Once thought to be dead and banished to the dustbin of history, maritime piracy has risen again into the consciousness of the public, policymakers, and academics. Southeast Asia was a hotspot for maritime piracy in the 1990s and early 2000s, while East Africa has seen piracy rise drastically since 2005. The search for a ‘solution’ to such an immediate problem as maritime piracy has meant that the policy debate has often outpaced the theoretical debate. To the extent that theoretical frameworks have been brought to bear on the debate on maritime piracy, they have focused on the causes of piracy. In this article, I move the debate forward by asking about the pirates themselves. Whatever the causes of piracy, once piracy exists, why does it look the way it does? Put another way, what determines the structure of maritime piracy syndicates, and their behavior while engaging in piracy operations?

In this article, I begin to address this question by examining the two main types of piracy operations that are of greatest concern to the international community: kidnappings for ransom and ship and cargo seizures. I argue that the structures and behaviors of these two types of maritime piracy syndicates can be thought of as adaptive strategies. These strategies address differing internal and external challenges that each type of syndicate faces as a result of their differing needs for two required inputs: the time needed between an attack and the realization of profit; and access to certain economic and security goods, namely a secure environment and market infrastructure. Past empirical work has found that ship and cargo seizures generally occur in weak, but still functioning, states, while kidnappings for ransoms are generally found in failed or collapsed states, and has argued that types of piracy operations vary geographically because
weak and failed states provide the two required inputs in differing quantities.\textsuperscript{1} The innovation in this article is to show that not only do the two inputs play a role in determining where different types of piracy hijackings take place, they also play a role in shaping what the syndicates that carry out these hijackings look like, and how they behave. And upon close inspection, there do appear to be differences in the organizational dynamics of piracy syndicates: structurally, for instance, ship and cargo seizure syndicates in Southeast Asia appear to thrive on secrecy, even within the organization, to the point that even the pirates themselves do not necessarily know where they are taking a ship after they hijack it.\textsuperscript{2} Kidnapping for ransom syndicates in Somalia, on the other hand, have gone so far as to appoint spokesmen who give interviews to international media.\textsuperscript{3} Behavior such as targeting decisions also varies significantly between different types of syndicates: the ships hijacked by kidnapping syndicates are more than five times as large (in tonnage) on average as the ships hijacked by seizure syndicates.\textsuperscript{4}

Whether they are seizing ships and cargo, or kidnapping sailors, pirates face two challenges. Internally, they must keep the organization together during the operation, a challenge I examine with a principal-agent framework to show how the inputs shape the security and control tradeoffs that exist (or not) in kidnapping gangs and ship and cargo seizure syndicates. Externally, pirates must maintain access to the external resources -- particularly a stable security environment and markets for both suppliers and buyers -- necessary for the success of their operation. Because kidnapping syndicates require copious amounts of time for negotiations, they face the challenge of keeping agents in line during negotiations, and maintaining ongoing access

\textsuperscript{1} Justin V. Hastings, "Geographies of State Failure and Sophistication in Maritime Piracy Hijackings," \textit{Political Geography} 28, no. 4 (May 2009): 213-23.


\textsuperscript{3} See Jamal Osman, "Somali Islamists Vow to Free British Hostages from Pirates," \textit{Sunday Times (UK)}, May 9, 2010.

\textsuperscript{4} Author’s dataset.
to a secure operating environment. By contrast, ship and cargo syndicates require less time but better economic infrastructure, and as a result face the challenge of maintaining access to markets to offload their goods, and preventing the agents from taking off with those goods.

Resolving principal-agent problems and external resource challenges, given differing time and external resource needs, explain why piracy syndicates have taken the forms that they have, and more specifically why different types of piracy syndicates adopt different internal structures and engage in differing behavior in the course of their operations. Ship and cargo seizure syndicates restrict information, time, and money to their agents while focusing on attacking targets that can be disposed of with minimal use of external resources. By contrast, kidnapping for ransom syndicates have constructed mechanisms to monitor and discipline their agents, while in hostile situations engaging in attacks that minimize their need for external resources and simplify ransom negotiations. Both types of syndicates have cultivated internal and external networks connections as a means of resolving both internal and external challenges. Principals in ship and cargo seizure syndicates have unique access to market networks that agents often do not have, while principals in kidnapping syndicates have access to external investors and officials, and use social and ethnic connections to bind their groups together.

In the first section, I look at analytical work on the causes of piracy, and descriptive studies of the two biggest piracy hotspots in Southeast Asia and East Africa, and argue there is still work to be done in building a theoretical understanding of what comes after piracy syndicates have come into being in those region: piracy operations. The second section focuses on the data used in the study, and provides overall information on maritime piracy operations around the world. The third, fourth, and fifth sections go into depth about the operational needs of different types of piracy syndicates, the internal and external challenges they face as a result, and the structures and behaviors that syndicates adopt to response to those challenges. The concluding section discusses what these findings mean for the debate on piracy operations in general.
STUDYING MARITIME PIRACY

The literature on maritime piracy has grown significantly in the past decade. Much of this literature looks at the causes of maritime piracy, either in general, or in specific parts of the world. In his magisterial overview of maritime piracy, Martin Murphy lists seven major factors that encourage piracy: “legal and jurisdictional opportunities, favorable geography, conflict and disorder, under-funded law enforcement/inadequate security, permissive political environments, cultural acceptability/maritime tradition, reward.”

Stig Jarle Hansen’s work on Somali piracy examines (but does not always accept without qualification) a number of purported reasons for piracy.

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6 Murphy, Small Boats, Weak States, Dirty Money, p. 28. See footnote 25 on p. 29 for more authors that discuss the causes of piracy.
the rise of piracy off the Horn of Africa, including a culture of maritime piracy, deprivation (where Somalis turned to piracy after their fishing stocks were supposedly depleted and they experienced outrage at foreign vessels fishing illegally in Somali waters), poverty, potential sponsorship of piracy by insurgent and/or terrorist organizations, the failure of counter-piracy strategies, and weak state institutions. Although he is sceptical of several of these explanations – the pirates are often from the richer parts of Somalia, and cargo ships attacked hundreds of miles from Somalia’s coast have little to do with illegal fishing – he concurs with Murphy that weak institutions (arising from conflict, and associated with permissive political environment, and weak law enforcement) may allow pirates to operate relatively unmolested. While there is little that can be done about geography, or the global shipping chokepoints that allow pirates to attack ships moving slowly in confined waters, most factors can be summed up in the correlated problems of state weakness and failure, and economic problems, specifically economic dislocation and poverty.

For the purposes of this article, I follow Rotberg and Gros in thinking of state failure as a situation where the central state has ceased to provide public goods for the population, either because of incipient violence, because the state exists solely to benefits the rulers and their clients, or because the state is no longer capable of broadcasting power (and day-to-day administrative control) over large swathes of a country’s territory. In the case of countries such as Somalia, the central state has simply ceased to exist, and all three conditions listed above apply. As the state fails, its economic institutions are unable to provide jobs or steady income

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for workers, some of whom become pirates, while its political and security institutions are unable to prevent pirates from operating, or to punish them after attacks. This is plausible, and to a certain, even likely. The implication is that, in the short term, more effective law enforcement would deter pirates, while in the longer term, rebuilding state institutions in a pirate source country would eliminate the “need” for people to become pirates, although some studies have found that a marginally safer, more stable environment may actually encourage piracy.

Piracy can also be seen as an opportunistic outgrowth of poverty. Certainly stories abound of impoverished sailors, fishermen, and workers turning to piracy in both Southeast Asia and Somalia. Yet even if the attackers themselves are often poor, the organizers of anything

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9 Liss, "Maritime Piracy in Southeast Asia."


above minimally planned piracy operations are often not. In fact, depending on the type of operation, they might need to be fairly wealthy and embedded in local and cross-border political and economic networks to carry out the attack successfully. In a ship and cargo seizure operation, for example, the leader of a syndicate and/or his middlemen must front at least some amount of money as a down payment for the pirates, and might have to buy weapons and transport. They also need to find a location to disguise the ship (if they intend on either selling the ship or making use of it themselves), a location to discharge the cargo (if they intend to sell the cargo), and buyer for the stolen ship and/or cargo, all of which require a fairly deep knowledge of and connections with the regional shipping industry, area ports, and commodities markets.\(^\text{12}\) Not surprisingly, to the extent they have been identified and captured at all, many ship and cargo seizure syndicate leaders in Southeast Asia have hailed from capital cities throughout the region and have been connected with the banking, insurance, and shipping industries,\(^\text{13}\) or may have connections to organized crime syndicates with ties to multiple countries.\(^\text{14}\) Similarly, the more sophisticated organizations in Somalia that engage in kidnapping for ransom need a technical means to communicate with their interlocutors and with each other if the operation involves more than one boat and a land base, and if they are unable to operate in an area that is free of local government interference, money and connections to pay off and otherwise neutralize the local government and elites during negotiations. In-depth examination of the organizations


\(^{13}\) Author Interview, Capt. Noel Choong, Head, International Maritime Bureau-Kuala Lumpur; Author Interview, Official, International Maritime Bureau.

\(^{14}\) Murphy, *Small Boats, Weak States, Dirty Money*, pp. 162-177.
themselves is thus useful for gaining a better understanding of how piracy varies (or does not) in different parts of the world.

Piracy Organizations in Southeast Asia and the Horn of Africa

While it does not ignore the causes or consequences of piracy, a significant portion of the maritime piracy literatures focuses on laying out the details of piracy organizations and their operations in different parts of the world. Southeast Asia and the Horn of Africa, as the two most prominent piracy hotspots of the past two decades, enjoy the lion’s share of attention. These studies are usually descriptive, providing insights into the motivations and recruitment of pirates, and details on the structure and behavior of piracy organizations, both in terms of general trends, and through investigation of specific incidents.

