Global Studies Quarterly (2024) **4**, 1–11

Oceans, Objects, and Infrastructures: Making Modern Piracy

Christian Bueger and Jan Stockbruegger
University of Copenhagen, Denmark

The agenda of objectual International Relations has shown why object matters, how they arise and with what effects. Far less attention has been paid to how objects are maintained and stabilized over time and how their coherence is achieved. To add this dimension to the debate, we suggest turning to the infrastructures of object maintenance. Infrastructures are social material arrangements that maintain objects and enable their use. We introduce a framework for the study of object infrastructures and illustrate it by drawing on the case of "maritime piracy". Providing a historical reconstruction of the infrastructures that produce piracy as an international object, we show that the growing proliferation of these infrastructures does not lead to an internal coherence of the object over time, but rather objectual fracturing and instability. We reveal how objects are often multiple rather than unitary. The article adds an important new dimension to the study of objects in International Relations.

La agenda de las Relaciones Internacionales objetuales ha demostrado por qué importan los objetos, cómo surgen y con qué efectos. Sin embargo, se ha prestado mucha menos atención a cómo se mantienen y estabilizan los objetos a lo largo del tiempo y a cómo se logra su coherencia. Con el fin de añadir esta dimensión al debate, sugerimos recurrir a las infraestructuras de mantenimiento de objetos. Las infraestructuras son arreglos socio-materiales que mantienen los objetos y permiten su uso. Presentamos un marco de trabajo para el estudio de las infraestructuras de objetos y lo ilustramos utilizando el caso de la "piratería marítima". Demostramos, al proporcionar una reconstrucción histórica de las infraestructuras que producen la piratería como objeto internacional, que la creciente proliferación de estas infraestructuras no conduce a una coherencia interna del objeto a lo largo del tiempo, sino que, más bien, provoca una fractura e inestabilidad objetual. Revelamos cómo los objetos son, a menudo, múltiples en lugar de unitarios. Este artículo añade una nueva e importante dimensión al estudio de los objetos en el campo de las Relaciones Internacionales.

Le programme des relations internationales objectuelles a démontré l'importance des objets, leur processus d'apparition et les effets qui l'accompagnent. L'on s'est beaucoup moins attardé sur le maintien et la stabilisation des objets dans le temps, et la construction de leur cohérence. Pour ajouter cette dimension au débat, nous suggérons de se tourner vers les infrastructures de maintien de l'objet. Les infrastructures sont des arrangements matériaux et sociaux qui maintiennent des objets et permettent leur utilisation. Nous présentons un cadre pour l'étude des infrastructures de l'objet et l'illustrons en nous appuyant sur le cas de la ≪ confidentialité maritime ≫. En proposant une reconstruction historique des infrastructures qui font du piratage un objet international, nous montrons que la prolifération croissante de ces infrastructures ne conduit pas à une cohérence interne de l'objet dans le temps, mais plutôt à une fracturation objectuelle et à de l'instabilité. Nous révélons que les objets s'avèrent souvent multiples, plutôt qu'unitaires. L'article ajoute une nouvelle dimension importante à l'étude des objets en relations internationales.

Introduction

The oceans are rich in objects that structure international political interaction and that provide focal points for international regimes and governing assemblages. Many ocean objects such as "piracy," "ships," or "subsea cables" not only have a long history but have also been at the forefront of the emergence of international treaties and governance structures. Indeed, they have provided important role models for universalist conceptions of global norms, standards, and laws.

Consider the ban of privateering in the 1856 Paris Declaration. The declaration not only established a universal understanding of "piracy," but it also helped create the state's monopoly of violence.[1] The 1884 Convention for the Protection of Submarine Telegraph Cables fixed the international meaning of "cables" and is one of the first multilateral treaties, while the 1914 Convention for the Safety of Life at Sea, which regulates marine shipping, turned the ship into an object of interest in international politics and—for the first time—provided international safety standards for the marine industry.[2]

Other ocean objects have emerged on the global agenda more recently. This includes, for instance, global spatial objects such as the Exclusive Economic Zones or the Marine Protected Area. The Exclusive Economic Zone (EEZ) is an object that was created and installed through the 1982 UN Convention on the Law of the Sea (UNCLOS) and is dependent on the declaration of a state drawing on scientific methodology and measurement.[3] Marine Protected Areas (MPAs), in turn, are more informal objects developed in science-based marine spatial planning practices. They are sometimes formally legalized in national laws, but sometimes only persist in informal practices.[4]

As these maritime examples indicate, much of world politics involves identifying, classifying and standardizing objects that are to be dealt with in global policies. Such objects can be very concrete material artifacts, such as ships and cables, or more ephemeral and abstract issues, such as piracy or spatial zones at sea. As highlighted by Esguerra (2024, this forum), these can be seen as objects of governance, knowledge, or expertise, which stresses the range of prac-

[1] See Thomson (1994) and the contributions in Colas and Mabee (2010).

[2] For an overview of these ocean treaties see Bosco (2021).

[3] On the law of the sea and practice of demarcation see Tanaka (2005).

[4] On marine protected areas see Alger (2020) and Chan (2018). On marine spatial planning see Boucquey et al. (2016).

Bueger, Christian, and Jan Stockbruegger. (2024) Oceans, Objects, and Infrastructures: Making Modern Piracy. *Global Studies Quarterly*, https://doi.org/10.1093/isagsq/ksae063

tices through which they are produced on and for the global stages. Indeed, the maritime examples given above highlight that international objects are products of practices such as treaty-making (e.g., piracy, EEZ), agreeing on international standards and norms (ships and cables), but also scientific knowledge production, statistics, and measurement (e.g., MPAs).

In this contribution we argue that to understand the role of objects—and how they are maintained and sustained—we need to peer towards those patterns and structures that give their practices coherence. To do so we introduce the notion of "infrastructure." With the concept of "infrastructure," we refer to a particular material and ideational arrangement through which an object is rendered knowable, constructed in a particular way, and is enabled to be used in diverse international practices. Infrastructures, in other words, lie beneath practices; they give an object endurance and stability over time and space. The ocean examples above already point to some of the potential components of such infrastructures: law, institutions, statistics, and measurements.

Our discussion contributes to the nascent debate on objectual international relations theory. The debate on how and why objects matter has significantly matured over the years.[5] Yet, we shall argue that the growing range of objectual International Relations (hereafter O-IR) studies, including by Bentley Allan (2017, 2018) and Olaf Corry (2013), have so far paid insufficient attention to the practical and often everyday practices of object construction and maintenance. In preferring long durée histories and a focus on the discursive construction of objects, they pay too little attention to materiality and the importance of practices of maintaining and perpetuating objects. In consequence, we risk losing sight of the problem that objects might erode over time, fracture, or even fully decay and being replaced by others (or not). Turning to the dynamic interplay of infrastructures, and how they maintain, but potentially also fracture objects, allows us to develop a better sense of the stability and change of global objects.

In what follows, we shall first elaborate further on the concepts of "object" and "infrastructure." We briefly reconstruct the development of O-IR theory, arguing that it originates in a pragmatist tradition and that it is today inspired by symbolic interactionism, science and technology studies and practice theories. We argue that O-IR has three main objectives: to explain the (1) emergence, (2) maintenance, and (3) effects of objects. It is notably the second objective which has received too little analytical attention but is key for understanding how objects exert effects across time and space. We then proceed in outlining how contemporary theories of infrastructures (infrastructuralism) can assist us in addressing this issue but also give us an overall preferable framework for the study of objects in practice.

We then turn to an empirical instance of an ocean object and its infrastructures—maritime piracy—to illustrate and further elaborate on the consequence of this theoretical argument. Reconstructing the infrastructures of piracy first reveals an interesting proliferation of infrastructures producing piracy as an object starting out in the 1980s. Second, we show that these infrastructures are concerned with the maintenance of piracy, yet that they produce slightly different versions of the object. The empirical case hence demonstrates the benefits of the infrastructure framework in allowing us to understand that objects are not necessarily stable and fixed, but often multiple, depending on the maintenance and adjustment work conducted in infrastructures.

