# 1AC

## 1AC — ADA (KU HW)

### 1AC — Advantage

#### The Advantage is Megaships —

#### The United States is expanding antitrust enforcement of international shipping

Seward & Kissell 3/2/22, Law firm specializing in antitrust. (Federal Maritime Commission and Department of Justice Announce New Steps to Strengthen Antitrust Enforcement Efforts in the Shipping Industry, <https://www.sewkis.com/publications/federal-maritime-commission-and-department-of-justice-announce-new-steps-to-strengthen-antitrust-enforcement-efforts-in-the-shipping-industry/>)

Building on our July 2021 alert regarding the signing of the first interagency Memorandum of Understanding (“MOU”) entered into by and between the Federal Maritime Commission (“FMC”) and the Department of Justice (“DOJ”), the DOJ and FMC on February 28 issued a joint release announcing additional steps that each agency would take to strengthen their partnership and support efforts to enforce the antitrust laws of the United States, reflecting their ongoing focus on promoting competition in the shipping industry. In press releases posted to each agency’s website, the Antitrust Division of DOJ and the FMC disclosed that “the Justice Department will provide the FMC with the support of attorneys and economists from the Antitrust Division for enforcement of violations of the Shipping Act and related laws” and that “the FMC will provide the Antitrust Division with support and maritime industry expertise for Sherman Act and Clayton Act enforcement actions.” This interagency initiative highlights an increasing level of sophistication and an ongoing focus by both DOJ and FMC to investigate and enforce violations of the Shipping Act and the antitrust laws of the United States. Simultaneously, the White House also on February 28 released a companion fact sheet that highlights ongoing enforcement efforts by the Executive Branch, with a particular focus on ocean carrier companies and alliances that operate in the container shipping industry. The fact sheet includes criticism of ocean carrier detention and demurrage fees and price increases, and contends that certain ocean carrier business practices have contributed to supply chain disruptions and port congestion. The fact sheet also notably states that the FMC will continue ramping up oversight of the global ocean shipping industry, and seeks additional reforms that “address the current antitrust immunity for ocean shipping alliances.” As shipping industry participants have speculated that supply chain pressures may last well into 2022, we expect that the government’s focus on fair competition in the shipping industry will continue.

#### They’re targeting all major shipping alliances

Consadine 21, Attorney with Seward & Kissell LLP. (Michael, Shipping Companies Beware: Antitrust Challenges Ahead as DOJ Focuses On Industry, <https://www.sewkis.com/publications/shipping-companies-beware-antitrust-challenges-ahead-as-doj-focuses-on-industry/>)

On July 12, 2021, the FMC and DOJ signed its first interagency MOU to foster cooperation in the enforcement of antitrust and other laws related to the maritime industry. Key provisions of the MOU provide that the agencies will: i) share information and materials relevant to the competitive conditions in the U.S.-international ocean liner shipping industry, including terminal services provided to ocean liners, and ii) confer, at least annually, to discuss and review enforcement and regulatory matters. Unlike the FMC, DOJ has the authority to bring criminal charges against alleged offenders of antitrust laws. In the past, DOJ has made its presence known by issuing statements regarding certain alliance agreements (vessel-sharing agreements); this MOU raises the stakes as it suggests more intense scrutiny by DOJ. FMC Activity, Audit Program and Recent Litigation On July 19, 2021, within days of the Executive Order and the signing of the MOU, the FMC also disclosed the Vessel-Operating Common Carrier Audit Program to review carrier compliance with FMC’s detention and demurrage rule. As part of this new audit program, the FMC will audit the top nine carriers by market share ― i.e., Maersk, MSC, CMA CGM, COSCO Group, Hapag-Lloyd, ONE, Evergreen, HMM and Yang Ming. Initially, the FMC will request information from the carriers to create a database of quarterly reports on detention and demurrage practices, and will follow with individual carrier interviews. The audit may also focus on other aspects of these companies’ practices and operations, such as billing, appeals procedures, penalties assessed by the lines, and any other restrictive practices. Significantly, the FMC has already been auditing carriers to address issues concerning intermodal congestion related to COVID-19 and to identify operational solutions to cargo delivery system challenges. The FMC is apparently poised to investigate eight carriers ― CMA CGM, Hapag-Lloyd, HMM, Matson, MSC, OOCL, SM Line and Zim ― that were identified as having implemented congestion-related surcharges. In August, the FMC requested information about these surcharges from these carriers. The FMC’s inquiry may focus on whether surcharges were implemented following proper notice, if their purpose was clearly defined, and whether there were clear events or conditions that triggered or terminated the surcharges. The FMC suggested enforcement action may occur if tariffs are improperly established. Shipping customers are also imploring the FMC to investigate shipping practices. On July 28, 2021, MCS Industries, a Pennsylvania-based home furnishings manufacturer, filed an administrative proceeding against COSCO and MSC, alleging that the carriers had violated provisions of the Shipping Act and refused to honor their service contracts, calling for the FMC to conduct an investigation of these companies’ shipping practices. COSCO and MSC have denied the allegations and noted, among other things, that MCS’s complaint should be heard in the fora specified in its respective service contracts with the carriers. An administrative law judge was appointed to hear the matter, the outcome of which should be closely watched by industry participants. DOJ Antitrust Landscape DOJ’s coordinated efforts with the FMC have implications for the shipping industry as DOJ antitrust prosecutions have been both expansive and punitive. DOJ’s jurisdiction includes foreign business activities that have a “substantial and intended effect in the U.S.” That broad reach has impacted numerous companies throughout the world in various industries ranging from auto parts to air cargo. Companies in such industries have paid millions of dollars in penalties and many of their employees have been imprisoned. The shipping industry has not been spared. In a long-running investigation, a Norwegian shipping company and its executives were indicted for their participation in an antitrust conspiracy focused on the allocation of customers and routes, rigging bids, and fixing prices for the sale of international ocean shipments of roll-on, roll-off cargo to and from the United States. The company pled guilty and was sentenced to pay a $21 million fine; four individuals have already been sentenced to serve prison terms. Four other companies also pled guilty for their roles in the conspiracy, leading to the assessment of more than $255 million in criminal fines.

#### BUT the Shipping Act creates immunity for vessel-sharing agreements

UNCTAD 18, UN Conference on Trade and Development – Report of Intergovernmental Group of Experts on Competition Law and Policy, (Challenges faced by developing countries in competition and regulation in the maritime transport sector, https://unctad.org/system/files/official-document/ciclpd49\_en.pdf

The Federal Maritime Commission [FMC] is the independent regulatory agency responsible for the regulation of seaborne transportation in the foreign commerce of the United States for the benefit of United States exporters, importers and the United States consumer. 25 Its mission is to ensure competitive and efficient maritime transportation services for shippers, by monitoring agreements among carriers and service contracts with regard to their effects on prices and services. The amendment of the Shipping Act (1916) in 1961 established the Commission and gave it the power to disapprove agreements between liner shipping carriers that were not in the public interest. In this regard, a violation of antitrust laws would be considered against the public interest. The Shipping Act (1984) removed both the public interest clause and the requirement for approval by the Commission for agreements between liner shipping carriers. Vessel-sharing agreements and other cooperative agreements are also permitted under the Act. 23. The United States has a statutory antitrust exemption for liner conferences. The Shipping Act, as amended by the Ocean Shipping Reform Act (1998), provides an alternative competition enforcement regime and includes limited antitrust immunity for agreements between liner shipping carriers from competition law. The Act introduced reforms that ended the authority of liner conferences to regulate the service contracts of members. In addition, the Act allows conference members to negotiate independent confidential service contracts with shippers and prohibits other members from retaliating against shippers or carriers that do so. Prior to the Act, such contracts had to be made public, potentially reducing the incentive for participants to enter into them. The annual report of the Commission in 2014 stated as follows: “Conference or price-fixing agreements have become largely irrelevant to United States liner shipping. No new carrier conference agreements have been filed with [the Commission] since fiscal year 2000. The remaining three conferences cover only government cargoes.” 26 All conduct that does not fulfil antitrust exemption requirements is subject to competition law and investigated by the Department of Justice if it involves cartel-like practices, including price fixing, bid rigging and market allocation.

#### That allows for the continuous acquisition of larger and larger megaships

O’Connor 14, Cozen O'Connor Law Firm, (A New Era For Vessel Sharing Agreements – FMC Allows P3 and G6 Alliances To Go into Effect https://www.jdsupra.com/legalnews/a-new-era-for-vessel-sharing-agreements-23682/)

Perhaps the first true vessel sharing agreement was called, appropriately enough, The Vessel Sharing Agreement (which led to use of the term “VSA” to describe such arrangements) among Sea-Land Service, Inc., Nedlloyd Lijnen, B.V., and P&O Containers, Ltd. This agreement was intended to maximize the utilization of the then very large and fuel efficient containerships (the so-called Econships) that Sea-Land had acquired from the estate of the bankrupt U.S. Lines. The P3 and G6 agreements have a similar purpose — maximizing utilization of large, efficient vessels as a means to reduce carrier costs. In other words, some of the basic reasons lines enter into VSAs have remained unchanged over the years. The use of space charter and vessel sharing agreements increased through the late 1980s and early 1990s, although the vast majority of these agreements were (like the original VSA) often focused on a single trade lane. During this period, relatively few lines were considered “global” carriers and those that were often offered service through a combination of stand-alone strings that did not involve partners, trade-specific vessel sharing agreements, and space charter arrangements. As world trade increased and the phenomenon of globalization emerged, carriers sought to meet the transportation needs of their increasingly global customer base. Hence, carriers moved to geographically broader cooperations that the FMC labeled “global alliances,” most notably The Grand Alliance, The New World Alliance, and the CKYH alliance. These agreements, although not truly global, were often broader in geographic scope and involved a more integrated, long-term cooperation than many of their predecessors. However, the objective was still the same: to provide a service superior to that which could be offered alone while reducing operational costs and capital risks. In many respects, the P3 and G6 agreements represent the next logical step in the evolution of carrier agreements: geographically broader, more operationally integrated, long-term vessel sharing arrangements that come closer to being truly global. As in the past, these arrangements help carriers hedge against the risk of the investment required to build the large, fuel-efficient ships necessary to provide service at a competitive cost. They also allow improved utilization, a key to achieving cost savings. The difference between these agreements and past VSAs is primarily one of degree rather than kind — the cost advantage offered by new tonnage is necessary to remain competitive, but the size and cost of new ships has reached the point where it may no longer be feasible for carriers to operate outside an alliance that helps reduce the risk of such an investment to the point that it is acceptable. Indeed, some are questioning whether it is possible for a line to remain competitive on a global scale following a 1990s model of offering a patchwork of stand-alone and cooperative services rather than being a member of a global alliance.

#### The size of those megaships are about to explode, drastically shaking up the entire industry

Fickling 21, Reporter for The Print. (David, March 30, 2021, Get ready for future, giant next-gen cargo vessels will make ‘Ever Given’ look like bath toy, <https://theprint.in/opinion/get-ready-for-future-giant-next-gen-cargo-vessels-will-make-ever-given-look-like-bath-toy/630839/>)

If you think the ultimate reason the Suez Canal got blocked last week is because container ships are getting too big, get ready for the future. The next few generations of cargo vessels are going to make the Ever Given look like a bath toy. Big enough to carry 20,124 twenty-foot equivalent units, or TEUs — the standard measure for cargo, representing a single shipping container — the Ever Given was one of the world’s largest such vessels when it was launched in 2018. The first container ship to break the 20,000 TEU mark had been at sea for less than a year. One famed 1999 study, written at a time when the largest boats carried less than 8,000 TEUs, argued it would prove impossible to build craft bigger than 18,000 TEUs. The Ever Given, finally floating on its way again, is now distinctly in the second class of mega freighters. There are nearly 100 ships carrying more than 20,000 TEUs on the seas or under construction, and the bigger vessels being assembled in Chinese and South Korean shipyards are mostly around the 24,000 TEU mark. A quarter of the capacity moved by the world’s largest container line, AP Moller-Maersk A/S, is on boats above the 17,500 TEU mark. That’s unlikely to be the end of it. Chinese shipyard Hudong-Zhonghua Shipbuilding Group Co. has already registered designs for a 25,000 TEU vessel, and it has become relatively commonplace to predict that 30,000 TEU monsters will be plowing the oceans before the decade is out. Such enormous hulls may cause problems that will put the Ever Given’s mishap into the shade. At Rotterdam, the largest ships already have to arrive at high tide to ensure there’s enough clearance for them to get through the channel, according to a 2019 study by Nam Kyu Park of South Korea’s Tongmyong University. Larger vessels will soon be unable to berth at Shanghai, Busan and Hong Kong even at high tide, unless channels are dredged out further, Park wrote. There are similar problems with infrastructure on dry land. Modern ports are astonishingly efficient at unloading, and can turn around a fully laden 20,000 TEU vessel in a couple of days. But the time spent waiting for a berth can cut deep into the wafer-thin economics of a container line. Longer quays may have to be built to accommodate the larger ships, as well as cranes that can reach across wider decks, larger loading yards for tens of thousands of containers, and faster rail and road terminals to take cargo to its next destination. Current vessels are already at the limits of what can fit along major shipping lanes. The Ever Given is too bulky to squeeze through the Panama Canal, where boats must be lifted over its mountainous spine with massive lock gates. At 24 meters (79 feet) deep, the Suez Canal has more capacity — but it’s roughly as deep as the Straits of Malacca and Singapore, so dredging it further to accommodate bigger ships won’t help much. The binding constraint on East-West trade at this point isn’t engineering, but geology. Extending 15.7 meters below the water line, the Ever Given shouldn’t, on paper, have trouble making it through any of those channels, which typically require 3.5 meters of clearance from the bottom. Next-generation ships with a 20-meter draught, on the other hand, would be at constant risk of grounding. How have container ships managed to defy expectations that their size would hit fundamental limits? A large part of it is because the economies of scale are so compelling. Bigger vessels use more fuel, but relative to the number of boxes stacked on their decks they’re far more efficient. They can also turn around a larger number of containers at a time and serve a wider array of feeder ports, ensuring they can defray their massive capital costs quicker. There’s little sign that this is about to change. New International Maritime Organization regulations against the burning of sulfur-intensive fuel oil introduced last year mean current ships are using costlier diesel, putting more pressure on naval architects to come up with yet more efficient designs. Beyond that, the IMO now has plans to reduce carbon dioxide emissions by 40% in 2030 compared with 2008, and by 70% by 2050. Even with a switch to cheaper, less polluting liquefied natural gas as the main fuel, that’s going to mean further drastic improvements in efficiency, not to mention propulsion technologies that don’t exist yet. To date, the best way to chip away at fuel consumption and emissions is by increasing size. It’s hard to know how the industry is going to cope with this. Perhaps Suez, Malacca and Singapore can be dredged to accommodate even bigger vessels. Perhaps shipyards will find ways to squeeze a few more inches out of existing channels. If not, alternative routes around the Cape of Good Hope and through the deeper Straits of Sunda and Lombok between Indonesia’s islands may prove the only viable way to accommodate such massive boats. Should that happen, those economies of scale will have to be drastically larger to make up for the longer sailing time. We’ve seen container ships leap from 10,000 TEUs to 24,000 TEUs. Don’t be shocked to see 50,000 TEU vessels plying the sea in your lifetime.

#### There are three scenarios —

#### The first scenario is Accidents —

#### Megaships drastically increase harms to the Arctic

Baker & Harris 16, Chairman of Marsh Marine Practice, and, Senior Vice. (Marcus & Stephen, Marsh Report: "PLUMBING THE DEPTHS" OF MEGASHIP SUPER-SIZED RISK, In Navigating a Shifting Risk Landscape Expert Perspectives on the Marine Industry, file:///C:/Users/sharris/Downloads/Navigating%20a%20Shifting%20Risk%20Landscape%20Expert%20Perspectives%20on%20the%20Marine%20Industry.pdf)

Navigation routes, such as those leading to or from the Panama Canal, have been the same for many years, with commercial cargo vessels following tried-and-tested pathways through the sea; however, the known safe depth for the navigation of many is only as much as the draught of the largest, deepest vessel ever to have used it. An extra four meters of depth that the newest megaships can draw could be the vital difference between uneventful navigation and a serious grounding or stranding, with all the perils of ship damage, crew endangerment, cargo loss and marine pollution that could result. As container ships are the largest users of both the Suez and Panama Canal systems, these are the vessels that, having the ability and commercial reasons to navigate new parts of the world’s oceans, are of most concern. Governments seeking to have large vessels use their ports and terminals will often be the first to blame the shipping industry when a serious grounding or stranding accident occurs in their waters. But how much of that blame should actually lay at a government’s own doorstep, when it comes to ensuring hydrographic surveys meet modern standards (and, where necessary, the funding to do so), especially when it is known that increasingly larger vessels will be using their waters? Let us not forget that the attempted—and ultimately unsuccessful—salvage of the MV Rena after it grounded on Astrolabe Reef in New Zealand in October 2011 resulted in one of the largest-ever protection and indemnity losses to the market. And the MV Rena was a very small container ship in comparison to the modern generation. Many vessel operators have been viewing, with great interest, the increasingly viable Arctic routes between Asia and Europe as an alternative to the much longer (both in time and distance) routes via Singapore and the Suez Canal; however, the vessels that have, to date, successfully transited the Northern Sea Route (NSR) around northern Russia have been relatively small in size. Marsh has already voiced concerns about the potential risks of larger vessels using this route with greater frequency, but the knowledge that so few of the waters have been adequately surveyed for depth to modern standards adds to those concerns. In addition, there is increasing talk of commercial use of the Northwest Passage (NWP) around northern Alaska and through the many islands of northern Canada, which still poses considerable risk, as some of the waters are even less bathymetrically assured than parts of the NSR. Only a handful of commercial vessels have ever successfully transited the NWP, yet some operators are already heralding those few successes to prove the NWP to be a major route for the future. The lack of hydrographic data for that whole region should remain a major concern for any sensible operator, echoed by similar warnings in the new Polar Code.

#### They make accidents inevitable

Waterson 19, Senior Vice President - Marine Hull and Liability for Lockton Companies LLP World’s Largest Insurance Broker. (Robert, Re-evaluating the risk of mega ships, https://www.locktoninternational.com/gb/articles/re-evaluating-risk-mega-ships)

“A consolidation process in the shipping transport market has contributed to a trend towards fewer but bigger ships,” says Robert Waterson, Senior Vice President - Marine Hull and Liability at Lockton. “Fleet operators have ordered larger ships and because they are newer this tends to have a positive effect on all costs including insurance premium levels. However, this does not necessarily mean claims volumes will be lower,” Waterson notes. With larger and more sophisticated vessels entering the sector – and more hazardous areas such as polar waters being explored – this is aggravating the risk of ever larger single losses, insurer AGCS warned in its “Marine claims trends 2018” report. “A major incident involving a fully loaded ultra-large container ship will easily result in a $1bn to $2bn insurance claim including damage to cargo, hull, salvage and wreck removal costs,” the report added. A number of container ship casualties recently fuelled a discussion about the growing risks associated with fires on mega-containerships. Ship fires are one of the major loss drivers in the shipping industry: In March 2018 a fatal fire on the new 15,252 TEU Maersk Honam. The incident is believed to have been triggered by mis-declared chemical cargoes causing a blast and fire which resulted in 130 people being taken to hospital. “The cargo description is often not clear and containers may contain chemicals and hazardous goods that were not supposed to be there or that were incorrectly described and thus loaded in the wrong part of the vessel,” says Waterson. Insurers’ apprehension focuses not only on large container ships but also on large passenger vessels, especially after Costa Concordia off the Tuscan holiday island of Giglio in Italy set off a chaotic evacuation of 4,229 passengers and crew, and 32 people died, according to the May 7, 2019 presentation “Megaship Challenges: The P&I Perspective” by Joe Hughes from the The American Club. Large vessels are more difficult to navigate, and grounding and/or collisions are harder to deal with as there is more cargo and fuel to salvage. Where salvage/wreck removal is required, the costs are vastly influenced by the type of cargo that has to be removed and how hazardous this cargo is. Very often this has to be accomplished in remote and difficult environmental conditions, and always within the requirements of both the local and international law. As environmental regulations tighten globally, these costs will only rise further and more cover will be required. A discussion in the insurance industry about whether large container ships might require a specific insurance rating, previously under consideration but not implemented, may now re-open as more data is available. As some underwriters withdraw from underwriting large container fleets this may affect renewals pricing and available capacity in the short term. “In hull and cargo, the specific risks attached to large ships are not being addressed. Ratings do not take this into account,” Waterson says. “Mega-ships carry higher risks and are not necessarily safer. While the claims frequency may fall, the size of a loss is likely to be much higher,” he notes.

#### They independently increase drastic amounts of pollution in the Arctic AND risk massive oil spills

Shavley 21, Reporter for Business Insider. (Kevin, May 1, 2021, The Ever Given crisis put mega ships under the spotlight. As vessels get bigger and more automated, a long-serving captain and other experts are weighing up the risks., <https://www.businessinsider.com/ever-given-suez-canal-blockage-mega-ships-sea-captain-2021-4>)

Shipping vessels have grown larger by multiples in just a few years, adding to worries among some industry insiders that a single mistake made by a massive ship could cause a global supply chain disruption, as the world saw with the Ever Given. That ship, which was stuck in the Suez Canal for about a week in March, slowed or stalled shipping traffic around the world. It was estimated to cost the global economy about $400 million per hour, and its effects have still been rippling through the economy in recent weeks. As ships like the Ever Given have grown over the last few decades, their crews have been shrinking because they're using more automated processes, said Captain Rahul Khanna, global head of marine risk consulting at Allianz Global Corporate & Specialty, whose team publishes an annual safety review. "Decades ago, the ships with 3,000 TEU — that's the number of twenty-foot containers that can fit onboard — were considered the big ones," said Khanna. Now, ships like the Ever Given carry maximum loads of more than 20,000 containers. Boat-building technology could in the years and decades ahead produce ever-larger ships, perhaps growing to 50,000 containers or more. If there's demand for such ships, modern technology could allow for such builds, Khanna said. Between 2006 and 2020, the largest shipping vessels in the world grew by 155%, according to a January report from the United Nations Conference on Trade and Development. The biggest ships are loading or unloading 125% more at each port they visit. With bigger boats, there could be more impactful accidents. "While seemingly efficient, they are too large to fit in some ports, increase dangers in storms, and highly piled containers are falling, causing product and the corresponding financial losses," said Cheryl Druehl, associate professor of operations management at George Mason University. Even the Ever Given debacle, which grabbed hold of the worldwide news cycle, could have been worse. If that ship's hull had broken, say, it would have taken even longer to fix the issue, Khanna said. It's likely that a crane would have had to have been constructed nearby to remove some or all of its load. Refloating it would have been a more complex task, likely stretching into months. As the shipping industry gets back to its normal routine, Khanna and other shipping industry insiders walked Insider through their concerns about the next big disaster. The most obvious answer was that another ship could get stuck in the Suez or Panama canals. The risk of a situation similar to the Ever Given's crash in one of those waterways was "unlikely but high impact," said Ambrose Conroy, founder and CEO of Seraph, a consulting and turnaround firm. The risk was lower at other heavily travelled shipping lanes, including the Singapore Strait, and the Strait of Hormuz, although it has geopolitical risks of its own, said Khanna. Ports in the future may also have trouble handling larger ships, but that's an issue that can be fixed with proper planning, Conroy said. Instead, it's the "black swan events" like the Ever Given that the industry needs to look out for. One concern is a shipping route that's becoming more popular. In decades past, a lane through the Arctic would open in summer months, giving ships a more direct path between Europe and Russia. As the climate crisis has reduced the amount of ice in those northern regions, that passageway is now increasingly being used in the winter. It's become so popular that the International Maritime Organization issued a revised Polar Code. As the Ever Given stalled global shipping in March, Moscow officials pointed to the Northern Sea Route through the Arctic as an alternative. But Arctic travel comes with its own risks. While it's unlikely that modern ships, with all their technology, would hit an iceberg, smaller ice floats can still damage hulls, Khanna said. An oil spill in the Arctic would also be devastating to marine life. And rescue crews might have difficulty reaching a stranded ship in such inhospitable waters.

#### That risks global species and ecosystem destruction

Tewari 17, IIASA Science Communication Fellow. (Parul Aug 16, 2017, What would an oil spill mean for the Arctic?, https://blog.iiasa.ac.at/2017/08/16/what-would-an-oil-spill-mean-for-the-arctic/)

While it can never be good news, an oil spill in the Arctic could be particularly dangerous because of its sensitive ecosystem and harsh climatic conditions, which make a cleanup next to impossible. With an increase in maritime traffic and an interest in the untapped petroleum reserves of the Arctic, the likelihood of an oil spill increases significantly. Maisa Nevalainen, as part of the 2017 Young Scientists Summer Program (YSSP), is working to assess the extent of the risk posed by oil spills in the Arctic marine areas. “That the Arctic is perhaps the last place on the planet which hasn’t yet been destroyed or changed drastically due to human activity, should be reason enough to tread with utmost caution,” says Nevalainen Although the controversial 1989 Exxon Valdez spill in Prince William Sound was quite close to the Arctic Circle, so far no major spills have occurred in the region. However, that also means that there is no data and little to no understanding of the uncertainties related to such accidents in the region. For instance, one of the significant impacts of an oil spill would be on the varied marine species living in the region, likely with consequences carrying far in to the future. Because of the cold and ice, oil decomposes very slowly in the region, so an accident involving oil spill would mean that the oil could remain in the ice for decades to come. Yet, researchers don’t know how vulnerable Arctic species would be to a spill, and which species would be affected more than others. Nevalainen, as part of her study at IIASA will come up with an index-based approach for estimating the vulnerability (an animal’s probability of coming into contact with oil) and sensitivity (probability of dying because of oiling) of key Arctic functional groups of similar species in the face of an oil spill. “The way a species uses ice will affect what will happen to them if an oil spill were to happen,” says Nevalainen. Moreover, oil tends to concentrate in the openings in ice and this is where many species like to live, she adds. During the summer season, some islands in the region become breeding grounds for birds and other marine species both from within the Arctic and those that travel thousands of miles from other parts of the world. If these species or their young are exposed to an oil spill, then it could not only result in large-scale deaths but also affect the reproductive capabilities of those that survive. This could translate in to a sizeable impact on the world population of the affected species. Polar bears, for example, have, on an average two cubs every three years. This is a very low fertility rate – so, even if one polar bear is killed, the loss can be significant for the total population. Fish on the other hand are very efficient and lay eggs year round. Even if all their eggs at a particular time were destroyed, it would most likely not affect their overall population. However, if their breeding ground is destroyed then it can have a major impact on the total population depending on their ability and willingness to relocate to a new area to lay eggs, explains Nevalainen. Due to lack of sufficient data on the number of species in the region as well as that on migratory population, it is difficult to predict future scenarios in case of an accident, she adds. “Depending on the extent of the spill and the ecosystem in the nearing areas, a spill can lead to anything from an unfortunate incident to a terrible disaster,” says Nevalainen. It might even affect the food chain, at a local or global level. “If oil sinks to the seafloor, some species run the risk of dying or migrating due to destroyed habitat – an example being walruses as they merely dive to get food from the sea floor,” adds Nevalainen. As the walrus is a key species in the food web, this has a high probability of upsetting the food chain. When the final results of her study come through, Nevalainen aims to compare different regions of the Arctic and the probability of damage in these areas, as well as potential solutions to protect the ecosystem. This would include several factors. One of them could be breeding patterns – spring, for instance, is when certain areas need to be cordoned off for shipping activities, as most animals breed during this time. “At the moment there are no mechanisms to deal with an oil spill in the Arctics. I hope that it never happens. The Arctic ecosystem is very delicate and it won’t take too much to disturb it, and the consequences can be huge, globally,” warns Nevalainen.