Prior to 2005, Southeast Asia was the region of the world best known for its dangerous waters, witnessing not only low-level robberies, but also high-profile ship and cargo seizures. The mid-1990s saw a number of seizures where ships were hijacked in the waters of the South China Sea near China, their crews killed or put off, the cargo discharged (often in a Chinese port), and the ships repainted, renamed, recertified to become a ‘phantom ship,’ in which the new ‘owners’ could transport cargo for their own ends.15 With a Chinese government crackdown, and the (apparent) end of local Chinese state collusion in hijackings, piracy incidents virtually

disappeared from the South China Sea.\textsuperscript{16} They continued, however, at a low level in other parts of Southeast Asia – notably in the waters of Indonesia, the Singapore Strait and the Malacca Strait, reaching a peak in 2000. Between 1998 and 2005, at the height of the Free Aceh Movement’s insurgency in Aceh at the northern entrance to the Malacca Strait, there was a surge in kidnappings for ransom against ship progressing through the Strait. The perpetrators were either insurgents themselves, or were taking advantage of the general loss of state control in the area.\textsuperscript{17} Piracy of all types in the Malacca Strait decreased in the aftermath of the Asian Tsunami in 2004, and stayed low. The ship/cargo seizures, so common before 2004, are now relatively rare. Researchers who have studied Southeast Asian ship and cargo seizures have generally found that, to the extent that the structure of Southeast Asian piracy gangs can be described with certainty, those who engage in robberies are largely from littoral communities or are internal migrants who have come to places such as Batam and have trouble finding work to support themselves.\textsuperscript{18} Those who initiate the ship/cargo seizures are generally somewhat wealthier, originating from large cities in Southeast Asia (such as Bangkok and Jakarta), and associated with the shipping, insurance, or commodities industries.\textsuperscript{19}

Since 2005, the Horn of Africa, particularly Somalia, has risen to prominence as a new hotspot for maritime piracy, particularly kidnappings for ransom. After the collapse of the Somali state in 1991, robberies and hijackings apparently occurred intermittently near Somalia.


\textsuperscript{17} Hastings, "Geographies of State Failure and Sophistication in Maritime Piracy Hijackings."

\textsuperscript{18} Frecon, “Piracy and Armed Robbery at Sea Along the Malacca Straits,” pp. 68-83.

\textsuperscript{19} Author Interview, Capt. Noel Choong, Head, International Maritime Bureau-Kuala Lumpur; Author Interview, Official, International Maritime Bureau.
In the late 1990s, both Somaliland (a region which declared independence soon after the central government collapsed) and Puntland (which remains an autonomous region that nominally accepts the transitional central government) coalesced into more or less functional government entities, and pushed piracy away until (in Puntland’s case) around 2004. Occasionally the pirates justified their actions as defending against illegal fishing (despite attacks on non-fishing vessels), and in general piracy was dominated by the Majerteen clan in Puntland. In 2003, Mohamed Abdi Hassan “Afweyne”, from the Suleiman clan, founded a multi-clan pirate gang in Hobyo and Harardheere with the help of Majerteen pirate veterans from Puntland. With the founding of the Hobyo-Haradheere network, and the continued activities of the Puntland network, piracy began increasing near Somalia, with 14 successful attacks recorded in 2005.\textsuperscript{20} In 2006, the Islamic Courts Union (ICU) swept through much of southern and central Somalia and cracked down hard on piracy, leading to sharp decline in attacks that year.

The subsequent Ethiopian invasion that swept away the ICU in turn allowed piracy to reemerge, around the same time, in 2007-2008, as Puntland’s government ran into severe financial difficulties, leading to an inability to pay its security forces. Piracy boomed in both Puntland and Galmudug (like Puntland, an autonomous region of Somalia), with the piracy networks fragmenting into many smaller groups and attracting thousands of recruits (or, rather, volunteers) (although the original networks have not lost all meaning, given their relative experience and prestige).\textsuperscript{21} Pirate attacks shifted from central Somalia to the Gulf of Aden, through which tends of thousands of ships pass each year. In response, foreign countries began instituting patrols in 2008 to protect their shipping, and building up a legal framework to attempt


\textsuperscript{21} Hansen, “Piracy in the Greater Gulf of Aden,” p. 34.
to deal with pirates. Pirates then shifted to more and more sophisticated ‘mother ships’, including not only hijacked fishing vessels but also hijacked cargo ships, that allowed them to attacked far out into the Arabian Sea and down the coast of East Africa.²² The pirate havens themselves shifted in response to increasing disapproval and attacks from clan elders and local government forces. Pressure from Puntland led the pirates to abandon their haven in Garacad in January 2011, and to abandon Hobyo in February 2011 for more hospitable locations nearby.²³

While the literature on the causes of maritime piracy show the importance of the political and economic factors – particularly state failure and weakness, and economic issues -- in the rise of piracy, and the literatures on Southeast Asia and Somali piracy go into detail on the nature of pirates, pirate attacks, and piracy organizations in those regions, in this article I draw from both literatures to move toward an overarching theoretical explanation of the structure and behaviour of pirate organizations in Southeast Asia and the Horn of Africa resulting from internal challenges, and external conditions (including those that create piracy in the first place).

DATA AND TYPOLOGY

The data used in this article are from a new dataset of 3421 ‘successful’ pirate attacks (those in which the pirates actually boarded the ship) taken from the monthly reports on piracy incidents issued by the International Maritime Organization between 1996 and 2010.²⁴ While other datasets are more ‘comprehensive’ in that they include attempted attacks (those in which

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²⁴ Please contact the author for the dataset used in this article.
the pirates were unable to board the ship) as well, this dataset is mostly concerned with looking at the targeting and procedural variations among different types of piracy operations. With attempted attacks, there is no way to know which type of operation the pirates were attempting to carry out.

The typology of pirate attacks used in the dataset builds on past categorizations used in the maritime piracy literature. Martin Murphy proposes a typology that evaluates the vulnerability of different regions to maritime piracy, and the threat level posed by different types of piracy organizations. At the core of his typology is the assumption that more organizationally and logistically sophisticated operations present greater security threats, with two broad categories of piracy: common criminal piracy, and organized criminal piracy. The first category largely overlaps with standard robberies at sea; the second involves objectives that include thefts of cargo and/or ships, and kidnapping for ransom, with a high propensity to use violence, access to international markets, frequent links to insurgent or terrorist groups and/or organized crime groups and, fairly high levels of political or official support.

For the purposes of this article, I use my own typology based on the intent and behavior of the pirates during the operation. While the more sophisticated attacks in this article would clearly fall into Murphy’s ‘organized criminal piracy’ category, I do not take as a given that more sophisticated operations will necessarily have access to international markets, or have links to external political or economic actors. Instead, I treat these characteristics in Murphy’s typology as external resources that may or may not be necessary for successful conclusion of the

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25 See, for example, Coggins, "Nothing Fails Like Success" and Iyigun and Ratisukpimol, "Learning Piracy on the High Seas."

26 Murphy, Small Boats, Weak States, Dirty Money, pp. 131-138. Murphy also does a literature review of the various typologies that have been discussed.
operation, depending on the objectives (ship/cargo seizure, and kidnapping for ransom) listed by Murphy.

Specifically, I define a ‘robbery’ as one in which the pirates’ main objective appears to be stealing money, valuables, ship parts, tools, or other non-cargo items from the ship. A ‘ship/cargo seizure’ operation is one in which the primary purpose of the attack appears to be taking over the ship and/or the cargo on the ship and selling them off for a profit. Sometimes the crew might be taken with ship when it is hijacked, sometimes they are dumped off (or thrown overboard), and sometimes both the crew and the ship are let go after the pirates have discharged the cargo. I define ‘kidnapping for ransom’ as an operation where the primary purpose appears to hold the ship and/or the crew hostage for ransom. In some kidnappings for ransom, both the crew and the ship are held for ransom, while in others, the crew is taken off the ship and held for ransom separately. Kidnappings for ransom do not include robberies where crewmembers were taken hostage during the course of the robbery, but no ransom demands were issued. Finally, ‘attacks’ are incidents where the clear aim of the attackers was simply to damage the ship, or where there is so little information that the incident could not comfortably fit elsewhere.

From these categories, we can see in Table 1 that robberies are by far the most common form of piracy, followed by kidnappings for ransom, and then ship/cargo seizures, and that while most types of piracy have occurred at least once in every region of the world, they are evenly distributed throughout the world. Southeast Asia (consisting of both the Malacca Strait and the South China Sea) has traditionally been the global hotspot for ship/cargo seizures, while East Africa (or more specifically, the areas near the Horn of Africa) and West Africa have traditionally seen the greatest numbers of kidnappings for ransom. Interestingly, while Southeast Asia (particularly the South China Sea) has by far the most robberies in the world, the second
and third biggest hotspots for robberies are the Indian Ocean (which contains India and
Bangladesh, where most of the attacks in that region occur) and South America. Despite
Somalia’s reputation for piracy in general, East Africa has seen relatively few robberies.

**Table 1. Pirate attacks by region and attack type**

[Insert Table 1 here]

Different types of pirate attacks also vary over time, as seen in Table 2. Although the numbers
vary substantially from year to year, robberies consistently are by far the most common type of
piracy. Ship/cargo seizures, the less common of the sophisticated piracy operations, enjoyed their
heyday before 2005, while kidnappings for ransom have surged since 2007 in particular. With
that said, all types of piracy continue to occur at least intermittently, and both ship/cargo seizures
and kidnappings for ransom, as ongoing security issues, deserve detailed examination.

**Table 2. Attack type by year**

[Insert Table 2 here]

To be sure, piracy incident data in general have a number of problems with
underreporting and bias. First, ship owners often have an incentive *not* to report an incident
(particularly if it is minor, such as the theft of a ship parts or crew valuables). Reporting the
incident could lead to an increase in the owner’s insurance premiums, and involving the
authorities – assuming they respond at all -- almost always requires diverting the ship and
delaying its journey (which costs the owner money in an industry with relatively low profit
margins) with no guarantee of satisfaction, particularly for robberies where the pirates are often long gone by the time the authorities intervene. Second, the primary reporting institution – the International Chamber of Commerce’s International Maritime Bureau Piracy Reporting Centre in Kuala Lumpur – is funded by the shipping industry, and thus may have an incentive to respond the needs and interests of the owners of large commercial vessels rather than private vessels or small-time boats, although this problem has been mitigated by the creation of other piracy information centers.  

More generally, given that small, local vessels are not even required to have International Maritime Organization registration numbers, attacks on small vessels in territorial waters and ports are almost certainly underreported, potentially by significant margins. Piracy incidents may be underreported worldwide by as much as two-thirds. As a result, any conclusions about aggregate piracy incidents around the world must necessarily be tentative, and should be approached with due humility.

Information on the incidents that are actually reported varies substantially in quality, particularly in earlier reports. The dataset used here is derived entirely from reports provided by the International Maritime Organization from 1996 through 2010. While many -- even most -- of the incidents listed in the IMO’s monthly piracy incident reports come from the Piracy Reporting Centre, not all do, and because they report different aggregate numbers for total attacks (successful or attempted), and types and locations of attacks, they are not per se the same datasets. The IMO’s data have several advantages. First, the IMO has posted a searchable database online at http://gisis.imo.org of all attacks it has recorded since 1995. The website

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27 Murphy, Small Boats, Weak States, Dirty Money, pp. 65-72.