[5]See, for instance, the objects of war Andră (2022); global health (Cabane 2023); interventionary objects (Danielsson 2020; Distler and Tekath 2023); gender (Scott and Olivius 2023); robots (de Pagter 2021); future objects (Esguerra 2019), as well as the contributions to this special forum.

Objects and Infrastructures

To understand the rise of the O-IR agenda, it is useful to offer some contextualization. The functionalist and pragmatist research tradition in IR has had a long-standing interest in the question of how "issues" emerge and consolidate on the international political agenda, how they lead to institutional structures, regimes, and international organizations, and how they become settled in international standards, norms, and laws.

Although never fully appreciated as a "paradigm" in its own right, a tradition stretching from David Mitrany's functionalism and studies of bureaucracy (see Steffek 2015) to Ernst Haas' research on issue-linkages, regime formation and expertise (e.g., Haas 1980; Keohane et al. 2005), and Emanuel Adler's work on different international communities (e.g., Adler 2005) finds a shared interest in understanding how epistemic and bureaucratic processes establish the issues that global policy is concerned about.

The core argument in this tradition is that the problems and issues around which states form their national interests and negotiate international regimes are not externally given but are engineered by experts and bureaucrats. This argument was path-breaking and vital for the establishment of constructivism. It also opened an ongoing research agenda on knowledge and expertise in the discipline (Bueger 2014a). Yet, it did not lead to a sustained interest in "issues" and how they are formed. As constructivists increasingly emphasized concepts such as identity, norms, discourse, or practice (Adler 2012), the question of the origins of the problems addressed by global policy became increasingly overlooked.

The establishment of O-IR signifies a revival of this research tradition. Rather than "issue" or "problem," the O-IR literature prefers the concept of "object." An object is defined here as a delineated socio-material entity that presents a problem significant enough to necessitate a governmental response. The inclination towards using the term "object" reflects advancements in intellectual thought, showcasing scholars' integration of concepts from sociology and science and technology studies (Esguerra 2024). This includes ideas such as Star and Griesemer's (1989) symbolic-interactionist notion of "boundary objects," Rheinberger's (1997) and Knorr Cetina's (1997) concepts of "epistemic" and "technical objects," Latour's (2004) notion of "matter of concerns" (Latour 2004), Harman's (2018) "object-oriented ontology," as well as ideas developed on "problematization" drawing Foucault's work (Bacchi 2015; Koopman 2018).

The primary accomplishment of such moves is the promotion of a broader understanding of the ontology of problems and the core issues on the international agenda. If "issues" and "problems" refer to mental and cognitive processes, the term "object" encompasses both a symbolic and a material dimension. This draws on insights from science and technology studies and practice theories, which have shown that material and discursive elements are often

difficult to entangle.[6] At the minimum, fabricating an issue requires other activities than thought, whether that is writing, deliberating, or demonstrating—all of which are material activities. As pragmatist philosopher John Dewey already noted,[7] for a troubling situation to become an issue, collectives need to be assembled, and material representations manufactured—books, paintings, photographs, statistics, and infographics are material inscriptions crucial in the formation of problems.

The O-IR Research Agenda

Drawing on such understandings, the literature on international objects has become rich and diverse. Some of these works narrow their focus to examining the symbolic effects of material artifacts and, for instance, study the symbolic meanings of objects, such as drones, flags, tanks, or passports.[8] While offering important insights for the debate, most O-IR theorists work out a different, essentially broader understanding.[9] These theorists argue for viewing objects on a broader scale, where the focus is not solely on discrete material artifacts like "tanks," but rather on socio-material entities with larger structural effects and governance implications, such as "war" (Andrä 2022), "climate" (Allan 2017, 2018), or "global health" (Cabane 2023).

Allan's understanding of objects is useful in this regard. Reflecting this more encompassing analytical angle, he defines objects as

> "entities or practices that have been constituted as self-contained units distinct from other objects, events, and actors. Objects of global governance include the climate, gender, the economy, human rights, terrorism, public health, and international trade. Some of these are more obviously classified as distinct systems, while others are more intuitively thought of as sets of practices." (Allan 2017, 136)

This definition clarifies that objects are larger, self-contained units with structuring effects. Allan continues his definition stressing that objects are hybrid socio-material entities and cannot be reduced to mental constructs, such as concepts and ideas. Referring to "entities as objects," he argues "helps to highlight that they are hybrid entities, not disembodied ideas or norms, which have both a knowledge and a physical or practical component" (Allan 2017, 136). The notion of an "object" hence incorporates notions of concepts, ideas, or norms, but suggests that an object cannot be reduced to such categories, given the importance of physical, material components.

Largely agreeing with the definition of Alan, the maturing research agenda of O-IR is concerned with three interrelated questions: (1) How are objects in global politics made and how do they gain significance (fabrication)? (2) How are objects held stable and maintained in the light of changing socio-historical conditions, contestation, or even resistance (maintenance)? (3) What are the political effects of objects (effect)? This to some degree constitutes the intellectual triangle of O-IR.

Yet, there is a tendency in the debate to focus on one of the three vertexes. A substantial number of studies investigate fabrication. These studies conceptualize and empirically study how objects are made, what needs to be assembled and related to each other to fabricate an object, and which practices, actors and relations are involved in such processes. Allan, for instance, proposes to describe this process as an interaction of scientists and states that steer and assemble an object—a process unfolding in three steps of designation, translation, and problematization (Allan 2017, 140).

Moreover, several studies also emphasize the third vertex: they are interested in the political effects of particular constructions of objects, such as how they distribute power, marginalize actors, or trigger flawed governance responses. Distler and Tedkath (2023), for example, show how German parliamentary debates rendered the 2013 military intervention in Mali into a hegemonic governance object, while Danielsson (2020) documents how epistemic contestation produces "peacebuilding" as a legitimate and authoritative object of expertise.

By contrast, the second vertex receives less attention. It is often subsumed under the first, suggesting that once an object is fabricated and starts circulating, it persists by itself. Accordingly, it would not require structure and processes that keep it afloat. Yet, such a view is problematic. First, as Knorr Cetina (2001) argues, objects are never static or complete. While they are contained units, their meaning is not fixed once and for all; their boundaries to other objects might be ambiguous, and new practices, events or actors might become related to them, so that their meaning is transformed. Objects, such as war, climate, or piracy persist over time, but their meaning and the practices they relate to have seen substantial transformation. As the constitutive and problematization practices, they rely on change and transformation, so do the objects.

Second, objects might fall out of fashion, become contested or even resisted, and might as well be replaced by new ones. Consider the career of the object "the third world"—an entity with considerable structural effect during the Cold War and in global development aid, which has been challenged and then replaced by others (such as "the Global South" or "emerging economies").[10] Yet, at the margins, it continues to persist, and, for instance, is still the title of a major International Relations journal—*Third World Quarterly*.

This implies that if we are interested in the fabrication and structuring effects of objects, paying close attention to the structures through which objects are kept in place is equally important. Such maintenance structures are part of the fabrication of an object and co-evolve with it. Moreover, the political effects of an object are perpetuated and enacted through these structures and their transformations.

Yet given the prioritization of fabrication and effect in current O-IR studies, maintenance structures have not yet received much attention. There are different options for how one might want to conceptualize such maintenance process and structures. Here we propose the concept of "infrastructure."

Infrastructuralism

We understand infrastructures as stabilized historically specific socio-material arrangements that underpin and enable

[6] See Rheinberger (1997) and Knorr Cetina (1997) for the debate in science and technology studies, and Bueger and Gadinger (2018) for the debate in international relations.

[7] See the reconstruction of Dewey's work in this regard in Hickman (1990).