#### Extinction

Petersen et al 4, Director @ Icelandic Institute of Natural History (Aevar, “Circumpolar Biodiversity Monitoring Program,” CAFF, http://library.arcticportal.org/309/1/CircumpolarBiodiversityFramework.pdf )

The circumpolar Arctic region, as defined for the purpose of CAFF at its inaugural meeting (see Figure 1 - CAFF map of the Arctic), covers some 14.8 million km of land and 13 million km of ocean. It plays a key role in the physical, chemical and biological balance of the globe. The Arctic region encompasses relatively pristine environments, compared to the rest of the globe. Vast wilderness areas are crucial for the preservation of the Arctic’s unique biological diversity, and the Arctic is additionally of much cultural, economic, and recreational value. The CAFF overview report (2001) highlighted such diverse actual and potential importance of Arctic biodiversity as for fuel, food (e.g. fisheries), fodder, nature tourism, ecosystem functioning, feedbacks f rom ecos y s tems to the global atmosphere, future genetic recombinations and adaptations, fiber pharmaceuticals, anti-microbial drugs and industrial enzymes (from extremophiles). The Arctic is unique in biological, physical, and chemical properties. Life in the Arctic has adapted to extreme conditions of darkness, cold and a brief summer season where food becomes plentiful. Arctic ecology is shaped by the severity of the climate and its variability in space and time. Arctic species must survive long periods when food is limited or unavailable, or otherwise migrate to more southerly latitudes, as many do to all corners of the globe. Arctic species must be adapted to respond quickly when conditions improve. The growing season is brief and intense. When sunlight reaches the oceans in the spring, plankton bloom. On land, the growth of plants begins the summer feast for the terrestrial species, allowing the breeding, raising of young, and storage for the upcoming winter. At the foundation of the intricate marine food webs are highly specialized species of phytoplankton and sea ice algae, especially adapted to the extreme conditions of darkness and cold, and the freshwater-brine conditions of the sea iceocean interface. Terrestrial and freshwater food webs are usually simpler than those in the marine environment, but are closely linked to the marine ecosystem, e.g. through run-off and many creatures which move between the different ecosystems. The complexity of Arctic biodiversity stems in part from the interplay between the terrestrial species, habitats and ecosystems, with those in the marine environment. In the overlapping structure of ecosystems, all species in a system depend to some degree on the ecological functions of other species such as good production, competition, and predation; and species behavior such as reproduction and migration are closely linked with these functions. With an integrated, ecosystem-based approach to monitoring, the impacts of stressors to these ecological functions are better identified and understood, as this type of monitoring bridges ecosystems, habitats and species. For example: seabirds nest on land but may feed in the ocean or in lakes and rivers on fish and invertebrates. Salmon, Arctic Char and certain other fish species are anadromous – crossing from the marine ecosystem to the freshwater ecosystem to breed. Polar bears den on land in snow banks, but hunt almost exclusively out on the edge of the sea ice. Seals make their homes in and on the sea ice and hunt in the ocean. Indigenous Peoples hunt across all ecosystems and habitats in the Arctic, marine, terrestrial and freshwater. Monitoring of the natural and anthropogenic impacts to the food webs and the ecological func t ions of the Arc t i c env i ronment and ecosystems provides critical information about the status and trends of Arctic species and the integrity of the food webs on which they depend for their survival. For humans, this directly relates to the socio-economic stability of their societies. The Arctic has high genetic diversity among its species. Many migratory species breed in the Arctic but spend the non-breeding season at more southerly latitudes. As a polar region, greater and faster impacts are being seen in the Arctic from climate change. Consequently Arctic biodiversity is experiencing both greater and earlier impacts than many other parts of the globe. These issues, vulnerabilities and impacts are more fully documented in Arctic Flora and Fauna: Status and Conservation (2001), and Impacts of a Warming Arctic: Arctic Climate Impact Assessment (2004). Of the approximately 450 species of birds, which breed or have bred in the Arctic region, 279 breed in significant numbers within the Arctic and spend the boreal (northern hemisphere) winter in significant numbers outside the CAFF member states. Migratory birds from the Arctic reach every part of the world except the interior of Antarctica. Thirty species reach southern Africa, 26 species reach Australia and New Zealand, 22 species reach southern South America and several pelagic species reach the southern oceans. Virtually all the world’s major ecosystems support some Arctic breeding birds during the boreal winter, with Arctic migrants occupying every major habi tat in ever y major region. The c o n s e r v a t i o n o f a l l A rc t i c b re e d i n g b i rd s throughout their migratory ranges is a global challenge, covering virtually all of the world’s major terrestrial and marine ecosystems, and requires a high level of international cooperation which can be achieved in part through the CBMP. In addition to the migrating birds, several species of land and marine mammals migrate to the Arctic in search of rich food resources. Migration routes link Arctic species to marine and terrestrial ecosystems throughout the world including the Antarctic. The Arctic’s nutrient-rich coldwater feeding grounds are crucial to the survival of many species of whales and are the foundation for the huge numbers of Arctic fish stocks. Northern waters, particularly the North Atlantic and the Bering Sea, are some of the world’s largest and most important marine fisheries. The link between the survival of humans and sustainability of the living environment is therefore obvious and of paramount importance.

#### Independently, megaships decimate phytoplankton populations

Xue et al 21, State Key Laboratory of Estuarine and Coastal Research, School of Marine Sciences, East China Normal University, (Chengfang, with Yang Yang, Peipei Zhao, Dongyun Wei, Jianhua Gao, Peng Sun, Zhiyang Huang and Jianjun Jia, Impact of Ship Traffic on the Characteristics of Shelf Sediments: An Anthropocene Prospective, https://www.frontiersin.org/articles/10.3389/fmars.2021.678845/full)

Marine vessels are undoubtedly one of the most prominent symbols of human activities in the ocean. Large ships cause significant disturbances in sediment dynamic processes mainly in three ways: (i) the jet flow generated by ships’ propellers causes resuspension of sediment on the bed of shipping lanes (Soon and Lam, 2014; Hong et al., 2016); (ii) the propagation of ship-induced waves may cause erosion of the channel slope and shoal (Rapaglia et al., 2011); and (iii) prolonged and frequent ship shuttle services enhance seabed sediment activity and increase the thickness of the active layer (Hong et al., 2013). Consequently, suspended sediment concentration increases significantly during ship navigation, and can be 30 times higher than the average background concentration (Rapaglia et al., 2011). More than that, turbid water affects the growth of phytoplankton, which in turn affects marine productivity (Huang et al., 1986; Pan and Shen, 2009). Compared to known ship-related hydrodynamics (e.g., propeller-jet, ship wave, ship wakes, etc.), little is known about the impact of ship traffic on marine sedimentation records (e.g., the characteristics of shelf sediments), largely due to the scarcity of studies dedicated to this field. Considering that maritime transport is responsible for 80% of the total volume of international trade (Notteboom et al., 2021), this rising anthropogenic-force induced sedimentary process deserves more attention, and research related to this will be important for marine biogeochemistry, sedimentary dynamics, and geomorphology. Over the past 70 years, China’s maritime transport has experienced explosive growth. Shanghai Port and Ningbo-Zhoushan Port have become the world’s leading ports in terms of container and cargo throughput. Due to these two ports, the coastal shipping lanes along Zhejiang Province are particularly busy. This area represents an ideal place to analyze the effects of seagoing traffic on the shelf sedimentary record. In this study, a shipping lane suitable for 5,000 ∼ 50,000 tons ships along the Zhejiang coast of the East China Sea was selected as the study site, and two short sediment cores were collected from the centerline and the periphery of the lane to analyze their ages and sediment characteristics. We use an improved 210Pb dating model to establish a more accurate depth-age framework in regions with frequent ship disturbance. In combination with development of China’s offshore shipping lanes, we explore the possible linkage between ship traffic and the changes in sedimentation. Study Area The booming development of China’s coastal and ocean-going shipping began in the late 20th century, with coastal transport accounting for 60% of the total domestic transport [China Port Yearbook (1999–2019)]. After decades of development, Shanghai Port and Ningbo-Zhoushan Port have become the world’s leading ports in terms of container and cargo throughput. The coastal shipping lanes along Zhejiang Province are particularly busy due to these two ports and the coastal shipping lanes intersect. The north–south lanes throughout the East China Sea include four main lanes: the Outer Shipping Lane, the Eastern Shipping Lane, the Middle Shipping Lane, and the Western Shipping Lane (Figure 1). The eastern and western shipping lanes intersect outside Aiwan Bay, where shipping is well-developed and traffic is frequent in the north–south direction. The lanes can allow ships of 5,000- to 50,000-ton to pass through, even up to 100,000 tons on some sections. This area is close to the Wenzhou Port, where many passenger ship lanes lead to the surrounding islands (He, 2008). Therefore, it is an ideal area to study about the disturbance caused by ships. The tides are regular semidiurnal tides with an average tidal range of 4 m, and the maximum can be 7 m. The wave height is approximately 1 m. During typhoons, the wave height is up to 5 m, and the maximum can reach 10 m (China Gulf Annals, 1993). The bottom sediment is clayey silt and silt (Jia et al., 2018). Materials and Methods We obtained two cores off the coast of Aiwan Bay, Zhejiang Province, China, to analyze grain size and geochemical elements. Combined with the dating framework, we analyzed the changes in sediment characteristics over time. A literature review was conducted to understand the history of the marine transport industry and the shipping lanes where the cores have been located over the past decades, with a view to quantify the sedimentation effects of ship disturbance. Coring Two cores were collected in May 2018 using a gravity coring tube. Core Z7 (28°3′0″N, 121°33′36″E), 1.5 m long with a water depth of 13.2 m, was collected at the intersection of two main shipping lanes used by vessels of 5,000- to 50,000-ton. Core Z8 (28°5′21″N, 121°32′36″E), 1.5 m long with a water depth of 12 m, was collected outside the shipping lane at a distance of 4.7 km from core Z7 in the northwestern direction. The natural sedimentary environments in the region of two cores are nearly identical because of the short distance between the two cores, which will better ensure an accurate representation of the effects of disturbance on the sediment due to maritime traffic through contrast analysis. XRF Core Scan The cores were each split into two parts using a GeoTek Core Splitter. One half of the core was covered with a 4 μm thick Ultralene film to avoid the contamination of the X-ray fluorescence (XRF) core scanner (Avaatech 3RD, Netherlands) measurement unit and the desiccation of the sediment (Richter et al., 2006). Instrument settings were optimized to minimize the mean square error (MSE) values, and the step size was 0.5 cm. Count times for XRF analysis ranged from 10 to 30 s (Table 1). Reliable data were obtained for 29 elements. Four powdered standards were analyzed every day before and after the analysis of the sediment cores to monitor signal drift and indicated that the signal remained stable during the analytical runs. The experiment was completed at the State Key Laboratory of Marine Environmental Science, Xiamen University, Xiamen. Grain Size Analysis Grain size analysis of 1 cm sub-samples was conducted using a laser particle analyzer (Mastersizer-2000, United Kingdom), which has a measurement range of 0.02–2000 μm with a relative error of <3% for repeated measurements. The experiment was completed at the Key Laboratory of Coastal and Island Development, Nanjing University, Nanjing. The matrix formula of McManus (1988) was used to calculate the sample statistics of the grain size distribution, that is, mean grain size (Mz), sorting (S), skewness (Sk), and kurtosis (K). The above four parameters refer to: the average size, the spread of the sizes around the average, the symmetry or preferential spread to one side of the average, and the degree of concentration of the grains relative to the average, respectively (Blott and Pye, 2001). The grain size standard deviation at 10 cm intervals was calculated to extract the sensitive grain size fraction (Sun et al., 2003). The changes in the sensitive grain size fraction over time can reflect the evolution of sedimentary dynamic processes and depositional environments. Age Models Age models are of critical importance in interpreting sedimentary records. One of the most important means for dating recent sediments (0–150 years) is by 210Pb (half-life 22.3 years), a natural radioactive isotope of lead (Appleby, 2001). The dried sample was homogeneously pulverized, weighed, and then sealed in a plastic box (70 × 70 mm) for 3 weeks. The activities of 210Pbex and 137Cs in the sediment samples were measured following the method described by Du et al. (2010). The radioactivities of the above nuclides were measured using an HPGe γ-ray detector (Canberra Be3830, United States) with a relative counting efficiency of 35% and an energy resolution of 1.8 keV (at 1332 keV). The detector has multilayer shielding (ultralow cryostat and no peak background in the isotopes of interest). The activity of 210Pbex was calculated from the activity of total 210Pb (46.5 keV, 4.25%) minus the activity of 226Ra, determined using the γ lines at 351.9 keV (37.6%) for 214Pb and 609.3 keV (46.1%) for 214Bi. The efficiency calibration of the detector systems was conducted using LabSOCS (Baronson, 2003). The experiments were performed at the State Key Laboratory of Estuarine and Coastal Research, East China Normal University, Shanghai. The commonly used 210Pb data processing and computation mainly include the CIC dating mode and the CRS dating model (Appleby, 2001). Given the strengths and weaknesses of the two computational models, the 210Pb chronology of this study was determined using both models. Historical Documents To study the response of sediment characteristics to the disturbance effects of ships, it is necessary to be familiar with the shipping lanes near the study area and the frequency of ship navigation. Compared to bulk cargo ships, container ships have the characteristics of large loading capacity, fast speed, and fixed throughput, which are more representative indicators to better reflect the impacts of ship disturbance on sedimentation. The China Port Yearbook comprehensively and accurately recorded the development of China’s port navigation and shipping industry, and recorded the container throughput of China’s coastal ports from 1979 to date, which could reflect the intensity of disturbance by ship movement on the shipping lanes. Therefore, the container throughput of the whole country and three ports, namely Qingdao Port, Shanghai Port, and Guangzhou Port, were calculated for the period 1979–2018. These three ports are important coastal ports in the Yellow Sea, East China Sea, and South China Sea, respectively. Results Depth-Age Framework The excess 210Pb of Z7 and Z8 remained in the law of radioactive decay. The linear fitting result of the excess 210Pb of Z7 was good, with a correlation coefficient of 0.66 by the CIC model and a sedimentation rate of 1.09 cm/yr. The Z8 was better, with a correlation coefficient of 0.91 and a sedimentation rate of 1.54 cm/yr (Figure 2). Considering that the locations of the two cores were not far from each other, approximately 4 km—expecting a great difference in sedimentation rate would be unreasonable. According to sedimentation rate data of the mud area along the coast of Zhejiang and Fujian (Jia et al., 2018), the average sedimentation rate here is approximately 1.5 cm/yr. The entire 150 cm long sedimentation sequence was recorded from approximately 100 years ago, which was before the emergence of container ships navigation along the coast of China in the late 1970s. Thus, it would be inaccurate to use uniform sedimentation rates to infer the age of sediment before and after the emergence of shipping lanes. In theory, the CIC model of 210Pb dating is suitable for a stable sedimentary environment, but for a less stable sedimentary environment, the CRS model may provide more accurate dating results (Zhang et al., 2008). It was found that above 70 cm depth both models gave similar curves for Z8 (Figure 3D), whereas for Z7, the difference was extremely large, with some layers up to 24 years (Figure 3A). The CRS dating results of the two cores above a depth of 70 cm were almost identical, and the sedimentation records were from 1977 to 2018; below a depth of 70 cm, the CRS model algorithm led to older dating results, and increasing depth (Zhang et al., 2008), with a small sedimentation rate. Therefore, in this study, the CRS dating model was used at depths above 70 cm and the CIC dating model at depths below 70 cm. The sedimentation rate was assumed to be uniform below 70 cm, and the sedimentation rate at 70 cm was used as the sedimentation rate for the 70–150 cm section. On this basis, the dating framework was established for the two cores, and the age of sediment for each layer at the same depth were almost identical, with a mean time difference of 0.4 year. The two cores showed the sedimentation records of 1873–2018 (Figures 3B,E). The sedimentation rates of Z7 and Z8 were in the ranges of 0.77–2.76 cm/yr and 0.77–2.53 cm/yr (Figures 3C,F), respectively. Grain Characteristics of Sediments The grain size components of Z7 and Z8 were dominated by silt, followed by clay, with the least amount of sand (Figure 4). Overall, the content of the grain size component did not fluctuate significantly with time. The sediment type was mainly clayey silt, with an occasional silt layer. Through comparative analysis of the two cores, it was found that the grain size parameters were quite different below and above 70 cm. The sensitive grain size fraction was calculated at 10 cm intervals. Both Z7 and Z8 had two sensitive grain size fractions—the first between 4 and 6 Φ, and the second between 6 and 9 Φ. The peak heights (standard deviation values) of the two sensitive grain size fractions below and above 70–60 cm were very different for the two cores, with the 70 cm value corresponding to the year 1977 (Figure 3). Generally, before 1977, the standard deviation of Z7 was smaller than that of Z8, whereas after 1977, the standard deviation of Z7 was larger than that of Z8. To better illustrate the variation in the sensitive grain size fraction over time, the layer at 70–60 cm was selected and two layers below and above 70–60 cm were shown, such as 150–140 cm, 120–110 cm, 30–20 cm, and 10–0 cm (Figure 5). Here we can see the difference below and above 70–60 cm for the two cores (Table 2), which indicated that the sedimentary dynamics of the environment had changed considerably since 1977. Before 1977, the standard deviation of Z7 was smaller than that of Z8, which meant that the sedimentary dynamics of Z7 were more stable than those of Z8. However, after 1977, the standard deviation of Z7 was larger than that of Z8, which meant that the sedimentary dynamics of Z7 were more turbulent than those of Z8. Moreover, after 1977, both the first and second sensitive grain sizes of Z7 were finer than those of Z8, which assumed that the finer particles were more affected by ship disturbance (Table 2). The first sensitive grain size fraction of Z7 (4.50–5.75 Φ) did not change significantly in the 150–110 cm section, with a moderate increase in the 110–70 cm section, a sudden increase in the 70–60 cm section, and a moderate increase above 60 cm (Figure 6). The second sensitive grain size fraction of Z7 (6.75–8.25 Φ) did not change significantly in the 150–110 cm section, with a moderate decrease in the 110–70 cm section, a sudden decrease in the 70–60 cm section, and a moderate decrease above 60 cm. The first grain size fraction of Z8 (4.25–5.50 Φ) showed a significant change in the 150–70 cm section, a moderate increase and then a decrease, and it changed very little above 70 cm, with a moderate decrease. The second grain size fraction of Z8 (6.50–8.00 Φ) varied significantly in the 150–70 cm section, with a moderate decrease and then an increase, and it changed very little above 70 cm, with a moderate increase. The measured grain size distribution curve (in the range of 2–12 Φ) was divided into 40 small cells in units of 0.25 Φ. The difference between two cores at the same time in these small cells was calculated separately. The content of Z8’s grain size component was subtracted from that of Z7 on the same layer, with the difference shown on a two-dimensional contour plot (Figure 7). Here we can see the quantity of coarser or finer particles difference between two cores at the same time. The results showed that the sediment can be divided into two groups—coarse and fine—using 6.25 Φ as the boundary, and the sediment varied considerably over time. In the section of 150–140 cm, the difference in relative content between the two cores was approximately zero. In the section of 140–80 cm, the coarser particles (<6.25 Φ) of Z7 were significantly less than those of Z8, whereas the finer particles (>6.25 Φ) were significantly more than those of Z8. In the section of 80–0 cm, the opposite occurred, especially above 70 cm, where the coarser particles of Z7 were significantly more than those of Z8. This indicates that the sediment on the shipping lane showed an increase in the coarse particulate fraction and a decrease in the fine particulate fraction from 1977. Elemental Characteristics of Sediment Elements with specific indicators, including S, Cl, Br, Si, Ti, and Ca, were selected for comparative analysis. These elements have steady repeat scanning results and reliable detection, and have often been used by previous researchers (Thomson et al., 2006; Marsh et al., 2007; Agnihotri et al., 2008; Croudace and Rothwell, 2015; Grygar and Popelka, 2016). The content of elements is a relative value, and the data quality is influenced by several factors, such as grain size and water content variations, core surface imperfections, and the presence of organic matter (Croudace and Rothwell, 2015). In order to attenuate above effects, element-to-element ratios were used, which can allow comparison between the cores. Ti is a typical reference element used for normalization (Grygar and Popelka, 2016). The element ratios Br/Cl, S/Ti, Si/Ti, and Ca/Ti, were selected for the study (Figure 8). The Br/Cl ratio for Z7 ranged from 0.06 to 0.17, with a mean value of 0.12, and the element ratio decreased slightly in the 0–40 cm section, with a mean value of 0.11. The S/Ti ratio ranged from 0.12 to 0.38, with a mean value of 0.20, and the element ratio increased significantly in the 0–40 cm section, with a mean value of 0.24. The Si/Ti ratio ranged from 2.77 to 6.79, with a mean value of 5.01, and the element ratio decreased significantly in the 0–40 cm section, with a mean value of 4.87. The Ca/Ti ratio ranged from 2.86 to 4.32, with a mean value of 3.54, and the element ratio decreased slightly in the 0–40 cm section, with a mean value of 3.48. The element ratios shifted at approximately 40 cm. According to the established dating framework (Figure 3B), the year was estimated to be approximately 1999. For Z8, the most significant shift was Si/Ti, which transformed at 77 cm, with a decrease in the 0–77 cm section. The Br/Cl ratio for Z8 ranged from 0.08 to 0.21, with a mean value of 0.14. The S/Ti ratio ranged from 0.14 to 0.34, with a mean value of 0.21. The Si/Ti ratio ranged from 3.92 to 7.20, with a mean value of 5.50, and the element ratio decreased significantly in the 0–70 cm section, with a mean value of 5.17. The Ca/Ti ratio ranged from 3.05 to 4.73, with a mean value of 3.63. Discussion Development of China’s Offshore Shipping Lanes Containerized maritime transport plays an important role in global trade, accounting for 80% of international cargo trade and growing at an average annual rate of 4% (Ducruet and Notteboom, 2012). A country’s container transshipment capability and accessibility directly reflect its maritime transport capacity, as well as its level of maritime transport development. China’s container industry began in 1979, with a container throughput of 32,900 twenty-foot equivalent unit (TEU). The late 20th century was in a period of rapid growth (Figure 9). According to statistics, the average annual container throughput in 1979–1999 was 2.95 million TEU, and in 1999–2018 it was 127.18 million TEU, a staggering 42-fold increase. The Port of Shanghai has held the top position for container throughput of the world’s largest ports since 2010. The external and internal feeders of foreign trade from the Port of Shanghai pass through the outside of Wenzhou Port, where our cores were collected. Combining the model with global economic development scenarios, it is suggested that global maritime traffic will increase by 240–1,209% by 2050 (Sardain et al., 2019). In addition, the shipping industry entered the so-called megaship era in 2007 when a leading container shipping company deployed a fleet of mega-containerships with a carrying capacity of more than 10,000 TEUs (Imai et al., 2013). The development of megaships requires deeper draft depths and the sea areas affected by ship disturbance is expanding into deeper water accordingly, thus the disturbance effect of megaships will have an increasing impact on relatively deep waters. China’s coastal shipping lanes are traversed in dense networks, with frequent passenger and cargo lanes. Vessels with a container load of more than 5,000 TEU, bulk cargo of more than 100,000 tons, and tankers of more than 100,000 tons meet our definition of a megaship. The southeast coast of China, the Bohai Bay, the Changjiang Estuary, the Taiwan Strait, and the eastern side of Taiwan Island are all areas affected by the disturbance of megaships (Figure 10). The study of modern sedimentary dynamics and its products in these areas should consider the influence of megaships on shipping lanes. Differential Performance of Grain Size and Elements The element content in the sediment is mainly controlled by its mineral composition. In addition, hydrodynamic conditions, adsorption and flocculation of fine particles, redox conditions, and human activities all have an influence on the variation of element content (Dong et al., 2009; Singh, 2009; Ye et al., 2013; Grygar and Popelka, 2016). The grain size of marine sediment is closely related to geochemical elements, both of which are in accordance with the “law of elements controlled by grain size” (Zhao and Yan, 1994). Fine-grained sediment can be readily enriched in some chemical elements, either because they are present in the clay minerals or because of the adsorption effect of the fine-grained particles. This is due to the correlation between particle size and elements, which are often used as a proxy for particle size (Zhou et al., 2019). However, as mentioned above, the particle size changed significantly approximately 1977, whereas the elemental ratios of S/Ti, Ba/Ca, Si/Ti, and Br/Cl did not change significantly until approximately 1999. The behavior of particle size and elements was not identical, and it was therefore worthwhile to investigate the underlying mechanism. Correlation analysis was conducted between the element ratios selected in this study and the sand, silt, and clay contents. Both were found to be poorly correlated, with the correlation coefficient almost always less than 0.3 (Table 3). There was therefore no significant correlation between the grain size and the elements. The factors influencing the change in the grain size of marine sediments can be summarized into two categories: the first is the change in sediment sources (sources or sediment flux), and the second is the change of sedimentary dynamics environment, which is closely related to the coastal circulation system and extreme climate events (Liu et al., 2010). The study area is located in the distal mud of the subaqueous Changjiang River delta, and the sediment mainly comes from the Changjiang River. Thus, the annual sediment flux of the Changjiang River Datong Station was counted during the period 1953–2018 (Figure 11). Before 2000, the annual sediment load was more than 300 Mt. After 2003, due to the influence of the Three Gorges Reservoir, the annual sediment load was less than 200 Mt. In this study, the grain size transition occurred early before the drastic change in sediment flux, so the grain size transition was not influenced by the change of sediment source. Some studies suggest that the load, grain size and sediment composition deposited over the coastal and shelf water adjacent to the estuary have changed in response to the Three Gorges Dam. However, this phenomenon occurs mostly downstream of the reservoirs and estuaries, and after long-distance transport, the signal of changing grain size in the study area has been difficult to detect (Gao et al., 2019). Even in the downstream of the reservoir, the median grain size variation is only about 5 μm (Gao et al., 2015), which is smaller than the variation caused by the navigation channel. Therefore, the transition of grain size was caused by changes in the sedimentary dynamics environment, mainly due to disturbance by ships. Marine sediments are mainly composed of terrestrial debris, biogenic materials, and marine authigenic substances, whose relative content determines the distribution of elements in the sediment. The elements, especially the biogenic elements related to the ecological environment, can reflect the evolution of the sedimentary environment. The time of element ratios shift lags behind the time of grain size shift, which was most likely a response of the ecological environment to the effects of ship disturbance. This occurred approximately 1999, when the frequency of navigation began to increase rapidly (Figure 9). At the beginning of ship navigation, the effects of ship disturbance did not cause significant changes in elements, until the rapid growth in the maritime transportation of China in 1999. There are complex mechanisms behind this response, involving processes such as the migration and transformation of marine biological production, biogeochemical cycling of marine substances and elements, especially redox-driven processes (Schubert et al., 1998; Duan et al., 2010). All of these processes were influenced by the environmental characteristics include suspended sediment concentration, salinity, total dissolved organic carbon, temperature, depth, pH, Eh, phytoplankton, and water circulation (Marcussen et al., 2008). Only after the disturbance frequency reached a certain level, would the elemental variation manifest. Therefore, grain size variations were expressed soon after the start of navigation, whereas the biogenic elements did not change significantly until 1999. Sedimentary–Ecological Response to Ship Disturbance Quantitative studies on the impact of human activities on ecology are of vital importance. In recent years, global reductions in riverine sediment fluxes have become widespread (Syvitski et al., 2005; Milliman and Farnsworth, 2011). Studies to investigate the impact of human activities, mainly in terms of changes in the fluxes and sediment properties of the sea (Dai et al., 2008; Gao et al., 2014; Yang et al., 2019), have made good progress in quantifying these impacts. For example, Dai et al. (2008) argued that, for the Changjiang River, the contribution of climate change to the reduction of sediment flux into the sea was only approximately 3%, with anthropogenic contributions accounting for 97%. Ship navigation is an important anthropogenic agent. During navigation, ships alter the local hydraulic regime, i.e., the generation of currents and ship-induced waves (Rapaglia et al., 2011; Fleit et al., 2016). The highest near-bed velocities resulting from ship generated waves range between 0.1 and 0.4 m/s in Danube River of Hungary, which was obtained by computational fluid dynamics (CFD) modeling (Fleit et al., 2016). The average flow velocity with no ship is 0.02 m/s, which means an increase of an order of magnitude due to ship (Fleit et al., 2016). In situ measurement shows that the water velocity increases to 2.1 m/s when the ship passes by, which is more than an order of magnitude higher than the typical tide and wind driven current speed in the channels of Venice (Coraci et al., 2007). The increased current speed can increase bottom shear stress, which will cause the resuspension of sediment in shallow water areas and the erosion of the channel slope and seabed (Rapaglia et al., 2011; Ji et al., 2014; Fleit et al., 2016). It is found that the ship-generated waves (including drawdown and surge waves) have much more effects on sediment resuspension than wind waves (Houser, 2014). Once the shear stress generated by the ship is larger than the critical shear stress which is further determined by sedimentary characteristics, the seabed sediment would move in suspension, saltation, and creep (Liou and Herbich, 1976; Liao et al., 2015). The bottom shear stress caused by propeller scour is an important mechanism contributing to sediment resuspension and subsequent erosion (Liao et al., 2015). In the same situation, the resuspension of coarser particles requires a greater incipient velocity (Liou and Herbich, 1976). Finer particles are easier to resuspend. Ship-generated waves are capable of resuspending significant quantities of bottom sediment and suspended sediment concentration increases with increment of turbulent kinetic energy of the ship wakes (Houser, 2014; Ji et al., 2014). In situ observation showed that suspended sediment concentration rose from 12 mg/L to 400 mg/L in Venice Lagoon, Italy, after the ship had sailed (Rapaglia et al., 2011). The intensity of sediment disturbance by a ship is related to the speed, propeller rotation speed, water depth, and draft of the ship (Liou and Herbich, 1976; Hong et al., 2013). Generally, the faster the speed of ships, the shallower the water depth, and the deeper the draft, the stronger the intensity of the disturbance. Sediment resuspension caused by ship disturbance has led to a series of changes in both the sedimentary environment and ecology. In this study, when establishing the dating framework, it was found that in a relatively stable sediment environment (such as the location of core Z8), the dating results obtained by the CIC and CRS dating models were consistent. However, in an unstable sediment environment (such as the location of core Z7), the results of the two dating models differed greatly, and the age difference of the same layer could be up to 24 years. Because of the inherent shortcomings of the CRS model, the bottom age is biased toward aging, whereas the CIC model homogenizes the sedimentation rate, which is obviously not applicable in an unstable sediment environment. A single dating model cannot establish a convincing and comparable dating framework. The best approach is to combine the two models, using the CRS model in the layer affected by ships and the CIC model in the lower part, to establish a CRS–CIC dual dating model. Figure 3 shows that the CRS–CIC dual dating model can be used with reliable results to address sedimentation rates in an overall sedimentary environment, but locally influenced by frequent ship motion. Since the development of coastal shipping in China in 1977, the fluctuations of grain size has changed largely. Before 1977, the fluctuation of grain size of Z8 is wider than that of Z7, which shows an opposite trend after 1977. Core Z8 is located near a small bedrock island called “Pishan,” which will cause more complicated hydrodynamics (tidal and wave) compared to core Z7 before 1977. In this case, the fluctuation of grain size at Z8 is wider than that of core Z7. However, the hydrodynamic condition is more complicated at core Z7 than that of core Z8 after 1977 due to the disturbance of ships, causing the fluctuation of grain size of Z7 is wider than that of Z8. In addition, the sensitive grain size at Z7 has been finer (Figure 5A). With 6.25 Φ as the boundary, the grain fraction finer than 6.25 Φ decreased (Figure 7). It was calculated that before 1977, core Z7 had a significantly higher fine grain fraction (>6.25 Φ) than core Z8, with a mean value of approximately 6%, but after 1977, core Z7 had a significantly lower fine grain fraction (>6.25 Φ), with a mean value of approximately 5%. This indicated an 11% reduction in the grain fraction finer than 6.25 Φ at the shipping lane and a significant coarsening of the sediment. Ship motion affected the local sedimentary dynamic environment. Although the total sedimentary flux was the same as the flux outside the shipping lane, it has a selective modifying effect on the sedimentary record: in the sediment on the shipping lane, which was dominated by silt, all grain fractions became more active under frequent ship disturbance. Due to differences in sedimentation mechanisms, it was relatively slow for fine grain to settle, and a significant proportion of the fine grain fraction may leave the shipping lane, causing a reduction in the fine grain fraction entering the seabed sediment. It has been shown that vessel-induced wakes can increase the concentration of suspended sediment by a factor of 30 above background values, but this surge only lasts for a few minutes, and then the high concentration persists for almost an hour before returning to background values (Rapaglia et al., 2011). The sustained high concentration is due to the slow settling velocity of fine particles. Ship disturbance also caused ecological changes. After 1999, the value of Br/Cl in the Z7 core decreased from 0.12 to approximately 0.11, the value of S/Ti increased significantly from 0.20 to 0.24, the value of Si/Ti decreased from 5.01 to 4.87, and the value of Ca/Ti decreased from 3.54 to 3.48. The decrease in Br/Cl could indicate, to some extent, the decline of primary productivity in the region (Thomson et al., 2006). High S-levels tend to indicate a low oxygen zone (Croudace and Rothwell, 2015). Si/Ti is an important indicator of siliceous phytoplankton productivity. The principle of reduced Ca/Ti is the same as that of Si/Ti, both of which belong to the response of biogenic elements to the marine environment (Marsh et al., 2007; Agnihotri et al., 2008). Specific to the above individual indicator, small changes in value may not be evidence of significant changes in the ecological environment. However, the changes in the four indicators pointed to consistency, which may be related to the disturbance of ships in the waterway. For example, frequent disturbance by ships made the shipping lane waters turbid, and light became the most important factor limiting marine productivity. The turbidity and high concentration of suspended solids was not conducive to the growth and reproduction of phytoplankton, and this reduced primary productivity (Jiang, 1993; Pan et al., 2011). In addition, the amount of phytoplankton directly affected the dissolved oxygen content in seawater. The reduction of phytoplankton decreased the dissolved oxygen content in seawater, leading to the dissolution of iron oxides and the formation of pyrite (FeS2), which increased the amount of elemental S in the sediment (Jiang, 1993; Croudace and Rothwell, 2015). Frequent disturbance was detrimental to diatom growth and reproduction, and decreased the biotransformation rate of silicates in seawater and the “silicon fixation” effect, thus decreasing the Si/Ti value in sediment (Huang et al., 1986; Pan and Shen, 2009). Calcareous phytoplankton such as coccolithophores are widely distributed and abundant in the ocean, are well preserved in the sediment and are important sources of biogenic Ca in the sediment (Poulton et al., 2007, 2013). Frequent disturbance was also detrimental to the growth of coccolithophores, and made it difficult for biogenic Ca to adhere to the particulate matter, which can reduce the Ca/Ti ratio in the sediment. Overall, the quality of habitat conditions along the shipping lane was significantly different from those outside the shipping lane. The content of each element in the sediment of the shipping lane was controlled by a combination of physical, chemical, and biological interactions. Suspension of fine particles caused by physical disturbance affected the marine ecosystem and ultimately changed the elements in the sediment.

