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## 1AC — CEDA (KU HS)

### 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.

#### Those ships are inherently anticompetitive

Veitch 16, Head of Policy for the Global Shipping Foundation, (Alex, Nov 2016, Report by Global Shipping Foundation, “The Implications of Mega-Ships and Alliances for Competition and Total Supply Chain Efficiency: An Economic Perspective”, <https://paperzz.com/doc/9427398/the-implications-of-mega-ships-and-alliances-for-competit>...)

The container shipping Market is undergoing considerable change. The development of the mega ship has had a profound impact. They have led to the creation of new strategic Global alliances and quickened the pace of consolidation in the industry. This paper analyzes the impacts for shippers, the customers of container ship operators, and in particular the Wider supply chain implications of Mega ships and the potential impact on competition between competitors and their shipper customers. This paper comes in two parts: the first provides an economic assessment of megaships, alliances and consolidation of the container ship industry; the second part, in the form of an Annex (Annex 1) takes a competition policy analysis of megaships, strategic alliances in the impacts of consolidation in the industry. the paper draws on various detailed studies and sources, including the recent Organization for Economic Cooperation and Development (OECD) International Transport Forum report on Mega ships and the oecd competition committee report on competition issues in liner shipping , but it also provides its own independent economic and competition assessments. The following key findings, conclusions, and recommendations for carriers, regulators and competition authorities, and shippers are summarized below. Economic Issues: Mega ships and the associated commercial practices of strategic alliances and mergers are driving consolidation in the container shipping sector. This is harmful to shippers because megaships and strategic alliances reduce supply chain efficiency and rivalry unimportant parameters of competition, including capacity, sailing frequency, de transit times, ports of call and Associated service quality. The higher economies of scale associated with megaships mean that fewer ships can operate in a market of a given size. Higher barriers-to-entry are likely to reinforce the trend towards fewer independent operators, with smaller operators being driven out of the major trades into niche markets faced with a trend towards consolidation and cooperation due to Mega vessels. It is unlikely competition problems associated with consolidation and megaships will be solved by new entrance into liner shipping. The report asks whether the time is right to question the received wisdom that shipping alliances and Consortium are preferable to consolidation between carriers because Shipping Lines operating common capacity cannot compete amongst themselves with regards to the Consortium has agreed capacity, sailing frequency, transit times, ports of call and Associated service quality.

#### 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.

#### Nuclear deterrence fails — conceptions of “limited war” are wrong

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The Ladakh crisis, still not over, has established an unpalatable reality: India’s nuclear weapons, whose raison d’etre is deterrence, have failed to deter China.

By reportedly occupying 1,000 square kilometre (sq km) of Indian territory in Ladakh, China not only walked through India’s conventional military capabilities, but also lobbed its purported nuclear deterrence out of reckoning. The Chinese message was loud and clear: China did not consider India’s nuclear weapons of any consequence.

Interestingly, Shivshankar Menon, former national security advisor, in his 2021 book India and Asian Geopolitics: The Past, Present – written after the 2020 Ladakh crisis began – says, “Since India became an overt nuclear weapon state in 1998, there has been no credible threat of using nuclear weapons against India nor attempt to use nuclear black-mail to change its behaviour. To that extent, India’s nuclear weapons have served their desired purpose.”

As NSA, Menon was responsible for India’s nuclear doctrine, posture, and operationalisation with the command of nukes vested in the prime minister-led National Command Authority.

To recall, after a series of five nuclear tests done on May 11 and 13, 1998, Prime Minister Atal Bihari Vajpayee wrote a letter to US President Bill Clinton citing China’s nuclear tests and the nuclear weapons nexus between China and Pakistan as the reasons for India’s tests. India also announced a nuclear ‘no first use’ policy, which meant that if deterrence failed, India would be prepared for an assured and credible second-strike capability after absorbing a first strike from the enemy – China, in the present case.

