnerships, and on a scale that has not been previously achieved. This is a tall order, particularly for Small Island Developing States (SIDS) and Least Developed Countries (LDCs) who face significant limitations.'" (UN 2017b)

The UN notes that the Blue Economy will aid in achieving the UN 'Sustainable Development Goals', of which one goal, 14, is, intriguingly, and reminiscent of Jules Verne (Verne 2018), 'Life Below Water'. However, in this context, that does not refer to human habitation on the sea floor. Although, why not?

On top of the traditional ocean activities such as fisheries, tourism and maritime transport, the Blue Economy entails emerging industries including renewable energy, aquaculture, seabed extractive activities and marine biotechnology and bioprospecting. The 'Blue Economy' also attempts to embrace ocean ecosystem services that are not captured by the market but provide significant contribution to economic and human activity. They include carbon sequestration, coastal protection, waste disposal, and the existence of biodiversity.

Small Island States (SIS), or Small Developing Island States (SDIS), relative to their land mass, have vast ocean resources at their disposal - presenting a huge opportunity for boosting their economic growth and to tackle unemployment, food security and poverty. They also have the most to lose from the degradation of marine resources. A 2015 World Wildlife Fund (WWF) briefing puts the value of key ocean assets over US\$24 trillion. Some 15 to 17 percent of the protein consumed by the world's population is provided from sea resources and exceeds 50 per cent in many of the least-developed countries. Fisheries

are now overexploited - some 80 per cent of the world's fish stocks for which assessment information is available are reported as fully exploited or overexploited. However, there is still plenty of room for aquaculture and offshore wind power. Aquaculture is the fastest growing food sector with the supply of 58 percent of fish to global markets. Aquaculture is vital to food security of the poorest countries especially. One estimate suggests that by 2050 one half of the world's 9 billion population could be fed from the sea. Against this, however, Illegal, Unregulated, Unreported (IUU) fishing affects about 20 per cent of the global fish yields, which costs about \$US23 billion a year (UN 2017a).

Territorialisation of the high seas and choke points

Whereas Byron noted two centuries ago that man's 'control stops with the shore', this is now far from the case. As noted above, every nation state is entitled to an Exclusive Economic Zone (EEZ) up to 200 nautical miles from a baseline which follows the low water mark of any extended coastline or of any outlying islands. Paradoxically, although the Law of the Sea was designed to ensure the security of states, seafarers and trade, it can also be exploited and used as a tool for expansion and blockade. The Chinese construction of artificial islands in the South China Sea and Russia's claim to the North Pole are examples. The latter rests on Russia's claim to the Outer or Extended Continental Shelf. The term *Outer Continental Shelf* originated in the US with Outer Continental Shelf Lands Act (OCSLA), of 7 August 1953, which defined the OCS as all submerged lands lying seaward of individual American states' coastal waters (3 miles offshore). The term was therefore originally confined to the US. However, the UN Convention on the Law of the Sea (UNCLOS) 1982 granted nation states an Exclusive Economic Zone (EEZ) out to 200 miles from the baseline. States enjoy the provision of an EEZ, whether the continental shelf extends that far. Where the continental shelf extends beyond 200 nautical miles a State is required by UNCLOS (Article 76) to make a submission to the Commission on the Limits of the Continental Shelf (CLCS). This sets out the coordinates of the outer limits of the shelf and is accompanied by technical and scientific data to support the claim. The Commission assesses the limits and data submitted by the coastal State(s) and makes recommendations. The outer limits of the continental shelf established by a coastal State based on these recommendations are final and binding. The term Outer Continental Shelf (OCS) is now often used to refer to the Extended Continental Shelf, out to a maximum limit of 350 miles, although 'Extended' is more accurate.

Geography, of course, dictates that in many places states cannot enjoy full or partial (economic) dominion over the sea and seabed out to the limits defined by UNCLOS. Some 75 percent of the world's trade passes through a few vulnerable choke points (NATO 2011: para 14). A classic example is the English Channel (La Manche), which is 21 miles at its narrowest point, so British and French territorial waters meet in the middle. From a security point of view this had a slightly bizarre result in October 2016 when a Russian squadron including the aircraft carrier *Admiral Kuznetsov* passed through the Channel en route for Syria, where Russia was supporting the Assad Government. Because one must drive on the right at sea, the squadron passed through British territorial waters, shadowed by British warships. This was not a problem: it was exercising the right of innocent passage, which permits warships to pass through other states' territorial seas if they are not a threat to those states.