#### Extinction

Poddar 21, Director SafEarth Clean Technologies Pvt Ltd. (Harshit, How The Loss Of Phytoplankton Could Lead To Our Demise, <https://medium.com/climate-conscious/how-the-loss-of-phytoplankton-could-lead-to-our-demise-8f9c91b937a8>)

The base of the entire aquatic food chain is the phytoplankton. Essentially what plants do on land, phytoplankton does in the ocean. It is the foundation on which the entire aquatic life is built. Any threat to this species would ultimately lead to a complete collapse of aquatic life. Unfortunately, the phytoplanktons are dying, and we are the ones killing them. These microscopic algae have been critical in making life on Earth possible for a number of key reasons. Oxygen Phytoplankton are responsible for over 50% of all the oxygen in our atmoshpere. These microscopic algae in our oceans are some of the most laborious workers in our ecosystem. Day and night, they absorb the carbon dioxide in the atmosphere and convert it into oxygen through photosynthesis. Food All the food in the ocean is ultimately produced by phytoplankton. Through photosynthesis, they produce carbohydrates which are in turn consumed by small fishes. These fishes are then consumed by larger fishes and so on. Kill the phytoplanktons and the oceans will be left with no food.

#### The second scenario is Indian Ocean Conflict —

#### The continued growth of megaships will cut India off from global trade

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According to the ITF, direct port calls by ships are considered important because they reduce risks, feeder vessel costs, and turnaround time in comparison to the option of trans-shipment feedering[2] via other ports.[23] Ports are considered competitive when they are chosen more regularly for direct calls than other ports.[24] Maritime landside infrastructure limitations dictate direct call options. A terminal’s integration with the wider set of requirements in the supply chain decides the choice of routes.[25] Even if a terminal is large enough to handle the berthing of a mega-ship, it needs several large cranes, better yard management capability, increased automation, larger storage facilities, more inland connectivity, and enhanced labour productivity. Mega vessels seek speedy unloading of the large volumes they carry.[26] Most countries in the Indian Ocean have to deal with reduced direct port calls due to their inability to serve mega-ship port calls.[27] With the size of ships predicted to grow beyond 21,000 TEU after 2020, more countries could be increasingly cut off from direct calls unless they undertake extensive modernisation. India’s largest port, the Adani CMA Mundra Terminal Private Limited on its west coast, can currently accommodate ships only up to 18,000 TEU. The majority of India’s container traffic is therefore shipped through ports outside the country, mainly from Colombo and Singapore. India is developing six deep-water sea mega-ports for receiving mega-ships under its ambitious Sagarmala Project, though the project is still in its nascent stages.[28] Unless India invests in maritime infrastructure, it will be unable to attract direct port calls to its shores, and will be vulnerable to geopolitical risks emerging from the Chinese investments in Colombo’s Hambantota mega-port and Pakistan’s Gwadar mega-port.[29] Cities unable to manage land acquisition for mega-port complexes are in danger of becoming completely cut out of direct calls. Long-term market projections suggest that by mid-century, international trade could require container ships of up to 50,000 TEU capacity which are likely to sail exclusively between trans-shipment terminals and mega-port complexes.[30] Mega-ship port calls could therefore mark the beginning of the end for the link between cities and ports.[31]

#### Indian fear of global isolation causes lash out and conflict with China

Mukherjee 20, Researcher on Asian Security with the Stimson Center. (Tuneer, Sino-Indian Maritime Competition: Shadow Fighting In The Indian Ocean, https://www.stimson.org/2020/sino-indian-maritime-competition-shadow-fighting-in-the-indian-ocean/)

Sino-Indian conflict has historically been restricted to the land domain. However, as both Beijing and New Delhi have opened their economies to global commerce, their dependency on sea-borne trade has exponentially increased. Both have come to realize the importance of naval power in enabling them to secure their sea lines of communication (SLOC), their primary concern being undisrupted energy access from the Middle East. To this end, both nations have outlined ambitious force modernization plans to develop a “blue-water navy” that can operate at longer distances from their homeland for sustained periods of time. As Beijing’s maritime security interests intersect with India’s, there has been a linear escalation in the interactions between the two naval forces, leading to benign competition between them in the Indian Ocean Region (IOR). The Malaccan Dilemma As early as 1985, Chinese naval planners began deploying squadrons for routine port calls in the Indian Ocean. 1 Over the years, this has evolved into Chinese naval taskforces engaged in security missions. In fact, in September 2019, India’s naval chief Admiral Karambir Singh asserted that at any given time on an average, about seven to eight Chinese ships operated in the area. This escalation of Chinese naval presence has been gradual and can be linked to China’s security dilemma over its access to SLOCs west of the Strait of Malacca. The “Malaccan Dilemma,” first touted by Chinese President Hu Jintao in 2003, was predicated around a crisis scenario in which China would be denied access to its trade and energy routes in the IOR. Since then, Beijing has stepped up its diplomatic, trade, and naval efforts to secure a foothold in the Indian Ocean. According to some estimates, around 40 percent of Chinese trade passes through the choke point every year. China’s Indian Ocean Outreach To address the “Malaccan Dilemma,” President Hu Jintao in 2004 initiated the policy of “new historic missions,” which entailed Chinese naval forces being deployed in the far seas for military operations other than war. The deployment of Chinese naval forces to the Gulf of Aden in 2008 for anti-piracy operations marked an inflection point in Sino-Indian maritime dynamics. It signaled Beijing’s intention of building a robust presence in the IOR to safeguard its interests. Since then, China has increased its footprint in the IOR by weaving together a patronage network in the Indian Ocean littoral countries. China has undertaken massive port development projects in countries such as Sri Lanka, Pakistan, and Bangladesh, under its 21st Century Maritime Silk Road initiative, accompanied by bountiful transfers of naval equipment and technology. All this has affected India’s strategic calculus, triggering fears of encirclement in what it considers its backyard. Shifting the Status Quo Notably, these Chinese endeavors resulted in three significant developments that have challenged the status quo in the Indian Ocean maritime theater. The first was the frequent deployment of Chinese submarines for “anti-piracy operations” in the region. This highly unusual move made Indian strategists wary of Beijing’s bona fide intentions in the IOR. The second was the inauguration of China’s first overseas naval base in Djibouti in 2017, which made concrete the prospect of a Chinese logistical support network in the region. The third is that, since 2015, Chinese research vessels have routinely plied the area collecting data and improving China’s knowledge of the hydrography, topography, and bathymetry of the waters. Such civilian missions help improve China’s operational knowledge of the IOR, while making it increasingly difficult for Indian forces to monitor Chinese activities in the region. India naval strategists fear these missions are aimed at augmenting Chinese subsurface maneuvers to counter India’s theatrical superiority. India’s Naval PostureIn the backdrop of their strategic competition and both countries’ efforts to arm themselves with the latest technology, Sino-Indian maritime rivalry raises concerns about an impending altercation between them in the high seas of the Indian Ocean.[…] In a likely scenario of a maritime confrontation between them in the region, their naval power will be well-matched. India’s biggest strategic advantage lies in its central position in the Indian Ocean, and its familiarity with the operating environment of the IOR. The Indian Navy has always maintained that its primary focus of operations is providing security for the Indian Ocean – protecting the homeland against external actors and maintaining sea control over the various SLOCs and chokepoints of the IOR. Thus, considering China’s increased presence, India has recalibrated its bearings and sought to improve its maritime domain awareness (MDA) in the IOR. It has adopted a more vigilant constabulary role using anti-submarine warfare equipment. Beginning in 2017, India initiated a new pattern of mission-based deployments in various areas of the IOR, conducting patrols around key SLOCs all year round. Taken together, these moves have amplified the Indian Navy’s operational awareness of the region. India has also initiated closer maritime cooperation with nations that are likewise cautious of China’s naval expansion. On the sidelines of the 2017 East Asia Summit in Manila, India, Japan, Australia, and the United States, took part in consultative discussions, reinvigorating the once abandoned Quadrilateral Security Dialogue. What came out of that summit and subsequent discussions, which have since been elevated to the ministerial level, was a loose framework for how to manage issues pertaining to the maritime commons and the concept of a free and open Indo-Pacific. The brainchild of Japanese Prime Minister Shinzo Abe, the Indo-Pacific essentially represents a realignment of the strategic backdrop against which the maritime security dynamics of Asia are set, reimagining the Indian and the Pacific Ocean as a unitary maritime theater. The United States has also supported this alignment by means of strategic and diplomatic outreach in the region via the Free and Open Indo-Pacific strategy. Washington and New Delhi have correspondingly cultivated a closer maritime security relationship, cementing strategic cooperation via a logistics exchange agreement in 2016 and an information sharing agreement in 2018. Comparing China and India’s Naval Capabilities In the backdrop of their strategic competition and both countries’ efforts to arm themselves with the latest technology, Sino-Indian maritime rivalry raises concerns about an impending altercation between them in the high seas of the Indian Ocean. China and India have progressively strengthened their naval capabilities over the years, investing in high value platforms such as nuclear-powered submarines, aircraft carriers, and autonomous unmanned vessels. Beijing and New Delhi have also made sustainable efforts to develop their C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) capabilities by launching their own navigation satellites. However, as Figure 1 & 2 below indicate, there is a growing gap between the blue-water naval capabilities of the two nations, with China clearly ahead. Yet, it is also important to note that China’s primary focus of naval strength has been in its near seas surrounding the first island chain. The Indian Ocean, while important, is a secondary focus for Beijing. Comparatively, India has not engaged China with a counter-theater presence in the Western Pacific and has focused its efforts instead on amplifying its naval defense of the IOR. The tri-services base at the Andaman & Nicobar Islands serves as an important component of this effort. In a likely scenario of a maritime confrontation between them in the region, their naval power will be well-matched. Anticipating Future Conflict In September 2019, a Chinese research vessel was forced to retreat by Indian forces for operating inside the exclusive economic zone of the Andaman & Nicobar Islands without prior permission. The incident reminded both sides of the delicate intricacies surrounding maritime engagement in the open seas. Specific confidence-building mechanisms and crisis management protocols are nearly non-existent between the two navies. Save for statutory procedures guiding interactions on the high seas, Sino-Indian maritime interactions remain unregulated. As both countries’ naval forces come in contact more frequently, tensions loom on the horizon. China and India have been engaged in a competitive embrace with one another for a while now. Both sides realize the importance of a cooperative bilateral relationship but are unwilling to cede any strategic ground. In the likelihood of a situation where Beijing gains an upper hand in the continental realm, strategists in New Delhi might be tempted to implement access-denial measures against Chinese naval assets in the region, to tilt the strategic balance back in India’s favor. While a confrontation along their international border could be isolated, a similar scenario in the maritime domain is likely to have multifaceted implications far beyond New Delhi and Beijing.

#### That goes nuclear

De Silva 21, Department of Strategic Studies, General Sir Johnkotelawala Defence University, Disarmament, Indian Ocean and Strategic Externalities: The Case of Sri Lanka, Journal for Peace and Nuclear Disarmament Volume 4, 2021 - Issue 2)

Frank Hoffmann’s “Pink Flamingo” concept is pertinently applicable to the South Asian region (Barner and Bensahel 2015) since it highlights a disaster that a state or an entity would have noticed emerging but ignored and that could cause catastrophic devastation. Hoffman is of the view that Pink Flamingo situations are patently evident but deliberately disregarded by policymakers for diverse reasons. South Asia is prone to dangerous nuclear trends and they are often ignored by the policymakers of non-nuclear states. This situation is worsened due to the tendency of avoiding adherence to the international disarmament mechanisms by the emerging nuclear powers in the region. Neither India nor Pakistan is a party to the Nuclear Non-Proliferation Treaty (NPT). It is understood that if an accident flares up in any of these states it could escalate into a worse pitch due to the public panic. In such an atmosphere nobody can guarantee that South Asia is suitably prepared to handle the transnational after effects of a nuclear catastrophe. Even though the threat is imminent, none of the non-nuclear states in South Asia has paid adequate attention to mitigate it. Apart from the direct danger of an accident or nuclear confrontation, the neighboring states of nuclear powers also face the threat of strategic manipulation of their assets by nuclear states. The worrisome factor is a blissful underestimation by non-nuclear states about the gravity of the emerging and persistent problem. The lack of awareness on how to face such situations could result in an abrupt collapse of the security well-being of non-nuclear states due to factors that operate beyond their control. This paper attempts to reveal the dangers of the existing “pink flamingo” situation in South Asia through the lens of a non-nuclear state.

#### The third scenario is Hacks —

#### Megaships are unique targets for cyber attacks

PTN 16, (3 Ways to Tackle Piracy and Terrorism, <https://www.porttechnology.org/news/how_shipping_lines_can_tackle_piracy_terrorism_and_cyber_threats/>)

However, as ships become larger, and the volume of containers increases, this puts ships at a much bigger threat of piracy and terrorism; however, the motivations behind each are fundamentally different, since they both have a different aim in mind. So what are the motivations behind attacks on mega containerships? Peter Cook, Director of the Security Association for the Maritime Industry, argues: “Whilst there is a clear difference between the motivation for piracy and terrorism (piracy being a criminal act is predicated purely on financial gain, whereas terrorism has an ideological aim and is therefore designed to terrorise those involved and affected), it does not necessarily mean that they should be treated exclusively. “Whilst a pirate is looking at what he can make out of attacking a ship from a business perspective (weighing up the risk v return ratio) a terrorist group will be looking at how they can further their cause by attacking a specific type of vessel, perhaps due to its flag, company of ownership or national/international standing. The terrorist attacks listed above clearly demonstrate that terrorists want a sensational attack and therefore the bigger the better.” Technical Paper: Port Security and the Effect of Piracy As well as piracy and terrorist threats, cyber security is also a massive issue within the maritime industry. It is such that cyber security has a fluctuating level of severity within the industry and requires increased focus to effectively deal with potential threats. It is therefore important for shipping lines not to underestimate their exposure to risk and implement the appropriate solutions. A recent survey from Moore Stephens found that although risk management strategies are satisfactory in the shipping industry, the companies that do not implement sound practices for preventing security threats are at risk or paying a much higher price, with cyber security being one of the most pertinent threats. Peter Cook elaborates on the main types of cyber security threats facing mega ships: “Cyber-attacks fall into three main categories: a criminal using cyber as the facilitator to commit another crime such as fraud; a targeted cyber-attack when the systems of a shipping company/ship are attacked to get specific data/IP or cause the company to lose business and or revenue or a “Hacktivist” who may target a company for personal gratification (CIA hackers for example).

#### Terrorists have the means, motive and opportunity to hack and weaponize megaships

Demchak & Thomas 21, Chair of Cyber Security and Senior Cyber Scholar, Cyber Innovation Policy Institute, U.S. Naval War College (Chris with ichael L. Thomas, Ph.D., is currently assigned to Maxwell Air Force Base as a professor of cyberwarfare studies at the U.S. Air Force Cyber College, CAN’T SAIL AWAY FROM CYBER ATTACKS: ‘SEA-HACKING’ FROM LAND, <https://warontherocks.com/2021/10/cant-sail-away-from-cyber-attacks-sea-hacking-from-land/>)

The vast bulk of the world’s critical economic and military traffic passes through a handful of narrow strategic waterways known as “maritime chokepoints.” While these waterways have always been prey to pirates, weather, and maritime accidents, these perils are now joined by maritime cyber attacks — whether conducted for ransom, malicious disruption, piracy, or as part of larger geopolitical conflicts. When a commercial vessel or warship is strategically delayed via sea-hacking, critical shipments are delayed by days or weeks. The massive size of modern container ships such as the Ever Given makes hacking their steering systems or forward speed a means of weaponizing the vessel. It is worth a bad actor’s effort to experiment with grounding a major new container ship remotely from land-based cells. The Suez Canal could be one of the more lucrative cyber disruption targets due to the amount and expected speed of traffic flow through its two-lane and one-lane sections. 30 percent of the world’s shipping container volume carrying 12 percent of global trade passes through the canal. Ships, including the very largest container vessels, can cut an average 12 days off a three-week trip from India to Italy by transiting the canal. The 205-meter-wide canal is known to be challenging even at modest speeds for ships the size of the Ever Given. Its 120-mile-long narrow transit offers the opportunity for cyber-induced disruption, particularly if one wanted to stall oil and gas deliveries to the Mediterranean and Europe. If the canal is blocked companies must take the alternative route — around the Cape of Good Hope, adding 10 to 12 days transit time, fuel costs, and security costs. Comparatively, according to a 2006 RAND study, the closing of the Malacca Strait would increase transit time by only an additional three days. With the grounding of the enormous container ship — the Ever Given — on March 23, 2021, the world was reintroduced to the issue of “maritime choke points”. The giant ship blocked the Suez Canal for six days. The Ever Given was not a cyber target this time but its grounding demonstrated the potential impact on global trade when a ship blocks a chokepoint. For example, the BBC reported that fears that the blockage would tie up shipments of crude oil resulted in crude prices rising by 4 percent on international markets. The Ever Given was launched in 2018, and is one of the largest ships in the world. It was built and is owned by a Japanese firm, leased and operated by a Taiwanese company, and sailing under a Panamanian flag. Similar-sized ships carry an increasing percentage of global trade, and the relatively recent 2015 addition of a second channel to the Suez Canal was undertaken in part to accommodate them. The canal is wide enough to accommodate such large vessels but physical clearance on either side of both channels is currently still limited. Mistakes in speed or understanding of wind effects on huge vessels can (and did in this case) come from human error. But they can also be stimulated by difficult-to-detect cyber intrusions into the navigation and steering systems of these ships, especially in newer vessels. The internet protocol networks used for steering and navigation are often not segregated effectively for cyber security. They are connected to the serial bus networks that make up the supervisory control and data acquisition systems critical to ship operations. The blockage caused by the grounding of the Ever Given demonstrates to cyber-competent terrorists or adversaries the potential for disruption if they are able to manipulate or disrupt transit mechanisms from the ships themselves, their containers’ content, and pilotage management systems. Even basic electricity supplies for locks such as those in the Panama Canal offer disruption options to a world of bad actors who have already demonstrated a willingness to attack critical infrastructure. The 900-kilometer-long Malacca Strait carries 40 percent of the world’s maritime trade, including a quarter of the globe’s seaborne oil supplies and 80 percent of the Middle East’s oil and gas supplies to China. Traffic congestion is its major challenge, particularly where the strait narrows to just 2.7 kilometers wide near Singapore. In addition to posing a lucrative target, these chokepoints also afford the opportunity, both from shore and through remote means, for potential bad actors to track particular ships, owners’ fleets, crew, content, origin, destination nationalities, or missions in order to select targets. These risks are aggravated as ships and systems rely increasingly on automation. Fully autonomous ships are a stated goal of the industry and the U.S. Navy. Such systems should include proper cyber security. Ships and Cyber Security Still Strangers In 2018, security researchers at Pen Test Partners found vulnerabilities in electronic chart display and information systems commonly used on cargo and container ships. These chart systems are often linked to GPS-guided autopilots, which when exploited give hackers the ability to access the operational technology of the ship: If networks are not segregated, hackers can remotely manipulate the ship’s steering, ballast pumps, and navigation. The electronic charting system is often slaved directly to the autopilot on many ships, causing the ship to automatically follow the charted course. Hackers can redirect the ship’s course by planting false information messages via satellite communications in order to mislead navigational decisions. Many satellite communications terminals on ships are available on the public internet with default credentials and can be hacked remotely. Numerous other paths can also prove useful vectors in the cyber attack of a vessel. For example, the 2018 research also showed that the electronic charting systems on some ships were still using relic operating systems with many known major vulnerabilities, such as Windows NT, often because these are expensive to upgrade. Even when malicious control is discovered, as the cliché goes, it can be very difficult to regain control in a timely manner. Commercial ship networks tend to have flat network architectures that are originally unsegmented networks without firewalls or other cyber security measures as part of their architecture. Once inside such networks, it is not difficult to travel around across the systems of the entire ship. Internal systems often use manufacturer default passwords, not just on firewalls but also on the critical programmable logic controllers running systems, as well as satellite communication equipment. Researchers have identified other vulnerabilities in computer-security forums, such as using the ship’s satellite terminal as a point of penetration. The terminal opens the system itself to attackers replacing the poorly secured firmware or simply reverting to an even less secure previous version, and then altering the applications running the terminal. Similar research results have produced similar concerns. Access in — whether through the electronic charting system, the satellite communications terminal, or any other outward-facing communications — means the ability to control critical ship systems covertly and use the massive bulk for any reason the attacker desires. At the outset some experts suggested that the Ever Given grounding was a cyber incident. When the voyage data recorder was examined, this speculation was shown to be wrong in this case. However, as long-time cyber control systems expert Joe Weiss noted, the potential for cyber disruption still exists. Despite the ship’s relative youth, the latest marine electronics likely installed for control and navigations do not resolve the vulnerabilities discussed earlier. The recent DefCon exercise is not a one-off example of success in simulated seahacking. Concurrent with the actual grounding of the Ever Given, a team of doctoral students competed in a NavalX “Hack the Machine” exercise — using the same “Grace” maritime system as DefCon — in order to determine if “hackers” could successfully attack maritime systems remotely through a cloud network. The team succeeded, “hacking and crashing the [fictional ship’s] cyber security monitoring system.” These oversights are major safety and security issues currently left unaddressed. One reason is a gap in crew skills and the costs of maintaining cyber secure systems while underway. Leaving poor default administrative passwords on essential systems means that attackers can take control of those systems. Shipping as a Cyber Campaign Weapon Attackers will not ignore the opportunities presented by poor maritime cyber security. A cyber campaign can provide a good enough return on investment in either economic or political benefits to make it attractive, and possibly even lucrative. American adversaries such as China, Russia, and Iran learn from these exploits and integrate them in larger cyber-enabled campaigns. Russia, for example, has spoofed a ship’s GPS at least 7,910 times between 2016 and 2019, affecting about 1300 commercial ships. In 2017, North Korean navigation jamming was said to be behind the forced return of hundreds of South Korean fishing vessels, and its cyber attacks led to the devastating NotPetya attacks that crippled the large Maersk shipping line the same year. In July 2021, Sky News reported the acquisition of documents said to originate from an Iranian offensive cyber unit called Shahid Kaveh, which is part of the Islamic Revolutionary Guard Corps cyber command. They present research on how to sink a cargo ship using cyber techniques and include details on the satellite communications systems used in the global shipping industry. The routine hacking of ships from space is coming. Currently the Global Navigation Satellite System constellation includes the American-run GPS, the Russian GLONASS, the European Union’s GALILEO, Japan’s QZSS, China’s BeiDou, and the Indian system known as NAVIC. Each nation’s ships tend to use their own national system. No nation’s commercial ships are as secure as necessary today, and they lag in securing the shipboard systems in the near and medium term. There is some talk of using older but functional radio wave technology as a more secure alternative to satellite-based systems, but the discussions are only just beginning. It is questionable how rapidly or widely alternatives such as eLORAN will spread. It will take investment and a sense of urgency on cyber security from major shipbuilding firms and shipping lines to accomplish this. As one researcher states, “[Electronic charting] systems pretty much never have anti-virus.” The anti-virus industry that protects land-based personal computers in the United States and Europe started over 30 years ago, but a multitude of huge ships launched during that time with complex computer architectures contain only basic cyber protection. U.S. and allied warships — as well as most of the world’s exporting economies — plan on free transit through the Suez Canal and other chokepoints. Iranian intelligence services have collected maps, means, and incentive to use maritime cyber weaknesses for Iranian campaigns. In the mid-1990s, Osama bin Laden’s al-Qaeda group experimented with a variety of attempted attacks using public transit, notably in Paris. Six years later al-Qaeda used commercial airliners against the Twin Towers in New York City on Sept. 11. The maritime cyber environment is abysmally insecure. The technical means to exploit these ships is well distributed across land-based hackers with no prior maritime systems experience. It doesn’t take much to mess with a passing ship. The opportunities are well-known, from the chokepoints and the ship dependence on external networks, clouds, and satellite navigation communications. The motivation is as varied as the adversary, ranging from the ransomware criminal, to the “just because they can” opportunist, to the state adversary and its proxies.