28 Murphy, Small Boats, Weak States, Dirty Money, pp. 67-68 has a discussion of underreporting, with a number of different authors’ estimates.
generates downloadable spreadsheets with some (but not all) of the information about the attacks that are listed in the database for each incident, (somewhat) easing the process of coding the data. Second, in the narrative section of every incident, the IMO often reports certain details in a consistent way (such as the number of pirates, whether the pirates are armed, whether the ship is at anchor or underway), easing coding. It also has a separate narrative section for consequences to the crew of an attack, allowing data on consequences to be coded more consistently.

With that said, the quality of the data provided by IMO has changed (and improved) substantially over the years, but it started from a relatively low baseline, so there are many incidents for which information is sketchy and, just as importantly, where subjective decisions have to be made about how to code the various categories in the dataset. In addition, while the IMO’s quarterly and annual reports show the number of attacks that involve hijackings and/or kidnappings in the aggregate (for example), they do not generally define those categories, nor do they link those numbers to specific incidents in the monthly reports or on the (now online) database.

Because of this, at times I coded the IMO’s data differently from how the IMO (apparently) did, and this has resulted in different aggregate numbers in terms of attacks, types of attacks, and even geographical locations of attacks. For example, the method for distinguishing between ‘successful’ and ‘attempted’ attacks in the IMO data is unclear. In this dataset, I include attacks where the attackers successfully boarded the ship, even if they were not successful in their overall goal (such as hijacking the ship, or stealing goods), or attacks where the clear aim of the attackers was to damage rather than board the ship (a primary example of this would be the Liberation Tamil Tigers Eelam’s suicide boats in Sri Lanka).
Since 2002, the IMO has coded the vast majority of incidents into a specific region of the world. Usually these codings are uncontroversial. For the dataset, except where the IMO’s coding was blatantly wrong,29 I used the same regional delineations, with a few exceptions. For many incidents that occur near the borders of the IMO’s defined regions or incidents where the IMO lists no region at all (especially before 2002), it is often unclear which region is actually the best, and the specific coding is subjective. This is particularly true in Southeast Asia at the southern tip of the Malacca Strait, where it meets the South China Sea, and off the Horn of Africa, where different incidents near the same city could theoretically be coded into East Africa, the Arabian Sea, or the Indian Ocean. Likewise, while most countries fall comfortably into one region. But for those countries at the seams of the regions (notably Yemen, India, Somalia, Oman, Thailand, Malaysia, Indonesia, Egypt and Sri Lanka), where necessary I plotted the latitude and longitude of the attack (where provided), and then assigned a region based on that location.

**OPERATIONAL NEEDS**

To build a theoretical explanation of piracy syndicates’ structure and behavior, I look at, first, inputs into piracy operations, second, challenges to those operations and, third, how piracy organizations respond to those challenges. Here I assume that the primary objective of all piracy syndicates is to turn a profit in a hostile (or at least uncertain) security environment. Different types of piracy operations require different quantities of two inputs: (1) the time between the attack and the realization of profit, and (2) access to a (somewhat) favourable security environment and economic markets in order to support the operation and to realize those profits.

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29 Please contact the author for the dataset to see where regional coding might differ from the IMO’s.
Given a syndicate’s security imperatives, as a result of the variation in time and external resource access needed for different operations, the syndicate faces internal challenges associated with the relationship between principals and agents, and external challenges associated with maintaining consistent access to a secure environment and economic markets. Ship and seizure syndicates and kidnapping for ransom syndicates adapt their structure and behavior in different ways to respond to these challenges because they have different time and external resources needs.

**Time**

We can think about time in a piracy operation in terms of how long it takes from the point at which pirates attack their target until they have successfully realized profits from the attack. In the case of a ship/cargo seizure operation, after they have taken over a ship, the pirates are faced with the problem with successfully disposing of the ship and the cargo and making the profit all while being in physical proximity to the loot (thus rendering them susceptible to being caught red-handed by the authorities. Speed is of the essence. In one case in April 2005, maritime police in Indonesia’s Riau Islands caught up with a tug and barge (the *Bahars*) that had been reported hijacked only a few hours earlier, only to find that the pirates had already repainted and renamed the tug had seized.\(^\text{30}\) If the financier (or whoever the leader is) has not done adequate preparation, the post-attack time period might be lengthened as the pirates search for a buyer for the loot, as happened to the hijackers of the *Louisa* in 1998. After hijacking the ship after the southern coast of Taiwan, they held the crew hostage and tried in vain to find a buyer of the ship.\(^\text{31}\) Ideally, for

\(^{30}\) “*Bajak Laut Dibekuk,*” *Batam Pos* April 27, 2005; Rumbadi Dalle, “*Polisi Kejar Pengupah Bajak Laut,*” *Koran Tempo* April 27, 2005.

the pirates, the post-attack process of disposing of the loot should take no more than a few days. In one incident in 2005, for instance, a syndicate hijacked a cargo ship carrying tin ingots in Indonesia, sailed to Pasir Gudang in Malaysia, and forced the crew to offload the ingots into a waiting warehouse over the period of several days.\textsuperscript{32} If the pirates are willing to offload the cargo and scuttle the ship, as was the practice of a pirate hijacking syndicate in Indonesia that attacked and scuttled three ships in the Bangka Strait in 2005, the process can be completed within a few hours.\textsuperscript{33}

This stands in contrast with the minimum time requirements for a kidnapping for ransom. In the planning phase, the financier and his middleman must acquire the accoutrements of piracy – a boat (with motor and gas) with enough supplies for the time it is at sea, weapons, and a satellite phone for communication. They must also hire pirates, often relatives in Somalia. In more sophisticated kidnapping operations, the financier and middlemen arrange landside shelter in which to keep the hostages (although ransom negotiations have often been done entirely offshore).\textsuperscript{34} The pirates then go looking for a ship to target, which can take some time.\textsuperscript{35} One source suggests that pirates who are running out of food, water, and fuel after several days at sea

\textsuperscript{32} "Kapal Indonesia Dibajak, Lalu Dibawa Ke Malaysia," \textit{Kompas}, April 27, 2005.

\textsuperscript{33} Author Interview, Capt. Noel Choong, Head, International Maritime Bureau-Kuala Lumpur; Author Interview, Official, International Maritime Bureau.


\textsuperscript{35} Bahadur, \textit{The Pirates of Somalia}, p. 17 suggests that the pirates’ standards are not very exacting – they avoid fast-moving vessels that are difficult to board, and warships.
may become less choosy about their targets.\textsuperscript{36} The actual attack, in which the pirates take over the ship and the crew, segues over into negotiations, as the pirates navigate the ship (and the crew) toward a haven where the pirates have a support base that can bring on food and supplies, and to which the pirates and crew can be removed if necessary. The back and forth discussions between the ship owners and the pirates can take weeks, months, or in some cases where there is a particularly difficult time obtaining ransoms (as with uninsured kidnappees), over a year, as happened when the British couple Paul and Rachel Chandler were kidnapped off Somalia in 2009.\textsuperscript{37} This long period of time in kidnapping operation ultimately poses problems for the pirate organizations, both in terms of resolving principal-agent problems, and in dealing with the security fallout of a failed state.

**External resources**

Piracy syndicates do not operate in a vacuum. Aside from varying lengths of time, they also require resources that are external to the syndicates themselves. Specifically, syndicates require a security environment that is, if not amiable, at least not overly hostile. They also need to access local (and in some cases transnational) markets to buy supplies for their operations, both before and after the takeover of the ship, and to make a profit off their loot (in the case of seizure syndicates).

External security for the operation is a perennial concern for any syndicate. For ship/cargo seizure syndicates, the pirates must evade the authorities in the run-up to the

\textsuperscript{36} "Sea Pirate Reportedly Shot Dead in Attack on Uae Vessel Off Somali Coast," *The National (Abu Dhabi)*, March 25, 2010.

\textsuperscript{37} Julie Etchingham, "Paul and Rachel Chandler: 'We're So Lucky to Be Home'," *The Telegraph (UK)*, November 28, 2010.
operation, during which time the financiers must contact the middlemen and potential buyers, obtain information on the potential target, and organize facilities for disguising the ship and, if necessary, discharging the cargo. In the aftermath of the attack, the pirates must actually disguise, rename, and recertify the ship, sail it to its destination, and then (if the cargo is the goal of the operation) unload and deliver the cargo, all while the authorities in most countries are hunting for them. Most aspects of this operation (such as information acquisition, recertification and repainting) require interaction with people who are outside the piracy syndicate and could theoretically scuttle the operation at any given time by asking the right questions.

Security concerns also apply in kidnappings for ransom, although they are accentuated by the extended time the negotiations take to complete. In the phase of the operation where pirates are searching for targets, and then actually attacking them, they may have to worry about interdiction, particularly (in the case of the Horn of Africa) in waters patrolled by foreign warships operating as part of anti-piracy task forces. After the actual attack, kidnappers then need to move the hijacked ship (and crew) to their intended destination, and then need a security environment that is sufficiently stable and ‘friendly’ to allow them to park the ship offshore and ferry supplies and replacement pirates to the ship from shore over the long period of time necessary for negotiations. Once the ransom is actually received and divided up, the pirates then need some way of holding on to the money (against robbers) before they dispose of it.