[8] See the contributions in Auslander and Zahra (2018), Hohmann and Joyce (2018), and Salter (2015).

[9] In so far as the notion of scale is problematic, one needs to acknowledge, however, that such boundaries between O-IR and other object-focused studies are fluid and inspire each other in several ways.

[10] See Berger (2004), and Solarz (2012) for a historical construction and the ongoing debate over the object.

practices from underneath. They structure the conditions under which other phenomena, such as objects, emerge, operate, and persist. Infrastructures standardize objects, prescribe how they can be used, and what is known about them.

This conceptualization of infrastructure follows, first, from the observation that many of the proposals for studying objects likewise argue for attention to infrastructures. Theorists advocating the study of objects, such as Knorr Cetina (e.g., 1997) and Star Leigh (e.g., Star and Ruhleder 1996) have called for recognizing the interplay between objects and infrastructures. Second, it is one of the immediate benefits of the concept of infrastructures that it straightforwardly leads us to the materiality of structures. This counter-acts the risks implied by other structural concepts, such as the community concept favored by Allan (2017), which prioritizes the social over the material.[11] Next, we develop some core principles that can guide the study of objects and infrastructures.

The study of infrastructure as a social and political phenomenon has been extensively explored since at least the 1980s, with a significant recent surge across disciplines such as anthropology, media studies, sociology, and increasingly IR (Rubenstein et al. 2015; Appel et al. 2018; Bueger et al. 2023). With the proliferation of this literature, analysis has extended well beyond the conception of infrastructures as passive material systems. Indeed, infrastructures are seen as "critical locations through which sociality, governance and politics, accumulation and disposition, and institutions and aspirations are formed, reformed and performed" (Appel et al. 2018, 3). They "articulate social relations to make a variety of social, institutional, and material things (im)possible" (Appel et al. 2018, 3). If numerous studies that draw on this expanded understanding have analyzed electricity grids, pipelines, sewage systems, roads, ports, or financial transaction systems, a significant segment of the transdisciplinary infrastructuralism literature focuses on objects in the sense advocated by O-IR.

Most influentially, Edwards (2010), has shown on this basis how climate as an object is produced and maintained through a global formation of modeling and data analysis infrastructures, which are refined and enriched throughout time. Drawing on the work of Edwards and others, a growing number of scholars show how infrastructures produce global objects, such as the Sustainable Development Goals (Tichenor et al. 2022) or global environmental assessments (Gustafsson and Lidskog 2023).

While there is a diverse range of usages and conceptualizations of infrastructure (see Littoz-Monnet 2024, this forum), for our purposes, that is to read infrastructures as the core structure through which objects are made and maintained, we rely on the following four core considerations.

First, infrastructures are socio-material arrangements that reside in the background. They are based on specific arrangements or assemblages of people, concepts, and things that are intentionally built to enable practices with a particular temporality or lifespan in mind. Yet, they are relational, open systems, in the sense that one infrastructure most often connects to another.

Second, infrastructures depend on practical work. This includes the designing and building of infrastructures and the practices for which they are intended to be used. While built to last, infrastructures also require maintenance and repair work to ensure their functioning over time and to avoid erosion and decay.

Third, infrastructures are structures that provide fixations of objects. They do so through standardization and the building of classification systems. Through such classification systems, infrastructures define objects, and their boundaries, in terms of what is relevant and what is not.

Fourth, infrastructures enable flows and allow for the circulation of objects within an infrastructure, but also beyond it. By fixing an object, these become immutable in one sense, but also more mobile in another sense, meaning that they can move and circulate more widely to be used within other infrastructures.

As an analytical framework, then, infrastructures play with the tensions between relations, flows, and temporary fixations, and they foreground the work, or practices, to proceed in the face of such tensions. In summary, the infrastructure framework provides us with an open and flexible vocabulary that allows us to study the material, ideational and epistemic work required to make objects, and enable and maintain their flow and the effects they produce. Next, we turn to the example of piracy to provide an empirical substantiation of how such processes unfold at the international level.

A Reconstruction of Piracy Infrastructures and Their Maintenance Practices

To better understand the relationship between objects and the infrastructures that produce and maintain them, in the following we draw on the case of modern maritime piracy. Piracy has been most often understood either as a concept or as a practice. Understood as a concept it refers to a specific form of violence at sea, while as a practice it refers to the activities of capturing vessels at sea, conducting robbery and theft at sea, or kidnapping ships and their crews for ransom.[12] Understanding piracy as an object opens investigations of how the phenomenon is known and how it is being dealt with in global governance institutions. The infrastructuralist perspective invites us to investigate which global infrastructures fix the meaning of piracy, produce knowledge about it, and render it "problematic" in a way that it needs to and can be dealt with by international institutions.

Piracy as a case of an object is interesting in several ways. As a global object, it in many ways precedes modern international relations. Roman philosophers already advanced the concept of the pirate as "communis hostis omnium" or "the common enemy of all" (Heller-Roazen 2009, 16). As international historians have shown, constructing piracy as a universal problem and policy object helped define the states' monopoly of violence in the early modern period (Thomson 1994; Gould 2012) and shaped the principle of universality in contemporary international law (Kontorovich 2003; Heller-Roazen 2009).

While a long-standing issue and object of international law, it was only in the 1980s that piracy gradually resurfaced as an object of international political interest requiring responses by global governance institutions. This re-emergence of piracy is closely linked to the rise of systematic knowledge production through the collection of data on incidents classified as piracy and the compilation of statistics. Such data collection and quantification practices turned piracy from an abstract intellectual object of international law into an empirical problem visualized and

[11] For a discussion of the risks linked to the community concept see Nicolini (2013).

[12] See Heller-Roazen (2009) for the former, and Bueger 2014b for the latter.

represented in numbers, graphs, and maps. A wide array of infrastructures was developed to deliver this work. Table one presents four types of infrastructures that we discuss further below.[13]

Below we detail each of these infrastructures that concertedly produced the global object of piracy and indeed continue to do so. We organize our discussion historically and show how the number of infrastructures that produce and maintain piracy as an object has multiplied significantly since the 1980s. We describe how these infrastructures construct piracy as an object and what maintenance practices are organized around them. As indicated in table 1, these maintenance practices are varied. Reconstructing the infrastructures over time, moreover, reveals that piracy is not a uniform or stable object, but along with the multiplication of infrastructures, it has become increasingly diverse and multiple in meaning. Table 1 aims to capture these differences in a concise manner.

International Law

We start with international legal infrastructures for historical reasons. These were among the first to fix the meaning of piracy in the form of a universal legal category—that is as an international "crime." This concept helps states and international organizations to treat piracy as a clearly defined legal issue and as a phenomenon that can be outlawed and addressed through national legal systems. The key practice underpinning this infrastructure, then, is legal analysis and argumentation. Yet maintaining piracy as an international legal category requires global diffusion and assurance that violence at sea is prosecuted. Hence, one maintenance practice here is capacity building and judicial reform programs aimed at enshrining this specific legal construction of piracy in national legal systems and law enforcement efforts. Practices such as evidence gathering, prosecutions, and imprisonment of pirates according to global standards are thus vital to sustain the international legal infrastructure and its specific legal construction of piracy.

The Paris Declaration and UNCLOS

The object of piracy has been important in the evolution of universal international law. Consequently, there is a long history of attempts to legally fix the meaning of piracy. Since classical antiquity, pirates were seen as armed private individuals, who threaten maritime shipping, that is all vessels and seafarers. Antique thinkers such as the Roman statesman Cicero thus conceptualized pirates as global outlaws who operate beyond the rules and laws of humanity. In the early modern period, this conceptualization was expanded to justify the fight against piracy as a universal right—and even duty—of all political communities. To declare an activity to be an act of "piracy," then, is a political move to discredit that activity and to justify extraordinary measures against any person or actor involved in it (Heller-Roazen 2009; Gould 2012, 10–22).