The second-strike capability is based on a triad of land, sea and air vectors. Given the paucity of combat aircraft for conventional war, especially when catering for a two-front war, aircraft availability for the nuclear role is merely theory. The land vector would be provided by the Agni-5 ballistic missile with a 5,000 km range meant to cover China. While this missile has yet to be operationalised, the Defence Research and Development Organisation (DRDO) has announced plans for Multiple Independent Re-entry Vehicles (MIRVs) which can deliver a number of warheads at different targets simultaneously instead of a single big bang.The DRDO awaits government clearance for MIRVs, which is the technology of the late 1960s.

The sea vector of the triad would be India’s indigenous ballistic missile submarines (SSBNs) INS Arihant and the follow-on vessel INS Arighat, which are expected to be armed with K-4 submarine launched ballistic missiles with a range of 3,500 km to hit China. The K-4s are still under development.

Incidentally, INS Arihant was commissioned in August 2016 and did its only deterrent patrol in November 2018. However, it was not clear what was meant by a deterrent patrol since SSBNs should carry its nuclear missiles, which was not done in this case.

Meanwhile, unsure about India’s assured second-strike capability, especially against China, some Indian analysts, writes Menon, “believe that India should change its no-first-use policy and begin to think of nuclear weapons as war-fighting weapons to compensate for India’s conventional inferiority against China.” The assumption is that since nuclear powers do not go to war there is very little possibility of a war between India and China. However, if war happens, it would, at best, be a limited border war.

The origin of this thinking that nuclear powers do not go to war lies in Cold War theology, where it was correctly believed that the presence of nuclear weapons with the US and Russia prevented war between the two blocs — NATO and Warsaw Pact — which had divided the world. Holding it as a truism for all times to come, Indian analysts – comprising policymakers, the military brass and retired senior officers – have superimposed this template on India. Hence, this popular narrative has emerged since the Ladakh 2020 stand-off between India and China.

These assumptions — no war, or a limited one between India and China — have neither been analysed nor war-gamed. The reality is that let alone the People’s Liberation Army (PLA), these assumptions do not even hold true against the Pakistani military, whose capabilities, with China’s support, have increased substantially.

Nuclear weapon powers

Before examining India’s case, there is a need to put into perspective the nuclear weapons of the US and the Soviets, and now the US and China.

In the 1950s, the Soviets had an overwhelming advantage over the US military in conventional forces. While the Soviets were not as technologically advanced as the US, they believed that quantity had a quality of its own. Instead of matching the Soviets’ quantity — tank for tank and gun for gun — US President Dwight Eisenhower introduced battlefield atomic or tactical nuclear weapons (TNWs) to thwart any Soviet conventional offensive in the European theatre. The TNWs worked because the US had superiority in strategic nuclear weapons (big yield bombs).

Called the ‘New Look’ strategy, the belief was that if the Soviets retaliated with their strategic nukes in response to the US’s TNWs, the latter could counter-retaliate with a bigger nuclear arsenal and perhaps control the nuclear escalation ladder. Since the Soviets did not put the US’s assumption to test as it would have resulted in Mutual Assured Destruction (MAD), the ‘New Look’ strategy, which came to be known as the US’s first offset strategy, worked.

However, by the early 1970s, two things happened. While retaining a formidable conventional arsenal, the Soviets managed to match the US in certain key conventional technologies. And their strategic nukes inventory matched the US’s nukes in range and yields, making an early use of TNWs extremely risky. With the Soviet or Warsaw Pact forces outmatching the US-led NATO in conventional forces’ size while maintaining near-technology parity, TNWs – without a superior strategic nukes arsenal – became too risky for use since the US’s control over the nuclear escalation ladder was no longer credible.

This led to the US’s second offset strategy where the reliance on nukes was abandoned. Instead, highly accurate and long-range conventionally guided munitions which could stop Soviet forces before they were arrayed for an assault were sought. Making use of battle networks and space for precision and stand-off attacks, conventional munitions which could achieve battlefield effects comparable with TNWs were fielded. This second offset strategy was used in the 1991 Gulf War against Iraq with spectacular success.