Both ship/cargo seizure and kidnapping syndicates make use of external markets to support the operation. In the run-up to an attack, ship/cargo seizure syndicates need to buy supplies – a fast boat to stage the attack, fuel, possibly ropes and boarding equipment, and weapons for the pirates themselves. In some cases the money comes from the initial sum laid out by the principals for the agents. In others, the agents are compensated for bringing their own
Likewise, kidnapping syndicates need markets to supply them with food, water, fuel, guns, ammunition, and *qaat* (a leaf often chewed by Somalis for its intoxicating effects), both while the pirates are searching for targets, and during the negotiation period.\(^{39}\)

The process of realizing profit after the attack also requires access to external markets. In kidnappings (and robberies), the pirates end up with cash at the end of their attack, or goods that can be converted easily into cash (such as jewellery or ship parts) pretty much anywhere in the world, although in practice, in Somalia, the profits are often poured into other investments, such as the *qaat* business.\(^{40}\) With sufficiently high profits in Somalia, there is some evidence the kidnapping for ransom syndicates are actually creating markets for real estate and high end goods as money flows into what were previously sustenance-based local economies.\(^{41}\) In ship and cargo seizures, on the other hand, pirates end up with either a ship, tons of cargo, or both. Ship/cargo seizure syndicates are thus dependent on a number of fairly sophisticated economic markets. While the shipping industry itself is global, ships themselves often run within certain regions, or at least between transhipment hubs such as Singapore or Hong Kong. The pirates thus often need to operate in areas with markets where it is not unusual to see a high throughput of either ships or large quantities of cargo, or both. The port and warehouse facilities and market


\(^{39}\) Osman, "Somali Islamists Vow to Free British Hostages from Pirates."


infrastructure associated with supporting legitimate transnational trade by ship need to be
extensive and sophisticated enough to absorb entire ships or large quantities of cargo without
clear provenance without distorting the markets or drawing undue attention from the
authorities.\textsuperscript{42} As we will see, such markets are not evenly distributed throughout the world.

**CHALLENGES TO OPERATIONS**

Both kidnappings for ransom and ship/cargo seizures face both internal and external
challenges to their operations. These challenges vary according to how and to what extent the
operational inputs – time and markets – affect the ability of syndicates to bring their operations
to a successful conclusion. In the case of kidnappings for ransom, the copious amounts of time
required mean that principal-agent problems are acute and ensuring a ‘secure’ environment is
paramount, while the relatively easy liquidation of the profits from the operation means that the
challenge of maintaining access to markets is mainly associated with acquiring supplies, and
maintaining a ‘secure’ environment for the negotiations. In the case of ship/cargo seizures, the
relatively short time frame minimizes many, but not all, principal-agent problems. At the same
time, the syndicate experiences significant external challenges in maintaining access to markets
in which it can liquidate its loot.

**Internal challenges: principal-agent problems**

\textsuperscript{42} Author Interview, Capt. Noel Choong, Head, International Maritime Bureau-Kuala Lumpur; Author Interview,
Official, International Maritime Bureau; Author Interview, Official, Hong Kong Shipowners' Association, Hong
Kong, October 2005.
The primary internal challenge to piracy syndicates is keeping the syndicate together in an uncertain security environment during the course of the operation, on the way to realization of profit. To understand this challenge, I use here a variation of the principal-agent framework that has been used to understand terrorist organizational dynamics. A principal-agent approach has been used profitably in a number of different contexts, particularly to explain why organizations might not be operating efficiently, or in ways that seem counterproductive to the interests of their stakeholders. Applying the principal-agent framework to illicit organizations is a relatively new and growing field. Byman and Kreps, for instance, look at state-sponsored terrorism, treating states as principals, and terrorist groups as agents. They find that states may have a number of reasons to delegate resources to terrorist groups (such as plausible deniability and credible commitments), but often then have problems controlling those groups. The Harmony project at United States Military Academy’s Combating Terrorism Center, by comparison, looks at the internal workings of al-Qaeda in the Horn of Africa, and finds that security concerns help to create principal-agent problems within terrorist groups, leading to misallocation of financial resources, and operations often failing (or getting out of hand).


45 HARMONY, "Harmony and Disharmony: Exploiting Al-Qa’ida’s Organizational Vulnerabilities " (West Point, NY: Combating Terrorism Center, United States Military Academy, 2006).
In the terrorism-based model, developed in the greatest depth by Jacob Shapiro (who was one of the authors of the Harmony report), the need for a terrorist organization to be clandestine, and the threat posed by state authorities, have a number of implications for how it is internally structured. Because of these security needs, terrorist leaders (principals) must delegate tasks and resources to lower-level operatives (agents), with the assumption that every communication between the two levels provides more opportunities for the authorities to find and defeat the organization. This problem of security coming at the cost of communication (and vice versa) means that, in Shapiro’s words, there are security-efficiency and security-control tradeoffs.46

In the former tradeoff, leaders must allocate financial resources to agents, but since the operational and support members of a terrorist organization may have different ideas about how to spend the money, the leaders are faced with the problem of how to keep the money from being misspent. Extensive monitoring requires extensive communication, and thus lower security, while another solution – limited amounts of money for agents – can hinder operations. Certain kinds of agents – particularly non-violent support staff – also face lower risks in involvement in the group, and thus have a lower threshold for defection to the authorities, given them power relative to the tactical members and the leadership.47


In the latter tradeoff, the foot soldiers may have different ideas from the leadership about desired levels of violence, either because they place a higher value on violence per se than the leadership does, or because the foot soldiers are operating in a strategic vacuum. Controlling the foot soldiers to the leadership’s satisfaction requires constant communication, and thus poses security risks. Terrorist organizations can try to overcome both tradeoffs by establishing intensive initiation requirements for members to weed out those with less commitment,\(^{48}\) and by recruiting members from networks in which they have large amounts of trust, such as school alumni groups or family members.\(^{49}\) In both cases, the organizations still run security risks – intensive initiation requirements such as years of training in Afghanistan attracts the attention of the authorities, and deep embeddedness in social networks sacrifices compartmentalization, making it easier for authorities to bring down entire networks once they capture even low-level operatives.\(^{50}\)

As criminal organizations, pirate gangs clearly have some differences from terrorist groups of which we should be mindful when transferring terrorism approaches to the criminal side. First, in a criminal organization motivated strictly by financial gain, there is no non-monetary ideological glue holding the group together, perhaps leading to more severe principal-agent problems than in terrorist organizations with well-defined political or religious goals. Second, many piracy syndicates are ephemeral – coming together for a single operation and then dispersing. As such, principals in piracy syndicates might need to figure out how to address


problems with their agents for every operation. This stands in contrast to many longstanding
terrorist organizations such as Hamas or the Provisional IRA that must preserve links across
different attacks (or no attacks at all) but also have opportunities to build up trust and monitor
behavior over the long term.\footnote{With that said, likeminded terrorists could ‘swarm’ around an operation and then disperse, raising similar issues. See John Arquilla and David Ronfeldt, eds., \textit{Networks and Netwars: The Future of Terror, Crime, and Militancy} (Santa Monica: RAND, 2001).} If anything, it should be noted, one-off pirate operations suffer
from \textit{greater} principal-agent problems than might exist in a terrorist organization.

Nonetheless, a principal-agent approach can be fruitfully applied to analysing pirate
gangs’ internal operational challenges, and thus what tradeoffs they might face. Like terrorist
organizations, pirate gangs often face a hostile environment, and sophisticated operations require
a certain amount of delegation to agents, either because of security concerns, or because
specialized skills are required of different agents, or both. Pirates’ goals, and the strategies to
achieve them, are often straightforward – they want to make a profit, and both the principals and
agents generally agree on the best course to achieve that. This does not mean, however, that all
agents are necessarily committed to other agents or the principal getting their share of that profit
(resulting in a risk of defection), or that they are equally willing to take the risks necessary to
finish the operation. The principal thus needs some way of monitoring or controlling his agents
while facing the same security-control/efficiency tradeoff, or some variation thereof, as terrorist
organizations.

Using a principal-agent approach to understand the internal dynamics of piracy
syndicates is not a given. A number of studies have instead taken a network approach to
analysing terrorist organizations and criminal syndicates. Indeed, inasmuch as modern globalized
communications and transportation technology have provided opportunities for structurally flat, highly adaptable, potentially ephemeral, and geographically diffuse groups of terrorists or criminals to come together for operations or violent campaigns, a network approach to illicit organizations has become de rigueur in the past decade.\(^\text{52}\)

Yet a principal-agent approach and a network approach are not mutually exclusive – they are in fact complementary. Any illicit organization, whether it is hierarchical or structurally flat, can be analysed as a network – indeed, in a book on network analysis, Mile Kahler argues that al-Qaeda has at different times been a centralized, hierarchical network and a decentralized, flat

Network analysis is ideal for analysing the strengths and weaknesses of different organizational structures (the variation in resilience, for example, of chain networks and networks with coordinating hubs), and in assessing the effects of different arrangements of social connections among nodes on an organization’s behavior. Yet the principal-agent approach is useful for analysing issues that arise from the nature of the links (or lack thereof) between nodes in that network, and in investigating organizational problems that may arise over the course of an operation as those nodes’ preferences diverge, even if the overall structure of the network remains unchanged. Any illicit organization, even a structurally flat network, that has an uneven distribution of financial resources, technical capabilities and/or ideological devotion among its nodes potentially faces preference divergence issues between those who have certain resources, capabilities, and motivations, and those who do not. Indeed, Shapiro and others find principal-agent problems in organizations such as al-Qaeda that have elsewhere been characterized as structurally flat networks. In turn, we will see, illicit organizations often attempt to address principal-agent problems by changing the structure of the network, or adding (or subtracting) links between nodes inside or outside of the core network.

The intensity (or lack thereof) of principal-agent problems that pirate syndicates face is a function of the variation in the two inputs – time and external resources. The relatively short time span required by ship/cargo seizures means that many principal-agent problems are mitigated, but not eliminated entirely. As a result, it is useful to apply the principal-agent framework to both

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55 HARMONY, "Harmony and Disharmony."
ship/cargo seizures and kidnappings for ransom, and to analyze the differing challenges different syndicates face.

First, for Shapiro’s terrorists, the security threat comes from a state whose ability to unravel the organization increases with every piece of information that is transmitted between the principal and the agents. Ship and cargo seizure operation leaders likewise must communicate with and provide financial resources to their agents both before the attack (in terms of target information, and money for equipment) and after (in terms of destination for the ship and/or cargo), leaving them vulnerable to compromise.

Second, ship/cargo seizure operations also have a possible divergence of preferences between the principals who finance the operation and find the targets, and the pirates themselves, who are explicitly hired for operations, and who actually take on the physical risk associated with hijacking and then delivering the ship and its cargo. There is a limited period of time during a ship/cargo seizure operation where the agents seemingly hold all of the cards – they have the ship and cargo (and knowledge of the ship’s location). The principal must thus deal with possible defection, where the agents might decide to try to help themselves to the ship and/or its cargo, and sell it off to the highest bidder. Because of the short time between hijacking and sale, and often the great distance between the physical location of the principals and the physical location of the agents, the principals have few punishments they can inflict on agents who defect with the loot. Given the transnational nature of many ship/cargo seizure operations, in Southeast Asia in particular, there are no close-knit family and/or clan ties (as in Somalia) that would lead to loyalty between principals and agents. In the case of the 2001 hijacking of the Selayang in the Malacca Strait, for instance, the hijackers were hired by an ethnic Chinese principal named Mr.