The concept of piracy started out as a political and moral category. Yet, it took centuries to establish the boundaries of piracy as a legal category. Early modern states including Britain, France, and Spain relied on private maritime militias to project naval power and attack enemy commerce. Yet these militias were called "privateers"—not pirates—because they were authorized, licensed, and controlled (sometimes) by states (Thomson 1994; Mabee 2009; De Carvalho and Leira 2022). Through the involvement of states, privateering was an important and regulated international practice. Yet, piracy and privateering often overlapped. Militias bribed officials or forged privateering licenses and attacked merchant vessels belonging to friendly nations and even their own citizens. Consequently, states banned privateering in the 1856 Paris Declaration Respecting Maritime Law.

The Paris Declaration helped outlaw piratical activities, but it didn't contain a precise legal definition of piracy that was accepted by all states. Such a definition only emerged with the adoption of the "constitution of the oceans" (Koh 1982)—the 1982 UNCLOS—which came into force in 1994. Article 101 in UNCLOS defines piracy as "illegal acts of violence or detention, or any act of depredation" against a ship or aircraft on the "high sea" that is "committed for private ends."[14] This definition is based on two criteria. First, acts of piracy are committed on the "high sea"—that is outside states' territorial waters; attacks against vessels inside territorial waters are not acts of piracy but "armed robbery." Second, piratical attacks are committed by "private" actors and for "private ends." That is, pirate groups are motivated by material gains and profits, not political objectives, which means that they are not linked to states or political organizations (Guilfoyle 2010a).

Maintenance

Piracy is a universal crime according to UNCLOS, as we have pointed out, which means that any state has the legal right and obligation to detain pirates and to prosecute them in their legal systems. Yet doing so is often difficult because many countries either have not criminalized piracy in their domestic laws—that is they do not have specific piracy legislations—or are unwilling to deal with piracy in their legal system—that is to hold costly piracy trials and to imprison convicted pirates. Moreover, many countries lack the law enforcement and jurisdictional capacities to deal with pirates, including the ability to collect and evaluate evidence and to maintain international human rights standards in their prisons. Consequently, even though piracy is a universal crime, many individuals arrested under the suspicion of committing piracy, for example in the Western Indian Ocean and the Gulf of Guinea, were released because there was no country able or willing to detain and prosecute them (Kontorovich 2003; Guilfoyle 2010b; Roach 2011).

A major effort is therefore needed to maintain piracy as a concrete, material and legal rather than an ideational or linguistic, conceptual "paper" category and to ensure that piracy is indeed treated as a universal criminal activity. This includes efforts to strengthen the legal and law enforcement capacities of regional countries. For example, the UN Office on Drugs and Crimes assists countries to write piracy legislations in East African countries, build prisons for convicted pirates, and train legal and law enforcement personnel to manage evidence and convict and imprison pirates according to international human rights standards. (UNODC 2013, 1).

[13]Since the number of infrastructures that can be empirically identified is enormous, and our objective is to elaborate on the relations between objects and infrastructures, rather than providing a survey, this is a strategic selection. Notable exclusions concern, for instance, private infrastructures, such as security companies and how these feed into global processes, but also many of the institutions at the regional and global level within which the object is used to develop policy solutions.

[14]See UNCLOS, https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf.

Table 1. Piracy infrastructures

Type of infrastructure	*Examples*	*Understanding of piracy*	*Maintenance practices*
International law	UN Convention on the Law of the Sea (UNCLOS), UN Office on Drugs and Crime (UNODC)	International crime defined as a universal and legal category that needs to be addressed at the global level	Jurisdictional reforms to ensure piracy prosecutions according to international law at the national level
Global Reporting Centers	International Maritime Bureau (IMB), International Maritime Organization (IMO)	A universal and quantifiable category that needs to be represented and addressed at the global level	Data quantification, visualization, and circulation; comparative regional trends and analysis; regular global piracy reporting
Regional Reporting Centers	ReCAAP, MSHoA, DCoC, YCOC, MDA	A regional problem that must be monitored and measured as part of regional trends and to ensure a regional response	Data quantification, visualization, and circulation; ensuring regional political support
NGOs and Academia	Oceans beyond Piracy, Piracy Studies	An entity that needs to be investigated in terms of its manifestations, causes, and solutions	Regular academic publications, conferences, events

Global Reporting Centers

The second type of piracy infrastructures are global reporting centers. The focus of these centers is not legal, but epistemic. They intend to make known where, when and how activities occur that can be classified as piracy. The core practice thus is not legal analysis but quantification—the collection of incident data through reporting systems, and the representation of piracy in numbers, statistics, graphs, maps, and other epistemic artifacts.

Piracy remains a universal category, yet one that is expressed in numbers and statistics rather than legal classifications. Quantification allows to present absolute numbers, that is the number of attacks that have occurred. It also provides the basis for identifying global trends, for instance, related to the growth or decline of the number of incidents in specific regions. Yet, as we show next, the ways in which organizations quantify piracy vary. Global reporting infrastructures require constant maintenance in the form of reporting and dissemination procedures to sustain piracy as a quantifiable universal object.

The International Maritime Bureau and the International Maritime Organization

Piracy became a matter of concern at an international level when the maritime transport industry drew attention to the problem in the early 1980s and created the International Maritime Bureau (IMB) at the International Chamber of Commerce to collect and disseminate data on piracy attacks. In the early 1990s, the IMB started to systematically record incidents, inform law enforcement officials, and issue alerts for the industry—a service that it continues to provide until today with increasing sophistication, including a 24 hrs watch and reporting center, live updates and piracy maps (Bueger 2015b). The main source of information for the IMB is direct reports by shipping companies and their employees. The IMB uses this data to draw attention to piracy and to provide real-time operational support for vessels passing through high-risk waters. The IMB piracy also helps inform insurance practices such as the designation of certain areas as "high-risk areas" where vessels need to pay higher premiums to insure coverage. The IMB's piracy reporting center is thus a central part of the larger private shipping and insurance infrastructure (Lobo-Guerrero 2008, Stockbruegger 2021).

The International Maritime Organization (IMO) is the key international organization in charge of regulating the shipping industry. Upon request from its member states, it also established a piracy reporting infrastructure in the 1980s. The IMO records piracy incidents and compiles reports through a dedicated infrastructure known as the Global Integrated Shipping Information System.

Yet, in contrast to the IMB's reliance on direct reporting from industry, the IMO requests verified reports from its member states.[15] Moreover, in contrast to the IMB the IMO's piracy data are "not intended for operational use by ships or shipowners" (IMO undated, 1). Instead, the IMO uses these data for "statistical analysis" and "to establish trends and modus operandi of perpetrators in different regions of the world" (IMO undated, 1).

The numbers in the two data systems hence differ, since not all incidents reported by the industry are officially verified by governments. Moreover, to classify piracy, the IMB does not use the legal definition of UNCLOS, but a technical understanding of piracy. Instead of the legal concept that limits piracy as an activity that takes place on the high seas, the IMB also includes robbery in ports or territorial waters in its definition of piracy.

We are hence faced with two overlapping global reporting infrastructures, one operated by the maritime transport industry and another run by a UN agency. These infrastructures construct piracy in different ways and for different political and technical purposes. While the IMO infrastructure is designed to facilitate a diplomatic and legal response to piracy, the IMB aims at drawing public attention to piracy incidents and to provide operational advice and information for vessels operating in high-risk areas. The ways in which piracy is "known" through these infrastructures—including what counts as a piracy incident and how many incidents occur—varies considerably across these infrastructures.

Maintenance

A key problem for global piracy reporting infrastructures is that they need to constantly produce and disseminate

[15] However, the IMO often draws on IMB data in its requests. For a reconstruction see Bueger 2015a.

incident numbers and reports as part of their core maintenance work. Without it, reporting agencies become irrelevant. Thus, as we have outlined before, the IMB and the IMO have developed complex data management systems and specific reporting and dissemination procedures. This also includes technical systems that require digital maintenance and information technology training, and security mechanisms.