The central point of the US’s second offset strategy was that both conventional and nuclear forces had to be credible and strong for major powers to not go to war since neither side would feel confident of exercising war control. This line of thought holds good even today, as observed between the US and China with regards to military tensions in the Taiwan Strait and the South China Sea.

In both the Taiwan Strait and South China Sea, the PLA has built a formidable Anti-Access and Area Denial (A2AD) firewall, in addition to excellent cyber and electronic warfare capabilities comparable with the US military. So, while the US military can continue with its aggressive freedom of navigation patrols in both theatres, which are meant to signal its intent to China, Taiwan and ASEAN, it worries about crossing Chinese red lines since it is not confident of winning a conventional war.

For this reason, the Biden administration has, since coming to office, been seeking an appointment for defence secretary Lloyd Austin with Chinese senior vice-chairman of the Central Military Commission General Xu Qiliang to determine mutual red lines. China has repeatedly refused this meeting on the ground that Xu outranks Austin on the protocol front.

The US fear is that continued uncertainty over Chinese red lines worries ASEAN – and the group’s members may then request the US military to slow down, if not totally abandon, its sea and air combat patrols.

On the other hand, having achieved parity in conventional war in these two theatres with the US military, China worries about getting overwhelmed by the US’s massive nuclear arsenal and aggressive first-use posture. This, theoretically, could lead to a reprise of the US’s first offset strategy situation where, backed by a bigger strategic nuclear inventory, the US military could, if outdone in conventional war, use its tactical nukes.

While refusing to be a party to the Strategic Arms Reduction Treaty (START) between the US and Russia on the plea that its nuclear weapons arsenal is comparatively small, and unwilling to change its no-first-use posture since it could affect its peaceful rise, China has decided to increase its strategic weapons inventory to build credible nuclear deterrence to discourage the US military from any nuclear misadventure.

This explains the building of an additional 120 missile silos for its DF-41 and DF-31 Inter Continental Ballistic Missiles (ICBMs). From its de-alert status — with separate launchers, missiles, and warheads — the PLA seems to be moving towards keeping a part of its nuclear arsenal on a launch on warning (LOW) nuclear posture. This refers to initiating a nuclear strike on detection of an incoming hostile missile. China’s early detection system comprising ground and space-based components, a control centre and data processing system has been provided by Russia. This strategic early warning, command and control, and rapid reaction system is available with only three nations — the US, Russia and China.

China has also deployed lower yield nuclear weapons for use against campaign targets to reduce collateral damage. Its DF-26 ballistic missile which can conduct precision strikes is the likely vector for lower yield warheads.

India’s nuclear domain

Against this backdrop, the belief that abandoning no first use and using nukes for war-fighting could compensate for India’s conventional inferiority against China seems especially misplaced.

For one, a shift to a first-use policy would not diminish the need for conventional deterrence. For another, while not being able to match Chinese nuclear deterrence, it could compel the PLA, if required, to use any or all three options: destroy the Indian nuclear kill chain with its cyber, electronic, directed energy weapons or long-range precision hypersonic glide vehicles; use lower yield nukes in campaign as a warning signal; or resort to an LOW nuclear posture. Simply put, India’s first-use policy against China would be suicidal.

Moreover, the proposition of fighting a limited war with China is equally ill-informed. The genesis of the concept of limited war is the 1999 Kargil conflict between India and Pakistan which, at best, was an aberration on three counts.

First, with no participation of the Pakistan Air Force, the Indian Air Force had air dominance, which would not be possible in war. Second, since the Pakistan Army too did not participate — it was a combination of the mujahids and Pakistan’s Northern Light Infantry (then, a paramilitary and not a regular army) versus the Indian Army and the IAF — the Indian side could build an overwhelming superiority of land forces in a localised area with massive employment of artillery in a direct firing role; all this will not happen in a proper war. And third, the Nawaz Sharif government cracked under the US’s pressure to withdraw its forces and end the conflict.