#### Ukraine means that attacks on megaships ensure escalation between the US and Russia

Borger 2/13/22, Reporter forn the Guardian. (Julian, Ukraine crisis: miscalculation could trigger unintended wider conflict, https://www.theguardian.com/world/2022/feb/13/ukraine-crisis-miscalculation-could-trigger-unintended-wider-conflict)

The unprecedented Russian military encirclement of Ukraine has not only brought closer the prospect of a devastating war in that country, it has also raised the risks of triggering an unintended wider conflict. The US and Nato have been adamant that their troops will not enter Ukraine no matter what happens, and the Pentagon has pulled out the 160 national guard soldiers who were acting as military advisers. This image provided by The White House via Twitter shows President Joe Biden at Camp David, Md., Saturday, Feb. 12, 2022. Biden on Saturday again called on President Vladimir Putin to pull back more than 100,000 Russian troops massed near Ukraine’s borders and warned that the U.S. and its allies would “respond decisively and impose swift and severe costs” if Russia invades, according to the White House. (The White House via AP) Biden warns Putin: you’ll pay a heavy cost if you attack Ukraine Even during the cold war, Washington and Russia made sure their forces did not clash, and Joe Biden has made clear he would seek to keep it that way. “That’s a world war when Americans and Russia start shooting at one another,” Biden said. However, the massing of Russian troops in Belarus and the deployment of a substantial Russian naval force in the Black Sea, matched on a smaller scale by Nato land, sea and air reinforcements on the alliance’s eastern flank, means there is far more military hardware in close proximity than is normal. And with proximity comes the increased danger of accidents and unintended consequences. “The risk of something going down like a mid-air collision, or a trigger-happy Russian or American, can really escalate things quickly,” said Danny Sjursen, a former army major and director of the Eisenhower Media Network. “You’re setting yourself up for accidents and miscalculation, and that’s when you can get out of control real quick, because there are domestic considerations both in Russia and in the United States. An American pilot dies – now what? I’m not saying that necessarily means we go to cataclysmic nuclear war but it escalates things.” The US national security adviser, Jake Sullivan, told CBS News on Sunday that the US had sought to be transparent about its troop deployments in eastern Europe in order “to avoid mistake, miscalculation or escalation and also to send a very clear message to Russia we will defend every inch of Nato territory”. There is a long history of close encounters over the Baltic and Black Seas. Earlier this month US jet fighters scrambled to intercept Russian warplanes operating close to Nato airspace while British and Norwegian planes took off to monitor Russian aircraft flying into the North Sea. While Russia has shut off large parts of the Black Sea to conduct its manoeuvres, Nato navies have stayed out of the immediate vicinity for now, while building up their presence in the Mediterranean. If they do decide to go through the Bosphorus in a show of strength, or to safeguard commercial shipping, the risk will rise again. Elisabeth Braw, a senior fellow at the American Enterprise Institute, said the danger was further heightened by Russia’s suspected use of “GPS spoofing”, interference with the navigational equipment of other vessels. On several occasions recently, civilian ships traveling in the Black Sea have encountered mysterious GPS troubles that showed the vessels being in a different part of the Black Sea or even on land. It was widely though the incidents were caused by Russia testing its technology. “It raises the risk for naval vessels that are in the Black Sea, which we should remember is not that big, and it’s crowded,” Braw said. “There’s enormous shipping activity in the Black Sea, and so all those crews face the risk of having no GPS.” The transfer of combat troops from Russia’s far east to Belarus has not only significantly increased the imminent threat to Ukraine, but also made eastern European Nato members increasingly nervous. “The closest training ranges in Belarus are 150 to 200km from Vilnius or Warsaw,” said Kristjan Mäe, the head of the Nato and EU department at Estonia’s ministry of defence. “This is a Russian force posture that hasn’t been there previously.” A refugee crisis at the Polish-Belarus border last year led to a close encounter between the troops facing each other, with Warsaw complaining that Belarus forces opened fire in the direction of their soldiers. “We have to remember that the people who are actually out on the frontline are very young men and women and they face enormous responsibility,” Braw said. “Yes there is a chain of command but if there is some sort of provocation or aggression, intentional or unintentional, that is directed against them, then they have to respond.” The close encounters so far have occurred in peacetime. In the event of war, nerves will be far more on edge, communications could be hampered or flooded with disinformation. “We cannot be entirely confident that in the lead-up to or during a conflict that Nato and Russia will be able to communicate, especially as current civil and military communication systems between them are not as robust or technically resilient as they should be,” Sahil Shah, a policy fellow at the European Leadership Network, said. “The world’s two largest nuclear-armed states have returned to the brink of conflict exactly 60 years after the Cuban missile crisis. If diplomacy is not pursued to the fullest extent, the risks of miscalculation and miscommunication could potentially pull in wider Europe into a devastating war. Without dialogue on how to manage de-escalation, it will be as if our leaders are running into a monsoon with newspapers over their heads.”

#### US-Russia escalation over Ukraine causes extinction

Helfand 2-8-2022, MD, is Immediate Past President of the International Physicians for the Prevention of Nuclear War, recipient of the 1985 Nobel Peace Prize, and cofounder and past president of Physicians for Social Responsibility, IPPNW’s US affiliate. He has published studies on the medical consequences of nuclear war in the New England Journal of Medicine, the British Medical Journal, and the World Medical Journal. (Ira, “Ukraine and the Threat of Nuclear War,” *The Nation*, <https://www.thenation.com/article/world/ukraine-russia-nuclear-threat/>)

As the crisis in Ukraine deepens, it is appropriate to consider what the actual consequences of war there might be. An armed conventional conflict in Ukraine would be a terrible humanitarian disaster. Last week, US government officials estimated that the fighting could kill 25,000 to 50,000 civilians, 5,000 to 25,000 Ukrainian military personnel, and 3,000 to 10,000 Russian soldiers. It could also generate 1-to-5 million refugees. These figures are based on the assumption that only conventional weapons are used. However, if the conflict spread beyond Ukraine’s borders and NATO became involved in the fighting, this would become a major war between nuclear-armed forces with the very real danger that nuclear weapons would be used—and the public debate about this crisis is utterly lacking in discussion of this terrible threat. Both sides in such a conflict would, of course, begin fighting with non-nuclear conventional weapons. But as a result of advances in technology and firepower over recent decades, these weapons possess much greater range and destructiveness than earlier models, enabling them to strike high-value targets—airbases, radar stations, command centers, logistical hubs, and so on—far behind the front lines. As the losses mounted up on both sides—and if one or the other faced imminent defeat—its leaders could feel driven to employ their tactical nuclear weapons to avert such an outcome. Both US and Russian military doctrines allow for the use of tactical nuclear weapons under such circumstances. Despite reductions in nuclear forces over the last several decades, Russia still has 1,900 tactical nuclear weapons and 1,600 deployed strategic nuclear weapons. On the NATO side, France has 280 deployed nuclear weapons and the UK, 120. In addition, the United States has 100 B-61 tactical bombs deployed at NATO bases in Belgium, Germany, Italy, the Netherlands, and Turkey, and an additional 1,650 deployed strategic warheads. If even a single 100-kiloton nuclear weapon exploded over the Kremlin, it could kill a quarter of a million people and injure a million more, completely overwhelming the disaster-response capability of the Russian capital. A single 100-kiloton bomb detonated over the US Capitol would kill over 170,000 people and injure nearly 400,000. But it is unlikely that an escalating nuclear conflict between the United States and Russia would involve single warheads over their respective capitals. Rather, it is more likely that there would be many weapons directed against many cities and that many of these weapons would be substantially larger than 100 kiloton. For example, Russia’s 460 SS-18 M6 Satan warheads have a yield of 500 to 800 kilotons. The W88 warhead deployed on US Trident submarines has a yield of 455 kilotons. A 2002 report showed that if just 300 of Russia’s 1,600 deployed strategic warheads were detonated over US urban centers, 78 million people would die in the first half hour. In addition, the nation’s entire economic infrastructure would be destroyed—the electric grid, Internet, food distribution system, transportation network, and the public health system. All of the things necessary to sustain life would be gone, and in the months following this attack the vast majority of the US population would succumb to starvation, radiation sickness, exposure, and epidemic disease. A US attack on Russia would produce comparable devastation there. And if NATO were involved, most of Canada and Europe would suffer a similar fate. Still, these are just the direct effects of the widespread use of nuclear weapons between NATO and Russia. The global climate effects would be even more catastrophic. Recent studies have confirmed the predictions, first advanced in the 1980s, that large-scale use of nuclear weapons would cause abrupt, catastrophic global cooling. A war involving the full deployed arsenals of the US and Russia could loft up to 150 teragrams (150 million metric tons) of soot into the upper atmosphere, dropping average temperatures around the world as much as 18 degrees Fahrenheit. In the interior regions of North America and Eurasia temperatures would drop 45 to 50 degrees, to levels not seen since the last ice age, producing a disastrous decline in food production and a global famine that might kill the majority of humanity. Even a more limited war involving just 250 warheads in the 100 kiloton range could drop average global temperatures by 10 degrees, enough to trigger a famine unprecedented in human history, which would almost certainly bring the end of modern civilization. The enormity of the risk inherent in the current game of nuclear chicken between the US and Russia demands a fundamental change in their relation to each other, and in the equally fraught relation between the US and China. The great powers can no longer pursue a zero-sum game to see who will come out on top. It is possible that one of them will emerge on top of the heap—but the heap may well be a global ash pile. Nuclear weapons are a discrete manmade threat to the survival of our species. Their elimination could be achieved within a decade if the leaders of the nuclear-armed states were committed to doing so. And the process of negotiating a verifiable, enforceable timetable for dismantling these weapons would establish a new cooperative paradigm in international relations that would enable them to address the other, more complex existential threat posed by the climate crisis. The elimination of nuclear weapons is not some pie-in-the-sky fantasy. It is an absolute necessity for our continued survival. We have not survived this far into the nuclear era because of wise leadership, or sound military doctrine, or infallible technology. As Robert McNamara famously observed, “We lucked out. It was luck that prevented nuclear war.” A hope for continued good luck is an insane security policy. A determination to eliminate these weapons is a policy grounded in reality, and it offers us the only acceptable path forward.

### 1AC — Plan

#### The United States federal government should substantially increase its prohibitions of anticompetitive vessel sharing agreements involving the acquisition, use, and sharing of mega-ships above 10,000 TEU capacity in container shipping.

### 1AC — Solvency

#### Solvency —

#### Prohibiting agreements forces a shift away from megaships

Haralambides 19, Professor of Maritime Economics and Logistics at Erasmus University Rotterdam. (Hercules, 2019, Gigantism in container shipping, ports and global logistics: a time-lapse into the future Maritime Economics & Logistics volume 21, pages1–60, https://link.springer.com/article/10.1057/s41278-018-00116-0)

Such consolidation in an industry that is already highly concentrated is bound to take place under the increasing scrutiny of the regulator who, with the final consumer in mind, is likely to encourage more competition rather than further consolidation. If the liner shipping market thus becomes more open and competitive in the future, i.e. if alliance agreements regarding vessel sharing, investment planning, etc. are scrutinized more closely for their compatibility with competition law, as I expect, the joint filling of the ship will become more difficult and ship sizes shall by necessity decrease, together with an increase in the number of ports of call. Low prices would then be achieved through higher competition rather than big ship sizes. In such a scenario, shipping companies will be forced to provide the services their customers want, rather than the ones they find it convenient to offer. Shippers do not like too much transshipment and, if they could help it, they would like their container as close to them as possible. Reduction in ship size and more direct calls could thus follow the example of the air-transport industry. The most common jet flying across the Atlantic is not the 420-seat 747 jumbo but the 200 plus-seat Boeing 767. Eight out of 10 transatlantic planes are twin-engine craft such as the 767, its bigger brother the 777, or the various airbuses. This taste for smaller international jets reflects the fact that travellers now like to shun big international hubs such as London and New York and fly directly to their destinations. This is changing the international market into a web of direct intercontinental flights rather than one big air-bridge between London and New York.

#### A reduction in ship-size leads to a more competitive industry

Haralambides 19, Professor of Maritime Economics and Logistics at Erasmus University Rotterdam. (Hercules, 2019, Gigantism in container shipping, ports and global logistics: a time-lapse into the future Maritime Economics & Logistics volume 21, pages1–60, https://link.springer.com/article/10.1057/s41278-018-00116-0)

The impact of alliances on container shipping and ports I just stated that the gigantism in shipping has been induced by both port competition and shipping alliances. Indeed, without the ability to use each other’s ships, no carrier alone would be able to achieve a capacity utilization high enough to justify the use of present day mega-ships, while at the same time offering the frequency that shippers demand. But carriers have gone a step too far: At the time of writing, three alliances carry 80% of global trade. Such consolidation, in an industry that is already highly concentrated, is bound to take place under the increasing scrutiny of the regulator who, with the final consumer in mind, is likely to encourage more competition rather than further consolidation. If this happens, i.e., if container shipping becomes more open and competitive in the future, and alliance agreements regarding vessel sharing, investment planning, etc. are scrutinized more closely for their compatibility with competition law, as I expect, the joint filling of the ship will become more difficult and ship sizes shall by necessity decrease, together with an increase in the number of ports of call. Low prices would then be achieved through more competition rather than big ship sizes. This is more so when it is doubtful if the economies of scale in shipping are passed on to the final consumer, as required by the consortia block exception from the provisions of competition law in Europe.Footnote51

#### Enforcement in shipping is effective and ensures compliance

Consadine 21, Attorney with Seward & Kissell LLP. (Michael, Shipping Companies Beware: Antitrust Challenges Ahead as DOJ Focuses On Industry, <https://www.sewkis.com/publications/shipping-companies-beware-antitrust-challenges-ahead-as-doj-focuses-on-industry/>)

In response to U.S. President Joseph Biden’s July 9, 2021 Executive Order to enhance competition and antitrust enforcement, the U.S. Federal Maritime Commission (“FMC”) entered into a Memorandum of Understanding (“MOU”) with the Antitrust Division of the U.S. Department of Justice (“DOJ”) to facilitate criminal investigations of violations of U.S. laws. Given that shipping companies and their employees may be separately charged by DOJ regardless of their physical location and face draconian penalties upon conviction, it is incumbent for all shipping companies – foreign and domestic – to monitor these recent developments and take steps to minimize the likelihood of harmful consequences, including by establishing or enhancing existing compliance programs.

#### Private antitrust action is necessary to deter international collusion

Lande 16, Professor of Law at the University of Baltimore School of Law, Director of the American Antitrust Institute. {Robert; Spring 2016; Antitrust, “Class Warfare: Why Antitrust Class Actions Are Essential for Compensation and Deterrence,” <https://scholarworks.law.ubalt.edu/cgi/viewcontent.cgi?article=2019&context=all_fac>)

OUR RECENT EMPIRICAL STUDIES demonstrate five reasons why antitrust class action cases are essential: (1) class actions are virtually the only way for most victims of antitrust violations to receive compensation; (2) most successful class actions involve collusion that was anticompetitive; (3) class victims’ compensation has been modest, generally less than their damages; (4) class actions deter significant amounts of collusion and other anticompetitive behavior; and (5) anticompetitive collusion is underdeterred, a problem that would be exacerbated without class actions. Recent court decisions undermine class action cases, thus preventing much effective and important antitrust enforcement.1 Class Actions Are Virtually the Only Way for Most Victims of Federal Antitrust Violations to Receive Compensation The antitrust statutes provide that violations result in automatic treble damages for the victims.2 The legislative history 3 and case law indicate that compensation of victims is a goal, perhaps the dominant goal, of antitrust law’s damages remedy.4 Class actions play an essential role in ensuring that the treble damages remedy serves its intended function of “protecting consumers from overcharges resulting from price fixing.”5 As the Supreme Court noted, “[C]lass actions . . . may enhance the efficacy of private [antitrust] actions by permitting citizens to combine their limited resources to achieve a more powerful litigation posture.”6 Accordingly, “courts have repeatedly found antitrust claims to be particularly well suited for class actions . . . .”7 Without class actions, cartels and other antitrust violators that inflict widespread economic harm would have little to fear from the treble damages remedy. This is because, as a practical matter, class action cases are virtually the only way for most victims of anticompetitive behavior to receive compensation.8 A 2013 study that Professor Joshua Davis and I conducted documents the benefits of private enforcement by analyzing 60 of the largest recent successful private U.S. antitrust cases (defined as suits resolved since 1990 that recovered at least $50 million in cash for the victims9 ). These actions returned a total of $33.8–$35.8 billion in cash to victims of anticompetitive behavior.10 These figures do not include products, discounts, coupons, or the value of injunctive relief or precedent—only cash.11 Consequently, these totals significantly understate the actual benefits of this litigation to the victims involved. And, of course, this study covered only 60 suits (albeit 60 of the largest private recoveries) out of the many hundreds of private cases filed in the United States during this period. Of these 60 large private cases, 49 were class action suits.12 These cases recovered a total of $19.4–$21.0 billion—the majority of the amount analyzed in our study.13 Since these were among the largest private actions ever filed, specific conclusions based upon these results may not generalize perfectly to all class action cases. They do suggest, however, that without class action cases, effective and significant victim compensation would be reduced dramatically. Most Successful Class Actions Involve Collusion that Was Anticompetitive Almost every private antitrust case that results in a remedy does so through a settlement,14 so the underlying merits of the plaintiffs’ claims usually have not been definitively assessed by a court or jury. Critics sometimes use this fact to support assertions that class actions usually are meritless, that plaintiffs often receive huge sums from cases not involving anticompetitive conduct, and that private antitrust actions often amount to legalized blackmail or extortion.15 Antitrust class actions arise in widely varied market and factual settings, and views about the merits of specific cases and the litigation risks involved vary as well. This makes it extremely difficult to draw objective conclusions about the merits of settlements. Nevertheless, there are good reasons to believe that the vast majority of class action cases in the Davis/Lande study involved legitimate claims. Forty-one of the 49 class actions involved allegations of collusion,16 and the same conduct supporting the settlements gave rise to criminal penalties in 20 cases; to civil relief by the FTC or DOJ in 8 cases; to civil relief by a state or other governmental unit in 9 cases; to a trial that the defendants lost and that was not overturned on appeal in 7 cases; to a class being certified in 22 cases; and to plaintiffs surviving or prevailing at summary judgment in 12 cases.17 Overall, 44 of the 49 class action suits (90 percent) exhibited at least one of these forms of legal validation as to their merits. (The 5 actions that did not have at least one of these indicia settled too early for a substantive evaluation of their merits).18 These results are broadly consistent with a finding that Professor John Connor derived from an analysis of 130 private recoveries worldwide in international cartel cases for which he could obtain the necessary data.19 He found that of the 50 largest worldwide settlements, measured by their monetary recoveries in constant dollars, 49 had been filed against international cartels.20 Of these, 51 percent were follow-ups to successful DOJ prosecutions, and another 8 percent were filed after fines by the EC or other non-U.S. antitrust authorities.21 Using a different data set, Connor and I found that 36 of 71 (also 51 percent) successful U.S. class action recoveries followed successful DOJ criminal cases.22 This data does not prove that these or any other specific class action cases involved anticompetitive conduct. But critics who assert that most antitrust class actions are little more than legalized blackmail rely only on anecdotes, hypotheticals, and opinions (often of defendants in the cases), without support from studies, and with no reliable empirical evidence that the actions lack merit or that settlement amounts are excessive compared to the anticompetitive harm.23 To be fair, one should compare the above indicia of validity to the absence of any systematic evidence underpinning the critics’ charges. Critics also sometimes assert that remedies typically secured in class action settlements are at best dubious and often are completely worthless, consisting of useless coupons, meaningless discounts, and obsolete products. They argue with regard to cash payments (without providing even a single anecdote) that “issuing [class members] a check is often so expensive that administrative costs swallow the entire recovery.”24 According to many critics the only ones to benefit from private enforcement are the attorneys involved.25 The critics who make these charges, however, never offer evidence beyond opinions, hypotheticals, and occasional anecdotes. Indeed, for the 49 antitrust class action cases that Davis and I studied, the data show that, overall, only a total of approximately 20 percent of the recoveries went for attorney fees (14.3 percent) or claims administration expenses (4.1 percent).26 The rest was returned to the victims. This result is consistent with older estimates of legal fees in antitrust class action cases in the 6.5 to 21 percent range.27 Critics also sometimes examine what happened in other areas of law and assert that these outcomes occur in contemporary antitrust class action suits as well. But they never offer systematic evidence from antitrust cases to support their opinions.28 Interestingly, only one of the lawsuits in the Davis/Lande study involved a coupon remedy—the Auction Houses cases. However, those coupons were fully redeemable for cash if they were not used for five years.29 The actions Davis and I studied were among the largest antitrust class actions ever brought and therefore might not be representative of class action cases in general. Abuses surely occur from time to time in class action cases, as they do almost everywhere in the legal system. But a majority of the critics’ most egregious examples are from other areas of law or are quite old.30 No one has ever presented reliable evidence showing that such examples occur frequently or are typical of contemporary antitrust class action cases.31 Class Victims’ Compensation Has Been Modest, Generally Less than Their Damages Even though the $19.4–$21.0 billion that Davis and I showed had been returned to victims in 49 class action cases is a significant figure when viewed in absolute terms, it probably was not nearly enough to fully compensate all of the victims involved. To ascertain “Recovery Ratios” (the percentage of the illegal overcharges that was obtained in the form of monetary payments to victims in private actions), Professor Connor and I assembled a sample consisting of every completed private case against cartels discovered from 1990 to mid-2014 for which we could find the necessary information. For each of these 71 cases we assembled neutral scholarly estimates of affected commerce and overcharges and compared these estimates to the damages secured in the private actions filed against these cartels.32 The victims of only 14 of the 71 cartels (20 percent) recovered their damages (or more) in settlement. Only seven (10 percent) received more than double damages. The rest— the victims in 57 cases—received less than their damages. In four cases, the victims received less than 1 percent of damages, and in 12 cases they received less than 10 percent of damages. Overall, the median average settlement was 37 percent of single damages. The unweighted mean settlement (a figure that gives equal weights to the cartels that operated in large and small markets) was 66 percent. The mean and median average Recovery Ratios are higher (81 percent and 52 percent, respectively), for the 36 cases that were follow-ups to DOJ prosecutions that imposed criminal sanctions.33 Because these Recovery Ratios do not include any valuations of products, discounts, coupons, or the value of injunctive relief or precedent, the actual worth of these remedies to the victims is greater than the figures reported above. Nevertheless, it fairly can be concluded that antitrust class action cases often return important recoveries to victims that are significant in absolute terms, but usually are modest when measured against the sizes of the overcharges involved. Class Actions Deter Significant Amounts of Collusion and Other Anticompetitive Behavior Private class action cases serve to deter a substantial amount of anticompetitive activity, perhaps even more than the highly acclaimed anti-cartel program of the U.S. Department of Justice, which often results in prison sentences for cartel participants.34 Virtually every contemporary analysis of antitrust enforcement assumes that deterrence is an important purpose of the private treble damages remedy provision.35 The Supreme Court has underscored this point. For example, in Reiter v. Sonotone Corp., the Court explained: Congress created the treble-damages remedy of § 4 precisely for the purpose of encouraging private challenges to antitrust violations. These private suits provide a significant supplement to the limited resources available to the Department of Justice for enforcing the antitrust laws and deterring violations.36 The government, however, cannot be expected to do all of the necessary enforcement for a number of reasons, including budgetary constraints, “undue fear of losing cases; lack of awareness of industry conditions; overly suspicious views about complaints by ‘losers’ that they were in fact victims of anticompetitive behavior; higher turnover among government attorneys; and the unfortunate, but undeniable, reality that government enforcement (or non-enforcement) decisions are, at times, politically motivated.”37 A recent study highlights the deterrence benefits of private enforcement by comparing the likely deterrent effects of private antitrust enforcement to that of criminal anti-cartel enforcement by the Antitrust Division.38The surprising result is that private enforcement—and even just antitrust class action cases considered separately—probably deters more anticompetitive behavior. From 1990 through 2011 the total of DOJ corporate antitrust fines, individual fines, and restitution payments totaled $8.2 billion. (Dis)valuing a year of prison or house arrest at $6 million39 adds another $3.6 billion in total deterrence from the DOJ’s anti-cartel cases, yielding a total of approximately $11.8 billion. This is a substantial figure, and the possibility of incurring such sanctions surely has deterred a significant number of would-be antitrust violators.40 Nevertheless, these penalties amount to approximately 50 percent of the $19.4–$21.0 billion in cash alone (not including products, etc.) secured by just the 49 studied class cases that were completed during the same period.41 These private cases were only a portion of the hundreds of successful class action cases completed during this period (albeit they were many of the largest).42 The total amount of payouts in class action cases is so high that it probably deters more anticompetitive conduct than even the DOJ’s anti-cartel enforcement efforts.

#### Empirics prove antitrust enforcement deters cartelization

Bos et al 15, Professor of Economics Department of Organisation and Strategy Maastricht University. (Iwan, with Stephen Davies Centre for Competition Policy & School of Economics University of East Anglia and Peter L. Ormosi Centre for Competition Policy & Norwich Business School University of East Anglia, , The deterrent effect of anti-cartel enforcement: A tale of two tails <https://ueaeco.github.io/working-papers/papers/ccp/CCP-14-06v2.pdf>)

The empirical contribution of this paper derives from a novel comparison of the distributions of overcharge observed for cartels between jurisdictions which did and did not prohibit cartels. It shows that the distribution for legal cartels has significantly more mass in its tails than does the distribution for illegal cartels. This finding is robust to controlling for the time period in which the cartels occurred and the perceived quality of the sources of the data. We suggest it has two potential explanations, not necessarily mutually exclusive. It may be that anti-cartel law is most effective in deterring very low or very high overcharge cartels, or it may be that such cartels are least likely to be detected in a world where cartels are illegal. The remainder of the paper is designed to distinguish which of these potential explanations is more likely. To do this, we present a fairly general theoretical model which is representative of the previous literature on cartel formation. This establishes the conditions under which we can deduce that its is deterrence which drives the empirical result. We argue that only relatively weak assumptions are required: in essence, low-overcharge cases are deterred by fines which have (at least partly) a fixed element, while high-overcharge cases, in the face of a higher probability of detection, either moderate their overcharge to lessen the likelihood of detection and lower the expected penalty (composition deterrence), or entirely abandon the cartel (frequency deterrence) because incentives become incompatible. This has some potentially important implications. In the previous literature, evidence on the nature of detected cartels has been widely used as a key source of information about the nature of collusion in the real world. But it now needs to be underlined that this evidence emanates only from cases which are not deterred, and are detected, by active anti-cartel enforcement policy. In that this ignores cases 21 which are deterred, it may seriously underestimate the welfare-enhancing impact of policy, especially insofar as it is the most harmful cases which are most likely to be deterred.18 This also raises doubts about conventional empirical wisdoms on the structural factors which are conducive to collusion. The evidence of this paper is confined to overcharge, but it is not unlikely that overcharge will be related to the structure of the cartel (number and asymmetries of members, duration, etc). If so evidence from previous studies on the structure and stability of cartels may require revisiting.

#### Shipping antitrust enforcement effectively deters

Smith 22, Attorney Reed Smith LLC. (Reed Smith, Antitrust insights in shipping – recapping 2021 and preparing for 2022, https://www.reedsmith.com/en/perspectives/2022/01/antitrust-insights-in-shipping-recapping-2021-and-preparing-for-2022)

In the same month that EO 14036 was issued, the FMC and the Antitrust Division of the Department of Justice (DOJ) entered into a memorandum of understanding relative to “Cooperation with Respect to Promoting Competitive Conditions in the U.S.-International Ocean Liner Shipping Industry.” The agencies agreed to share information “for the purpose of improving each agency’s effectiveness in carrying out its respective legal responsibilities.” They also agreed to confer, at least annually, to address law enforcement, regulatory, and other matters related to competitive conditions in the international ocean liner shipping industry. This is the first-ever agreement of this nature between the two agencies. Importantly, unlike the FMC, the DOJ has criminal enforcement capabilities. Specifically, the DOJ has jurisdiction to enforce U.S. antitrust laws not only against domestic business activities but also against foreign business activities that have a substantial and intended effect in the United States, up to and including criminal prosecution. In recent years, the DOJ has indicted a foreign ocean liner shipping company and its executives in relation to a conspiracy regarding allocation of customers and routes, bid rigging, price fixing, and other anticompetitive conduct in the international roll-on, roll-off ocean shipping industry, resulting in guilty pleas, hefty fines, and prison time for individuals, not just for the company and its executives, but also for four other competitors that were found to have participated in the conspiracy. The DOJ’s prosecutions followed a European Union antitrust probe into the container line shipping industry, which was resolved in 2016 when 14 companies entered into legally binding commitments to increase price transparency for customers and reduce the likelihood of coordinating prices. The FMC, on the other hand, has jurisdiction to investigate and sanction ocean carriers that implement unfair and unreasonable practices in violation of the U.S. Shipping Act. Specifically, the FMC brings enforcement actions and issues civil penalties against ocean carriers; the FMC also adjudicates private party actions brought by cargo owners and awards reparations. The FMC has intensified its efforts to use these tools against ocean carriers, in particular in relation to their demurrage and detention practices during the COVID-related port congestion crisis. The most recent illustrations are three policy statements issued by the FMC last month to encourage shippers to file private party complaints against ocean carriers, either individually or collectively, and to protect them from retaliation and attorney fees awards when such actions were brought in good faith. In one of these statements, the FMC recognized that private actions are important to alert the agency of potential violations and to deter unfair and unreasonable conduct by carriers.

# 2AC

## Advantage

#### Russia war causes extinction

Cotton-Barratt 17 (Owen Cotton-Barratt, et al, PhD in Pure Mathematics, Oxford, Lecturer in Mathematics at Oxford, Research Associate at the Future of Humanity Institute, Existential Risk: Diplomacy and Governance, <https://www.fhi.ox.ac.uk/wp-content/uploads/Existential-Risks-2017-01-23.pdf>)

The bombings of Hiroshima and Nagasaki demonstrated the unprecedented destructive power of nuclear weapons. However, even in an all-out nuclear war between the United States and Russia, despite horrific casualties, neither country’s population is likely to be completely destroyed by the direct effects of the blast, fire, and radiation.8 The aftermath could be much worse: the burning of flammable materials could send massive amounts of smoke into the atmosphere, which would absorb sunlight and cause sustained global cooling, severe ozone loss, and agricultural disruption – a nuclear winter.

According to one model 9 , an all-out exchange of 4,000 weapons10 could lead to a drop in global temperatures of around 8°C, making it impossible to grow food for 4 to 5 years. This could leave some survivors in parts of Australia and New Zealand, but they would be in a very precarious situation and the threat of extinction from other sources would be great. An exchange on this scale is only possible between the US and Russia who have more than 90% of the world’s nuclear weapons, with stockpiles of around 4,500 warheads each, although many are not operationally deployed.11 Some models suggest that even a small regional nuclear war involving 100 nuclear weapons would produce a nuclear winter serious enough to put two billion people at risk of starvation,12 though this estimate might be pessimistic.13 Wars on this scale are unlikely to lead to outright human extinction, but this does suggest that conflicts which are around an order of magnitude larger may be likely to threaten civilisation. It should be emphasised that there is very large uncertainty about the effects of a large nuclear war on global climate. This remains an area where increased academic research work, including more detailed climate modelling and a better understanding of how survivors might be able to cope and adapt, would have high returns.