The key and most visible outputs of quantification practices are a range of material artifacts through which the object of piracy is constructed, represented, and visualized. This takes several forms. The IMB, which aims at informing operational planning, maintains and constantly updates a piracy reporting map for shipping companies. It also publishes quarterly piracy reports to inform practitioners and the broader public about recent piracy trends and to draw attention to emerging piracy hotspots. The IMO, on the other hand, is not concerned with real-time reporting practices and online cartographic visualizations to inform maritime operations, but with a legally verified record. Hence, so far, the infrastructuralist lens had led us to three versions of piracy as an object.

Regional Monitoring Centers

The story becomes more multi-faceted when we now feature in the range of regional infrastructures that emerged from the mid-2000s. Regional monitoring centers redefine piracy as a regional maritime security problem. While piracy reporting centers collect piracy statistics at the global level, regional monitoring centers do so at the regional level. Moreover, their reports also often draw on local knowledge and are designed to inform and help coordinate regional counter-piracy initiatives. That is, these monitoring centers are not only designed primarily to draw attention to a problem but to help construct counter-piracy and broader maritime security responses at the regional level (Bueger 2015b).

Regional monitoring infrastructures thus partly abandon piracy as a universal category of international law or as a quantifiable macro-trend at the global level. Instead, they pay close attention to local manifestations, practices, and dynamics of piracy. This includes suspicious events and variations in the severity of attacks and intelligence about piracy groups and networks and how they relate to other blue crimes such as maritime trafficking and illegal fishing. Piracy, then, becomes a regionally and even locally grounded and bounded object. This, however, also requires new maintenance practices—including new forms of visualizations and reporting to represent and connect different regional maritime security trends.

Regional infrastructures have been built since the 2000s starting out from a mechanism developed in Southeast Asia in 2006. They were constructed in response to high incident numbers in particular regional seas as captured by the IMB and IMO analyses. This includes the Strait of Malacca and Singapore and the Sulu and Celeb Seas in Southeast Asia, the Western Indian Ocean and the area off the coast of Somalia, and the Gulf of Guinea. Table 2 provides an overview of the major infrastructures in those regions. As the table indicates, three sub-types of regional infrastructures can be differentiated. Each is discussed further below.

The Variety of Regional Infrastructures

The first type of regional infrastructures are piracy reporting centers such as the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP) . These infrastructures largely mirror the approach taken by the IMO in terms of defining piracy and measuring it. They are meant to accelerate knowledge production and to be more fine-grained and attuned to the local context, but also to be more closely integrated with governmental authorities and regional political structures, beyond those representing member states at the IMO.

Second, centers such as the Information Fusion Center (IFC) in Singapore are infrastructures that not only address piracy, but a wider range of maritime security issues, such as trafficking or illicit fishing. These centers operate in a broader maritime surveillance approach, known as Maritime Domain Awareness (Bueger and Edmunds 2024). They work on a dedicated "area of interest," where they monitor all maritime activity, record incidents, and issue alerts and guidance documents, as well as organize operational responses to maritime incidents. Contrary to reporting centers, this type of infrastructure not only relies on direct incident reports, but attempts to fuse information from different sources, which includes human intelligence, and data from remote sensing, such as the tracking of ship movements through radar and satellites. With the support of algorithms, they aim at identifying suspicious behavior, predicting trends and supporting preventive policing at sea.

A third type of infrastructure is reporting centers that are part of naval missions. To coordinate naval operations between countries and with the shipping industry, for instance, the European Union created the Maritime Security Centre – Horn of Africa (MSCHoA) which operates an information-sharing system and issues alerts and warnings to regional states and the shipping industry. The MSCHoA also provides classified and unclassified briefings and trend analyses for expert publics, including diplomats.

The basic underlying principle of each of these regional infrastructures is the same: to record and share information on incidents and produce reports. Throughout these infrastructures, piracy emerges as a regional, rather than a global object. While some of these infrastructures are envisioned as permanent, others are temporary and linked to operational objectives and dedicated missions and are hence more temporarily limited. The mandate for MSCHoA, for instance, needs to be renewed periodically because it primarily supports counter-piracy naval missions. Others reporting infrastructures have ceased to exist. For instance, the North Atlantic Treaty Organization (NATO) no longer collects and publishes counter-piracy data for the Western Indian Ocean because its counter-piracy mission in the region was terminated in 2016 (Bueger and Stockbruegger 2016, 46).

Maintenance

Regional piracy reporting infrastructures face similar technical maintenance challenges as their global counterparts. This includes, for example, the need to visualize complex maritime security trends that are not limited to piracy. Many Maritime Domain Awareness centers represent data in the form of heat and risk maps which show the locations of piracy activity and document hotspots. Charts, tables, and infographics—that are illustrated data presentations that are more visually appealing and particularly important in the social media sphere—are an increasingly important way of representing data (Suarez 2010). Yet they also lend themselves to be used in and circulated through powerpoint presentations.

However, regional infrastructures also face specific maintenance challenges that are not limited to technical and

23 Examples of regional piracy infrastructures

	Type	*Foundation*	*Main focus*
Southeast Asia			
ReCAAP[16]	Piracy reporting center	Multilateral treaty	Epistemic
IFC Singapore[17]	Maritime domain awareness	MoU	Operational
Western Indian Ocean			
DCoC[18]	Piracy information sharing	MoU	Epistemic
MSCHoA[19]	Mission-based	Pragmatic	Operational
MASE[20]	Maritime domain awareness	Multilateral treaty	Operational
IFC-IOR[21]	Maritime domain awareness	MoU	Operational
Gulf of Guinea			
YCoC[22]	Piracy reporting	MoU	Epistemic & operational
MDAT GoG[23]	Piracy-reporting, mission based	Pragmatic	Operational

reporting issues. Regional centers are part of complex diplomatic arrangements that help secure funding and political support. ReCAPP, for example, has been supported heavily by Japan and the United States, while Singapore, France, and the European Union have helped build and maintain centers in Southeast Asia and the Western Indian Ocean. This makes regional reporting centers sometimes more fragile than global reporting centers at the IMO and the IMB. Sustaining complex regional political arrangements is required to maintain regional monitoring infrastructures. Regional infrastructures, hence, lead us to a fourth version of piracy, that is, as a regional and locally bounded object.

Nongovernmental Infrastructures: Non-Governmental Organizations and Academia

So far, we have focused on public piracy infrastructures—except the IMB—that are either funded or operated by governments. This has brought different versions and enactments of piracy as an object to the fore. Yet a reconstruction of the infrastructures that make an international object would not be intelligible without also considering non-state and in particular science-related infrastructures. This is not insignificant, particularly considering the central argument in many O-IR studies that scientific networks and academia play a crucial role in shaping objects (Allan 2017; Esguerra 2024). While our observations of piracy do not refute this argument in principle, it can be observed that the legal, bureaucratic, and operative infrastructures in this case are more central than scientific ones. Yet, academic, and non-governmental infrastructures are still part of the story.

Piracy is not an object of study in a clearly demarcated scientific discipline. Legal scholarship has most clearly been part of the UNCLOS infrastructure discussed above. Beyond this, it is noteworthy that the rise of modern piracy as an object created by the infrastructures laid out has also spurred scholarship and activities by non-governmental organizations.

In particular, the growth in recording piracy incidents related to Somalia starting in 2008 spurred significant efforts by scholars and NGOs to develop knowledge and insights about piracy. This includes, most prominently, a US-based non-governmental and advocacy organization and the rise of a dedicated academic field of "piracy studies."