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Ching, but given little information before the attack about what they were supposed to do, and were unable to contact him for further instructions once they had taken over the ship.\(^{57}\)

This is not to say that there are no extra-contractual ties at all – Martin Murphy describes how at least some of the ship/cargo seizure syndicates are connected with and/or run by ethnicity-based organized crime groups.\(^{58}\) But these ties often seem to be among principals, rather than between principals and agents. Eric Frecon’s interviews with pirates in Batam suggests that the pirates themselves are ethnic native Indonesians (*priumi*) who are hired on a case-by-case basis by principals who are often (but not always) ethnically Chinese.\(^{59}\)

Kidnappings for ransom present somewhat different principal-agent problems. Unlike ship/cargo seizure specialists, kidnappers are generally operating out of failed states lacking the ability to crack down on their operations very effectively. Once the pirates have hijacked the ship and have taken the crew hostage, communication can be frequent and information-rich with little effect on security. The location of Somali pirates is often not secret – they often stay on the ship with the crew (who they usually need to operate the ship) and bring food and water on board. After hijacking the ship, they make their way to the harbors of known pirate way stations without significant subterfuge.\(^{60}\) The pirates may actually have some incentives to provide information about their internal activities (such as the number of pirates) since this lends credibility to their demands. Hence we see the rise of pirate “spokesmen” in Somalia who speak to the media.


\(^{58}\) Murphy, *Small Boats, Weak States, Dirty Money*, pp. 169-177.

\(^{59}\) Frecon, "Piracy and Armed Robbery at Sea Along the Malacca Straits," pp. 75-77.

During Paul and Rachel Chandler’s ordeal, for instance, pirates from the group gave interviews to British media and complained that the ransom that was being offered the hostages was insufficient, since holding the couple was costing them £50,000 per month.\(^{61}\)

The pirates’ complaint points to one of the primary factors in kidnappings for ransom – time. While the kidnappers are usually operating in areas of state failure and so are not worried about the state intercepting their communications and breaking up the operation, the length of the operation presents risks for the principal. He must find ways to monitor his agents’ behavior with regard to money he allocates for daily expenses of the operation over a period of weeks or months, thus running into the same problem of financial inefficiency or unwanted violence as terrorist organizations attempting to run long-term operations. Unlike in clandestine terrorist organizations, monitoring agents’ behavior in kidnapping syndicates is somewhat easier, given that communication between principals and agents does not \textit{per se} cause security problems.\(^{62}\)

With that said, the preferences of agents and principals are not perfectly aligned. Clearly the agents in kidnapping operations are undertaking greater risks than the principals, particularly as foreign naval forces have adopted more aggressive rules of engagement. Just as with terrorist groups, agents have a distribution of levels of commitment to the cause, and thus risks they are willing to take.\(^{63}\) In Somalia, there are conflicting reports about the risk-aversion of kidnapping syndicate agents. A 2008 United Nations report singled out the “depth of their motivation” of

\(^{61}\) Osman, "Somali Islamists Vow to Free British Hostages from Pirates."

\(^{62}\) With that said, the pirates still take security precautions while communicating with each other, such as using local cell phones and switching phone numbers frequently. See Jama Deperani and Robert Young Pelton, "Mv Blida Ransom Drop Cancelled by Pirates: Garaad Group Fires Negotiator, but Agrees to Hand over Two Sick Hostages," \textit{Somalia Report} 11 October 2011.

Somalia’s pirates as distinguishing them from pirates in other parts of the world,\textsuperscript{64} while one of the pirates holding the Chandlers noted in response to threats by an Islamist group to rescue the hostages, “If we can’t keep them, we will have to give up. We’re not prepared to put our lives at risk.”\textsuperscript{65} Given certain changes in the probability of pirate agents being attacked or killed in the course of an operation, or of the operation having a decreased chance of success (for whatever reason), it is conceivable that risk-averse agents might defect.

The problem for principals is that agents have an incentive to defect over a long period of time. Kidnapping syndicate agents can, in the right instance, make a side deal with ship owners or the governments whose citizens are being held. Their incentive to do this increases with time. The potential reward for a given agent could go down over time if the final salary is determined as a percentage of the ransom, as seems to be the case in many kidnapping syndicates. Several reports indicate that profits are shared out equally among the agents from the ransom, with the first pirate to board the target ship receiving a higher share or a non-monetary gift (such as a car).\textsuperscript{66} Like most negotiations, the initial number put forward by the seller (in this case, the pirate syndicate) is far higher than what is acceptable to the buyer (the shipping company) and a delicate set of back-and-forth offers is required to come to a mutually acceptable amount.\textsuperscript{67} The pirates’ costs increase over time as the potential ransom decreases, until there is an amount below which the pirates cannot go for fear of losing money on the operation, as the pirates in the


\textsuperscript{65} Osman, “Somali Islamists Vow to Free British Hostages from Pirates.”


\textsuperscript{67} Joffe-Walt, "Behind the Business Plan of Pirates, Inc.."
Chandler operation claimed.\textsuperscript{68} The pirates on board the ship are not the only agents – the ransom negotiator is himself an agent (and sometimes, depending on his financial investment in the project, a principal). As of 2011, there appear to be several negotiators in Somalia who are essentially ‘free-lance’, working for several different piracy operations at the same time. They have easier access to the ship owners (and insurance companies) that will ultimately pay the ransom due to their initial position, their international experience (often studying in the US or the UK), and their ability to speak English.\textsuperscript{69} And there is evidence that indeed the negotiators do cut out side payments for themselves, negotiating a final ransom payment that includes the stated ransom, and then an additional percentage or payment for themselves.\textsuperscript{70}

As with preference divergence between terrorist principals and agents over the proper level of violence (and appropriate targets) in a terrorist campaign, the temptation for pirate agents to use violence to speed along the negotiations increases as the negotiations drag on and their share decreases. Agents may in general use more violence than is optimal for the principal. In one case in February 2011, a large of number of pirates who had taken over a yacht with four Americans off the coast of Yemen grew increasingly agitated as resources apparently ran low, the mother ship disappeared, and a US naval warship drew close to the yacht to negotiate. Finally one of the pirates fired a rocket-propelled grenade at the pursuing US warship, setting off a chain

\textsuperscript{68} Osman, "Somali Islamists Vow to Free British Hostages from Pirates."


reaction in which the pirates shot the hostages (all fatally) and each other. Whatever discipline
the principals wanted to enforce broke down, resulting in a failure of the operation.\textsuperscript{71}

**External challenges: Maintaining access to external resources**

Given the generally illicit nature of maritime piracy, it is not guaranteed that syndicates
will be able to maintain access to external resources – a favourable security environment and
markets capable of supplying the syndicates and liquidating their loot – to the extent necessary to
bring their operations to successful conclusions. The threats to syndicates’ external resources
come from several directions. First, the time and resource needs of different types of operations
lead different types of piracy to predominate in failed and weak states. Yet weak and failed
states, in turn, provide their own threats to syndicates’ security and market access. Second, active
state crackdowns imperil syndicates’ access to stable security arrangements and markets.

In his article looking at maritime piracy hijackings from 2000 to 2007, Justin Hastings
finds that they were mostly limited (in that time period, at least) to countries falling below
approximately the sixtieth percentile in the World Bank Governance Indicators.\textsuperscript{72} The bottom
sixty percent of countries includes all failed states, obviously, but also a large number of
countries that are weak but functioning, such as Indonesia and Vietnam, and countries, such as
Malaysia and Thailand, that have been considered middle-income.\textsuperscript{73} More specifically,
kidnappings for ransom occur almost entirely in countries ranking in the bottom twenty percent


\textsuperscript{72} Hastings, "Geographies of State Failure and Sophistication in Maritime Piracy Hijackings."

of the World Bank Governance Indicators, while ship/cargo seizures occur almost entirely in countries between the twentieth and sixtieth percentile.\(^74\) In Hastings’ typology of state failure and weakness, states (or specific areas within state boundaries) with the lowest governance levels – ‘failed’ states – do not have the ability to provide either economic or security public goods, while ‘weak’ states are able to provide both, if highly imperfectly.

Given that their need for economic public goods such as markets is limited to the basic supplies – fuel, food, water, motors, etc. – necessary for carrying out their operation, kidnapping syndicates can do without the sophisticated market infrastructure characteristic of some weak (non-failed) states. The long stretches of time necessary for negotiations, free from interference from functioning state authorities, also mean that kidnapping syndicates thrive in failed state environments. By contrast, ship/cargo seizures can be done in a much short period of time (allowing them a better chance of evading pursuing security forces), but require not only basic supply markets, but also the relatively sophisticated market infrastructure associated with the shipping industry to sell off the hijacked ship and cargo, leading them to thrive in weak (but not failed) states.\(^75\) Percy and Shortland push this argument further, arguing that, if state-building actually does begin to succeed in Somalia, maritime piracy could become even more entrenched in the country, as the pirates would likely take advantage of a more stable business environment in which to pursue piracy and invest their profits.\(^76\)

But the same characteristics of weak and failed state environments that allow different types of piracy operations also present challenges. The provision of public security goods in

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\(^75\) Ibid, pp. 215-217.

\(^76\) Percy and Shortland, "The Business of Piracy in Somalia."
weak states means that ship/cargo seizure operations must move with all due haste before the authorities catch up with them. Although most such operations do in fact move quickly, often times this is not quick enough. In the April 2005 incident in which the *Bahars* tug-and-barge combination were hijacked off Bintan island in Indonesia, the pirates immediately set about heading for Thailand and repainting the ships at sea, but they were tracked down by Indonesian maritime police within eight hours of the hijacking.\(^77\)

The lack of public security goods in failed states allows syndicates to operate relatively openly (unlike, for example, mafia in some developed countries), but also means that kidnapping syndicates must find ways to provide their own security, a problem that grows over the time of the operation, as they face open attacks from other pirate gangs, each other, local militias, and, in just the right conditions, local, possibly *ad hoc*, governments. In Robert Rotberg’s formulation, violence – between the state and citizens, and among citizens – is inherent in state failure.\(^78\)

Violence affects not only private citizens but also violent groups themselves. When al-Qaeda attempted to establish a foothold in Somalia in the early 1990s, it encountered similar problems – it was forced to devote significant resources to defending itself from attack and ingratiating itself with rival Somali factions.\(^79\) This is doubly true for kidnapping syndicates operating in failed states over the long period of time required for successful ransom negotiations. Absent payments or local elites who are willing to take the money, the pirates lose security very quickly, as when


\(^78\) Rotberg, "The New Nature of Nation-State Failure."