Instead of learning the right lesson – that the Indian military needed to build credible counter-offensive capability – Army Chief General V.P. Malik formalised the limited war concept. Writing in the Indian Express newspaper of June 21, 2002, he said, “In the changed Indo-Pak strategic environment, there is a likelihood of limited wars than an all-out war. A limited war implies limited political and military objectives, not hurting excessively at any one time, limited in time, space and force levels.” The reality is that the complexion of war — whether it be limited or all-out — would be determined by the stronger side. In this case, China.

Failure to develop deterrence against China

On the question of nuclear tests, what needs to be asked is this: Why did the Vajpayee government, which said its nuclear tests were to maintain balance with China, fail to develop nuclear deterrence against it?

The answer has been provided in US’s former deputy secretary of state Strobe Talbott’s book Engaging India: Diplomacy, Democracy, and the Bomb. According to Talbott, days before India’s tests, Jaswant Singh, who was close to the prime minister but held no office at that time, sought an impromptu appointment with the US energy secretary Bill Richardson, who was visiting India. Considered close to the US President Bill Clinton, Richardson was staying at the US ambassador’s residence in New Delhi. During their meeting, Singh told the US officials that should the US president wish to convey something urgent to the Indian prime minister, it could be done through him, bypassing the slow bureaucratic procedures. Confused at that time, the US understood the import of Singh’s secret mission when, within days, India did its nuclear tests.

Instead of strengthening national security by quickly covering the paces from nuclear tests to nuclear weaponisation, the Vajpayee government dawdled, working on close ties with the US by offering itself as a strategic counterweight to China. Singh’s meeting with Richardson led to 13 rounds of talks on non-proliferation between him and Talbott. The talks were not about China, which ostensibly was the reason for India’s tests, but on Pakistan. Since the Pakistan Army Chief, General Jehangir Karamat, had told Talbott that Pakistan would not compromise on its national security and would do its own tests to match India’s, the US’s hope on non-proliferation was to dissuade a willing India from credible weaponisation. Pakistan had made it clear that its nuclear programme was tied with that of India.

Fast forward to May 2020. India lacks both conventional and nuclear deterrence against China. With little possibility of catching up on either, the gap will only continue to grow. Specific to the nuclear domain, India has several tough questions on the table: How to develop nuclear deterrence? What should India’s nuclear policy and posture be? What to do with Agni-5 and SSBNs since nuclear deterrence had failed? How to develop conventional deterrence since the military leadership has shown little interest in understanding the PLA’s informatised and intelligentised wars to modify its own military reforms? Procrastination on these issues is not an option since China would soon be tempted to militarily reclaim its territories from India, including Ladakh and Arunachal Pradesh.

Sadly, the situation vis-à-vis Pakistan is not encouraging either. Reported to have more nukes than India, and with full spectrum nuclear capability (covering tactical, operational and strategic targeting), Pakistan has developed credible nuclear deterrence against India. Moreover, with increased interoperability (i.e. the ability of the PLA and Pakistan military to fight together against India) since the scrapping of Article 370 from Jammu and Kashmir – which brought the two friends in tight military embrace – operational surprises by the Pakistan military cannot be ruled out in conventional war.

The going, as the saying goes, has got tougher for India, both in the north and the west.

#### 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

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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.

#### \*\*Ocean shipping reform is progressing through Congress — Ocean Shipping Reform Act

Berman 4-4-2022, group news editor for Logistics Management, Modern materials Handling, and Supply Chain Management Review. (Jeff, 4-4-2022, “U.S. Senate approves Ocean Shipping Reform Act, bill to head to conference”, Logistics Management, [https://www.logisticsmgmt.com/article/u.s.\_senate\_approves\_ocean\_shipping\_reform\_act\_bill\_to\_head\_to\_conference accessed 4-8-2022](https://www.logisticsmgmt.com/article/u.s._senate_approves_ocean_shipping_reform_act_bill_to_head_to_conference%20accessed%204-8-2022))

The Ocean Shipping Reform Act (OSRA) took another step on its course to being signed into law, with the United States Senate late last week unanimously voted to sign off on it on a voice vote.