Oceans Beyond Piracy

From 2010 to 2018, the US-based philanthropy organization One Earth Future Foundation funded the Non-Governmental Organization (NGO) Oceans beyond Piracy to address the problem of piracy off the coast of Somalia. As the primary NGO engaging in the issue, its main output was an annual report on piracy that focused on calculating the costs associated with piracy in the region. This included states' costs for counter-piracy naval operations and piracy prosecutions, as well as industry-associated costs for piracy insurance, the rerouting of vessels, and private security measures (Oceans Beyond Piracy 2010). The reach of these reports was gradually extended to also include the so-called "human costs" of piracy (Oceans Beyond Piracy 2013) and to cover other regions such as the Gulf of Guinea and Southeast Asia (Oceans Beyond Piracy 2014). In 2018, as global attention to Somali piracy declined, One Earth Future Foundation closed Oceans Beyond Piracy and replaced it with Stable Seas. Stable Seas continued publishing its flagship reports on the economic and humanitarian costs of piracy (Stable Seas 2020 and 2021). When the foundation decided to stop funding, Stable Seas was continued by the protagonists involved, yet, without being able to continue its work in the same fashion. It is noteworthy that within this non-governmental infrastructure, piracy was largely casted and measured in financial terms. Piracy hence emerged here as an object whose economic value and price could be calculated.

Piracy Studies

A nascent academic field of scholars emerged to study global piracy in the 2000s and briefly consolidated in the 2010s (Bueger 2014b; Jacobsen and Larsen 2019). Starting out from region-specific investigations in security studies, various disciplines including international law, economics, peace research, and criminology became concerned about piracy. A significant spike in this field occurred during the high level of attention to Somali piracy between 2008 and 2014. A dedicated blog—piracy-studies.org—underpinned the piracy studies infrastructures, as well as several international academic conferences and meetings at which academics discussed and helped formulate piracy as an object. Yet, as the reported number of piracy incidents off the coast of Somalia declined, the field started to fragment and has since been in a state of decay.

Piracy studies, however, played an instrumental role in translating divergent data sets into each other—though no unified data set, which would incorporate the data from IMB, IMO, and the regional centers, emerged. If anything, it was the consequence of piracy studies to enrich piracy as an object, going beyond law and numbers, by investigating

the land-based causes and consequences of piracy, such as economic deprivation and governance failures, and by shedding light on the organizational structures and practices of piracy groups (Shortland and Varese 2015). This not only includes studies into piracy organizations at the local level, but also statistical calculations to investigate pirates' economic incentives and cost–benefit ratio, as well as critical evaluations of counter-piracy activities (The World Bank 2013a,b). Many academics worked closely with Oceans Beyond Piracy and international organizations such as the World Bank or UN Office on Drugs and Crime to help develop programs aimed at addressing the land-based causes of piracy.

NGOs and academics, hence, did play a role in constructing piracy as a global object, yet one that is translatable and that not only draws on but can be adjusted to different infrastructures. Perhaps, most importantly, academics and NGOs helped construct piracy as an economic object—one that is calculable—and as a cultural object—one that is embedded in local, national and regional cultures and needs and demands terrestrial responses in the form of economic development and state-building interventions.

Summary: Piracy Infrastructures and Their Maintenance

As this short historical reconstruction reveals, "piracy" as an object of international attention is produced by a rich set of global and regional infrastructures. These infrastructures overlap yet produce distinct piracy objects for professional communities and practices, including the maritime transport industry, diplomats, and international organizations. Some piracy objects are universalistic and legalistic, while others are based on more particularistic and context-specific understandings of the problem. These infrastructures provide the background condition ensuring that piracy, in the form of multiple objects, can circulate widely. While we could only sketch out the range of maintenance work that is carried out in these infrastructures, which is arguably comprised of many more mundane activities, the aim of our reconstruction was to demonstrate the importance of these.

The diversity of infrastructures, however, also can create conflict and confusion between piracy objects—and the infrastructures that produce them. Some of the piracy infrastructures, moreover, are not stable and are temporarily limited. Some are in a state of decay (e.g., Piracy Studies) or have already been demolished (e.g., Oceans beyond Piracy). In the next section, we turn to the question of the coherence of piracy as an object.

Piracies: The Fragility of an Object

As our initial empirical review of infrastructures has shown, piracy is anything but a stable, fixed object. It is useful to evoke the plural, and in this sense, one can argue that the infrastructures produce different "piracies" (Hastings 2012). Yet, those piracies are closely connected in a sense that it still makes sense to speak of a unified whole, yet fractured and multiple at the same time.

Piracy is multiple in at least two regards: definition and classification. First, while there is a common core understanding of what piracy is, one for which international law provides a formal definition, practical understandings deviate across infrastructures. Second, a substantial controversy continues between the various piracy reporting infrastructures on how to classify piracy.

As shown, UNCLOS provides a form of fixation of the object, in that it defines piracy as acts occurring on the high seas, that is, outside of territorial waters. Yet, infrastructures like the IMB do not rely on that definition and include incidents occurring in sovereign waters in their construction of piracy. Others stay closer to the UNCLOS definition and add the category of 'armed robbery at sea' to refer to piratical acts in national waters, but in turn, merge them in their reporting and analyses. To solve this problem, for instance, one of the regional centers in Southeast Asia, draws on the bespoke category of "Theft, Robbery and Piracy at Sea," in short "TRAPS" (Information Fusion Centre 2022).

An additional challenge, and significant divergence among infrastructures concerns how to deal with and integrate "attempted acts of piracy" or "suspicious activity." Obviously, such categories are important because they are part of the object of piracy. However, they are also more difficult to define, let alone verify. Integrating these can significantly impact the number of piracy attacks and hence on the evaluation of the problem's severity.

A related problem concerns how to dis-entangle and classify piracy to acknowledge that it might be comprised of very different activities, and involves different degrees of violence, reaching from the small-scale theft of a wallet, robbery with knives, and large-scale cargo theft, to kidnap and ransom. Several of the infrastructures attempt to differentiate between the severity of piracy. The Southeast Asian ReCAAP, for instance, works with five categories. Yet others, such as the IMB, do not conduct such differentiations. These nuances can lead to controversies, as evidenced in the debate of 2015, when the annual numbers between ReCAAP and IMB differed substantially for Southeast Asia, as the former excluded minor robbery incidents from its press statement (Bateman 2015).

The results of these divergences are not only substantially different interpretations of the state of piracy in different parts of the world, but an ongoing struggle of whether the classification systems could be harmonized under common standards—which is an ongoing debate in the IMO.

The multiplicity of piracy has important implications for counter-piracy cooperation and operations. On the one hand, the existence of different meanings and understandings of piracy is rooted in strategic pragmatism. It ensures flexibility and allows actors to construct tailored responses to piracy in specific regions or issue areas. For example, piracy reporting and MDA centers have developed different definitions of piracy to capture the nature of piracy operations and other maritime security events in their region and to collect and distribute piracy data and information efficiently to other stakeholders.

Yet on the other hand, as scholars have noted (Struett et al. 2013), multiplicity generates friction that, if not carefully managed, can undermine counter-piracy cooperation and increase the costs of developing and maintaining common infrastructures to ensure security at sea. For example, the development and growing sophistication of regional reporting centers and counter-piracy strategies make it more difficult for international organizations—such as the UN Security Council, or the European Union—to coordinate piracy globally and to ensure coherence across multiple initiatives. In other words, our discussion shows that the multiplicity of objects and infrastructures is both vital and inevitable and a major obstacle and hindrance to addressing global problems such as piracy.

Conclusion: Infrastructures and Objects

Starting out from objects is a productive (and at least partially innovative) research agenda for IR that allows us to integrate insights from science and technology studies, the study of expertise, and other social sciences (Esguerra 2024). While the question of how such studies differ from those that draw on related concepts, such as issue areas, requires further attention, O-IR brings important dimensions of international governing to the fore concerning how the problems that global policies address are constructed.