\(^79\) Clint Watts and Jacob N. Shapiro, "Al-Qaida's (Mis)Adventures in the Horn of Africa," (West Point, NY: Combating Terrorism Center, United States Military Academy, 2007), pp. 20-21.
rival pirate gangs in Haradheere fought in 2010 over perceived reneging in prior agreements, or when the Chandlers’ kidnappers apparently moved the couple in 2010 to a safer location upon the approach of an Islamist militia that vowed to attack the pirates (either because they objected to piracy, or because they had not been paid off). Similarly, in May 2009, the pirates who hijacked the MV Victoria (and anchored it off Eyl) were constantly on guard against attacks from other pirate gangs during the operation, and after the ransom was paid, offered to stay on board the ship to protect the MV Victoria from being attacked again before it reached safety, suggesting an intensely uncertain security environment.

State authorities have also cracked down on both markets and the pirate syndicates themselves in both weak and failed states. Aside from actual patrols, such as the joint Singapore, Indonesia, Malaysia MALSINDO patrols begun in the Malacca Strait in 2005, ship/cargo seizure syndicates have faced difficulties in profiting off hijacked ships and cargo as states have attempted to disrupt their markets. GPS locators such as ShipLoc, and the Automatic Identification Systems hidden on ships have aided ship owners in knowing where their ships are, and if they are off course (or if the locators are turned off, that something has gone wrong). In one case in June 2001, pirates successfully hijacked the Selayang in the Malacca Strait, but did not find and turn off the automatic location beacon, allowing the shipping company and the police to track down the ship in Samarinda.

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81 Osman, "Somali Islamists Vow to Free British Hostages from Pirates."


Increased evidentiary requirements for proving ownership when registering ships in certain jurisdictions (notably Hong Kong) have made it more difficult for seizure syndicates to register seized ships.\textsuperscript{84} In the same vein, embossed names and registration numbers on the sterns of ships make it difficult for pirates simply to paint over the names and assign bogus registration numbers.\textsuperscript{85} The IMO began requiring embossing and registration on cargo ships on international voyages and all ships over 500 tons beginning in July 2004, although in practice most ships over 500 tons had been registered and embossed for years before the regulation came into effect.\textsuperscript{86} From the dataset, we can see that after the ship embossing regulation took effect for existing ships in mid-2004, the number of ship/cargo seizures dropped significantly. Between 1996 and 2004, there were an average of 13.2 ship and cargo seizures per year. Between 2005 and 2010, this dropped to 6.3 seizures per year (see Table 2).\textsuperscript{87}

Kidnapping syndicates in East Africa also face state crackdowns. In June 2008, the UN Security Council passed a resolution authorizing ‘all necessary means’ for member states to suppress piracy, including that in Somali territorial waters, as long as they had the permission of

\textsuperscript{84} Author Interview, Official, Hong Kong Shipowners' Association.

\textsuperscript{85} Author Interview, Capt. Noel Choong, Head, International Maritime Bureau-Kuala Lumpur.


\textsuperscript{87} The decline in ship and cargo seizures was paralleled, however, by a decline in robberies worldwide that began in 2004, and continued until 2006 before rebounding. The increase in robberies might be explained by better reporting from 2007 onwards. The decrease that preceded that is more difficult to explain. Ship and cargo seizures, however, would seem to be much more likely to be consistently reported (given that the owner has lost the ship), and thus we can be more confident of those numbers.
the Transitional Federal Government. Later that year, the UNSC passed another resolution that welcomed a European Union-led naval operation (Operation Atalanta) in the Gulf of Aden to deter pirates, protect transiting ships, and fighting off attacks where possible, and authorized land-based counter-piracy operations where necessary. Naval vessels from the EU, the US, and other countries soon began patrolling the Gulf of Aden. CTF-151, a multinational task force led by the US, was spun off from the counterterrorism-focused CTF-150 already in the Arabian Sea, in January 2009. This was followed by the 2009 Djibouti Code of Conduct, the purpose of which was to provide a legal and operational framework for dealing with Somali piracy.

The patrolling states have in turn adopted more aggressive rules of engagement, resulting in warships pursuing known pirate ships, and commandos storming hijacked ships to kill or capture pirates when the situation presents itself. The Maersk Alabama incident in April 2009, in which US Navy snipers killed three pirates while they held the captain of the Maersk Alabama hostage in a lifeboat off the USS Bainbridge, was one such incident. In early 2011, in separate incidents, Malaysian and South Korean commandos stormed hijacked ships, freed the hostages, and killed and/or captured the pirates. In an increasing number of incidents, including in the

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Malaysian and South Korean cases, the capturing navies have taken the pirates back to the navies’ home countries for trial.\textsuperscript{92} While the patrols and more active rules of engagement have not actually stopped piracy off the Horn of Africa, they do seem to have forced pirates to adapt and change their behavior. A report by Geopolicity describes how Somali pirates have shifted their attacks from the Gulf of Aden (and its protected transit corridor), and have pushed further out into the Indian Ocean since 2008.\textsuperscript{93} The dataset confirms this, as seen in Table 3. While Somalia was almost alone in 2006 and 2007 in seeing kidnapping operations, 2008 saw the emergence of Yemen as the new hotspot (correlating with the shift of piracy to the Gulf of Aden), and 2010 saw the spread of kidnappings for ransom to countries far from Somalia, including Madagascar, the Maldives, Mozambique, Oman, and the Seychelles, as the counter-piracy patrols increased in frequency and intensity.

Table 3. Kidnappings for ransom near Somalia (2006-2010)

[Insert Table 3 here]

\textbf{ATTEMPTED SOLUTIONS: THE STRUCTURE AND BEHAVIOR OF PIRACY SYNDICATES}

Piracy syndicates adopt specific structures and behaviors as a response to internal and external challenges. These responses are not indeterminate, but are constrained by the amount of time and the type of external resources that they need. To resolve principal-agent problems,

\begin{footnotesize}
\begin{enumerate}
\item Mike Pflanz, "South Korean Commando Raid Kills Eight Somali Pirates," \textit{The Telegraph (UK)}, January 21, 2011;
\item "Malaysia Extended Detention of Somali Pirates," \textit{Agence France Presse}, February 6, 2011.
\item "The Economics of Piracy: Pirate Ransoms & Livelihoods Off the Coast of Somalia," (British Virgin Islands: Geopolicity, May 2011).
\end{enumerate}
\end{footnotesize}
seizure syndicates often restrict information and money to agents, who have a limited amount of
time to defect, while kidnapping syndicates often set up elaborate monitoring mechanisms,
which largely work due to a relatively unrestricted political environment. To deal with potential
strictures on access to external resources, seizure syndicates have changed targets to minimize
the need for market infrastructure, and kidnapping syndicates have dealt with hostile security
environments by, in some cases, simplifying their operations to minimize the time needed for
negotiations. To resolve both principal-agent problems and external resources issues, finally,
syndicates engage in the cultivation of various types of both internal and external network ties,
creating interconnectedness within the syndicates, and embeddedness without.

Resolving principal-agent problems

Ship and cargo seizure principals attempt to address the principal-agent problem in
several ways. First, principals restrict information to agents, and restrict the amount of time that
agents have that information. In the April 2005 case of an attack on the Bahar tug and barge
combination off Batam, Indonesia, a Singaporean named Mr. Lee (who was either the financier
or his middleman) provided the targeting information to the pirate broker the same day as the
ships to be attacked left port, meaning that the agents only knew their target for a few hours
before they had to act, minimizing chances for defection. Furthermore, although the ships and
cargo were to be sold in Thailand, it was not clear that the pirates knew yet exactly where they
were to go when they were captured.94

Second, principals restrict the timing and amount of money they transfer to agents. This
is aided by the relatively simple financial structure of ship and cargo seizure operations. In the

case of the Bahar attack, the pirates were each paid a flat sum before the attack as a deposit, and expected to be paid an additional fee upon delivery of the ship and cargo to the buyer.\(^\text{95}\)

Similarly, in kidnapping syndicates, the pirates who attack the ships and guard the ships once they have been hijacked are hired on commission, with the promise of full payment upon completion of the operation. In many cases, they run up debt (on qaat, among other goods) prior to completion of the operation, resulting in repayment obligations after the operation and considerably more bookkeeping for the syndicate’s accountant.\(^\text{96}\)

Despite the long time frame normally required for kidnappings, because they are often operating in environments relatively free of state pressure, principals in kidnapping syndicates can communicate frequently with their agents, both the negotiator, and the pirate themselves. Crewmembers on the MV Victoria, which was held in Eyl, Somalia in 2009, described seeing the pirates making frequent calls using the ship’s satellite phone, and watched the negotiator communicate consistently with what they took to be the senior pirate commander during the course of the operation. Negotiators who do not communicate frequently with principals are liable to be removed from the operation.\(^\text{97}\)

Perhaps because of their ability to communicate without fear of disruption, kidnapping principals in Somalia have set up monitoring and discipline systems that are time-intensive and rely on certain punishment, neither of which can be used by terrorist organizations or seizure syndicates. In at least some pirate networks there is a certain level of bureaucratization to regularize monitoring. Reports describe at least some of the pirate gangs in Somalia as having

\(^{95}\) Author Interview, Riau Islands Provincial Maritime Police Official, Batam, Indonesia, November 2005.

\(^{96}\) Bahadur, The Pirates of Somalia, pp. 196-199.

agents fill out time sheets when entering or leaving hijacked ships, with daily phone communication between the financiers and the agents.\textsuperscript{98} Other sources describe the syndicates employing accountants and logistical coordinators who keep track of expenses and provisions, with payments for each actor explicitly written out, sometimes on Excel spreadsheets.\textsuperscript{99}

Some gangs also claim to operate according to a code of conduct that metes out immediate and harsh punishments – either fines or death – for misbehavior such as pointing guns at other pirates, harming the hostages, or stealing goods from the hijacked ship. One pirate admitted that he had been fined for stealing the wallet of a hostage during one operation. For more serious offenses, there is (or was as of 2009) reportedly a mobile court that can try cases and punish the guilty. When conflicts arise between different pirate syndicates, the principals can meet to resolve their differences without violence. Presumably the code of conduct is designed to prevent agents’ behavior from causing inter-gang strife.\textsuperscript{100} A July 2011 UN Security Council report also suggests that piracy networks have also begun attempting to enforce informal (and possibly formal) agreements to share negotiators, suppliers, and even pirate havens.\textsuperscript{101}

The occurrence of inter-group violence, particularly between pirate gangs fighting over a ship or over ransoms, is not infrequent, and suggests that the code of conduct is often honored more in the breach than in reality. One ship owner, for instance, recounted how the pirates who had hijacked his ship asked to be taken closer to their homes after the ransom was paid because

\begin{flushleft}
\textsuperscript{98} Joffe-Walt, "Behind the Business Plan of Pirates, Inc."