The bill will head back to the House of Representatives, with the expectation it will head to President Biden’s desk to be signed into law, following conferencing between the House and Senate on differences that need to be hammered out between the chambers.

This represents the most recent sign of progress for the OSRA, getting bipartisan approval from United States Senate Committee on Commerce, Science, and Transportation on March 22 and OSRA being passed in December 2021 by the United States House of Representatives by a convincing 364-40 vote and its subsequent introduction into the Senate in February by Senator Amy Klochubar (D-Minn.) and Senator John Thune (R-S.D.).

The House version of the bill was introduced by Representatives John Garamendi (D-CA) and Dusty Johnson (R-SD) in August, with the objective of making the Federal Maritime Commission (FMC) “a more effective federal regulator.”

Key components of the Ocean Shipping Reform Act of 2021 include:

requiring ocean carriers to certify that late fees —known in maritime parlance as “detention and demurrage” charges—comply with federal regulations or face penalties;

shifting burden of proof regarding the reasonableness of “detention or demurrage” charges from the invoiced party to the ocean carrier;

prohibiting ocean carriers from unreasonably declining shipping opportunities for U.S. exports, as determined by the FMC in new required rulemaking;

requiring ocean common carriers to report to the FMC each calendar quarter on total import/export tonnage and 20-foot equivalent units (loaded/empty) per vessel that makes port in the United States;

authorizing the FMC to self-initiate investigations of ocean common carrier’s business practices and apply enforcement measures, as appropriate; and

establishing new authority for the FMC to register shipping exchanges

#### \*\*Maersk was subpoenaed by the DOJ

Dixon 3-17, is a general assignment reporter at Law360. (Gracie, 3-17-2022, “DOJ Subpoenas Shipping Giant Maersk Amid Antitrust Focus,” Law360, https://www.law360.com/articles/1474850/doj-subpoenas-shipping-giant-maersk-amid-antitrust-focus)

The U.S. Department of Justice has subpoenaed Maersk, the Danish shipping giant confirmed Friday, a move in line with President Joe Biden's State of the Union promise to "crack down" on rising ocean freight shipping costs following the industry's rapid consolidation. The subpoena for A.P. Moller Maersk comes less than a month after the White House announced a concerted effort by the DOJ and the Federal Maritime Commission to ensure that three global alliances that have come to dominate ocean carrier freight shipping in the past decade are complying with competition laws. According to a Maersk spokesperson, the subpoena is part of the DOJ's ongoing investigation into supply chain disruption. "We have not seen evidence of any actual or alleged wrongdoing on the part of Maersk and will continue to cooperate with the U.S. Department of Justice as they continue their investigation," the spokesperson added. The White House had outlined concerns that spot rates for freight shipping between the U.S. and Asia have jumped 1000% since January 2020, while the container shipping industry pulled in $190 billion in profits last year, a seven-fold increase from 2020, in a fact sheet issued ahead of the State of the Union address. "Right now, three global alliances, made up entirely of foreign companies, control almost all of ocean freight shipping, giving them power to raise prices for American businesses and consumers, while threatening our national security and economic competitiveness," the White House said in the Feb. 28 statement. Ocean freight carriers enjoy a degree of protection from antitrust measures under The Shipping Act of 1984 and The Ocean Shipping Reform Act of 1988. The statutes give antitrust cover to ocean carriers' agreements on shipping rates, pooling arrangements and allotted routes if approved by the FMC, which regulates carriers. But the White House shared concerns that as the three alliances' control of the global container ship capacity ratcheted up from 30% to 80% since 2011, these protections have enabled the dramatic price hikes. The White House added that ocean carriers are now able to cancel or change bookings and impose additional fees without notice, often effectively refusing to take American exports altogether. Under the cross-agency initiative, the DOJ will provide attorney and economists' support for enforcement of Shipping Act violations, and the FMC will provide the Antitrust Division with maritime industry expertise for enforcement efforts as well. The rapid consolidation and rising prices have also garnered Congressional attention. The Subcommittee on the Coronavirus Crisis and the Subcommittee on Economic and Consumer Policy jointly requested information from ocean freight carriers Maersk, CMA CGM Group and Hapag-Lloyd AG regarding dramatic price increases and reports of exorbitant fees and surcharges in early March. "We are deeply concerned that [Maersk, CMA CGM, and Hapag-Lloyd] may have engaged in predatory business practices during the pandemic, making scores of essential goods needlessly expensive for consumers and small businesses," Chairmen Rep. James E. Clyburn, D-S.C., and Rep. Raja Krishnamoorthi, D-Ill., said in a statement at the time. The Ocean Shipping Antitrust Enforcement Act, a bipartisan bill introduced by Rep. Jim Costa, D-Calif., on Feb. 28 would walk back several antitrust exemptions currently in place for ocean freight carriers. And members of the Senate Commerce, Science and Transportation Committee held a hearing March 3 to consider the Ocean Shipping Reform Act, a separate bipartisan bill that would strengthen the FMC's oversight authority and ability to hear complaints against carriers.