The concept of 'choke points' was first enunciated by The British Admiral Sir John Fisher (Daly 2009) at the beginning of the twentieth century. He listed thirteen, including many that are critical today. The first three were the Strait of Hormuz between Oman and Iran at the entrance to the Persian Gulf, the Bab-el-Mandeb passage from the Arabian to the Red Sea between Yemen and Socotra, and the Strait of Malacca between Malaysia and Indonesia. All of these - and the other ten - are still critical factors for maritime security, in all its forms, today.

In terms of energy security - one of the key security areas which overlaps with maritime security - one fifth of all the world's oil and petroleum products and one third of all that transported by sea - 21 million barrels per day - passes through the Strait of Hormuz. At its narrowest, the Strait is 21 nautical miles (39 km) wide. Much of this oil is destined for the United States, Western Europe, and Japan. Iran could easily close the Strait using fast attack boats, cruise missiles and, now, Unmanned Air Vehicles (UAVs) - drones. Even a temporary blockage of the strait could wreak havoc on global oil markets (The List 2006, Strait of Hormuz 2019).

However, research by the Royal Institute of International Affairs at Chatham House has found that disruption of just one of the world's eight key maritime choke points could have a major impact on global food security. It also found that more than half of all internationally traded grain must pass through at least one of 14 major choke points, while more than 10 per cent depends on a maritime choke point to which there is no viable alternative (De Bremme 2019).¹

But the choke point problem is not confined to western powers. Throughout history, Russia and China have faced the same problems. In the event of war, sanctions or blockade, China could face isolation. In such circumstances, it will have two different maritime theatres of operation, the East and South China seas. Geography means that it would have difficulty moving forces from one to the other. Consequently, it needs a strong navy. There is the same problem in both seas. Both seas are surrounded by archipelagos of islands which isolate them from the Pacific Ocean, and, therefore, from the rest of the world. The islands of the Philippines and Indonesia create narrow passages into the Pacific and Indian oceans. Java, Borneo and Mindanao are the frame of this system of islands, while the space between them is filled with randomly distributed smaller islands. To add to China's problem, the interior of the South China Sea is also filled with small islands (GPF 2016).

Any of these islands can house hostile air and missile forces, while the narrow spaces between can be blocked by sea power. Therefore, it is obvious why the Chinese care so much about the Spratly and Paracel islands in the South China Sea. They must stop hostile forces getting control of them. Instead, they must create a Chinese-controlled channel through the islands framing the South China Sea. They need to clear the islands both to allow themselves access and to deny them to forces who can cut China off from the world. (GPF 2016). That is one reason why China has been pouring vast resources and masses of concrete (every one of the key artificial islands includes a huge cement plant), to raise reefs into artificial islands which, using UNCLOS, it can then claim are its territory (China 2015).

China's drive to prevent itself being encircled is linked with its Belt and Road Initiative (BRI), formerly the One Belt One Road (OBOR) Initiative, the new 'Silk Road' (Frankopan 2015, 2018). The original 'belt' was a plated affair – states across central Asia as far as Europe, while the 'road' stretched across the South China Sea, through the Strait of Malacca and across the Indian Ocean to Africa, via the Maldives, and through the Suez Canal, via Djibouti. Two more of the obvious choke points. It finishes at the Port of Piraeus, in which China has now taken a controlling interest. So, China's ability to import and export goods and raw materials for its 1.3 billion people and from its expanding economy by sea is severely vulnerable to interdiction. Looking at it from the west, that traffic could be interdicted in the Suez, Bab-el-Mandeb, Hormuz Malacca Strait and South China Sea chokepoints. 'One Belt, One Road' became 'Belt and Road' from 2018, when China declared an explicit interest in the second road – the Northern Sea Route (NSR), through the thawing Arctic. Alternative shipping routes to some of the world's most important corridors, including the Panama Canal, Turkish Straits and Suez Canal have been proposed, including the Nicaraguan Canal, the Kra (Thai) Canal (to circumvent the Strait of Malacca), and the Northern Sea Route – the North-East Passage. However, these potential substitutes have yet to be realised. Djibouti, the Maldives and Strait of Malacca are expected to remain potential choke points along the Maritime Silk Road for the foreseeable future (De Bremme 2019).