It is very difficult to precisely estimate the probability of existential risk from nuclear war over the next century, and existing attempts leave very large confidence intervals. According to many experts, the most likely nuclear war at present is between India and Pakistan.14 However, given the relatively modest size of their arsenals, the risk of human extinction is plausibly greater from a conflict between the United States and Russia. Tensions between these countries have increased in recent years and it seems unreasonable to rule out the possibility of them rising further in the future.

## Solvency

## T — Scope

#### C/I — the scope of antitrust is bounded solely by legislative exemptions

Garubo, citing Supreme Court, 84, Senior Vice President and Corporate Secretary, Commercial Credit Group, Juris Doctor, magna cum laude, from California Western School of Law (Angelo, “Severing the Legislative Veto Provision: The Aftermath of Chada,” *California Western law Review,* 21.1)

A proviso is a clause engrafted on an enactment to restrain or modify the enacting clause or to except from its operation something which otherwise would have been within it. It also acts to exclude or prevent possible grounds of misinterpretation. It is designed to prevent an interpretation which extends that statute to cases not intended by the legislature to be brought within its purview.140 By its very nature a veto provision can be considered as a proviso to the rest of the statute. The function of a veto provision is to allow Congress to exercise post enactment control over the executive. 141 It allows them to prevent officials of the executive branch from implementing a statute in a way which is inconsistent with the intent of the legislature.142 By "vetoing" an act of the executive branch, Congress could insure that any implementation of a statute was consistent with the purview of that statute. 143 The Department of Education Organization Act' 44 authorized the Secretary of Education, an executive official, to prescribe rules and regulations as he determines are necessary to administer and manage the functions of the department. 145 The statute also contained a veto provision which stated that rules and regulations promulgated under the Act could be disapproved by a concurrent resolution of Congress.146 As this example indicates, veto provisions act as provisos to the main body of a statute by allowing Congress to retain control over the implementation of the statute by the executive branch. Since a veto provision can qualify as a proviso, the rule in Davis v. Wallace 147 and Frost v. Corporation Commission 148 can be applied to show that the legislative intent test is inadequate to determine if a veto provision should be severed. In Davis and Frost, the Supreme Court ruled that a proviso could not be severed if it was originally written into the statute. 149 The Court reasoned that severing such a provision would result in an extension of the scope of the statute.' 50 Such an extension would be contrary to the legislative intent of a statute by including subject matter which the legislature expressly chose to exclude.151 The Davis and Frost analysis can be applied to the "congressional veto" because (1) the veto provision can be considered a proviso 152 and (2) severing a veto provision will expand the scope of the statute contrary to legislative intent. 5 3 By severing a veto provision the executive branch would be free to expand or limit the scope of a statute through its implementation. Such an expansion or limitation would constitute a defacto contradiction of legislative intent by altering the purview of the statute.' 54 A veto provision is a control mechanism.' 55 Its mere presence in a statute indicates the legislature's desire to restrict the scope of that statute. 5 6 By removing it, the court would affect a fundamental change in the nature of the statute, which was not accounted for when the legislature enacted the law. 157 Because a veto provision is a proviso, its excise from a statute would contradict legislative intent. A test which uses legislative intent to determine if a veto provision is severable could only find that the provision is not severable. Thus, when literally applied, the legislative intent test is not adequate to determine if a veto provision should be severed from its statutory framework.

## T — Wholesale

#### Counter-interpretation---the private sector includes an industry.

The Law Dictionary N.D., (The Law Dictionary: Featuring Black's Law Dictionary Free Online Legal Dictionary 2nd Ed. “Private Sector” , <https://thelawdictionary.org/private-sector/> , date accessed 9/11/21)

What is PRIVATE SECTOR? An industry that is composed of private companies. The corporate sector and the personal sector are encompassed in the private sector and they are responsible for the allocation of the majority of resources within the economy.

#### The private sector includes subsets---refers to many different actors.

Walker and Hofstetter 16 (Katharina Walker is Advisor for vocational skills development and Helvetas’ youth focal person. Sonja Hofstetter joined Swisscontact in Cambodia in July 2016. She is the Quality Assurance Manager and Deputy Team Leader of the Skills Development Programme. “ Study on Agricultural Technical and Vocational Education and Training (ATVET) in Developing Countries” Federal Department of Foreign Affairs FDFA, Swiss Agency for Development and Cooperation SDC, Global Programme Food Security, 25.1.2016, <https://www.shareweb.ch/site/Agriculture-and-Food-Security/focusareas/Documents/ras_capex_ATVET_Study_2016.pdf> , date accessed 7/19/21)

In many developing countries, the private sector1 [[BEGIN FOOTNOTE 1]] 1 The private sector is not perceived as a homogenous mass even though the terminology might suggest this to be the case. In this study, the term “private sector” is used to circumscribe the various actors such as small and medium sized companies, large companies, sectorial associations, business associations, chambers of commerce, etc.[[END FOOTNOTE 1]] faces challenges in finding adequately skilled employees. This also holds true for sectors linked to agriculture, e.g. processing, distribution, marketing, etc. The development of ATVET from a purely productivity-oriented approach to provide broader and more specialised skills sets along agricultural value chains is likely to raise the interest of private sector actors. This incentive can result in a stronger and more sustainable financial and conceptual engagement of employers in ATVET.

#### ‘By’ only requires anticompetitive practices resulting from private sector action.

Michigan Court of Appeals 10 (SAWYER, J. Opinion in DEQ. v. Worth Twp., 808 N.W.2d 260, 289 Mich. App. 414 (Ct. App. 2010). Google scholar caselaw. Date accessed 7/23/21).

Second, we look to the meaning of the phrase "by the municipality." This phrase is key because it answers plaintiffs' contention that MCL 324.3109(2) imposes responsibility for a discharge on a municipality without regard to the source of the discharge. That is, plaintiffs argue that any discharge of raw sewage within a municipality constitutes prima facie evidence of a violation by the municipality even if the municipality is not the source of the discharge. We disagree. The word "by" has many meanings. For its meaning as a nonlegal term, we look to a layman's dictionary rather than a legal one. Horace v. City of Pontiac, 456 Mich. 744, 756, 575 N.W.2d 762 (1998). We find these definitions from the Random House Webster's College Dictionary (1997) to be particularly helpful: "10. through the agency of" and "12. as a result or on the basis of[.]" Thus, MCL 324.3109(2) imposes responsibility on the municipality not when the violation merely occurs within the boundaries 264\*264 of the municipality, but when the violation occurs "through the agency of" the municipality or "as a result" of the municipality, that is to say, when it is the actions of the municipality that lead to the discharge.

## CP — Guidance

#### 2---Perm do both. FMC takes over, and crowds out public enforcement. Hybrid efforts relieve agency capital and spark innovation

Bornstein 19, Associate Professor of Law, University of Florida Levin College of Law. (Stephanie, “Public-Private Co-Enforcement Litigation”, 104 Minn. L. Rev. 811, pg. 826-828)

3. Economic Theory Rationales

A separate, but related group of considerations for hybrid enforcement grows out of economic theory. The chief economic argument in favor of hybrid enforcement systems is that they increase overall enforcement of the law while also shifting the cost of the increase away from the public fisc.75 In his germinal work on the private attorney general, John Coffee describes this advantage, noting that “the role of private litigation is not simply to secure compensation for victims, but is at least equally to generate deterrence . . . by multiplying the total resources committed to the detection and prosecution of . . . prohibited behavior.”76 Enabling private enforcers to litigate was intended as a “necessary supplement” to public agency enforcement: 77 as Coffee explains, the “private attorney general is induced by the profit motive to seek out cases that otherwise might go undetected.”78 A hybrid system that incentivizes private attorneys to pay up front for the cost of litigation with the promise of attorneys’ fees or a bounty reward provides added enforcement with no cost to cash-strapped public agencies.79 Indeed, as Gilles suggests, reliance on private enforcement to supplement public agency budgets is now both assumed and expected.80

A second economic rationale for hybrid enforcement is that it fosters healthy competition that can lead to innovation and ensure robust enforcement.81 Public and private enforcers competing for fines or damages may work harder and faster to beat each other to the punch in filing, and succeeding in, litigation.82 The fact that Congress has created a private right of action to encourage enforcement of any particular statute also sends a message—as Burbank et al. describe it, a “clear and consistent signal that violations will be prosecuted,” which “insur[es] against the risk that a system of administrative implementation will be subverted.”83 Clopton adds that redundant authority to enforce public law prevents under-enforcement because having two parallel enforcers ensures that either will make up for the other’s preferences or errors in selecting and prosecuting cases.84

#### 3---guidance isn’t effectively binding.

**Levin 18** (Ronald M. Levin, William R. Orthwein Distinguished Professor of Law, Washington University in St. Louis, 2018, ADMINISTRATIVE LAW REVIEW, "RULEMAKING AND THE GUIDANCE EXEMPTION", page 297, http://www.administrativelawreview.org/wp-content/uploads/2018/10/ALR-70.2\_Levin.pdf)//veronica

In short, despite Pacific Gas, a guidance document can legitimately play an influential role that does not rise to the level of being “binding.”163 This distinction is important, because it enables the law to accommodate the manifold ways in which agency personnel and private interests consult and use guidance documents. This understanding of the functions of guidance harmonizes with the thrust of the institutional pronouncements from government entities and professional associations that I summarized in an earliersection.164 Those pronouncements have affirmed the positive functions that guidance documents serve in public administration, such as structuring internal conduct and showing members of the public what practices would be risky and which would be safe. This perspective also harmonizes with the substantial body of administrative law doctrine that supports protection for reasonable reliance interests. That doctrine has roots in due process165 as well as the obligation to avoid arbitrary and capricious action.166 Most of the doctrine originated in cases involving agency adjudication; but it is relevant here because, as scholars have noted, the role of guidance documents in agency decisionmaking is directly comparable to that of an agency’s adjudicative precedents.1

#### It doesn’t stick, especially against well-resources companies.

Parrillo and Otis 18 – Nicholas R. Parrillo is Professor of Law at Yale Law School and the consultant on ACUS’s project on Agency Guidance; Lee Liberman Otis is the Chair of the Committee on Judicial Review of the Administrative Conference and Senior Vice President and Director of the Federalist Society’s Faculty Division [Nicolas R. and Lee Liberman, 3/5/18, The Regulatory Review, “Understanding and Addressing Controversies About Agency Guidance,” <https://www.theregreview.org/2018/03/05/parrillo-otis-understanding-addressing-controversies-agency-guidance/>, DOA: 7/7/21, Lowell-TT]

The remedy for this kind of problem could, theoretically, be the same as the remedy for guidance that unduly coerces regulated parties: The agency should treat the guidance flexibly on a case-by-case basis, generally adhering to the path outlined in the guidance—but not always. The idea is that an approach that allows or encourages some parties to harm others, unless done by notice and comment, should not give ironclad protection to those who may do harm.

But this may not work very well in the real world. When an agency offers “safe harbors” that are not actually 100 percent safe, it puts regulated parties in a difficult position. Flexibility also may not do much to protect regulatory beneficiaries and interested third parties. It can help in situations where these parties, or NGOs representing them, can and do participate in individual cases and argue against applying the guidance. This may happen if the cases are big and salient, and if the NGOs are well-resourced and sophisticated—as seems to be the case for some U.S. Environmental Protection Agency permitting proceedings. But often these conditions do not hold.

#### 4---notice and comment---failure to include notice-and-comment means parties THINKS it’s non-binding

**Strauss 19** (Peter L. Strauss, Betts Professor of Law Emeritus, Columbia Law School., November 2019, Environmental Law , Vol. 49, No. 3, "Domesticating Guidance", pages 782-783, https://www.jstor.org/stable/10.2307/26864)//veronica

Given the requirement of “finality” for merits review of agency action, courts facing challenges to seriously intended guidance have often used “binding in practice” formulations to hold that its adoption had required notice and comment rulemaking. This passage from Appalachian Power Co. v. Environmental Protection Agency77 (Appalachian Power) reflects reasoning often used: If an agency acts as if a document issued at headquarters is controlling in the field, if it treats the document in the same manner as it treats a legislative rule, if it bases enforcement actions on the policies or interpretations formulated in the document, if it leads private parties or State permitting authorities to believe that it will declare permits invalid unless they comply with the terms of the document, then the agency’s document is for all practical purposes “binding.”78 The understood implication is that notice and comment procedures are then required.

#### Shipping industry profits are massive

Etter & Murry ’22 — Lauren Etter and Brendan Murry; “Shipping Companies Had a $150 Billion Year. Economists Warn They’re Also Stoking Inflation;” <https://www.bloombergquint.com/business/supply-chain-crisis-helped-shipping-companies-reap-150-billion-in-2021>

[TITLE]: Shipping Companies Had a $150 Billion Year. Economists Warn They’re Also Stoking Inflation

(Bloomberg) -- Ocean shipping rates are expected to stay elevated well into 2022, setting up another year of booming profits for global cargo carriers — and leaving smaller companies and their customers from Spain to Sri Lanka paying more for just about everything.

The spot rate for a 40-foot container to the U.S. from Asia topped $20,000 last year, including surcharges and premiums, up from less than $2,000 a few years ago, and was recently hovering near $14,000. What’s more, tight container capacity and port congestion mean that longer-term rates set in contracts between carriers and shippers are running an estimated 200% higher than a year ago, signaling elevated prices for the foreseeable future.

#### Antitrust has to be a backstop — only threat of antitrust can force action — In order to grant leniency there has to be the threat of antitrust.

Stoller 21, Research Director for the American Economic Liberties Project. (Matt, Too Big to Sail: How a Legal Revolution Clogged Our Ports, <https://mattstoller.substack.com/p/too-big-to-sail-how-a-legal-revolution?utm_source=url>)

Finally, we have to restore mid-sized ships and ports. In Portland, Maine, a mid-size port that serves mid-size ships is now thriving, serving both exporters and importers in a reasonably smooth manner. That’s a good model. Public investment in new shipping firms would be useful here. Of course, we can’t undo 20 years of ultra-large container ship construction, but we can end incentives for building more of them by charging harbor maintenance fees based on ship size, or otherwise forcing carriers to internalize the full cost of big ships. This will have to be on a national scale, with the threat of antitrust, so carriers can’t play U.S. ports off one another.

#### Economy stable, but counterplan shatters it with deficit spending that spurs inflation.

Schultz et al. 21 (George, former US Secretary of the Treasury and Secretary of State, “America’s Excessive Government Spending Must Stop,” 23 February 2021, <https://www.project-syndicate.org/commentary/risks-of-excessive-us-government-spending-by-george-p-shultz-et-al-2021-02>, DOA: 9-11-2021) //Snowball //strikethrough of rhetoric

STANFORD – Many in Washington now seem to think that the US federal government can spend a limitless amount of money without any harmful economic consequences. They are wrong. Excessive federal spending is creating grave economic and national-security risks. America’s fiscal recklessness must stop.

The COVID-19 crisis has provided the latest impetus for government spending, even to the point of steering the American mindset toward socialism – a doctrine that has always harmed people’s well-being. But some say there is no need to worry about excessive spending. After all, they argue, record-low interest rates apparently show no sign of increasing. The economy was humming along just fine until the pandemic hit, and will no doubt rebound strongly when it ends. And is there even a whiff of inflation in the air?

This thinking is dangerous~~ly short-sighted~~. The fundamental laws of economics have not been repealed. As one of us (Cogan) demonstrated in his book The High Cost of Good Intentions, profligate government spending invariably has damaging consequences.

High and rising US national debt will eventually crowd out private investment, thereby slowing economic growth and job creation. The Federal Reserve’s continued accommodation of deficit spending will inevitably lead to rising inflation. Financial markets will become more prone to turmoil, increasing the chance of another big economic downturn.

Financial markets’ current relative calm and low consumer-price inflation are no cause for comfort. Previous periods of sharp increases in inflation, rapidly rising interest rates, and financial crises have followed periods of excessive debt like a sudden wind, without warning.

Shultz and Taylor’s book Choose Economic Freedom shows that economic indicators in the United States gave no hint in the late 1960s of the subsequent rapid rise in inflation and interest rates in the early 1970s. Likewise, financial markets during the years immediately preceding the 2007-09 Great Recession provided little indication of the calamity that would ensue.

## CP — FMC

#### Deterrence deficit---regulations can’t deter anticompetitive conduct.

Dogan 08, \*Stacey L. Dogan, Professor of Law, Northeastern University; \*Mark Lemley, William H. Neukom Professor, Stanford Law School; of counsel, Keker & Van Nest LLP; (October 2008, “Antitrust Law and Regulatory Gaming”, https://scholarship.law.bu.edu/cgi/viewcontent.cgi?article=1873&context=faculty\_scholarship)

Our goal in this paper is not to persuade the reader that these particular examples of regulatory gaming violate the antitrust laws (though we think they do) or that other examples, such as regulatory price squeezes, do not violate the antitrust laws. Rather, our point is that whether or not particular acts of regulatory gaming harm competition is and should be an antitrust question, not merely one that involves interpreting statutes or agency regulations. Regulatory agencies and even Congress cannot prevent gaming ex ante. Experience with the pharmaceutical industry suggests that if Congress acts to squelch one form of gaming, companies will find other ways to game the system. And even if Congress or the regulating body can surgically fix a particular type of exclusionary behavior, such an ex post response (unlike the threat of antitrust treble damages) does nothing to compensate for past harm or to deter future gaming behavior. Some level of antitrust enforcement – with appropriate deference to firm decisions about product design and affirmative regulatory decisions that affect market conditions – provides a necessary check on behavior, such as product hopping, that has no purpose but to exclude competition.

## DA — COMPETES

#### PC is low and Biden can’t use it effectively

Magary 2-17-2022, analyst @ SF Gate (Drew, “Joe Biden is a lousy president,” San Francisco Gate, https://www.sfgate.com/politics-column/article/Joe-Biden-is-a-lousy-president-16924305.php)

Joe Biden is out of excuses. He never should have had any. He won the 2020 election decisively. He took over the White House while having both houses of Congress in his pocket. He was a veteran of the Hill who, I foolishly presumed, understood not only how things are done in Washington, but how that process has evolved since he first won elected office in 1973. Best of all, he wasn’t Donald Trump. Those are all good things, and Biden’s first 100 days showed him cashing in on all of that political capital. He presided over a comprehensive and free vaccine rollout, and he crafted a nearly $2 trillion stimulus fund that included direct payments, paid leave, extended unemployment benefits, small business grants and a trove of other goodies. He has done precious little ever since. Democrats failed to get a minimum wage increase into that stimulus bill, with eight Democrats even voting against it. That failure would soon repeat itself in every other vital initiative Biden tried to get off the ground. He banked his first term on passing the Build Back Better Act — an ambitious proposal that could have potentially reinforced and redesigned the American social safety net — only to have it killed by a single, awful Democratic Senator. He pivoted to a large-scale plan to protect voting rights only to have that entire project killed by a different awful Democratic Senator. He seized $7 billion in frozen Afghanistan funds and then split the baby between the Taliban and 9/11 victims. One of Biden’s former associates — a crony, really — will oversee the doling out of that money, while skimming a hefty amount of it off the top for his trouble. In many ways, it feels as if Biden’s presidency is already over. He let the unemployment benefits and tax breaks from his stimulus bill expire. A historic rise in price inflation has wiped out many gains that working class Americans made on his watch. When the omicron variant ravaged an already exhausted nation and the CDC responded with mixed messages on quarantining and mask-wearing, Biden stood idly by, exacerbating a partisan fight over virus prevention that never should have existed to begin with. Politico reported that Biden has been more apt to listen to New York Times columnist David Leonhardt for pandemic guidance than his own experts. He could have taken cues from even worse columnists over there, I suppose. Speaking of worse, Roe vs. Wade stands to be overturned roughly four months from now, and from what I can tell, Biden’s only move to prevent this calamity has been a sternly worded statement that Brett Kavanaugh will crumple up and toss into a barbecue pit. Saudi Arabia, home to Osama bin Laden and the majority of the 9/11 hijackers, is about to jack up the price of oil across the world, despite Biden’s pleading for them not to. Republicans wanna put a lock on every uterus, shred every mail-in voting ballot and throw every book about slavery into a blast furnace, and they’re succeeding. Right now. Despite having no executive power of any kind. All of Biden’s adversaries have counted on him proving weak and helpless, and they’ve been right in doing so. All this begs the question: Does Joe Biden even know he’s president? Does he give a s—t? After voters risked COVID and endless waits at the polls to vote him into office, and after the New Georgia Project and other grassroots organizations helped provide him with the legislative clout he needed to re-engineer this country into something better, it feels as if he has no power of any kind. He’s uninterested in confronting the student debt crisis, even though he has the ability to expunge it with a stroke of his pen. He’s shown no ambition to use the vaccine rollout to create a wider, and permanent, free health care system. Sea levels will rise a foot by 2050, but the next time I hear “Green New Deal” out of Biden’s mouth will be the first. Faced with a Federalist Society wet dream of a Supreme Court hellbent on destroying millions of lives, he formed an exploratory committee to expand the court. That committee refused to decide on court expansion one way or the other. This is where I get pissed off. All my life, Democrats have been terrified of governing. When Republicans take office, they have very little compunction about using power, and often abusing it. Joe Biden won the Democratic nomination in 2020 thanks to a bloodless Democratic power play that consolidated every other candidate’s following in order to crush Bernie Sanders. These people have it within them to be ruthless, too. So where the f—k are they? I am sick to death of this. I’m sick of voting out evil politicians only to be saddled with merely ineffective ones. I’m sick of Democrats treating every Republican victory as a winning campaign message for themselves two years down the road. I’m sick of having to actively search around for good things Biden and his party have done, like I’m trying to find a pair of lost sunglasses. Their accomplishments are rarely, if ever, self-evident. I’m sick of Kyrsten Sinema. I’m REALLY sick of Joe Manchin. I’m sick of watching American cynicism get handsomely rewarded by Biden and by his spineless compatriots. But cynicism is what’s called for at the moment. It’s not merely that Biden has been a lousy president; it’s that I’ve seen nothing to suggest that he’ll STOP being lousy. I have no faith that he’ll get his Supreme Court pick through. I have no faith that he’ll be able to resurrect Build Back Better, whether in its original form or piecemeal. I have no faith he’ll do anything monumental this year, or any other year of his term. Why would I? What has he done to give me a reason to believe in him?

#### He’s using PC on shipping reform now

Greenstein 3/2/22, partner in the Washington, D.C. office of Constantine Cannon, (Seth, UPDATE: The End of the Ocean Carriers’ Antitrust Exemption? <https://constantinecannon.com/antitrust-group/update-the-end-of-the-ocean-carriers-antitrust-exemption/>)

President Joe Biden’s call for shipping reform during his State of Union address is the latest indicator that the longstanding antitrust exemption for ocean carriers may be running aground. On January 7, 2022, this blog asked whether supply chain delays and skyrocketing container shipping prices could lead to the end of ocean carriers’ historical immunity from the antitrust laws under the Shipping Act of 1916. Given events in the ensuing weeks, the answer may well be “yes.” The White House released a Fact Sheet on February 28, entitled “Lowering Prices and Leveling the Playing Field in Ocean Shipping.” After citing estimates that in 2021 the pandemic enabled the container shipping industry to reap profits seven times higher than its 2020 profits, and five times its profit over the entire prior decade, the Biden administration announced several steps designed to “lower consumer prices and level the playing field in ocean shipping.” Id. Among those initiatives, the President called on Congress to pass “reforms that address the current antitrust immunity for ocean shipping alliances.” Id. President Biden echoed this message in his State of the Union address. After commenting that “capitalism without competition isn’t capitalism,” it is “exploitation,” President Biden observed: “During the pandemic, these foreign-owned companies raised prices by as much as 1,000% and made record profits.” Id. He then announced a “crackdown” on ocean carriers “overcharging American businesses and consumers.” Id. In fact, Congress did not wait for the State of the Union to put the shipping antitrust exemption on the chopping block. Representative Jim Costa issued a press release following the State of the Union address describing his bipartisan Ocean Shipping Antitrust Enforcement Act as the answer to President Biden’s call for shipping reform. The bill, which would eliminate the shipping antitrust exemption in its entirety, was introduced in the House on February 28 by Rep. Costa and co-sponsors- Rep. Dusty Johnson and Rep. John Garimendi (whose Ocean Shipping Reform Act passed the House in December 2021 by a 364-60 bipartisan vote). This legislation would thus go even further than the Free Market Antitrust Immunity Reform (“FAIR”) Act bill proposed in 1999-2001, which would have eliminated the exemption for ocean carriers while preserving the exemption for marine terminal operators. We can expect this drive to revive competition in the shipping industry to continue. Reps. Costa and Johnson are the Chair and Ranking Member, respectively, of the House Agriculture Subcommittee on Livestock and Foreign Agriculture. Agricultural export interests have been severely affected by ocean carrier practices during the pandemic, including the shipping of empty containers back to foreign ports.) Our January 7 post observed that Congress could consider more granular approaches. In addition to the FAIR Act approach, we noted that a pro-competitive bill could eliminate the exemptions that enable fuel profiteering while “permitting ocean carriers to continue entering into vessel-sharing agreements that at least in theory promote efficiency by combining containers from multiple carriers onto a single ship—similar to airline codesharing arrangements.” The adverse market effects of the Shipping Act antitrust exemptions continue to command the attention of the White House and Congress. The days of ocean carriers’ antitrust immunity, though more than a century old, may now indeed be numbered.

#### Biden’s spending PC on Ukraine

Chalfant 2-25-2022 (Morgan, “White House seeks $6.4B from Congress in Ukraine-related aid,” *The Hill*, <https://thehill.com/policy/international/595928-white-house-seeks-64b-from-congress-in-ukraine-related-aid?rl=1>)

The White House is asking Congress to approve $6.4 billion in additional funding to help respond to the ongoing Russian invasion in Ukraine, two sources confirmed to The Hill. The request includes $2.9 billion for State Department and U.S. Agency for International Development for humanitarian assistance as well as security assistance to Ukraine, Poland, the Baltic states and allies on NATO’s eastern flank, according to a Biden administration official. The Biden administration is also asking Congress for $3.5 billion in additional funding for the Pentagon, according to the official. White House press secretary Jen Psaki on Friday told reporters that officials with the White House Office of Management and Budget (OMB) were in touch with Congress about additional assistance as it relates to Ukraine. An OMB official told The Hill the administration made the request during a recent conversation with lawmakers. “As the President and bipartisan members of Congress have made clear, the United States is committed to supporting the Ukrainian people as they defend their country and democracy,” the OMB official said. “In a recent conversation with lawmakers, the Administration identified the need for additional U.S. humanitarian, security, and economic assistance to Ukraine and Central European partners due to Russia’s unprovoked and unjustified invasion,” the official said. “The Administration will continue to closely coordinate with our European allies and partners to assess on-the-ground needs, and remain in close touch with Congress as these needs evolve.” A congressional leadership aide told The Hill that lawmakers are eyeing attaching a Ukraine assistance package and additional coronavirus relief to the omnibus appropriations bill. The current stopgap budget bill funds the government through March 11.

#### Huge delays

Williams 2-17-2022 (Clete, “The path forward on the US-China technology competition,” *Atlantic Council*, <https://www.atlanticcouncil.org/blogs/econographics/the-path-forward-on-the-us-china-technology-competition/>)

Pass Bipartisan China Competitiveness Legislation In recent months, the US House of Representatives and Senate both passed versions of China competitiveness legislation. This legislation centers on increasing government incentives to promote innovation in key technology areas such as semiconductors, quantum computing, 5G, and synthetic biology, among others. Both versions of the legislation also seek to improve supply chain resilience and reliability through partnerships with key allies around the world. Finalizing the legislation should be an easy decision, but prospects for a swift conclusion appear increasingly unlikely due to actions by both parties. House Democrats pursued a partisan process to design key elements of the bill, such as its trade components. Their strategy exacerbated partisan tensions and yielded poorly designed proposals that could undermine US competitiveness, such as an unwieldy outbound investment mechanism or the effort to raise tariffs on low-cost goods. As for the Republicans, many appear focused on scoring political points rather than legislating by calling the legislation “weak on China” without offering a viable alternative.