# 2AC

## AT: CHRISTIANITY PROCEDURAL

### 2AC---Christianity

#### 7. Premise is contradictory

Walters 2010 (Kerry, Professor emeritus of Philosophy at Gettysburg College, Atheism: A guide for the Perplexed, pp. 79-80)

Perhaps the first skeptic to object to God’s existence on the grounds of divine impossibility was Carneades of Cyrene, whom we met in Chapter 1. He pointed out that **the concept of God defended by theists is internally inconsistent or self-contradictory. Since it’s impossible for a self-contradiction to exist, God’s existence is likewise impossible**. Specifically, Carneades argued that **God cannot be both omnipotent and good, or virtuous. Omnipotence implies a state of eternal perfection, but moral virtue implies imperfection overcome.** Courage, for example, is a virtue that consists in mastering one’s fear of a dangerous situation. What sense does it make to say that an all-powerful God, who presumably has nothing whatsoever to fear, has ever been in a place to practice the virtue of courage? Perhaps Carneades was guilty of equivocation in assuming an identity between divine goodness and virtue. Nonetheless, **internal inconsistencies such as this, he concluded, so strain rational belief in God that we’d be better off dropping the whole idea of deity** (Thrower 2000, p. 41). Divine impossibility arguments since Carneades generally follow the spirit of his strategy by taking three related approaches: (1) find two attributes or qualities of God which are said to be necessary and show that they’re inconsistent; (2) show that in exercising any one of his attributes, God necessarily contradicts the attribute; and (3) show that an attribute standardly predicated of God is impossible. Consider, for example, the standard theistic claim that God is both omnipotent (all-powerful) and omniscient (all-knowing). **If God is omniscient, he can predict everything, including his own future acts. But if God is omnipotent, he can overrule everything, thus making all predictions about the future, including predictions about his own behavior, uncertain. So the attributes of omnipotence and omniscience are inconsistent.** God can be one or the other but not both, in the same way that Carneades argues that God can be omnipotent or virtuous but not both. A simple way of illustrating the second strategy of a divine impossibility argument—showing that in exercising an attribute God contradicts the attribute—is to recall a question that most first year philosophy students encounter: Can God make a rock too heavy for God to pick up? On the surface, the question seems silly. But it gestures at a more serious puzzle: **can God perform an act which entails God’s limitation? If God is omnipotent, then the obvious response is “yes.” But if so, then God’s omnipotence destroys his omnipotence.** If, startled by this outcome, we respond “no,” then our claim is that God isn’t omnipotent after all. And if this is the case, why call him “God”? Another example of the second strategy comes from Antony Flew, who argued that the attributes of “incorporeality” and “person” are inconsistent. Theists claim that God is personal, and Christian theists even speak of God in terms of a trinity of persons. But they also insist that God, being eternal and infinite, is without body. In ordinary usage, however, the notion of “person” only makes sense in terms of embodiment. The notion of a person without a body, says Flew, is contradictory (Flew 1966). But this argument isn’t as compelling as the previous one. As we saw in the discussion in Chapter 1 of the “personal” theistic God, most theists would argue that they attribute personhood to God in an analogous sense, not in the univocal way Flew does. God exists in a way that is similar but not identical to the way in which humans exist. One of those similarities is the possession of “personal” characteristics such as the ability to love, to know, and so on. This needn’t mean that God’s personhood entails divine embodiment. Theists who make this distinction are still obliged, of course, to justify the claim that God is analogous in certain ways to humans, and doing so may lead to assertions that are inconsistent or contradictory. The third way of arguing against God’s existence on the grounds of impossibility consists in showing that a particular power attributed to God just can’t be the case. Take omniscience, the ability to know everything that is knowable. But surely what is knowable includes experiences such as evil-doing, jealousy, sickness, and sexual desire. Yet God doesn’t seem capable of any of these sorts of experiences, precisely because of the sort of entity—perfectly good, immortal, and sexless—he is. So God can’t be omniscient; omniscience is an impossibility for God.