Geography and choke points have a key impact on all aspects of maritime security, which overlaps with human security – the fate of seafarers taken hostage in a choke point, for example, – energy security, food security. And existential threats provoke responses.

Maritime cyber-security

Like it or not, computers now control our lives. Therefore, cyber-security, and cyber-crime – and ways to deter and counter it – will have a massive impact on the conduct of business and security. Including Maritime Security. These developments may have, potentially, a catastrophic effect in a future maritime security event. Ships are getting bigger, but their crews are getting smaller. Navigation is more and more dependent on computers which, by definition, are vulnerable to cyber-attack. A large oil or,

1. The 14 choke points listed were: Eight Maritime – Panama Canal, Straits of Dover, Strait of Gibraltar, Turkish Straits (Dardanelles, Bosphorus), Suez Canal, Bab-el-Mandeb (see text), Hormuz (big for oil but not so much for food), Malacca. Six non (or not entirely) -maritime: US inland road and rail network, US Gulf Coast Ports, Brazil Inland Road Network, Brazil southern ports, Black Sea rail network, Black Sea Ports.

even worse, Liquefied Natural Gas (LNG) tanker could conceivably be steered off its planned course, into a harbour or run aground, and then blown up. Although very specific circumstances are required to make LNG explode, it could be done (Kaplan 2006). With cyber security attacks an increasing threat to technology used not just in shore-based organisations, but also on-board modern ships, the IMO issued guidelines relating to cyber risk management in June 2017. Ship owners and managers must incorporate these guidelines into their safety management systems by 1 January 2021 (Solent 2019).

The US Navy has played a leading role in the development of cyber warfare and defence. On 29 January 2010 US Fleet Cyber Command was inaugurated as the 10th Fleet, based at Fort Meade Maryland, giving it the same status as, for example, the mighty Sixth Fleet responsible for Europe or Seventh Fleet for the west Pacific. The Tenth Fleet was originally constituted to combat the U-Boat threat, and the reconstituted Tenth Fleet now manages threats in cyber space and ensure access to online traffic and commerce. In July 2009, the then Secretary of Defense, Robert Gates, wrote:

Our increasing dependency on cyberspace, alongside a growing array of cyber threats and vulnerabilities, adds a new element of risk to our national security. To address this risk effectively and to secure freedom of action in cyberspace, the Department of Defense requires a command that possesses the required technical capability and remains focused on the integration of cyberspace operations. Further, this command must be capable of synchronizing war-fighting effects across the global security environment as well as providing support to civil authorities and international partners. (Jackson 2009)

In August, 2017, President Donald Trump announced that he would elevate US Cyber Command, the parent command to U.S. Fleet Cyber Command to full Combatant Command status. (Gibbons-Neff and Nakashima 2017.)

Conclusion

This article has demonstrated that Maritime Crime and Maritime Security are inextricably entwined and have been since ancient Greek historians recounted how ‘pirates’ worked in league with state naval forces (Bellamy 2012). As Byron so astutely observed, recorded in the opening quotation, for centuries man’s ‘control stopped with the shore’, but today sovereignty in varying degrees extends far out across the continental shelf. Ironically, while sea levels are rising, the territorialisation of the sea be stripping it away, laying the continental shelves bare. Maritime crime and security studies embrace protection of commerce and the human security of those who go about it, and also protection of the oceans themselves and their resources. Specific issues include piracy, unauthorised entry into states’ territorial waters, smuggling of exotic plants and animals, drug trafficking, human trafficking, smuggling and proliferation of weapons and armaments, and components thereof, tax evasion, Illegal, Unregulated and Unreported fishing, and discharging noxious materials, causing pollution. The study of maritime crime and security requires an inter-disciplinary approach, involving multiple areas of expertise including, but not limited to, law, international relations, geography, oceanography, zoology, botany, navigation, engineering – civil, mechanical and electronic – and computing. The list is as boundless as the oceans themselves which carry between 80 and 90 percent of everything we consume and within 60 miles of which 40 percent of the world’s population lives.

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