#### Dead on arrival

Edmondson 1-26-2022, reporter in the Washington bureau (Catie, “Democrats Renew Push to Pass Industrial Policy Bill to Counter China,” *New York Times*, <https://www.nytimes.com/2022/01/26/us/politics/democrats-china-competitiveness-bill.html>)

Biden administration officials and Democrats in Congress are pushing to revive stalled legislation that would pour billions of dollars into scientific research and development and shore up domestic manufacturing, amid deep differences on Capitol Hill about the best way to counter China and confront persistent supply chain woes. House Democrats unveiled a 2,900-page bill on Tuesday evening that would authorize $45 billion in grants and loans to support supply chain resilience and American manufacturing, along with providing billions of dollars in new funding for scientific research. Speaker Nancy Pelosi said in a statement that she hoped lawmakers would quickly begin negotiations with the Senate, which passed its own version of the bill last June, to settle on compromise legislation that could be sent to President Biden for his signature. But the effort faces obstacles in Congress, where attempts to sink significant federal resources into scientific research and development to bolster competitiveness with China and combat a shortage of semiconductors have faltered. The Senate-passed measure fizzled last year amid ideological disputes with the House and a focus on efforts to pass Mr. Biden’s infrastructure and social policy bills. For months, the competitiveness measure was rarely even mentioned, except perhaps by Senator Chuck Schumer, Democrat of New York and the majority leader, who has personally championed it. But facing a disruptive semiconductor shortage that has broken down supply chains and helped fuel inflation, Democrats are now vigorously pressing ahead on the bill. With Mr. Biden’s domestic agenda sputtering, the party is eager for a legislative victory, and top administration officials and lawmakers have said they hope to send a compromise bill to the president’s desk in a matter of months. ADVERTISEMENT Continue reading the main story “We have no time to waste in improving American competitiveness, strengthening our lead in global innovation and addressing supply chain challenges, including in the semiconductor industry,” Mr. Schumer said. Both the House bill and the one that passed the Senate last year would send a lifeline to the semiconductor industry during a global chip shortage that has shut auto plants and rippled through the economy. The bills would offer chip companies $52 billion in grants and subsidies with few restrictions. The measures would also pour billions more into scientific research and development pipelines in the United States, create grants and foster agreements between companies and research universities to encourage breakthroughs in new technologies, and establish new manufacturing jobs and apprenticeships. “The proposals laid out by the House and Senate represent the sort of transformational investments in our industrial base and research and development that helped power the United States to lead the global economy in the 20th century,” Mr. Biden said in a statement. “They’ll help bring manufacturing jobs back to the United States, and they’re squarely focused on easing the sort of supply chain bottlenecks like semiconductors that have led to higher prices for the middle class.” Lawmakers will still need to overcome differing views in the House and Senate over how best to take on China and, perhaps more crucially, how to fund the nation’s scientific research. “There are disagreements, legitimate disagreements,” Gina Raimondo, the commerce secretary, said in an interview. “How do we do this? How do we get it right? There doesn’t seem to be much disagreement over the core $52 billion appropriation for chips. There is disagreement around how we make investments in research and development in basic science.” Sign Up for On Politics A guide to the political news cycle, cutting through the spin and delivering clarity from the chaos. Get it sent to your inbox. One major difference is that while the Senate bill invests heavily in specific fields of cutting-edge technology, such as artificial intelligence and quantum computing, the House bill places few stipulations on the new round of funding, other than to say that it should go toward fundamental research. In a memo on the legislation, House aides wrote that their measure was “focusing on solutions first, not tech buzzwords.” Some experts argue that approach lacks urgency. Stephen Ezell, the vice president for global innovation policy at the Information Technology and Innovation Foundation, a policy group that receives funding from telecommunications and tech companies, called the House bill “not sufficient to enable the United States to win the advanced technology competition with China.” He argued that the focus on advanced technology in the Senate-passed bill would do more to increase American competitiveness. How the Supply Chain Crisis Unfolded Card 1 of 9 The pandemic sparked the problem. The highly intricate and interconnected global supply chain is in upheaval. Much of the crisis can be traced to the outbreak of Covid-19, which triggered an economic slowdown, mass layoffs and a halt to production. Here’s what happened next: A reduction in shipping. With fewer goods being made and fewer people with paychecks to spend at the start of the pandemic, manufacturers and shipping companies assumed that demand would drop sharply. But that proved to be a mistake, as demand for some items would surge. Demand for protective gear spiked. In early 2020, the entire planet suddenly needed surgical masks and gowns. Most of these goods were made in China. As Chinese factories ramped up production, cargo vessels began delivering gear around the globe. Then, a shipping container shortage. Shipping containers piled up in many parts of the world after they were emptied. The result was a shortage of containers in the one country that needed them the most: China, where factories would begin pumping out goods in record volumes Demand for durable goods increased. The pandemic shifted Americans’ spending from eating out and attending events to office furniture, electronics and kitchen appliances – mostly purchased online. The spending was also encouraged by government stimulus programs. Strained supply chains. Factory goods swiftly overwhelmed U.S. ports. Swelling orders further outstripped the availability of shipping containers, and the cost of shipping a container from Shanghai to Los Angeles skyrocketed tenfold. Labor shortages. Businesses across the economy, meanwhile, struggled to hire workers, including the truck drivers needed to haul cargo to warehouses. Even as employers resorted to lifting wages, labor shortages persisted, worsening the scarcity of goods. Component shortages. Shortages of one thing turned into shortages of others. A dearth of computer chips, for example, forced major automakers to slash production, while even delaying the manufacture of medical devices. A lasting problem. Businesses and consumers reacted to shortages by ordering earlier and extra, especially ahead of the holidays, but that has placed more strain on the system. These issues are a key factor in rising inflation and are likely to last for months — if not longer. In addition, as lawmakers debate how to counter Beijing’s rising influence, efforts to compromise on the foreign policy components of the legislation will most likely create tensions between the chambers and between Democrats and Republicans. In the Senate, for example, lawmakers included stricter requirements for when universities must report foreign funding to the Education Department. Democrats in the House have resisted the Senate’s proposed foreign policy provisions, complaining that the chamber focused too narrowly on countering China rather than investing in domestic manufacturing. Much of the foreign policy legislation added by Democrats to the House bill is focused on climate change; the House measure would also authorize $225 million over five years to bolster the State Department’s military training and education programs in the Indo-Pacific region. Few Republicans are expected to support the House bill, though some of the measures included in the legislation have previously garnered bipartisan support. “It reflects virtually no Republican input and — to be frank — will be dead on arrival in the U.S. Senate,” said Representative Michael McCaul of Texas, the top Republican on the Foreign Affairs Committee, who said the bill did not take a hard enough line against China.

#### Winner’s win---spending PC rebuilds it

Kane 7-24-2021, The Washington Post's senior congressional correspondent and columnist (Paul, “Day-to-day, Biden’s agenda looks rocky. But congressional Democrats say things are far rosier if you take the long view.,” *Washington Post*, https://www.washingtonpost.com/powerpost/biden-agenda-democrats-congress/2021/07/24/83b776be-ebc0-11eb-ba5d-55d3b5ffcaf1\_story.html)

There is, so far at least, little fear that Democrats are spreading themselves too thin by eschewing the traditional practice of focusing on a handful of domestic policy issues in the first two years of an administration. “Political momentum and political capital is like a muscle. The more you exercise it, the more of it you have. It is not like a finite resource that you can run out of if you spend too much of it. What happens is that if we do a lot of positive things, then we’ve got more political clout to do even more positive things,” Sen. Brian Schatz (D-Hawaii) said. But there is an undercurrent of fear that Democrats lost focus on battling the pandemic and that those gains might be forgotten if current trend lines prompt new shutdowns. “We’ve done a good job over the last several months. But we’re going to have to continue to do it with aggressiveness and precision because the other side has no interest in governing and is going to spend all their time trying to mischaracterize public policy wins,” Rep. Hakeem Jeffries (D-N.Y.), who is in charge of messaging in Pelosi’s leadership team, said. Some worry that the Biden administration needs to stay focused on promoting the $1.9 trillion American Rescue Plan, fearful of mistakes similar to 12 years ago, when the Obama administration neglected to promote its roughly $800 billion economic recovery bill after it passed a month into office. “I don’t think they’ve gotten enough credit for the extraordinary logistical and managerial effort to manage the rollout of the vaccine. That was a big task. And I think it was managed effectively. And I think that’s maybe the most important thing and the least discussed,” Sen. Angus King (I-Maine) said. In late 2010, while he was still a college professor, King wrote an essay, “The Democrats Beat Themselves,” citing how poorly the Obama administration sold the economic recovery. “Basically, the President was subjected to a two-year, nonstop ‘Swift Boating’ and never really fought back,” King wrote after the 2010 political bloodbath for Democrats. So, yes, on Tuesday, federal health officials reported more than 62,000 new cases of the deadly virus as 314 Americans died of the virus. A day earlier, the stock market tumbled more than 700 points amid fears of the health crisis causing another economic shock. But exactly six months earlier — Jan. 20, the day Biden was sworn in under strict social distancing and masking guidelines outside the Capitol — there were more than 185,000 new virus cases and a rolling weekly average of almost 200,000, with 4,440 deaths caused by covid-19 that day. On Jan. 20, the Dow Jones industrial average stood at 31,188, far below the closing of 34,512 six months later. Labor Department reports this month showed strong wage growth amid steady job growth that suggests sometime next year, the economy will recover all the lost jobs from the pandemic. In June and most of July, Biden tried to move past the pandemic and focused his attention on the bipartisan infrastructure plan and the proposed $3.5 trillion budget plan that is favored by liberals. Those two packages are filled with campaign pledges to remake government support for the middle class, the most ambitious budgets since the Great Society proposals of the 1960s. Democrats will need to make Congress spend a lot more time in Washington if they want to get Biden’s agenda passed Democrats defend these proposals as worthy of the big moment the nation faces. “We are confronting a multitude of crises, including a once-in-a-century covid-19 pandemic, a democracy crisis, a racial justice crisis and a climate crisis all at the same time,” Jeffries said. Schatz views the old presidential model of focusing on a couple big things as outdated. “The model from the ’80s was if you do too many things, people are going to get freaked out. And I think the danger here is not doing enough rather than doing too much,” he said.

## DA — Private Rights

#### Their Muris evidence is a critique of the House Judiciary Committee’s proposal — that’s wholly distinct from the aff AND they have zero spill over warrant in the evidence — here’s what the Committee proposed:

Nadler & Cicilline ’20 — Jerrold Nadler (Chairman, Committee on the Judiciary); David N. Cicilline (Chariman, Subcommittee on Antitrust, Commercial and Administrative Law); “MAJORITY STAFF REPORT AND RECOMMENDATIONS;” SUBCOMMITTEE ON ANTITRUST, COMMERCIAL AND ADMINISTRATIVE LAW OF THE COMMITTEE ON THE JUDICIARY; 2020; https://judiciary.house.gov/uploadedfiles/competition\_in\_digital\_markets.pdf?utm\_campaign=4493-519

Private enforcement plays a critical role in the nation’s antitrust system. The Sherman Act and Clayton Act both include a private right of action. This reflected lawmakers’ desire to ensure that those abused by monopoly power have an opportunity for direct recourse.2531 It also reflected a recognition that public enforcers would be susceptible to capture by the very monopolists that they were supposed to investigate, necessitating other means of enforcement.

Empirical surveys of trends in antitrust enforcement indicate that private enforcement deters anticompetitive conduct and strengthens enforcement overall.2532 In recent decades, however, courts have erected significant obstacles for private antitrust plaintiffs, both through procedural decisions and substantive doctrine.

One major obstacle is the rise of forced arbitration clauses, which undermine private enforcement of the antitrust laws by allowing companies to avoid legal accountability for their actions.2533 These clauses allow firms to evade the public justice system—where plaintiffs have far greater legal protections—and hide behind a one-sided process that is tilted in their favor.2534 For example, although Amazon has over two million sellers in the United States, Amazon’s records reflect that only 163 sellers initiated arbitration proceedings between 2014 and 2019.2535 This data seems to confirm studies showing that forced arbitration clauses often fail to provide a meaningful forum for resolving disputes and instead tend to suppress valid claims and shield wrongdoing.2536

Several other trends in judicial decisions have hampered private antitrust plaintiffs, including in cases involving dominant platforms. To address these concerns, the Subcommittee recommends that Congress consider:

• Eliminating court-created standards for “antitrust injury” 2537 and “antitrust standing,” 2538 which undermine Congress’s grant of enforcement authority to “any person . . . injured . . . by reason of anything forbidden in the antitrust laws;” 2539

• Reducing procedural obstacles to litigation, including through eliminating forced arbitration clauses2540 and undue limits on class action formation;2541 and

• Lowering the heightened pleading requirement introduced in Bell Atlantic Corp. v. Twombly. 2542

#### 3 — Private right of action is high now.

Posner and Weinstein 18, \*JD, Professor @ U Chicago Law School, \*\*JD Focused on corporate litigation (Eric and Lauren, “APPLE INC., Petitioner, v. ROBERT PEPPER, et al., Respondents. ———— On Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit ———— BRIEF OF ANTITRUST SCHOLARS AS AMICI CURIAE IN SUPPORT OF RESPONDENTS,” Lexis)

Consistent with Congress’s two-track enforcement structure, today most antitrust enforcement actions are brought by private parties rather than regulators. Private litigation accounted for about 90% of antitrust filings in federal court each year between 1975 and 2012. See Hindelang Criminal Justice Research Ctr., Univ. at Albany, Sourcebook of Criminal Justice Statistics Online: Antitrust Cases Filed in U.S. District Courts (2012), https://www.albany.edu/sourcebook/pdf/t5412012.pdf; compare U.S. Courts, Table C-2A, http://www.uscourts .gov/sites/default/files/data\_tables/jb\_c2a\_0930.2017.pdf (approximately 650-700 civil antitrust cases filed in federal courts per year from 2013 to 2017), with U.S. Dep’t of Justice, Antitrust Div. Workload Statistics FY 2008- 2017, at 5-6, https://www.justice.gov/atr/file/788426/ download (approximately 40-110 civil and criminal cases filed by DOJ Antitrust Division per year from 2008 to 2017).

#### Their ev agrees — Private litigation is high now---their card is a straw-person.

**1NC Nuechterlein and Muris ’21** (Jonathan E. Nuechterlein and Timothy J. Muris, Sidley Austin LLP, U.S. Chamber Institute for Legal Reform, “Private Antitrust Remedies An Argument Against Further Stacking the Deck”, <https://instituteforlegalreform.com/wp-content/uploads/2021/03/March-2021-Antitrust-Paper-FINAL.pdf>, March 2021)

A new populist movement has catapulted antitrust onto center stage in today’s public policy debates. A **recent House staff report embodies the central tenets of that movement, proposing legislation that would revamp antitrust doctrine and private antitrust remedies**.1 The House Antitrust Report (the Report) claims that antitrust doctrine is too permissive, that federal antitrust enforcement is too lax, and that the result is undue market concentration and tepid competition.2 **It urges Congress to expand the scope of antitrust liability by subordinating economic analysis of consumer welfare to various social values traditionally addressed by non-antitrust policy measures.**3 And it calls on the federal antitrust agencies to enforce this new pro-plaintiff regime by suing U.S. companies for a broad range of routine business practices that, for good reason, are lawful under existing antitrust doctrine.4 **These populist proposals for amending substantive antitrust law are deeply problematic.** **They would exalt the interests of individual competitors over consumers’ interests in vigorous competition by inducing companies across the economy to pull competitive punches, lest juries find them liable for acting “unfairly” towards their rivals.5 Because such proposals will play a central role in antitrust policy debates for some time, they warrant deep and skeptical scrutiny.** This paper, however, focuses on a related but distinct topic that the House Antitrust Report discusses in its final pages: **the procedural and remedial dimensions of antitrust litigation brought by private plaintiffs rather than federal or state authorities.**6 “**In recent decades,” the Report says, “courts have erected significant obstacles for private antitrust plaintiffs,” thereby “undermin[ing] private enforcement of the antitrust laws.”**7 To “address these concerns,” the Report calls for “[e]liminating court-created standards for ‘antitrust injury’ and ‘antitrust standing’”; “[r]educing procedural obstacles to litigation, including through eliminating forced arbitration clauses”; and “[l]owering the heightened pleading requirement introduced in Bell Atlantic Corp. v. Twombly.”8 Such proposals rest on a fundamental misconception that the decks in private antitrust litigation are somehow stacked against plaintiffs. But quite the opposite is true: U.S. antitrust law privileges plaintiffs over defendants in ways that find no counterpart elsewhere in the law. “The United States is unique in the world insofar as private enforcement of the antitrust laws vastly outstrips public enforcement. There are roughly ten private federal cases for every case brought by the Department of Justice or Federal Trade Commission.”9 The reason is straightforward. **The U.S. system of private antitrust remedies, including automatic punitive (treble) damages, gives plaintiffs’ lawyers overwhelming incentives to bring weak cases and pressures defendants to settle them**. And the unusually liberal class action mechanisms available in the United States magnify these perverse incentives for litigiousness. **It would disserve American consumers to eliminate the procedural protections that curb the worst excesses of this regime, which imposes major costs on the U.S. economy. Because today’s regime is overdeterrent by design, it already discourages firms on the margin from engaging in procompetitive behavior that a court or jury might misconstrue as anticompetitive. And it saddles private enterprise with major costs—settlement payouts, lawyers’ fees, and insurance premiums—that companies across the economy pass through to consumers in the form of higher prices. Over the decades, broad bipartisan majorities of the Supreme Court—led by such “liberal” Justices as Thurgood Marshall and David Souter—have construed the antitrust laws to check the most blatant abuses by plaintiffs’ lawyers.** **These are the very same judicial “obstacles” to liability that the House Antitrust Report proposes to abolish.** **But the Report cites no basis— and there is none—for undoing these consensus Supreme Court decisions and thereby tilting the antitrust playing field even more sharply against U.S. businesses and consumers.** This paper is divided into two parts. The first part summarizes the current regime for private antitrust remedies in the United States, explains how it systematically benefits plaintiffs at trial and in settlement negotiations, and compares it to the less pro-plaintiff regime for non-antitrust litigation. The second part then critiques specific proposals for stimulating even more antitrust litigiousness in the United States. Private Antitrust Remedies Compared With Private Non-Antitrust Remedies The antitrust laws enable private plaintiffs to recover damages for antitrust violations. In principle, compensatory damages for antitrust violations are appropriate and uncontroversial to the extent they make eligible plaintiffs whole, just as tort law, in principle, appropriately makes plaintiffs whole for violations of common law negligence principles. But private antitrust remedies in the United States extend far beyond the relief available in ordinary civil litigation. For example, if plaintiffs succeed in proving negligence or breach of contract, they generally collect compensatory damages equal to their harm. In unusual circumstances, tort plaintiffs can collect punitive damages as well, but only if they can successfully argue that the defendant behaved egregiously. Attorneys’ fees in ordinary civil litigation are also subject to the “American Rule”—with rare exceptions, each side is expected to pay its own lawyers no matter who wins. The U.S. system of antitrust remedies departs from that baseline litigation regime in two significant respects, both of which greatly advantage plaintiffs. Automatic Punitive Damages With narrow exceptions, any plaintiff that prevails on any theory of liability under federal antitrust law is automatically entitled to “threefold the damages by him sustained.”10 In other words, two-thirds of every private antitrust award takes the form of punitive damages, over and above what is needed to make the plaintiff whole. Of course, sometimes punitive damages are appropriate for their deterrent value—for example, where a given category of conduct (1) often escapes detection or (2) never has redeeming social value. And sometimes antitrust cases involve such conduct: for example, naked price-fixing cartels often elude detection and have no redeeming social value. Such cartels exemplify conduct that is “per se” unlawful and, indeed, is subject to criminal as well as civil penalties. The problem is that prevailing antitrust plaintiffs always recover treble damages, even when the defendant’s conduct was open rather than covert, and even when it was not clearly unlawful when it was undertaken. **As antitrust law has evolved since the Sherman Act of 1890, it has come to address a broad range of competitive conduct that is not categorically anticompetitive and is thus properly subject to the full “rule of reason” rather than any “per se” prohibition.11 Such cases require a judge or jury to scrutinize the context and economic effects of the defendant’s conduct and consider not only the extent of any competitive harm, but also any countervailing benefits. This appropriately nuanced approach applies today to an extraordinary array of conduct, including joint ventures,12 trade association activities,13 vertical restraints,14 and virtually any claim of monopolization under Section 2 of the Sherman Act, such as exclusive dealing**.15 A defendant’s conduct in such cases generally lacks the features that could possibly justify punitive damages. In most, there was nothing surreptitious about the defendant’s conduct; indeed, it may have been common knowledge to everyone in the relevant business community. **Like defendants in many negligence cases, defendants in rule-of-reason antitrust cases could not have predicted with any reasonable degree of certainty that their conduct would later be deemed unlawful.** “The line between winning and losing may be exceedingly fine in such cases,”16 but “no matter how close the case, the winner gets a bounty and the loser gets a penalty” in the form of treble damages.17 The leading antitrust treatise describes that outcome as “an embarrassment to antitrust policy,” given “the law’s usual discomfort with imposing unforeseen liability.”18 Moreover, “[t]he practical effect of mandatory trebling is to tilt the settlement process in the plaintiff’s favor because mandatory trebling so inflates the defendant’s cost of losing and the plaintiff’s value of a victory in a rule of reason case.”19 One-Way Fee-Shifting In contrast to the American Rule that governs most U.S. civil litigation, any prevailing antitrust plaintiff is also entitled to recover attorneys’ fees from the defendant.20 **In complex antitrust cases that go to trial, each party can incur tens of millions of dollars in attorneys’ fees. If the ultimate verdict is for the plaintiffs, the defendant is saddled not only with its own multi-million-dollar legal bill, but also with the plaintiffs’**. And this fee-shifting mechanism is an entirely one-way ratchet: “[t]he successful defendant gets nothing” even if it prevails.21 **This arrangement “simply echoes and enhances the effect of mandatory trebling” and “further tilts the risk evaluation and settlement process in favor of the plaintiff.”22 Expanding Private Antitrust Remedies Would Be Unnecessary and Counterproductive.** There is no basis for suggestions that private antitrust remedies are not strong enough and need to be turbocharged by new pro-plaintiff legislation.23 The regime for U.S. private antitrust remedies is already aggressively pro-plaintiff when compared to remedies available in comparable non-antitrust cases. Pursuing Deterrence, Not Overdeterrence Advocates of expanding private antitrust remedies begin with the premise that “private enforcement deters anticompetitive conduct” and conclude, in the words of the Report, that legal “obstacles” to recovery by “private antitrust plaintiffs” should be eliminated to maximize deterrence.24 But even if the premise is true,25 the conclusion would not follow. The Report appears to assume that the more deterrence the law provides, the better, and that any “obstacles” to private recovery should thus be removed.26 But that **position ignores the consequences of overdeterrence, including the prospect that firms will respond to the threat of draconian penalties in ways that reduce the threat of liability but that ultimately harm consumers. Overdeterrence is a particular concern in antitrust doctrine because the line separating lawful from unlawful conduct can be blurred and much of the conduct falling on the lawful side of the line is socially beneficial.** As economists William Baumol and Alan Blinder explain: One problem that haunts most antitrust litigation is that vigorous competition may look very similar to acts that undermine competition .... The resulting danger is that courts will prohibit, or the antitrust authorities will prosecute, acts that appear to be anticompetitive but that really are the opposite. **The difficulty occurs because effective competition by a firm is always tough on its rivals**.27 **For example, excessive antitrust remedies for predatory pricing may not only deter firms from engaging in conduct that would ultimately be deemed unlawful, but also induce them to keep prices well above their costs and, in effect, hold a price umbrella over smaller, potentially litigious rivals. Such a regime would result in less competition and higher prices for consumers—the very outcomes the antitrust laws are designed to prevent.** Proposals to slap another layer of deterrence on top of existing private remedies are particularly perverse because, as discussed above, the current U.S. regime is already overdeterrent, in that it subjects firms to unusually severe liability risks even for overt conduct subject to the rule of reason. If anything, Congress should consider aligning private antitrust remedies with remedies for analogous common law torts by, for example, limiting treble damages and one-way fee-shifting to cases involving hard-core violations that may elude detection, such as price-fixing cartels. **In all events, Congress should not make a bad situation worse by ratcheting up the level of overdeterrence.** That, however, is precisely what the Report advocates. It reflects the ascendant populist strain in American antitrust rhetoric, which claims that “Chicago School” conservatives in the 1970s and 1980s “ushered in a new ideology” that hobbled effective antitrust enforcement.28 **The Report implies that today’s procedural guardrails against antitrust litigation abuse arise from the same political movement, and it advocates overruling half a century of judicial precedent. Among other legislative proposals, the Report calls for (1) “[e]liminating court-created standards for ‘antitrust injury’ and ‘antitrust standing’” recognized in Brunswick and similar cases;29 (2) “[l]owering the heightened pleading requirement introduced in Bell Atlantic Corp. v. Twombly”;30 and (3) “eliminating forced arbitration clauses.”31 Each of those proposals is misconceived.** The Need To Show “Antitrust Injury” Although one would not know it from reading the Report, Brunswick was authored not by a conservative Justice over a liberal dissent, but by noted liberal Justice Thurgood Marshall for a unanimous Court.32 **The case illustrates why antitrust injury is a necessary gating criterion for a private antitrust suit**. The defendant was a manufacturer of bowling equipment. When some of its bowling-center customers fell into financial distress and defaulted on their equipment payments, the defendant acquired those centers rather than letting them close. The plaintiffs—rival bowling centers—sued on the ground that “by acquiring the failing centers [the defendant] preserved competition, thereby depriving [them] of the benefits of increased concentration.”33 And they sought damages “designed to provide them with the profits they would have realized had competition been reduced” in the absence of the defendant’s acquisitions.34 The Court unanimously held that such suits are “inimical” to the fundamental purpose of the antitrust laws: “the protection of competition, not competitors.”35 Brunswick was unanimous because it was obviously correct. Yet, the House Antitrust Report explicitly calls on Congress to overturn Brunswick with new legislation and abolish the “antitrust injury” requirement. **The predictable result of such legislation would be a flood of new competitor suits designed to prop up retail prices. That outcome would benefit plaintiffs and their lawyers but harm American consumers.** The Logic of Twombly Like Brunswick, Twombly was not the work of the Court’s conservative wing; the author of the majority opinion was Justice David Souter, and the vote was 7-2. And, contrary to the House Antitrust Report’s mischaracterization, Twombly did not introduce a “heightened pleading requirement”36 for antitrust cases. Instead, it applied the default pleading standard of Rule 8(a)(2) of the Federal Rules of Civil Procedure—not the heightened Rule 9(b) pleading requirement applicable to fraud and certain other claims—to allegations that the Twombly defendants entered into an illegal market-allocation agreement.37 The Court held that Rule 8(a)(2) requires a plaintiff to plead non-conclusory factual “allegations plausibly suggesting,” and “not merely consistent with,” an unlawful agreement rather than lawfully independent business decisions.38 This holding is unexceptional and follows largely as a matter of logic from the general principle that, to survive a motion to dismiss, a complaint must contain “more than labels and conclusions[] and a formulaic recitation of the elements of a cause of action.”39 As Twombly recognized, it is particularly important to apply this general pleading standard to antitrust complaints; otherwise, nothing beyond complete speculation would entitle plaintiffs’ lawyers to impose massive discovery costs on businesses throughout the economy. “[I]t is only by taking care to require allegations that reach the level suggesting conspiracy that we can hope to avoid the potentially enormous expense of discovery in cases with no reasonably founded hope that the discovery process will reveal relevant evidence to support [an antitrust] claim.”40 Again, the futility of the exercise would not deter plaintiffs’ attorneys because “the threat of discovery expense will push cost-conscious defendants to settle even anemic cases.”41 That, however, is the wasteful regime the House Antitrust Report urges Congress to impose on American business and ultimately on consumers. The Value of Private Arbitration The Report further calls for abolition of pre-dispute arbitration clauses, which are generally applicable only to plaintiffs in contractual privity with the defendants they wish to sue. According to the Report, such clauses “allow [defendants] to evade the public justice system—where plaintiffs have far greater legal protections—and hide behind a one-sided process that is tilted in their favor.”42 That claim is wrong in several respects. FIRST Nearly one hundred years after passage of the Federal Arbitration Act of 1925,43 private arbitration has proven itself as a fair, less expensive, and speedier alternative to the court system for adjudicating business disputes of all kinds, including antitrust claims. Indeed, recent research suggests that consumers tend to fare better, and receive compensation far sooner, when they proceed via arbitration rather than in court.44 In all events, the process is hardly “tilted in ... favor” of antitrust defendants.45 SECOND The supposedly “greater legal protections” the Report attributes to court-based antitrust litigation operate mainly to the benefit of plaintiffs’ attorneys, not their clients. It is true that arbitration commonly lacks key features endemic to antitrust litigation, such as massive discovery burdens for defendants and one-way fee- shifting for plaintiffs’ lawyers. But those features do not make traditional multi-year court litigation fairer than arbitration; they make it more costly for defendants, more conducive to forced settlements, and thus more likely to bestow a contingency fee windfall on plaintiffs’ attorneys. Restricting the availability of arbitration would enable plaintiffs’ lawyers to bring more meritless suits and, by forcing companies to settle them for substantial sums, would increase their costs of doing business and ultimately raise the price of goods and services economy-wide. THIRD Contractual arbitration provisions do not enable anyone “to evade the public justice system”46 even where they apply. No matter what provisions private parties agree to, defendants remain fully accountable, in court, to two federal antitrust agencies and 50-plus state AGs, all of which appear eager to build on the new wave of antitrust cases they have recently brought against some of America’s largest companies. The Report suggests, without citation, that eliminating arbitration clauses is necessary anyway because even though antitrust authorities can hold wrongdoers accountable in federal court, they are “susceptible to capture by the very monopolists that they [are] supposed to investigate.”47 No one familiar with the theory of “capture” or with America’s antitrust enforcers would make such a claim. “Capture” is a phenomenon associated with industry-specific regulators, not the generalist antitrust litigators who lead and staff the U.S. Department of Justice’s Antitrust Division, the Federal Trade Commission, and state AGs’ offices. **Those litigators have strong incentives to bring aggressive cases against prominent defendants, both to gain professional experience and to make a name for themselves.** Such experience and reputation are especially valuable for antitrust enforcers who wish someday to transition to private law firms. If anything, antitrust enforcers are more likely to be prodded into marginal litigation by a target’s rivals than to be argued into submission by the target itself. **Private litigation will continue playing a central role in the enforcement of U.S. antitrust law. But antitrust plaintiffs already enjoy advantages in private litigation that are unparalleled in other areas of U.S. civil liability**. **Those advantages have spawned litigation abuses even against the backdrop of today’s substantive antitrust doctrine, and the economy-wide costs of those abuses will only increase if, as the populists propose, Congress expands the scope of substantive antitrust liability. As America begins to rebuild its post-pandemic economy, now is not the time to stack the litigation decks even more lopsidedly against private enterprise**.