Adding to the growing body of O-IR literature, we first argued that we should study objects in their relation to infrastructures. To understand how objects have an impact over time in the light of their indeterminate and unstable character, we need to investigate the structures that maintain, fix, and stabilize them. We have argued that a focus on infrastructures can help in such an endeavor, as it provides an advanced framework for studying such processes.

Drawing on the case of piracy, we have reconstructed some of these infrastructures. This revealed how, under conditions of multiple and proliferating infrastructures, global objects are fragile, unstable, and frequently indeterminate. While, for instance, international law provides some degree of fixation, and a shared "core" understanding, objects are in flux and open-ended. They are dependent on the work of infrastructures. Focusing on the infrastructures that produce, maintain, and transform objects, and organize the flow and circulations of them, opens an important empirical agenda that brings the practical and material everyday working of an arguably complex international system to the fore. While some of this complexity could only be sketched in this article, future studies will aid in understanding the details and consequences of this infrastructural work.

References

Adler, Emanuel. 2005. *Communitarian International Relations. The Epistemic Foundations of International Relations*. London: Routledge.

———. 2012. "Constructivism in International Relations: Sources, Contributions and Debates'," In *Handbook of International Relations, Second Edition*, edited by W. Carlsnaes, T. Risse and B.A. Simmons London: Sage.

Alger, Justin. 2020. *Conserving the Oceans: The Politics of Large Marine Protected Areas*. Oxford: Oxford University Press.

Allan, Bentley B. 2017. "Producing the Climate: States, Scientists, and the Constitution of Global Governance Objects." *International Organization* 71 (1): 131–62.

———. 2018. "From Subjects to Objects: Knowledge in International Relations Theory." *European Journal of International Relations* 24 (4): 841–64.

Andrā, Christine. 2022. Problematising war: Towards a reconstructive critique of war as a problem of deviance. *Review of International Studies* 48 (4): 705–724.

Appel, Hannah, Nikhil Anand, and Akhil Gupta. 2018. "Temporality, Politics and the Promise of Infrastructure." In *The Promise of Infrastructure*, edited by N. Anand, A. Gupta and H. Appel. Durham, 1–40. Duke University Press.

Leora Auslander, and Tara Zahra. Eds. 2018. *Objects of War. The Material Culture of Conflict and Displacement*. Ithaca, NY: Cornell University Press.

Bacchi, Carol. 2015. "The Turn to Problematization: Political Implications of Contrasting Interpretive and Poststructural Adaptations." *Open Journal of Political Science* 5 (01): 1–12.

Bateman, Sam. 2015. "Piracy Monitoring Wars: Responsibilities for Countering Piracy." RSIS Commentary 115 (May 13, 2015), Accessed August 28, 2024. https://www.files.ethz.ch/isn/191045/CO15115.pdf.

Berger, Mark T. 2004. "After the Third World? History, Destiny and the Fate of Third Worldism." *Third World Quarterly* 25 (1): 9–39.

Bosco, David. 2021. *The Poseidon Project: The Struggle to Govern the World's Oceans*. Oxford: Oxford University Press.

Boucquey, Noëlle, Luke Fairbanks, Kevin St. Martin, Lisa M. Campbell, and Bonnie McCay. 2016. "The Ontological Politics of Marine Spatial Planning: Assembling the Ocean and Shaping the Capacities of 'Community' and 'Environment'." *Geoforum* 75: 1–11.

Bueger, Christian. 2014a. "From Expert Communities to Epistemic Arrangements: Situating Expertise in International Relations." In *International Relations and the Global Politics of Science and Technology*, edited by M. Mayer, M. Carpes and R. Knoblich, 39–54. Wiesbaden: Springer VS.

———. 2014b. "Piracy Studies: Academic Responses to the Return of an Ancient Menace." *Cooperation and Conflict* 49 (3): 406–16.

———. 2015a. "Making Things Known: Epistemic Practices, the United Nations, and the Translation of Piracy." *International Political Sociology* 9 (1): 1–19.

———. 2015b. "From Dusk to Dawn? Maritime Domain Awareness in Southeast Asia." *Contemporary Southeast Asia* 37 (2): 157–82.

Bueger, Christian, and Timothy Edmunds. 2024. *Understanding Maritime Security*. Oxford: Oxford University Press.

Bueger, Christian, and Frank Gadinger. 2018. *International Practice Theory*. 2nd ed. Cham: Palgrave.

Bueger, Christian, and Jan Stockbruegger. 2016. "Pirates, Drugs and Navies: Why the Western Indian Ocean Needs a New Security Architecture." *The RUSI Journal* 161 (5): 46–52.

Bueger, Christian, Tobias Liebetrau, and Jan Stockbruegger. 2023. "Theorizing Infrastructures in Global Politics," *International Studies Quarterly* 67 (4): squad101.

Cabane, Lydie. 2023. "Shaping the Global: Knowledge, Experts, and U.S. Universities in the Emergence of Global Health," *Globalizations* 20 (3): 499–516.

Chan, Nicholas. 2018. "'Large Ocean States': Sovereignty, Small Islands, and Marine Protected Areas in Global Oceans Governance." *Global Governance* 24 (4): 537–55.

Colas, Alejandro, and Bryan Mabee. 2010. *Mercenaries, Pirates, Bandits and Empires: Private Violence in Historical Context*. London: Hurst.

Corry, Olaf. 2013. *Constructing a Global Polity*. New York: Palgrave MacMillan.

Danielsson, Anna. 2020. "Reconceptualising the Politics of Knowledge Authority in Post/Conflict Interventions: From a Peacebuilding Field to Transnational Fields of Interventionary Objects." *European Journal of International Security* 5 (1): 115–33.

De Carvalho, Benjamin, and Halvard Leira. 2022. "Challenging Order at Sea: The Early Practice of Privateering." In *The Sea and International Relations*, edited by B. De Carvalho and H. Leira, Manchester: Manchester University Press, 118–46.

De Pagter, Jesse. 2021. "Speculating about Robot Moral Standing: On the Constitution of Social Robots as Objects of Governance." *Frontiers in Robotics and AI* 8: 769349.

Distler, Werner, and Miriam Tekath. 2023. "Knowledge and the Governing of the Interventionary Object Mali in the German Parliament." *European Journal of International Security* 11 (1): 1–18.

Edwards, Paul. 2010. *A Vast Machine. Computer Models, Climate Data, and the Politics of Global Warming*. Cambridge: MIT Press.

Esguerra, Alejandro. 2019. "Future Objects: Tracing the Socio-Material Politics of Anticipation." *Sustainability Science* 14 (4): 963–71.

———. 2024. "Objects of Expertise. The Socio-Material Politics of Expert Knowledge in Global Governance. An Introduction." *Global Studies Quarterly*, 4 (3), Special Forum: "Objects of Expertise."

Gould, Harry D. 2012. "Cicero's Ghost: Rethinking the Social Construction of Piracy." In *Maritime Piracy and the Construction of Global Governance*, edited by M.J. Struett, J.D. Carlson and M.T. Nance, 23–46. New York: Routledge.

Guilfoyle, Douglas. 2010a. "The Laws of War and the Fight against Somali Piracy: Combatants or Criminals." *Melbourne Journal of International Law* 11 (1): 141–53.

———. 2010b. "Counter-Piracy Law Enforcement and Human Rights." *International and Comparative Law Quarterly* 59 (01): 141–69.

Gustafsson, Karin M., and Rolf Lidskog. 2023. "Expertise for Policy-Relevant Knowledge. IPBES's Epistemic Infrastructure and Guidance to Make Environmental Assessments." *Journal of Integrative Environmental Sciences* 20 (1): 2187844.

Haas, Ernst B. 1980. "Why Collaborate? Issue-Linkage and International Regimes." *World Politics* 32 (3): 357–405.

Harman, Graham. 2018. *Object-Oriented Ontology. A New Theory of Everything*. London: Penguin.