\textsuperscript{100} Abdinur, "Life in Somalia's Pirate Army."

\end{flushleft}
they were afraid of being robbed by other gangs.\textsuperscript{102} In another incident in January 2010, Somali pirates who had hijacked the supertanker \textit{Maran Centaurus} engaged in a firefight with another pirate gang who controlled the waters in which the supertanker was anchored while negotiations were ongoing. The second gang claimed that the first had reneged on an agreement to share the ransom; they continued fighting in Haradheere after the ship was released.\textsuperscript{103}

\textbf{Resolving external resource problems}

To address problems with maintaining access to security and to both supplier and buyer markets, pirate syndicates adapt the nature of their operations, both in terms of targeting and process. Depending on the type of operation, certain kinds of ships may be easier to dispose of, given external resource challenges. Table 4 shows the distribution of general categories of ships that are attacked in each type of attack. Robberies show the greatest diversity of categories, not surprisingly, with cargo, container, carrier, and tanker ships -- in other words, the ships most commonly used by the global shipping industry, and thus the ship presumably most easily within reach of would-be robbers -- being by far the favorite targets.

More interestingly, the numbers for the more sophisticated operations show the sensitivity of syndicates to market conditions. The two most popular categories for ship/cargo seizures, tugs (and barges) and fishing vessels, both can be repainted, renamed, and reused by the syndicates, which suggests they are trying to minimize involvement in large-scale commodities markets. Tugs can be used to haul small loads away from major ports, while fishing vessels can simply be used for fishing (eliminating the need for the shipping and commodities market), or

\begin{footnotesize}
\textsuperscript{102} Joffe-Walt, "Behind the Business Plan of Pirates, Inc."

\textsuperscript{103} McConnell and correspondent, "Battle Rages in Pirate Hub over $7 Million Ransom."
\end{footnotesize}
can be sold off perhaps relatively easily, even with current market access problems. Fishing vessels are often small and are not required to register with the IMO (or have embossed names on their sterns), thus freeing them from the market disruption tactics instituted within the past decade.104 Small-time fishermen have been unable to afford the private ship tracking systems, such as ShipLoc, which can run several hundred dollars per month, well above their earnings.105 Notably, with one partial exception, no container ship was subject to seizure during the period covered by the dataset – transferring cargo to and from container ships requires access to (often well policed) container ports. In the only exception, a container was transferred off the ship in Montevideo, Uruguay by pirates posing as legitimate shippers. The ship itself was not seized.106 The categories targeted by kidnapping syndicates were somewhat more diverse than those targeted by ship/cargo seizure syndicates, possibly because kidnappers are not constrained by external economic markets whose availability varies by type of ship. Interestingly, kidnappers also hijacked few container ships (perhaps due to the speed of many container ships).107

Table 4. Categories of ships attacked by attack type

[Insert Table 4 here]

The differential responsiveness of syndicates to external resource challenges can also be seen in the size of the ships attacked (Table 5). There is no particular reason why robbers would care

105 Ibid.
106 See the dataset for the incident, which took place on the Nedlloyd Recife on March 3, 1996.
about the size of a ship, and indeed, they attack the largest ships on average. Larger ships are more difficult for ship/cargo seizure syndicates to hide or sell off inconspicuously; as a result ship/cargo seizure targets are by far the smallest among the attack types, both in terms of the average tonnage, and in terms of the largest ship ever attacked.

Table 5. Summary statistics for tonnage by attack type

[Insert Table 5 here]

Interestingly, as the shipping industry, states, and international organizations have taken the measures described above to disrupt the market, the already low average tonnage of ships that were actually seized in Southeast Asia (thus excluding ship/cargo seizures where only the cargo was seized and the ship discarded), has, even with some outliers, declined over time (between 1996 and 2010) as syndicates turn their attention to smaller, more easily disposable ships (see Chart 1). The changed targeting behavior of seizure syndicates is logically an attempt to seize ships that are more likely to go unnoticed in markets and ports that have been made increasingly hostile by state crackdowns and regulations.

Chart 1. Tonnage of ship seizures over time in Southeast Asia

[Insert Chart 1 here]

This stands in contrast to the behavior of kidnapping syndicates in Somalia, who have taken advantage over time of the fairly favourable security environment and easy access to markets for supplies by increasing the size of the ships they attack (presumably they expect to increasingly
large ransoms as well) (see Chart 2). What this suggests is that while anti-piracy patrols and increasingly aggressive rules of engagement may changed Somali pirates’ hunting grounds, the structural and behavioural dynamics of the groups do not seem to have been seriously hindered.

**Chart 2. Tonnage of kidnapping for ransom targets near Somalia over time**

[Insert Chart 2 here]

Syndicates can also adapt to external resource challenge by changing the process in such a way as to make them less reliant on those resources. In ship/cargo seizure syndicates, this can be seen above in the preponderance of ships attacked that could theoretically be used by the pirates themselves without resorting to markets – such as fishing vessels and some tugs and barges – thus short circuiting the most difficult part of the process. In kidnapping syndicates, this can be seen in regional differences in nature of operations. West Africa (specifically Nigeria) is the largest cluster of kidnappings after the Horn of Africa as a consequence of the unrest in the Niger River delta, with armed groups such as the Movement for the Emancipation of the Niger Delta and the Niger Delta People’s Volunteer Force demanding justice for land appropriation and human rights abuses, a share of the oil wealth extracted from the Delta and offshore by foreign oil companies and an end to pollution caused by oil extraction. One of the tactics of these groups has traditionally been attacking foreign oil companies’ ships and offshore oil rigs, and demanding ransoms. The crucial difference with Somali kidnappings for ransom is that while

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108 See, for example, Deperani and Pelton, “MV Blida Ransom Drop Cancelled by Pirates: Garaad Group Fires Negotiator, but Agrees to Hand over Two Sick Hostages,” which discusses groups’ desires for increased ransoms (and the negotiators who can get them).

nearly all Somali kidnapping syndicates have held both the ship and the crew for ransom, in
Nigeria, nearly all kidnapping operations involve taking the hostage off the ship or rig and
holding them on land (see Table 6).

Table 6. Kidnappings with and without ship seizure in West Africa and near Somalia

[Insert Table 6 here]

While the central Nigerian state is seemingly perpetually on the verge of failure, it is not a
collapsed state, and government forces have occasionally brought severe pressure to bear on the
armed groups, leading to a problematic security situation for the groups’ operations.\(^1\)
Negotiating for only hostages (instead of for the ship or rig as well) may allow the operation to
be completed more quickly and with less preparation – the hostages can be released immediately
(albeit for less money than a Somali hijackers would demand), and no supplies are needed to
maintain the ship while negotiations are ongoing. Since the hostages can also be hidden from the
authorities and moved more easily than a ship, kidnapping only hostages in Nigeria is arguably
an example of a ‘piracy’ syndicate that has adapted to a fraught security environment by
simplifying the process of realizing ransom payments, thus decreasing the time they need to
complete the operation and the security problems that arise from long time frames.

Using networks to resolve internal and external challenges

Building networks forms a substantial part of piracy syndicates’ adaptation to challenges,
although even here the strategies different types of syndicates adopt differ. Kidnapping

\(^{1}\) See, for example, Murphy, *Small Boats, Weak States*, pp. 117-118.
syndicates have cultivated internal networks to address principal-agent problems, and aid in monitoring and compliance, something that ship and cargo seizure principals have largely eschewed, in large part because of the short time frame and external network ties uniquely enjoyed by the principals. Both kidnapping for ransom and ship/cargo seizure syndicates have attempted to resolve external resource access problems by embedding the syndicates (particularly the principals) in external networks that can provide them with markets and security.

Principals in ship/cargo seizure syndicates, for instance, have an informational advantage over agents, in that they have access, built up over years, to the economic networks that are necessary to sell off the ship and cargo. What little is known of the principals in Southeast Asian piracy syndicates, for example, suggests that they are often members of the shipping industry, the shipping insurance industry, or associated cargo sectors. In the case of the Bahars, for instance, while Mr. Lee’s formal occupation is unknown, he clearly had access to precise information on the timing and path of the Bahars’ trip, and the cargo they would be carrying. Similarly, in the 1998 case of the Petro Ranger, where a Singaporean oil tanker was hijacked in the South China Sea and its kerosene cargo partially transferred to another tanker that came alongside, the syndicate principals were apparently oil smugglers in southern mainland China.

The pirates on the ground often do not have these network connections. There is little physically stopping the agents actually on the ship from defecting; as with terrorist organizations, ship/cargo seizure syndicate leaders cannot provide certain punishment for shirking or defecting

111 Murphy, Small Boats, Weak States, Dirty Money; Author Interview, Capt. Noel Choong, Head, International Maritime Bureau-Kuala Lumpur.

112 Author Interview, Owner, Shipping Company, Singapore, November 2005.
agents. Unlike terrorist agents, who are quite capable of making off with money or blowing things up against the will of the principals, defecting pirate agents do not generally have access to the political and economic networks necessary to fraudulently re-register the hijacked ship and sell off it and its cargo. Defection is thus difficult unless the agents take the resources provided to them by the principal and hijack a ship of which they can dispose profitably without extensive political and commercial connections.