#### No correlation between economic decline and war.

Walt 20, Robert and Renée Belfer professor of international relations at Harvard University. (Stephen M., 5/13/20, “Will a Global Depression Trigger Another World War?”, *Foreign Policy*, https://foreignpolicy.com/2020/05/13/coronavirus-pandemic-depression-economy-world-war/)

On balance, however, I do not think that even the extraordinary economic conditions we are witnessing today are going to have much impact on the likelihood of war. Why? First of all, if depressions were a powerful cause of war, there would be a lot more of the latter. To take one example, the United States has suffered 40 or more recessions since the country was founded, yet it has fought perhaps 20 interstate wars, most of them unrelated to the state of the economy. To paraphrase the economist Paul Samuelson’s famous quip about the stock market, if recessions were a powerful cause of war, they would have predicted “nine out of the last five (or fewer).”   
Second, states do not start wars unless they believe they will win a quick and relatively cheap victory. As John Mearsheimer showed in his classic book Conventional Deterrence, national leaders avoid war when they are convinced it will be long, bloody, costly, and uncertain. To choose war, political leaders have to convince themselves they can either win a quick, cheap, and decisive victory or achieve some limited objective at low cost. Europe went to war in 1914 with each side believing it would win a rapid and easy victory, and Nazi Germany developed the strategy of blitzkrieg in order to subdue its foes as quickly and cheaply as possible. Iraq attacked Iran in 1980 because Saddam believed the Islamic Republic was in disarray and would be easy to defeat, and George W. Bush invaded Iraq in 2003 convinced the war would be short, successful, and pay for itself.

The fact that each of these leaders miscalculated badly does not alter the main point: No matter what a country’s economic condition might be, its leaders will not go to war unless they think they can do so quickly, cheaply, and with a reasonable probability of success.

Third, and most important, the primary motivation for most wars is the desire for security, not economic gain. For this reason, the odds of war increase when states believe the long-term balance of power may be shifting against them, when they are convinced that adversaries are unalterably hostile and cannot be accommodated, and when they are confident they can reverse the unfavorable trends and establish a secure position if they act now. The historian A.J.P. Taylor once observed that “every war between Great Powers [between 1848 and 1918] … started as a preventive war, not as a war of conquest,” and that remains true of most wars fought since then.

The bottom line: Economic conditions (i.e., a depression) may affect the broader political environment in which decisions for war or peace are made, but they are only one factor among many and rarely the most significant. Even if the COVID-19 pandemic has large, lasting, and negative effects on the world economy—as seems quite likely—it is not likely to affect the probability of war very much, especially in the short term.

#### Countries turn inward---prefer post-COVID evidence.

Walt 20, Robert and Renée Belfer professor of international relations at Harvard University. (Stephen M., 5/13/20, “Will a Global Depression Trigger Another World War?”, *Foreign Policy*, https://foreignpolicy.com/2020/05/13/coronavirus-pandemic-depression-economy-world-war/)

One familiar argument is the so-called diversionary (or “scapegoat”) theory of war. It suggests that leaders who are worried about their popularity at home will try to divert attention from their failures by provoking a crisis with a foreign power and maybe even using force against it. Drawing on this logic, some Americans now worry that President Donald Trump will decide to attack a country like Iran or Venezuela in the run-up to the presidential election and especially if he thinks he’s likely to lose.

This outcome strikes me as unlikely, even if one ignores the logical and empirical flaws in the theory itself. War is always a gamble, and should things go badly—even a little bit—it would hammer the last nail in the coffin of Trump’s declining fortunes. Moreover, none of the countries Trump might consider going after pose an imminent threat to U.S. security, and even his staunchest supporters may wonder why he is wasting time and money going after Iran or Venezuela at a moment when thousands of Americans are dying preventable deaths at home. Even a successful military action won’t put Americans back to work, create the sort of testing-and-tracing regime that competent governments around the world have been able to implement already, or hasten the development of a vaccine. The same logic is likely to guide the decisions of other world leaders too.

Another familiar folk theory is “military Keynesianism.” War generates a lot of economic demand, and it can sometimes lift depressed economies out of the doldrums and back toward prosperity and full employment. The obvious case in point here is World War II, which did help the U.S economy finally escape the quicksand of the Great Depression. Those who are convinced that great powers go to war primarily to keep Big Business (or the arms industry) happy are naturally drawn to this sort of argument, and they might worry that governments looking at bleak economic forecasts will try to restart their economies through some sort of military adventure.

I doubt it. It takes a really big war to generate a significant stimulus, and it is hard to imagine any country launching a large-scale war—with all its attendant risks—at a moment when debt levels are already soaring. More importantly, there are lots of easier and more direct ways to stimulate the economy—infrastructure spending, unemployment insurance, even “helicopter payments”—and launching a war has to be one of the least efficient methods available. The threat of war usually spooks investors too, which any politician with their eye on the stock market would be loath to do.

Economic downturns can encourage war in some special circumstances, especially when a war would enable a country facing severe hardships to capture something of immediate and significant value. Saddam Hussein’s decision to seize Kuwait in 1990 fits this model perfectly: The Iraqi economy was in terrible shape after its long war with Iran; unemployment was threatening Saddam’s domestic position; Kuwait’s vast oil riches were a considerable prize; and seizing the lightly armed emirate was exceedingly easy to do. Iraq also owed Kuwait a lot of money, and a hostile takeover by Baghdad would wipe those debts off the books overnight. In this case, Iraq’s parlous economic condition clearly made war more likely. Yet I cannot think of any country in similar circumstances today. Now is hardly the time for Russia to try to grab more of Ukraine—if it even wanted to—or for China to make a play for Taiwan, because the costs of doing so would clearly outweigh the economic benefits. Even conquering an oil-rich country—the sort of greedy acquisitiveness that Trump occasionally hints at—doesn’t look attractive when there’s a vast glut on the market. I might be worried if some weak and defenseless country somehow came to possess the entire global stock of a successful coronavirus vaccine, but that scenario is not even remotely possible.

# 1AR

## DA

### 1AR — Defense

#### No warming impact.

Ord 20, research fellow at the Future of Humanity Institute at Oxford University, has advised the World Health Organization, the World Bank, the World Economic Forum, and the UK Prime Minister’s Office and Cabinet Office. (Toby, “4. Anthropogenic Risks”, *The Precipice: Existential Risk and the Future of Humanity*, Oxford)

Major effects of climate change include reduced agricultural yields, sea level rises, water scarcity, increased tropical diseases, ocean acidification and the collapse of the Gulf Stream. While extremely important when assessing the overall risks of climate change, none of these threaten extinction or irrevocable collapse.

Crops are very sensitive to reductions in temperature (due to frosts), but less sensitive to increases. By all appearances we would still have food to support civilization.85 Even if sea levels rose hundreds of meters (over centuries), most of the Earth’s land area would remain. Similarly, while some areas might conceivably become uninhabitable due to water scarcity, other areas will have increased rainfall. More areas may become susceptible to tropical diseases, but we need only look to the tropics to see civilization flourish despite this. The main effect of a collapse of the system of Atlantic Ocean currents that includes the Gulf Stream is a 2°C cooling of Europe—something that poses no permanent threat to global civilization.

From an existential risk perspective, a more serious concern is that the high temperatures (and the rapidity of their change) might cause a large loss of biodiversity and subsequent ecosystem collapse. While the pathway is not entirely clear, a large enough collapse of ecosystems across the globe could perhaps threaten human extinction. The idea that climate change could cause widespread extinctions has some good theoretical support.86 Yet the evidence is mixed. For when we look at many of the past cases of extremely high global temperatures or extremely rapid warming we don’t see a corresponding loss of biodiversity.87

So the most important known effect of climate change from the perspective of direct existential risk is probably the most obvious: heat stress. We need an environment cooler than our body temperature to be able to rid ourselves of waste heat and stay alive. More precisely, we need to be able to lose heat by sweating, which depends on the humidity as well as the temperature.

A landmark paper by Steven Sherwood and Matthew Huber showed that with sufficient warming there would be parts of the world whose temperature and humidity combine to exceed the level where humans could survive without air conditioning.88 With 12°C of warming, a very large land area—where more than half of all people currently live and where much of our food is grown—would exceed this level at some point during a typical year. Sherwood and Huber suggest that such areas would be uninhabitable. This may not quite be true (particularly if air conditioning is possible during the hottest months), but their habitability is at least in question.

However, substantial regions would also remain below this threshold. Even with an extreme 20°C of warming there would be many coastal areas (and some elevated regions) that would have no days above the temperature/humidity threshold.89 So there would remain large areas in which humanity and civilization could continue. A world with 20°C of warming would be an unparalleled human and environmental tragedy, forcing mass migration and perhaps starvation too. This is reason enough to do our utmost to prevent anything like that from ever happening. However, our present task is identifying existential risks to humanity and it is hard to see how any realistic level of heat stress could pose such a risk. So the runaway and moist greenhouse effects remain the only known mechanisms through which climate change could directly cause our extinction or irrevocable collapse.

#### Warming inevitable.

Curry 19, PhD, Professor Emeritus and former Chair of the School of Earth and Atmospheric Sciences at the Georgia Institute of Technology. (Judith A., 2-6-2019, “Hearing on Climate Change: The Impacts and the Need to Act”, pg. 7-8, <https://curryja.files.wordpress.com/2019/02/curry-testimony-house-natural-resources.pdf)---language> edited

Is it possible that something truly dangerous and unforeseen could happen to Earth’s climate during the 21st century? Yes it is possible, but natural climate variability (including geologic processes) may be a more likely source of possible undesirable change than [anthropogenic] manmade warming. In any event, attempting to avoid such a dangerous and unforeseen climate by reducing fossil fuel emissions will be futile if natural climate and geologic processes are dominant factors. Geologic processes are an important factor in the potential instability of the West Antarctic ice sheet that could contribute to substantial sea level rise in the 21st century.23

Under the Paris Agreement, individual countries have submitted to the UNFCCC their Nationally Determined Contributions (NDCs). Under the Obama Administration, the U.S. NDC had a goal of reducing emissions by 28% below 2005 levels by 2025. Apart from considerations of feasibility and cost, it has been estimated24 using the EPA MAGICC model that this commitment will prevent 0.03o [degrees] C in warming by 2100. When combined with current commitments from other nations, only a small fraction of the projected future warming will be ameliorated by these commitments. If climate models are indeed running too hot,25 then the amount of warming prevented would be even smaller. Even if emissions immediately went to zero and the projections of climate models are to be believed, the impact on the climate would not be noticeable until the 2nd half of the 21st century. Most of the expected benefits to the climate from the UNFCCC emissions reductions policy will be realized in the 22nd century and beyond.

Attempting to use carbon dioxide as a control knob to regulate climate on decadal to century timescales is arguably futile. The UNFCCC emissions reductions policies have brought us to a point between a rock and a hard place, whereby the emissions reduction policy with its extensive costs and questions of feasibility are inadequate for making a meaningful dent in slowing down the expected warming in the 21st century. And the real societal consequences of climate change and extreme weather events (whether caused by manmade climate change or natural variability) remain largely unaddressed.

This is not to say that a transition away from burning fossil fuels doesn’t make sense over the course of the 21st century. People prefer ‘clean’ over ‘dirty’ energy – provided that all other things are equal, such as reliability, security, and economy. However, assuming that current wind and solar technologies are adequate for providing the required amount and density of electric power for an advanced economy is misguided.26

The recent record-breaking cold outbreak in the Midwest is a stark reminder of the challenges of providing a reliable power supply in the face of extreme weather events, where an inadequate power supply not only harms the economy, but jeopardizes lives and public safety. Last week, central Minnesota experienced a natural gas ‘brownout,’ as Xcel Energy advised customers to turn thermostats down to 60 degrees and avoid using hot water.27 Why? Because the wind wasn’t blowing during an exceptionally cold period. Utilities pair natural gas plants with wind farms, where the gas plants can be ramped up and down quickly when the wind isn’t blowing. With bitter cold temperatures and no wind, there wasn’t enough natural gas.

A transition to an electric power system driven solely by wind and solar would require a massive amount of energy storage. While energy storage technologies are advancing, massive deployment of cost effective energy storage technologies is well beyond current capabilities.28 An unintended consequence of rapid deployment of wind and solar energy farms may be that natural gas power plants become increasingly entrenched in the power supply system.

Apart from energy policy, there are a number of land use practices related to croplands, grazing lands, forests and wetlands that could increase the natural sequestration of carbon and have ancillary economic and ecosystem benefits. 29 These co-benefits include improved biodiversity, soil quality, agricultural productivity and wildfire behavior modification.

In evaluating the urgency of CO2 emissions reductions, we need to be realistic about what reducing emissions will actually accomplish. Drastic reductions of emissions in the U.S. will not reduce global CO2 concentrations if emissions in the developing world, particularly China and India, continue to increase. If we believe the climate model simulations, we would not expect to see any changes in extreme weather/climate events until late in the 21st century. The greatest impacts will be felt in the 22nd century and beyond, in terms of reducing sea level rise and ocean acidification.

#### Their models are wrong, and innovation and adaptation solve

O'Brien 19, professor of economics, emeritus, at Lehigh University. (Anthony Patrick, 10-19-2019, "Your View by Lehigh professor: ‘Climate change is not going to kill us’", *The Morning Call*, https://www.mcall.com/opinion/mc-opi-climate-change-existential-threat-20191019-kdluxxt45vfdhkfavdppz2yjaa-story.html)

Some scientists take issue with the National Climate Assessment and argue that the cost of climate change will eventually run into the trillions of dollars. They could be right, but there are three reasons to question any long-range forecast of the climate (or the economy, or anything else):

1) the unavoidable imprecision in the models used; 2) the neglect of market adjustments; and 3) the neglect of technological change.

First, if you’ll pardon a little geek speak, the world is nonlinear (straight-line projections don’t work) and stochastic (or uncertain). So assumptions about initial conditions and the estimated parameters of models matter a lot. Years ago, economist Paul Samuelson of MIT showed that in building nonlinear models of the business cycle, small changes in a model’s parameters would result in forecasts that the economy would either grow smoothly with mild recessions (great) or would experience increasingly severe recessions (uh-oh).

Edward Lorenz, also of MIT, applied similar reasoning to climate models, concluding: “In view of the inevitable inaccuracy and incompleteness of weather observations, precise very long-range forecasting would seem to be non-existent.”

These insights into the nature of nonlinear, stochastic models became the foundation for a branch of math called chaos theory. In short, there are good reasons that economists can’t accurately forecast when the next recession will begin and meteorologists can’t accurately forecast whether the coming winter will be snowy or dry. And the further in the future the forecast, the more skeptical you should be.

Forecasts of conditions 70 years in the future? Whether rosy or gloomy, there’s no good reason to believe them.

Models of climate change also ignore the role of the market adjustments that are already occurring. Consumers worried about climate change have been eating less beef, buying more products made from recycled materials, and buying more from companies that are operating in an environmentally friendly way. As always in a market system, companies are more than happy to adapt to changing consumer preferences.

Finally, the National Climate Assessment and similar forecasts assume essentially no technological progress in energy efficiency, sequestering carbon or other ways of lessening climate change. No technological progress over 70 years in an area attracting as much research attention from business, government and universities as climate change does? Not likely.

### 1AR — Turn

#### No extinction—we’re immune to disease at a species level but the squo is key to effective depop.

Adalja 16

[Amesh Adalja, infectious-disease physician at University of Pittsburgh. "Why Hasn't Disease Wiped out the Human Race?," Atlantic, 6-17-2016, https://www.theatlantic.com/health/archive/2016/06/infectious-diseases-extinction/487514/ // wyo-cjh]

“You’ll tell us when you’re worried, right?” That was the question posed to me countless times at the height of the 2014 West African Ebola outbreak. As an infectious disease physician, I was interviewed on outlets such as CNN, NPR, and Fox News about the dangers of the virus, and the answer I gave was always the same: “Ebola is a deadly, scary disease, but it is not that contagious. It will not find the U.S. or other industrialized nations hospitable.” In other words, no, I wasn’t worried—and not because I have a rosy outlook on infectious diseases. I’m well-aware of the damage these diseases are causing around the world: HIV, malaria, tuberculosis; the influenza pandemic that took the world by surprise in 2009; the anti-vaccine movement bumping cases of measles to an all-time post-vaccine-era high; antibiotic-resistant bacteria threatening to collapse the entire structure of modern medicine—all these, like Ebola, are continuously placing an enormous number of lives at risk. But when people ask me if I’m worried about infectious diseases, they’re often not asking about the threat to human lives; they’re asking about the threat to human life. With each outbreak of a headline-grabbing emerging infectious disease comes a fear of extinction itself. The fear envisions a large proportion of humans succumbing to infection, leaving no survivors or so few that the species can’t be sustained. I’m not afraid of this apocalyptic scenario, but I do understand the impulse. Worry about the end is a quintessentially human trait. Thankfully, so is our resilience. For most of ~~mankind’s~~ history, infectious diseases were the existential threat to humanity—and for good reason. They were quite successful at killing people: The 6th century’s Plague of Justinian knocked out an estimated 17 percent of the world’s population; the 14th century Black Death decimated a third of Europe; the 1918 influenza pandemic killed 5 percent of the world; malaria is estimated to have killed half of all humans who have ever lived. Any yet, of course, humanity continued to flourish. Our species’ recent explosion in lifespan is almost exclusively the result of the control of infectious diseases through sanitation, vaccination, and antimicrobial therapies. Only in the modern era, in which many infectious diseases have been tamed in the industrial world, do people have the luxury of death from cancer, heart disease, or stroke in the 8th decade of life. Childhoods are free from watching siblings and friends die from outbreaks of typhoid, scarlet fever, smallpox, measles, and the like. So what would it take for a disease to wipe out humanity now? In Michael Crichton’s The Andromeda Strain, the canonical book in the disease-outbreak genre, an alien microbe threatens the human race with extinction, and humanity’s best minds are marshaled to combat the enemy organism. Fortunately, outside of fiction, there’s no reason to expect alien pathogens to wage war on the human race any time soon, and my analysis suggests that any real-life domestic microbe reaching an extinction level of threat probably is just as unlikely. When humans began to focus their minds on the problems posed by infectious disease, human life ceased being nasty, brutish, and short. Any apocalyptic pathogen would need to possess a very special combination of two attributes. First, it would have to be so unfamiliar that no existing therapy or vaccine could be applied to it. Second, it would need to have a high and surreptitious transmissibility before symptoms occur. The first is essential because any microbe from a known class of pathogens would, by definition, have family members that could serve as models for containment and countermeasures. The second would allow the hypothetical disease to spread without being detected by even the most astute clinicians. The three infectious diseases most likely to be considered extinction-level threats in the world today—influenza, HIV, and Ebola—don’t meet these two requirements. Influenza, for instance, despite its well-established ability to kill on a large scale, its contagiousness, and its unrivaled ability to shift and drift away from our vaccines, is still what I would call a “known unknown.” While there are many mysteries about how new flu strains emerge, from at least the time of Hippocrates, humans have been attuned to its risk. And in the modern era, a full-fledged industry of influenza preparedness exists, with effective vaccine strategies and antiviral therapies. HIV, which has killed 39 million people over several decades, is similarly limited due to several factors. Most importantly, HIV’s dependency on blood and body fluid for transmission (similar to Ebola) requires intimate human-to-human contact, which limits contagion. Highly potent antiviral therapy allows most people to live normally with the disease, and a substantial group of the population has genetic mutations that render them impervious to infection in the first place. Lastly, simple prevention strategies such as needle exchange for injection drug users and barrier contraceptives—when available—can curtail transmission risk. Ebola, for many of the same reasons as HIV as well as several others, also falls short of the mark. This is especially due to the fact that it spreads almost exclusively through people with easily recognizable symptoms, plus the taming of its once unfathomable 90 percent mortality rate by simple supportive care. Beyond those three, every other known disease falls short of what seems required to wipe out humans—which is, of course, why we’re still here. And it’s not that diseases are ineffective. On the contrary, diseases’ failure to knock us out is a testament to just how resilient humans are. Part of our evolutionary heritage is our immune system, one of the most complex on the planet, even without the benefit of vaccines or the helping hand of antimicrobial drugs. This system, when viewed at a species level, can adapt to almost any enemy imaginable. Coupled to genetic variations amongst humans—which open up the possibility for a range of advantages, from imperviousness to infection to a tendency for mild symptoms—this adaptability ensures that almost any infectious disease onslaught will leave a large proportion of the population alive to rebuild, in contrast to the fictional Hollywood versions. While the immune system’s role can never be understated, an even more powerful protector is the faculty of consciousness. Humans are not the most prolific, quickly evolving, or strongest organisms on the planet, but as Aristotle identified, humans are the rational animals—and it is this fundamental distinguishing characteristic that allows humans to form abstractions, think in principles, and plan long-range. These capacities, in turn, allow humans to modify, alter, and improve themselves and their environments. Consciousness equips us, at an individual and a species level, to make nature safe for the species through such technological marvels as antibiotics, antivirals, vaccines, and sanitation. When humans began to focus their minds on the problems posed by infectious disease, human life ceased being nasty, brutish, and short. In many ways, human consciousness became infectious diseases’ worthiest adversary. None of this is meant to allay all fears of infectious diseases. To totally adopt a Panglossian viewpoint would be foolish—and dangerous. Humans do face countless threats from infectious diseases: witness Zika. And if not handled appropriately, severe calamity could, and will, ensue. The West African Ebola outbreak, for instance, festered for months before major efforts to bring it under control were initiated. When it comes to infectious diseases, I’m worried about the failure of institutions to understand the full impact of outbreaks. I’m worried about countries that don’t have the infrastructure or resources to combat these outbreaks when they come. But as long as we can keep adapting, I’m not worried about the future of the human race.

#### Even engineered pathogens leave isolated populations untouched—they not only have to prove dispersal to EVERY HUMAN BEING would be effective but that terrorist organizations have the incentive to do so, which they apparently wouldn’t.

Nick Beckstead 14, Research Fellow at the Future of Humanity Institute, citing Peter Doherty, recipient of the 1996 Nobel Prize for Medicine, PhD in Immunology from the University of Edinburgh, Michael F. Tamer Chair of Biomedical Research at St. Jude Children’s Research Hospital, “How much could refuges help us recover from a global catastrophe?” in Futures, published online 18 Nov 2014, Science Direct

That leaves pandemics and cobalt bombs, which will get a longer discussion. While there is little published work on human extinction risk from pandemics, it seems that it would be extremely challenging for any pandemic—whether natural or ~~manmade~~[created]—to leave the people in a specially constructed refuge as the sole survivors. In his introductory book on pandemics (Doherty, 2013, p. 197) argues:¶ “No pandemic is likely to wipe out the human species. Even without the protection provided by modern science, we survived smallpox, TB, and the plagues of recorded history. Way back when human numbers were very small, infections may have been responsible for some of the genetic bottlenecks inferred from evolutionary analysis, but there is no formal proof of this.”¶ Though some authors have vividly described worst-case scenarios for engineered pandemics (e.g. Rees, 2003 and Posner, 2004; and Myhrvold, 2013), it would take a special effort to infect people in highly isolated locations, especially the 100+ “largely uncontacted” peoples who prefer to be left alone. This is not to say it would be impossible. A madman intent on annihilating all human life could use cropduster-style delivery systems, flying over isolated peoples and infecting them. Or perhaps a pandemic could be engineered to be delivered through animal or environmental vectors that would reach all of these people.

#### Pandemics solve nuclear war---it’s likely now.

Barry. R. Posen 20. Ford International Professor of Political Science at MIT and Director Emeritus of the MIT Security Studies Program. 4/23/2020. “Do Pandemics Promote Peace?” <https://www.foreignaffairs.com/articles/china/2020-04-23/do-pandemics-promote-peace>. DOA: 9/2/2020. SIR.

What these analysts miss is that COVID-19, the disease caused by the coronavirus, is weakening all of the great and middle powers more or less equally. None is likely to gain a meaningful advantage over the others. All will have ample reason to be pessimistic about their military capabilities and their overall readiness for war. For the duration of the pandemic, at least, and probably for years afterward, the odds of a war between major powers will go down, not up. PAX EPIDEMICA? A cursory survey of the scholarly literature on war and disease appears to confirm Blainey’s observation that pessimism is conducive to peace. Scholars have documented again and again how war creates permissive conditions for disease—in armies as well as civilians in the fought-over territories. But one seldom finds any discussion of epidemics causing wars or of wars deliberately started in the middle of widespread outbreaks of infectious disease. (The diseases that European colonists carried to the New World did weaken indigenous populations to the point that they were more vulnerable to conquest; in addition, some localized conflicts were fought during the influenza pandemic of 1919–21, but these were occasioned by major shifts in regional balances of power following the destruction of four empires in World War I.) That sickness slows the march to war is partly due to the fact that war depends on people. When people fall ill, they can’t be counted on to perform well in combat. Military medicine made enormous strides in the years leading up to World War I, prior to which armies suffered higher numbers of casualties from disease than from combat. But pandemics still threaten military units, as those onboard U.S. and French aircraft carriers, hundreds of whom tested positive for COVID-19, know well. Sailors and soldiers in the field are among the most vulnerable because they are packed together. But even airmen are at risk, since they must take refuge from air attacks in bunkers, where the virus could also spread rapidly. Ground campaigns in urban areas pose still greater dangers in pandemic times. Much recent ground combat has been in cities in poor countries with few or no public health resources, environments highly favorable to illness. Ground combat also usually produces prisoners, any of whom can be infected. A vaccine may eventually solve these problems, but an abundance of caution is likely to persist for some time after it comes into use. Major outbreaks damage national economies, which are the source of military power. The most important reason disease inhibits war is economic. Major outbreaks damage national economies, which are the source of military power. COVID-19 is a pandemic—by definition a worldwide phenomenon. All great and middle powers appear to be adversely affected, and all have reason to be pessimistic about their military prospects. Their economies are shrinking fast, and there is great uncertainty about when and how quickly they will start growing again. Even China, which has slowed the spread of the disease and begun to reopen its economy, will be hurting for years to come. It took an enormous hit to GDP in the first quarter of 2020, ending 40 years of steady growth. And its trading partners, burned by their dependence on China for much of the equipment needed to fight COVID-19, will surely scale back their imports. An export-dependent China will have to rely more on its domestic market, something it has been attempting for years with only limited success. It is little wonder, then, that the International Monetary Fund [forecasts](https://www.youtube.com/watch?v=Oz56lV17s9o) slower growth in China this year than at any time since the 1970s. Even after a vaccine is developed and made widely available, economic troubles may linger for years. States will emerge from this crisis with enormous debts. They will spend years paying for the bailout and stimulus packages they used to protect citizens and businesses from the economic consequences of social distancing. Drained treasuries will give them one more reason to be pessimistic about their military might. LESS TRADE, LESS FRICTION How long is the pacifying effect of pessimism likely to last? If a vaccine is developed quickly, enabling a relatively swift economic recovery, the mood may prove short-lived. But it is equally likely that the coronavirus crisis will last long enough to change the world in important ways, some of which will likely dampen the appetite for conflict for some time—perhaps up to five or ten years. After all, the world is experiencing both the biggest pandemic and the biggest economic downturn in a century. Most governments have not covered themselves with glory managing the pandemic, and even the most autocratic worry about popular support. Over the next few years, people will want evidence that their governments are working to protect them from disease and economic dislocation. Citizens will see themselves as dependent on the state, and they will be less inclined to support adventures abroad. At the same time, governments and businesses will likely try to reduce their reliance on imports of critical materials, having watched global supply chains break down during the pandemic. The result will probably be diminished trade, something liberal internationalists see as a bad thing. But for the last five years or so, trade has not helped improve relations between states but rather fueled resentment. Less trade could mean less friction between major powers, thereby reducing the intensity of their rivalries. In the Chinese context, less international trade could have positive knock-on effects. Focused on growing the domestic economy, and burdened by hefty bills from fighting the virus, Beijing could be forced to table the Belt and Road Initiative, an ambitious trade and investment project that has unnerved the foreign policy establishments of great and middle powers. The suspension of the BRI would soothe the fears of those who see it as an instrument of Chinese world domination. Interstate wars have become relatively rare since the end of World War II. The United States and the Soviet Union engaged in a four-decade Cold War, which included an intense nuclear and conventional arms race, but they never fought each other directly, even with conventional weapons. Theorists debate the reasons behind the continued rarity of great-power conflict. I am inclined to believe that the risk of escalation to a nuclear confrontation is simply too great. COVID-19 does nothing to mitigate such risks for world leaders—and a great deal to feed their reasonable pessimism about the likely outcome of even a conventional war.

#### It causes ceasefires and peace talks---COVID proves that pandemics incentivize them to avoid disease spread which caps global escalation.

Deirdre Shesgreen 20. Foreign Affairs Reporter at USA Today. 4/28/2020. “'War and disease travel together': Why the pandemic push for a global cease-fire is gaining ground.” <https://www.usatoday.com/story/news/world/2020/04/28/coronavirus-un-secretary-wants-global-cease-fire-amid-pandemic/5163972002/>. DOA: 9/4/2020. SIR.