Hastings, Justin V. 2012. "Understanding Maritime Piracy Syndicate Operations." *Security Studies* 21 (4): 683–721.

Heller-Roazen, Daniel. 2009. *The Enemy of All: Piracy and the Law of Nations*.

New York: Zone Books.
Hickman, Larry A. 1990. *John Dewey's Pragmatic Technology*. Bloomington, IN: Indiana University Press.
Hohmann, Jessie, and Daniel Joyce. eds. 2018. *International Law's Objects*. Oxford: Oxford University Press.
IMO. Undated. "GISIS—Piracy and Armed Robbery. International Maritime Organization." Accessed August 28, 2024. https://gisis.imo.org/Public/PAR/Default.aspx.
Information Fusion Centre. 2022. *IFC Regional Maritime Security Situation Brief: Theft, Robbery And Piracy at Sea, & Maritime Terrorism*. Accessed August 28, 2024. https://www.ifc.org.sg/IFC2Web/Events/8th%20MARISX/IFC%20TRAPS%20and%20Maritime%20Terrorism%20Sharing.pdf.
Jacobsen, Katja Lindskov, and Jessica Larsen. 2019. "Piracy Studies Coming of Age: A Window on the Making of Maritime Intervention Actors." *International Affairs* 95 (5): 1037–54.
Keohane, Robert O., John G. Ruggie, Peter J. Katzenstein, and Philippe C Schmitter. 2005. "Transformations in World Politics: The Intellectual Contributions of Ernst B. Haas." *Annual Review of Political Science* 8 (1): 271–96.
Knorr Cetina, Karin. 1997. "Sociality with Objects. Social Relation in Postsocial Knowledge Societies." *Theory, Culture and Society* 14 (4): 1–31.
———. 2001. "Objectual Practice." In *The Practice Turn in Contemporary Theory*, edited by T.R. Schatzki, K.K. Cetina and E.V. Savigny, 1–40. London: Routledge.
Koh, T.B. 1982. "A Constitution for the Oceans," Remarks by T.B. (Tommy) Koh, President of the Third United Nations Conference on the Law of the Sea. New York: United Nations.
Kontorovich, Eugene. 2003. "The Piracy Analogy: Modern Universal Jurisdiction's Hollow Foundation." *Harvard International Law Journal* 45 (1): 183–237.
Koopman, Colin. 2018. "Problematization in Foucault's Genealogy and Deleuze's Symptomatology: or, How to Study Sexuality without Invoking Oppositions." *Angelaki—Journal of the Theoretical Humanities* 23 (2): 187–204.
Latour, Bruno. 2004. "Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern." *Critical Inquiry* 30 (2): 225–48.
Littoz-Monnet, Annabelle. 2024. Knowledge Machineries and their Objects of Expertise: Knowing Bodies, Moves, and Moods through 'Mobile Health' Data. *Global Studies Quarterly*, 4 (3), Special Forum: "Objects of Expertise."
Lobo-Guerrero, Lobo. 2008. "'Pirates,' Stewards, and the Securitization of Global Circulation." *International Political Sociology* 2 (3): 219–35.
Mabee, Bryan. 2009. "Pirates, Privateers and the Political Economy of Private Violence." *Global Change, Peace & Security* 21 (2): 139–52.
Nicolini, Davide. 2013. *Practice Theory, Work & Organization*. Oxford: Oxford University Press.
Oceans Beyond Piracy. 2010. *The Economic Cost of Maritime Piracy 2010*. One Earth Future Foundation. Accessed August 26, 2024. https://oneearthfuture.org/en/one-earth-future/publication/economic-cost-maritime-piracy-2010.
———. 2013. *The Human Cost of Maritime Piracy, 2012*. One Earth Future Foundation. Accessed August 26, 2024. https://www.grip.org/wp-content/uploads/2013/06/human_cost_of_maritime_piracy_2012.pdf.
———. 2014. *The State of Maritime Piracy 2013*. One Earth Future Foundation. Accessed August 26, 2024. https://www.oceanuslive.org/main/DownloadAsset.aspx?uid=797.
Rheinberger, H.-J. 1997. *Toward a History of Epistemic Things: Synthesizing Proteins in the Test Tube*. Stanford, CA: Stanford University Press.
Roach, J Ashley. 2011. "Countering Piracy off Somalia: International Law and International Institutions." *The American Journal of International Law* 104 (3): 397–416.
Rubenstein, Michael, Bruce Robbins, and Sophia Beal. 2015. "Infrastructuralism: An Introduction." *MFS—Modern Fiction Studies* 61 (4): 575–86.
Salter, M.. ed. 2015. *Making Things International*. Minneapolis: University of Minnesota Press.
Scott, David, and Elisabeth Olivius. 2023. "Making Gender Known: Assembling Gender Expertise in International Organizations." *International Studies Quarterly* 67 (2): sqad035.
Shortland, Anja, and Federico Varese. 2015. "State-Building, Informal Governance and Organised Crime: the Case of Somali Piracy." *Political Studies* 64 (4): 811–31.
Solarz, Marcin Wojciech. 2012. "'Third World': The 60th Anniversary of a Concept that Changed History." *Third World Quarterly* 33 (9): 1561–73.
Stable Seas. 2020. *The State of Maritime Piracy 2020: Assessing the Human Costs*. Broomfield, CO: One Earth Future Foundation.
———. 2021. *Pirates of the Gulf of Guinea: A Cost Analysis for Coastal States*. One Earth Future. Accessed August 26, 2024. https://www.unodc.org/documents/Maritime_crime/UNODC_Pirates_GoG_A_Cost_Analysis_for_Coastal_States.pdf.
Star, Susan Leigh, and James R Griesemer. 1989. "Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907–39." *Social Studies of Science* 19 (3): 387–420.
Star, Susan Leigh, and Karen Ruhleder. 1996. "Steps toward an Ecology of Infrastructure: Design and Access for Large Information Spaces." *Information Systems Research* 7 (1): 111–36.
Steffek, Jens. 2015. "The Cosmopolitanism of David Mitrany: Equality, Devolution and Functional Democracy beyond the State." *International Relations* 29 (1): 23–44.
Stockbruegger, Jan. 2021. "US Strategy and the Rise of Private Maritime Security." *Security Studies* 30 (4): 580–604.
Struett, Michael J, Mark T. Nance, and Diane Armstrong. 2013. "Navigating the Maritime Piracy Regime Complex." *Global Governance* 19 (1): 93–104.
Suarez, Mauricio. 2010. "Scientific Representation." *Philosophy Compass* 5 (1): 91–109.
Tanaka, Yoshifumi. 2005. "Zonal and Integrated Management Approaches to Ocean Governance: Reflections on a Dual Approach in International Law of the Sea." *The International Journal of Marine and Coastal Law* 19 (4): 483–514.
The World Bank. 2013a. *The Pirates of Somalia: Ending the Threat, Rebuilding the Nation*. Washington, DC: The World Bank.
———. 2013b. *Pirate Trails: Tracking the Illicit Financial Flows from Pirate Activities off the Horn of Africa*. Washington, DC: The World Bank.
Thomson, Janice A. 1994. *Mercenaries, Pirates, and Sovereigns: State-Building and Extraterritorial Violence in Early Modern Europe*. Princeton, NJ: Princeton University Press.
Tichenor, Marlee, Sally E. Merry, Sotiria Grek, and Justyna Bandola-Gill. 2022. "Global Public Policy in a Quantified World: Sustainable Development Goals as Epistemic Infrastructures." *Policy and Society* 41 (4): 431–44.
UNODC. 2013. "Counter Piracy Programme: Support to the Trial and Related Treatment of Piracy Suspects." Accessed August 28, 2024. https://www.unodc.org/documents/easternafrica/piracy/UNODC_Brochure_Issue_11_wv.pdf.