Building up external network ties with local government officials, whether through directly involving them in piracy (or its profits), or through bribes, is also useful for stabilizing the security environment for ship/cargo seizure syndicates, although they would clearly prefer not to involve local officials at all, given the speed with which many ship/cargo seizure operations take place. For law enforcement in Southeast Asian countries, where most ship/cargo seizures take place, hijackings are nearly always stopped by finding and capturing the hijacked ship, and arresting the agents on board, either before they disguise and sell off the ship, or afterwards, based on tips, suspicions of port authorities, or reports by the crew of the hijacked ship. The 2005 Bahar incident, for example, was resolved because the pirates dumped the crew onto a small island that contained a village (unbeknownst to the pirates). One of the crewmembers used a SIM card in his pocket and the village chief’s cell phone to call the ship owners in Pekanbaru, who alerted the police, who set off in pursuit, and captured the pirates within eight hours of the hijacking.\(^{113}\) Nonetheless, the syndicates do occasionally make use of external networks with government officials to operate. Ship/cargo seizures in the waters of the South China Sea closest to China did not really stop until the Chinese government staged a

\(^{113}\) Author Interview, Riau Islands Provincial Maritime Police Official; "Bajak Laut Dibekuk"; Dalle, "Polisi Buru Pengupah Bajak Laut."
massive crackdown on government corruption in Guangdong, Hainan, and Fujian in 1999 and 2000.114 Martin Murphy likewise goes into great detail about Southeast Asian government officials’ tepid response to piracy and their possible profiting from it.115

For their part, kidnapping principals also use network connections to prevent agent defection and maintain operational stability in an uncertain environment. As with ship/cargo seizure syndicate principals, kidnapping principals have often access to money, information and network connections that low-level pirates do not, in this case money to pay some initial outlays, experience with and a reputation for prior successful operations (which aids recruitment) and networks of investors (who often share clan ties with the principals).116

The internal network ties also serve to mitigate principal-agent problems. The 2011 United Nations Security Council report on Somalia and Eritrea outlines the organizational structure of the Hobyo-Harardheere network. For each hijacking, a ‘committee’ led by the chair (the leader of the network) and including several investors and the heads of the sea-based pirates and land-based guards oversees the finances of the operation. The committee is thus effectively a self-monitoring clique within the broader network, making principals out of actors (such as the operational commanders) who would otherwise be agents.117 Among other models discussed by Stig Jarle Hansen, the operation can also be run with a shareholder structure, where the pirates on

115 Murphy, Small Boats, Weak States, Dirty Money, pp. 82-88.
the ground make small investments themselves, giving them financial buy-in and reducing chances of defection.\footnote{Hansen, “Piracy in the Greater Gulf of Aden,” p. 35. Hansen also mentions an investor-only model, which would seem to lead to many of the aforementioned principal-agent problems, and a shareholder model where the principal gathers outside investors, and then hires the pirates on commission, which would seem to be closest to the UNSC report model.}

The clan ties for which Somalis are known can help to resolve both principal-agent problems and external resource access issues. Hansen describes the importance of clan protection and clan alliances in allowing piracy syndicates to operate. As of 2009, single pirate gangs were mostly (but entirely) composed of members of the same clan, ensuring some internal linkages between the agents and the principals that would carry across operations (and could be used to enforce discipline).\footnote{Hansen, “Piracy in the Greater Gulf of Aden,” pp. 25-26.} Negotiators often operate as ‘independent contractors,’ sometimes working on multiple hijackings with different gangs at the same time, but they too are often recruited from the same clan as the pirate leader.\footnote{UN Security Council, "Report of the Monitoring Group on Somalia and Eritrea Pursuant to Security Council Resolution 1916 (2010),” p. 35.} Similarly, investors often came from the same clan as the principal – coupled with a committee and shareholder structure, this would increase mutual accountability between the pirate leader and the investors.\footnote{Hansen, “Piracy in the Greater Gulf of Aden,” p. 37.} Inter- and intra-clan networks can also ensure kidnapping syndicates’ access to a stable external security environment. There is some evidence that the different piracy networks have reached across clan lines at the principals’ level to forge informal agreements to share negotiators, suppliers, and anchorages. The UNSC 2011 report even claims that in 2010 there was actually a formal
agreement between the Puntland and Hobyo-Haradheere networks to share profits and a base at Garacad.\textsuperscript{122}

Although syndicates attempt to maintain a secure operating environment by anchoring in clan-controlled territory, in the event they anchor in other clans’ territory, pirates from those clans are sometimes brought in to the operation. This creates a cross-clan network that makes it difficult to tear apart the operation in inter-clan conflict.\textsuperscript{123} The external networks necessary to stabilize the security environment are not only bolstered by inter-clan involvement, but also by payoffs to other pirate gangs, local clan elders and local government officials in Puntland, or local al-Shabaab leaders in territory controlled by the group. These payments apparently have ranged between 5 and 30%\textsuperscript{124}. While kidnapping syndicates would probably prefer not to make payments and build external networks, they clearly have shown an ability to do so when necessary.

\section*{CONCLUSION}

Attempts to ‘solve’ the problem of piracy have until now mostly involved decreasing time pirates have before, during, and after their operations (such as through increased patrolling and changed rules of engagement), increasing the probability and severity of pirates’ punishments, and decreasing the probability of successfully accessing markets (such as by cutting off the market for looted goods and ships). Many of these methods are extremely expensive, or have reached a point of diminishing marginal returns. This article was

\begin{itemize}
\item \textsuperscript{123} Hansen, "Piracy in the Greater Gulf of Aden," pp. 26, 36.
\end{itemize}
an attempt to step back and begin to create the rudiments of a theoretical understanding of why maritime pirate syndicates and their operations take the form that they do. In doing so, the analysis presented here has several theoretical and policy implications.

First, principal-agent analysis is in fact useful in characterizing the dynamics of structurally flat, fragmented illicit networks. While the terrorism literature has seen in-depth application of the principal-agent analysis to the inner workings of (often hierarchical) terrorist groups, the flatter and more fragmented nature of many criminal networks has generally led to less focus on the principal-agent problems they face. Given that piracy syndicates build networks to resolve both the internal and external challenges they face, network analysis and principal-agent analysis can both be used to understand piracy syndicates’ structure and behavior.

Second, while piracy has proven difficult to stamp out completely, piracy syndicates have their own organizational challenges, and it would be a mistake to assume that pirates’ adaptability has necessarily led to optimal structures and behaviors. The intense networking with local elites among kidnapping syndicates in Somalia costs the syndicates time and money, while the secrecy of ship and cargo seizure principals renders agents less able to adapt to changing circumstances.

Third, this article has moved beyond simply identifying different types of piracy operations and their causes, and explored the internal dynamics of piracy syndicates engaged in those operations. General causes are not irrelevant (and in the long run need to be addressed to stamp out piracy entirely), but once piracy exists, it behooves us to ask why these pirates are behaving as they are. While there is some variation within similar piracy operations, piracy syndicates’ (possibly sub-optimal) structure and behavior are not wholly unpredictable: It would be surprising, for instance, to see kidnapping for ransom syndicates without monitoring mechanisms or thickly connected internal networks, or ship/cargo seizure syndicates hijacking large ships. The specific ways in which members of the group interact with each other and with the outside world, and certain aspects of their operations are shaped by the imperatives of the operations themselves, which are themselves products of pirates’ external environments.
Finally, this analysis gives some hope to policymakers who may be looking for alternative methods of getting at piracy organizations after the counter-piracy activities have reached diminishing marginal returns, and before long-terms solutions finally bear fruit. The internal and external challenges that piracy syndicates face, such as principal-agent problems and access to favorable security and economic environments, are points of weakness for the groups. By understanding how different types of syndicates’ structure and behavior are set up to (imperfectly) address these challenges, policymakers may be able to implement policies that will render the groups unable to bring their operations to a successful conclusion.
Table 1. Pirate attacks by region and attack type (1996-2010)

<table>
<thead>
<tr>
<th>Region</th>
<th>Robberies</th>
<th>Ship/Cargo Seizures</th>
<th>Kidnappings for Ransom</th>
<th>Attacks</th>
<th>Total</th>
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Table 2. Attack type by year

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Table 3. Kidnappings for ransom near Somalia (2006-2010)

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<td>4</td>
</tr>
<tr>
<td>Yemen</td>
<td></td>
<td>0</td>
<td>0</td>
<td>27</td>
<td>15</td>
<td>10</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>10</td>
<td>44</td>
<td>48</td>
<td>56</td>
<td>163</td>
</tr>
</tbody>
</table>
Table 4. Categories of ships attacked by attack type (1996-2010)

<table>
<thead>
<tr>
<th>Category</th>
<th>Robberies</th>
<th>Ship/Cargo Seizures</th>
<th>Kidnappings for Ransom</th>
<th>Attacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cargo</td>
<td>546</td>
<td>25</td>
<td>66</td>
<td>8</td>
</tr>
<tr>
<td>Carrier</td>
<td>695</td>
<td>4</td>
<td>33</td>
<td>5</td>
</tr>
<tr>
<td>Container</td>
<td>474</td>
<td>1</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Fishing</td>
<td>81</td>
<td>35</td>
<td>71</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>20</td>
<td>0</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Passenger</td>
<td>69</td>
<td>12</td>
<td>22</td>
<td>5</td>
</tr>
<tr>
<td>Supply</td>
<td>16</td>
<td>0</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Tanker</td>
<td>802</td>
<td>27</td>
<td>51</td>
<td>6</td>
</tr>
<tr>
<td>Tug/Barge</td>
<td>97</td>
<td>43</td>
<td>26</td>
<td>1</td>
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<tr>
<td>Unknown</td>
<td>112</td>
<td>10</td>
<td>13</td>
<td>9</td>
</tr>
</tbody>
</table>
Table 5. Summary statistics for tonnage by attack type (1996-2010)

<table>
<thead>
<tr>
<th>Attack Type</th>
<th>Number of Attacks (with known tonnage)</th>
<th>Mean Tonnage</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robbery</td>
<td>2589</td>
<td>19174</td>
<td>20696</td>
<td>6</td>
<td>186675</td>
</tr>
<tr>
<td>Ship/Cargo Seizure</td>
<td>87</td>
<td>2537</td>
<td>4124</td>
<td>19</td>
<td>25063</td>
</tr>
<tr>
<td>Kidnapping for Ransom</td>
<td>208</td>
<td>13240</td>
<td>24216</td>
<td>11</td>
<td>162252</td>
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<tr>
<td>Attack</td>
<td>25</td>
<td>13012</td>
<td>21694</td>
<td>70</td>
<td>81076</td>
</tr>
</tbody>
</table>
Chart 1. Tonnage of ship seizure targets over time in Southeast Asia
Chart 2. Tonnage of kidnapping for ransom targets near Somalia over time
Table 6. Kidnappings with and without ship seizure in West Africa and near Somalia (1996-2010)

<table>
<thead>
<tr>
<th></th>
<th>Only Crew Taken Hostage</th>
<th>Ship and Crew Taken Hostage</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Africa</td>
<td>28</td>
<td>3</td>
</tr>
<tr>
<td>Near Somalia</td>
<td>6</td>
<td>197</td>
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</table>