When the head of the United Nations first called for a “global cease-fire” on March 23, it seemed like a quixotic quest that would fall on the deaf ears of warring guerrillas, militant terrorists and belligerent governments across the globe. But over the past month, fighters from [Colombia](https://www.bbc.com/news/world-latin-america-52090169) to [Ukraine](https://www.unian.info/war/10932227-mp-ukraine-asks-russia-via-osce-to-ensure-full-ceasefire-in-donbas-amid-coronavirus-crisis.html) have signaled a willingness to put down their weapons as the world confronts [a deadly pandemic](https://www.who.int/emergencies/diseases/novel-coronavirus-2019) that could devastate civilian populations and armies alike. The [15-member U.N. Security Council](https://www.un.org/securitycouncil/) may vote as early as this week on a resolution that demands an “immediate cessation of hostilities in all countries on its agenda” and calls for armed groups to engage in a 30-day cease-fire, according to a draft of the measure obtained by USA TODAY. Its fate is uncertain, and experts say it comes with many caveats and exceptions – including a loophole that could allow Russia to continue [bombing civilians in Syria](https://www.usatoday.com/story/news/world/2020/03/13/syria-war-bashar-assad-prospers-9-years-barbarity-confusion/4939671002/). Right now, world powers are still quibbling over several provisions. The Trump administration has objected to any language expressing support for [the World Health Organization](https://www.usatoday.com/story/news/world/2020/04/22/who-chief-tedros-adhanom-ghebreyesus-pilloried-by-trump-and-gop-allies-amid-coronavirus-pandemic/5163962002/), among other provisions – disputes that could sink or stall the effort. President Donald Trump has blasted the WHO being biased toward China and accepting Beijing's statements about the coronavirus outbreak at face value. A State Department official declined to comment on the draft, citing ongoing negotiations. The official, who was not authorized to speak on the record, said the Trump administration supports the call for a global cease-fire but wants to ensure it will not hinder U.S. counterterrorism missions. If it passes, experts say its impact could be significant – albeit not sweeping – during an otherwise bleak moment of global crisis. “This is not a piece of paper that’s going to save the planet, and it’s not even going to stop some of the nasty wars that are burning out there,” said Richard Gowan, an expert on the United Nations and peacekeeping with the International Crisis Group, a nonpartisan organization that seeks to prevent conflict. “But it’s at least something which could help ease middle-sized and smaller conflicts in countries ranging from [Colombia to Sudan](https://www.crisisgroup.org/global/global-ceasefire-call-deserves-un-security-councils-full-support), where we know that armed groups are actually interested in pausing violence and talking about peace during the COVID crisis.” It could also help staunch the flow of refugees in some war-ravaged countries – and thus slow the spread of COVID-19, said Barry Posen, an international professor of political science at the Massachusetts Institute of Technology. "War and disease travel together and are usually causative," Posen said. While a global cease-fire may sound lofty and idealistic, he said, it's also [quite practical](https://www.foreignaffairs.com/articles/china/2020-04-23/do-pandemics-promote-peace?utm_medium=newsletters&utm_source=fatoday&utm_campaign=Do%20Pandemics%20Promote%20Peace?%20%20%20&utm_content=20200423&utm_term=FA%20Today%20-%20112017), particularly in places like Syria and Yemen, where health care is scarce and civilians are extremely vulnerable to disease. "The intrusion of COVID into that situation would make what's already a horror show into an even bigger horror show," he said. "If you can do a little something to suppress these wars at the moment, you would also be doing a little something to suppress the disease." And because these conflicts are also producing refugees, it could help limit the further spread of the illness if civilians are not forced to flee conflict zones. [In this handout image released by the United Nations, U.N. Secretary-General Antonio Guterres holds a virtual press conference on April 3, 2020, at UN headquarters in New York. Guterres Friday renewed his call for a global cease-fire, urging all parties to conflict to lay down arms and allow war-torn nations to combat the coronavirus pandemic. "The worst is yet to come," Guterres said, referring to countries beset with fighting like Syria, Libya and Yemen. "The COVID-19 storm is now coming to all these theatres of conflict."](https://www.un.org/sg/en) The United Nation's secretary-general, , has used both lofty rhetoric and harsh reality in his pitch for the cease-fire. "There should be only one fight in our world today: our shared battle against COVID-19," he said in an [April 3 news briefing](https://news.un.org/en/story/2020/04/1061012) on his effort. French President [Emmanuel Macron](https://www.ft.com/content/317b4f61-672e-4c4b-b816-71e0ff63cab2) has also championed the cease-fire proposal. So far, about 16 armed groups and more than 100 countries have endorsed the measure, according to an informal tally kept by U.N. officials. A few examples: In Colombia, a [left-wing rebel group](https://www.bbc.com/news/world-latin-america-52090169) known as the ELN agreed to a cease-fire starting April and said it would consider reviving peace talks with the government. In Yemen, one side of that brutal war – the [Saudi Arabia-led coalition](https://www.reuters.com/article/us-yemen-security-saudi/saudi-led-coalition-announces-one-month-extension-of-yemen-ceasefire-idUSKCN2261GS) – agreed to a unilateral cease-fire for at least a month, to help control the spread of coronavirus in a country already ravaged by starvation and other diseases. The Houthis, backed by Iran, have not yet signed on. In Syria, the Kurdish-led [Syrian Democratic Forces agreed](https://www.kurdistan24.net/en/news/36baafd8-e08b-4e7f-bedc-3acb28c5ba90) to a cease-fire, saying its fighters would defend themselves against attacks but not engage in offensive military action. “We hope that this humanitarian truce will help to open the door for dialogue and political solution and to put an end to the war in the world and Syria,” the SDF said in a statement.

#### Global pandemic will crush industrial civilization—solves our impacts but does not cause extinction.

Vince 13 [Gaia Vince, science journalist and winner of Royal Society Winton Prize, the UK’s premier prize for science books. "Global transformers: What if a pandemic strikes?" 7-11-2013, http://www.bbc.com/future/story/20130711-what-if-a-pandemic-strikes // wyo-cjh]

Over the past century, humans have been transforming the planet so profoundly that we are pushing it into a new geological era, the Anthropocene (the Age of Man). But how will the Anthropocene unfold? Will we continue on a path of global climate change, land-use change, resource depletion, biodiversity loss and population expansion? Or will something happen to push us off this trajectory – perhaps back into Holocene-like conditions? As I mentioned before, over the next few columns I’ll be looking at technologies or events that have the potential to radically alter our planet. The first one is a pessimistic one for humans: what if our species were hit by a global pandemic? In the Anthropocene we are encroaching on wild lands, bringing us closer to monkeys and apes, for example, which are traded internationally for bushmeat and pets. We are also living in close proximity to domestic creatures like pigs, chickens and ducks. It means that diseases that infect animals have an unprecedented chance to jump across species to us. Humans are so genetically alike that pathogens easily spread between individuals and across populations. And because we are living in greater numbers and densities than ever before, and because so many of us travel internationally – and so much faster – there’s a greater opportunity for pathogens to spread. If a virus can infect someone in one part of the world, it is unlikely to be contained. Few places are truly remote in the Anthropocene. Epidemics are certainly not new or unpredictable. A new strain of influenza virus occurs every 1-2 years, for example. But the sudden global explosion of an epidemic that infects a large number of the population – a pandemic – is harder to predict. We know a pandemic has occurred every 10-50 years for the past few centuries, and the last one was in 1968, so we're overdue one. Epidemiologists do not talk of whether there will be a new pandemic, but of when it will occur. Pandemics, which kill a significant proportion of the population have acute and lasting effects on society. The Black Death, a bubonic plague during the Middle Ages caused by the bacterium Yersinia pestis, killed 30%-60% of Europeans (80% of people in the south of France and Spain) and reduced global population from 450 million to around 350 million. In a single province of China, more than 4 million people died (90% of the population) in 1334 alone. Such a toll was socially transformative. Entire cities were depopulated, world trade declined, but so did wars. In some countries witch hunts rooting out the unknown cause of the plague resulted in minority groups being massacred, including lepers and Jews. For plague survivors life generally improved, especially for those at the bottom of the ladder. Peasants benefited from the scarcity of labour to gain better wages (often through revolt), and their crops and cattle spread into unoccupied land giving most people a richer diet. The Black Death also had an environmental impact – loss of agricultural activity allowed forests to regrow, and their photosynthetic activity sucked so much carbon from the air it contributed to the regional cooling event known as the Little Ice Age. Economic slump More recently, the Spanish Flu of 1918 killed one in five of those infected, some 40-50 million people worldwide, which was more than the guns of World War I. The impacts of this pandemic should have been especially severe because unusually, more than half of those who died were young working-age adults, aged 20-40 (most flu outbreaks kill the very old and young first). However, the global economic slump that resulted from incapacitation or deaths among the workforce melded into the dramatic effects of the war. The HIV/Aids epidemic, which also disproportionately effects young, working age men and women, can give some idea of economic impact – in hard-hit sub-Saharan African countries the economies were estimated to be on average 22% smaller in 2010, due to the virus's effects. So what would be the result of a global pandemic in the 21st Century? The world’s population in the Middle Ages was just a few hundred million; in 1918, it was 1.8 billion – now it is more than 7 billion. The numbers of people infected and killed could run into the hundreds of millions. Industry, food production, and the trappings of our modern world economy would all suffer, but this could be to the benefit of the environment. Poverty in HIV-hit southern Africa means it has the lowest per capita greenhouse gas emissions on the planet. During the global financial crisis that began in 2008, annual emissions from the energy sector fell from 29.3GT to 29GT. Fewer people would mean less production of everything from food to plastics. That could mean fewer industrial emissions, agricultural and residential land reverting back to forest perhaps, few polluting journeys, and less freshwater extractions. But what if the pandemic was really severe – killing 80%-90% of our species? Aside from a few people with immunity, densely populated cities would be worst hit – small remote islands may be spared through quarantine. It could mean an end to our advanced human civilization for a time, at least. Our species impact on the planet would diminish substantially as a result of our few numbers and global capability. Although greenhouse gas emissions may drop suddenly, the effect on temperature would take centuries to perceive because of how long carbon dioxide persists in the air. Nevertheless, temperatures would fall. Biodiversity would recover in many cases, due to reduced human encroachment on habitats, hunting and pollution. The planet wouldn't be the same as it was in pre-industrial times a few centuries ago – the signs of our Anthropocene interference would still be there, but it would perhaps no longer be a human-dominated planet. Wouldn't it be great to achieve some of these desirable planetary outcomes without the horrific suffering of a global pandemic?

#### Industrial civilization is unsustainable, causes extinction, and turns warming

Trainer 20, PhD from University of Sydney. Conjoint Lecturer in the School of Social Sciences, University of New South Wales (Ted, The Simpler Way: Collected Writings of Ted Trainer, *The Simplicity Institute*, pp. 3-6)

1. Unsustainability

The way of life we have in rich countries is grossly unsustainable. There is no possibility of all people on Earth ever rising to rich world per capita levels of consumption of energy, minerals, timber, water, food, phosphorous etc. These rates of consumption are generating numer-ous alarming global problems, now threatening our survival and the survival of other species. Most people have no idea of the magnitude of the overshoot – of how far we are beyond sustainable levels of re-source use and environmental impact. If all the estimated 9.8 billion people living on earth in 2050 were to consume resources at the pres-ent per capita rate in rich countries, world annual resource production rates would have to be about eight times as great as they are now.

For instance, the ‘Ecological Footprint’ analysis indicates that the amount of productive land required to provide one person in Australia with food, water, energy and settlement area is about 6.6 ha (Global Footprint Network, 2019). If 9.8 billion people were to live as Australians do, approximately 65 billion ha of productive land would be required. However, the total amount of productive land available is only 12 billion ha. If we assume one third of this should be set aside for nature (see, e.g., Baillie Yang, 2018) the amount available for humans might be about 8 billion ha. In other words, our rich world per capita footprint is about eight times as big as it would ever be possible for all of the world’s people to sustainably share.

Figures for some other items indicate much worse ratios. For instance, the top 10 nations consuming iron ore and bauxite (from which we ob-tain aluminium and steel) have per capita use rates that are respectively around 65 and 90 times the rates for all the other nations (Wiedmann et al., 2015). Mineral ore grades are falling. All people could not rise to present rich world levels of mineral use. The same case can be made with respect to just about all other resources and ecosystem services, such as agricultural land, forests, fisheries, water and biomass.

These simple figures clearly demonstrate the impossibility of all people ever having the material ‘living standards’ we have taken for granted in rich countries like Australia. We are not just a little beyond sustainable levels of resource demand and ecological impact – we are far beyond sustainable levels. Rich world practices, systems and ‘living standards’ are grossly unsustainable, and can never be extended to all the world’s people. Again, few people seem to grasp the magnitude of the over-shoot. We must face up to dramatic reductions in our present per capita levels of production and consumption.

1.1. Now add the absurd commitment to economic growth

The main worry is not the present level of resource use and ecological impact discussed above, it is the level we will rise to given the obsession with constantly increasing the amount of production and consumption. The supreme goal in all countries is to raise incomes, ‘living standards’ and GDP as much as possible, constantly and without any idea of a limit. That is, the most important goal is economic growth.

Consider the implications. If we assume a) a 3% p.a. economic growth, b) a population of 9.8 billion, c) all the world’s people rising to the living standards we in the rich world would have in 2050 given 3% p.a. growth – in that scenario, the total volume of world economic output would be 20 times as great as it is now and doubling every 23 years thereafter.

So even though the present levels of production and consumption are grossly unsustainable, the determination to have continual increase in income and economic output will multiply these towards absurd and impossible levels in coming decades.

Why analyse in terms of 9.8 billion rising to rich world levels? Because a) it is not morally acceptable to assume that they remain much poorer than we are, and b) that’s what everyone aspires to, so we had better think about whether it is viable.

1.2 But what about technical advance?

When confronted by global sustainability problems most people just assume that technical advance and ‘green growth’ will solve them, enabling us to go on living with ever-increasing levels of affluence. They do not realise that the magnitude of the problems rules this out.

The core ‘tech-fix’ faith is that resource demand and environmental impacts can be ‘decoupled’ from economic growth, i.e., that produc-tion and consumption can go on increasing while resource demand is sufficiently reduced. This is extremely implausible (see Part Three of this anthology for more detail). How likely is it that the world’s amount of production could be multiplied by 20 while resource use and environmental impacts are reduced by, say, 50% – i.e., a factor 40 reduction? None of the thirty or more reports over the last 20 years show any global reduction at all; they all show that as GDP rises so do the impacts. The recent review essay by Hickel and Kallis (2019) pro-vides a powerful critique of ‘green growth’ (see also Ward et al., 2016).

1.3 Global problems should be seen in terms of ‘limits to growth’

The ‘limits to growth’ perspective (Meadows et al., 1972) is essential if we are to understand the most serious global problems facing us:

The environmental problem is basically due to the fact that far too much producing and consuming is going on, taking too many resources rom nature and dumping too many wastes back into nature. We are eliminating species mainly because we are taking or ruining so much habitat. The environmental problems cannot be solved in an economy that is geared to providing ever-rising production, con-sumption, ‘living standards’ and GDP (see the next essay, ‘Why this economy must be scrapped’, for more detail).

Third World poverty and underdevelopment are inevitable if a few living in rich countries insist on taking far more of the world’s re-sources than all could have. The Third World can never develop to rich world levels of consumption, because there are far too few re-sources for that. (For more detail on this issue, see the essay ‘Third World development’ in Part Two.)

Conflict and war are inevitable if all aspire to rich world rates of consumption, and if rich countries insist on limitless growth on a planet with limited resources. Rich countries now have to support repressive regimes willing to establish policies that enable our cor-porations to ship out cheap resources, use Third World land for export crops, exploit cheap labour etc. This means we must be ready to get rid of regimes and to invade and run countries that threaten to follow policies contrary to our First World interests. Our rich world living standards could not be as high as they are if a great deal of repression and violence was not taking place, and rich countries contribute significantly to this. If we are determined to remain affluent, we should remain heavily armed! (This issue is developed in the essay in part Two called ‘If you want affluence, prepare for war’.)

Social cohesion is deteriorating and quality of life is being damaged. This is so even in the richest nations, because the supreme goals are raising business turnover, incomes and the GDP, not meet-ing needs, building community and improving the quality of life. (Some details of this decline in quality of life and the benefits of an alternative way to live are discussed in Part Four.)

#### Industrial civilization causes rushed AI development — extinction.

De Haan 19, AI Expert, Futurist and Space Enthusiast (Hein, October, “Capitalism: The Enemy of Friendly AI,” *Towards Data Science*, <https://towardsdatascience.com/capitalism-the-enemy-of-friendly-ai-e6b3f40dbe08>, Accessed 08-27-2021)

We need to talk about our future; specifically, our future as influenced by advanced Artificial Intelligence (AI). At some point in our near future, many experts expect humanity will create the first Artificial General Intelligence (AGI): an AI that’s roughly as intelligent as humans are. Relatively shortly after, an Artificial Superintelligence (ASI: an AI much smarter than any human) will most probably arise. Note that humans rule the planet because of their superior intelligence; an ASI might very well take over due to its intelligence being superior to our intelligence. An ASI does not by default share our moral values, and many thinkers, like the late physicist Stephen Hawking, have warned that creating an ASI could lead to the extinction of humankind.

What is Friendly AI?

Let’s start by defining Friendly AI. A term coined by AI researcher Eliezer Yudkowsky, it refers to an ASI that is beneficial to humanity instead of harmful. Like we discussed in the introduction, an ASI does not by default share our morals; a Friendly AI is one that does. The importance of Friendly AI can hardly be overstated, and can be illustrated with a thought experiment called the paperclip maximizer, first described by Nick Bostrom. This thought experiment describes an AGI that is given the seemingly innocent goal of maximizing the number of paperclips in its collection.

The ASI is so successful that it eventually transforms all of Earth into paperclip manufacturing facilities.

In order to more successfully optimize the number of paperclips, the AGI improves its own intelligence in order to become an ASI. This ASI then invents (radical) new ways of manufacturing more and more paperclips; it is so successful that it eventually transforms all of Earth into paperclip manufacturing facilities. Of course, humanity goes extinct as a side effect. It’s not that the ASI hated us; it’s just that we were made out of material it could use for its own purpose.

Note that human extinction can be a side effect of a lot of goals an ASI has, not just maximizing the number of paperclips. Human extinction could even be instrumental to an ASI’s goal. Say you give an ASI the goal of minimizing the amount of spam you get in your inbox. In order to achieve this, the ASI could simply wipe out humanity, as that would guarantee that you’ll never get spam again.

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What does capitalism have to do with this?

I hope the paperclip maximizer thought experiment has made it clear that “friendliness” is not a default property of ASI. That’s exactly the problem: building an ASI is a (huge) challenge, but making it friendly (a Friendly AI) requires some challenge on top of that. The point is that capitalism rewards those that are faster to market: companies rush to put their product on the market before a competitor delivers theirs, because they understand that being the first matters.

The monetary reward of being the first company to create ASI will be incredible.

The same will be true for ASI: companies are already investing billions of dollars into AI, but in the future, the total investment will only grow, especially when the possibility of creating ASI becomes more feasible. The monetary reward of being the first company to create ASI will be incredible. An ASI could do so much valuable work so much better and so much faster than any human could that the first mover advantage will be indescribable. Now remember what we discussed: Friendly AI requires an extra challenge on top of ASI. Companies might very well not think too much about friendliness in order to be the first to create ASI, and that’s where the disaster starts.

#### Economic crisis sparks widespread movements towards localized sustainability.

Trainer **’**19—Conjoint Lecturer in the School of Social Sciences, University of New South Wales (Ted, “Entering the era of limits and scarcity: the radical implications for social theory,” Journal of Political Ecology Vol. 26, 2019, dml)

In time, this pressure is likely to shift from submitting requests to the state to making demands on it, and then to taking increasing control of it. There will be increasing insistence that frivolous industries must be phased out so that scarce resources can be devoted to meeting fundamental town and regional needs. Meanwhile towns will be driven by necessity to bypass the center and take initiatives such as setting up their own farms, energy supplies and factories, thus transferring various functions out of the control of the centre. There will be increasing recognition that the local is the only level where the right decisions for self-sufficient communities can be made. In time, these shifts will lead to the transfer of functions and power from state-level agencies to the local level, leaving the center with relatively few tasks, and mainly with the role of facilitating local activities. This radical restructuring could conceivably be a smooth and peaceful process, driven by a general recognition that scarcity is making local self-governing communities the only viable option. If this happens then in effect, Stage 1 will be recognized as having constituted the revolution, essentially a cultural phenomenon, and the macroscopic structural changes in Stage 2 will be seen as a consequence of the revolution. Thus a case for Anarchist theory and practice It will be evident that the alternative social organization sketched above is a fairly common Anarchist vision (although there are also varieties that are not being advocated). The argument is that settlements enabling a high quality of life for all, despite very low resource use rates, must involve all members in thoroughly participatory deliberations regarding the design, development and running of their local productive, political and social systems. Their ethos must be non-hierarchical, cooperative and collectivist, seeking to avoid all forms of domination and to prioritize the public good. They must draw on the voluntary good will and energy of conscientious citizens who are ready to contribute generously and to identify and deal with problems informally and spontaneously, and to focus on seeking mutually beneficial arrangements with little if any need for industrial infrastructures and transport networks, bureaucracy, paid officials or politicians. Regional and wider issues will be tackled by the characteristic Anarchist mechanisms of federations and (powerless) delegates bringing recommendations back down to town meetings. The principle of 'subsidiarity' is evident in the practice of grass-roots politics, the avoidance of hierarchies, and the central role of town assemblies. The very low resource costs sustainability requires are achievable because of the proximity, diversity of functions and integration, the familiarity enabling informal communication and spontaneous action, and the elimination of many processes (e.g., transport, waste dumping, fertilizer production, packaging). In the 1930s the Spanish Anarchists in the Barcelona region showed what could be done by ordinary workers and citizens. An impressive current example is the Catalan Integral Cooperative movement (Dafermos 2017; TSW 2015a). Thousands work in hundreds of different cooperatives providing hundreds of thousands of dollars worth of food, goods and services, including unemployment and other welfare services. They operate more than twenty food 'pantries' largely via voluntary labor, handling more than a thousand products. Their goal is to build an alternative society focused on meeting needs, with no involvement of the state or market principles. Many eco-villages operate according to Anarchist principles, achieving high levels of sustainability (again see Lockyer 2017 and Grinde et al. 2018). In addition it will be evident that the discussion of transition strategy also follows Anarchist principles, especially in the notion of 'prefiguring' the new here and now within the old, not depending on the centre let alone a vanguard party, and recognizing the importance of ideas and values. The advent of GFC 2 Unfortunately the foregoing transition sequence is likely to be greatly disrupted and possibly thwarted a global financial crisis of much greater magnitude than the 2008 event. It is widely recognized that the much higher levels of debt are likely to bring on at least a serious recession, and probably worse in the next few years. The global economy is heavily dependent on petroleum supply, which is been kept up by 'fracking', but this has only been made possible by enormous debt; none of the major companies in the arena has ever made a profit. Several analysts have pointed out that the price levels necessary to make the new sources of petroleum profitable now seem to be above those necessary to enable economies to function normally. In addition, Ahmed (2017) has argued persuasively that the rapidly worsening population, food, water and ecological conditions affecting Middle Eastern petroleum suppliers are increasing their chances of becoming failed states. Meanwhile the proportion of their petroleum production they must use internally is increasing, adding to the possibility that their capacity to export will dry up within a decade. These and other deteriorating resource and ecological conditions (especially falling Energy Return on Energy Invested rates) are likely to trigger serious global economic disruption long before localist initiatives have been well enough established. Yet it is very unlikely that the kind of transition envisaged could begin unless there is major breakdown

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in the existing consumer-capitalist system. As long as it keeps the supermarket shelves stocked, discontent is likely to be muted, and focused on demands for more jobs and higher incomes rather than system replacement. The Goldilocks outcome would seem to be an economic depression that falls short of catastrophic breakdown, but is serious enough to convince large numbers that the system is not going to provide for them. The challenge to the Left This analysis has especially important implications for those who are radically critical of consumercapitalist society. Firstly it is evident that the revolution required to solve the problem is far bigger than that which Marx envisaged. Merely getting rid of capitalism will not suffice. Secondly, the most promising frontier now for such critics is the challenge to current society being set by unsustainable resource and ecological impacts. Latouche said the limits to growth are giving critical theory its last chance (2012: 75). Yet the foregoing argument has been that this opportunity has hardly been recognized, let alone taken up. Bookchin saw this some time ago. "The New Left, like the old left, has never grasped the revolutionary potential of the ecological issues, nor has it used ecology as a basis for understanding the problems of communist reconstruction and utopia" (1973: 242). Significant and increasing numbers of ordinary people are seriously concerned about these issues and are thinking more or less in the general direction of replacing consumer-capitalism with localism and simpler ways. These themes are likely to be the most effective foundations for critical social theory and practice now. But unfortunately the Left has a deeply entrenched reluctance to embrace these ideas. The traditional assumption has been that when power has been taken from the capitalist class, the contradictions preventing full application of the productive forces will be removed and technical advance will lift all to material wealth. Socialism is distinctly not conceived today in terms of frugality or localism. Indeed some socialists embrace 'ecomodernist' ideas, notably Phillips (2014) and Sharzer (2012), who explicitly spurn the suggestion that local or simpler ways are necessary or desirable. David Harvey represents the many Marxists who reject localism both as a goal and as a revolutionary strategy in favor of the typical socialist focus on action at the state level (Harvey 2017). For a critique, see Springer (2017). The Marxist position fails to address current circumstances, where the goal must be to contradict individualistic competitive affluence and must focus on citizen involvement in local economies. Major change at the central or state level cannot be achieved before a profound cultural revolution has been achieved, and this is most likely to occur via developments at the local level. Delusion and denial: the inability to respond There are difficult and puzzling issues for social theorists that will not be taken up in this article. They are the psychological and institutional reasons for the failure to deal adequately with the limits to growth predicament, or with its major sub-problems such as the looming petroleum supply, debt, and climate change crises. The core phenomenon to be explained here would seem to be failure to even recognize the existence and/or seriousness of the problems, rather than lack of appropriate remedial action. The essential causal factor is surely that if the limits to growth analysis is accepted then perhaps the most deeply entrenched post-Enlightenment assumption has to be jettisoned, i.e., the taken-for-granted conviction that progress and the good life are defined by capacity to produce and consume more and more material wealth. The suggestion that the supreme social goal should be materially simple lifestyles and systems, with no prospect of rising to greater affluence over time, would seem to be about as distasteful and unthinkable to workers and the lumpenproletariat as to the super-affluent 1%. 6. Conclusions: a reorientation of social theory The argument is that the advent of the limits to growth issue should be seen as requiring a major shift in the focal concerns of social theorists, especially those interested in critical perspectives on contemporary society and in sustainability and utopian themes. To begin with, a limits perspective involves a commitment to an inescapable logic that leads to quite specific conclusions regarding desirable social forms and how they might be achieved. If the limits are as severe as has been argued, then the goal must be transition from consumer-capitalist society to a general form that involves far lower resource use, and this has to mean mostly small-scale local economies that are self-governing, basically cooperative and committed to materially frugal lifestyles. If this is so, then the transition is essentially a cultural problem, and it is difficult to imagine how these ways could be established other than through a slow grass-roots process whereby ordinary people increasingly coerced by scarcity and economic deterioration take on the restructuring of their own suburbs, towns and regions (Alexander and Gleeson 2019). A major implication drawn above is that centralized agencies, especially the state, cannot drive these changes through.

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#### Finishing De Haan

De Haan 19, AI Expert, Futurist and Space Enthusiast (Hein, October, “Capitalism: The Enemy of Friendly AI,” *Towards Data Science*, <https://towardsdatascience.com/capitalism-the-enemy-of-friendly-ai-e6b3f40dbe08>, Accessed 08-27-2021)

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#### Trade skyrockets emissions — deals systematically ignore the environment.

Kucik 18 — Assistant professor in the School of Government and Public Policy at the University of Arizona (Jeffrey; December 22nd; “Trade deals have glaring omission: Environmental standards”; *The Hill*; <https://thehill.com/opinion/energy-environment/422458-trade-deals-have-glaring-omission-environmental-standards>; Date Accessed 03-04-2021)

Unfortunately, cooperation on the environment still lags in other areas. The international agreements that govern free trade still fail to adequately address climate change.

Trade plays an important role in global greenhouse gas (GHG) emissions. To start, there are the emissions associated with production. Emissions from industry account for around 20 percent of GHG output in both the United States and the European Union.

And, as production has moved out of the OECD to elsewhere in the world, GHG output has increased in emerging markets. The European Commission reports that, between 2000 and 2015, emissions grew by 45 percent in Brazil and 130 percent in India.

In those countries, changes in land use to promote agriculture exports and industrialization are major contributors to climbing emissions.

The spread of production around the world also increases emissions from transportation. Parts and components cross borders multiple times before a finished product appears on our shelves. Each step in that process contributes a little more to overall emissions.

What are recent trade agreements doing to confront these trends? The answer appears to be: not enough.

Trade deals suffer from two main shortcomings. First, they fail to recognize that climate change is a problem. The Comprehensive Economic and Trade Agreement (CETA) between Canada and the EU probably scores best on this front.

It acknowledges 1972's Stockholm Declaration and "Agenda 21" — a broad commitment to sustainable development that came out of the Earth Summit.

But CETA shares a trait with other recent deals, including the revised Comprehensive and Progressive Trans-Pacific Partnership (CPTPP) and the U.S.-Mexico-Canada Agreement (USMCA). Despite lengthy passages about the environment, these deals never say the words “climate change,” and they are largely silent on the issue of GHG emissions.

Silence on this issue isn’t just a point of principle. Failing to recognize climate change has a policy implication, namely, the world’s trade deals do not lock members into more responsible practices.

Rather than binding commitments, there are only general aspirations, such as CPTPP’s call for “low emissions technologies.” That’s not a very significant step beyond the promises made decades ago in Rio.