## AT: P, /P

### 2AC---AT: P

## AT: PRESUMPTION

### 2AC---Presumption

## AT: FUTARCHY CP

### 2AC---T/L

#### Certainty key.

Camilla Jain Holtse 20, Associate General Counsel - Head of Competition Law & Policy in A.P. Moller-Maersk (Maersk), based in Copenhagen, “Navigating Through Uncertain Waters—The Importance of Legal Certainty, Predictability, and Transparency in Future Antitrust Enforcement,” Journal of European Competition Law & Practice, vol. 11, no. 8, 11/14/2020, pp. 446–449

Fourthly, procedural rules differ across jurisdictions and due process is not always prevailing, adding to the unpredictability and uncertainty about the process and outcomes. The focus on international cooperation and coordination has predominantly been on the substantive legal framework and less so on procedural matters.

Fifthly, the geographic boundaries of national competition laws are becoming more and more blurry. For example, in the USA, we have seen a move towards the extra-territorial effect of US antitrust laws for foreign conduct. The same can be said about the EU practice of requiring merger notification for non-EEA joint ventures where the parent’s turnover meets the EU turnover thresholds and there are other examples. Furthermore, we see that many countries are increasingly claiming ‘indirect effects’ on their territory of a given practice. This uncertainty in geographic outreach of competition laws and the increased focus on indirect effects mean that today companies often must assume that the competition laws of a country may apply everywhere.

IV. What do markets need? simplicity, transparency, and predictability

With the complexity of today’s world, the need for simplicity, transparency, and predictability is now more compelling than ever.

Simple, transparent, and predictable rules lead to level playing fields. Like the sidelines on a football field, competition policy enables companies to analyze strategy, and invest in resources designed to effectively counter rival actions. When boundary lines are unclear, companies lose the ability to compete—some operate outside the playing field, others receive aid from sponsors to account for perceived ‘unfairness’, and those companies seeking to avoid penalty often miss opportunities that would have been obvious if the field were clearly marked. All of these inefficiencies ultimately hurt consumers in the form of higher prices and lower innovation.

Perhaps the most effective regulatory tools for increasing predictability is the use of safe harbours such as block exemptions, whether by regulation or through enforcement guidelines. Safe harbours encourage efficiency-enhancing behaviour at the lowest regulatory cost. Companies assigning ‘zero’ risk to a venture category are able to innovate more effectively and allocate capital more efficiently to the benefit of all stakeholders.

Another effective regulatory tool is the award or predictable, transparent benefit for compliance efforts. The Commission expects companies to comply with competition rules and evaluates positively any effort made by them in this respect. However, it is reluctant to take into consideration the existence of a competition compliance programme as a mitigating circumstance for the calculation of applicable fines contrary to other jurisdictions that see such programmes as a mitigating factor, as well as provide clear guidance on what is expected of such a programme. It seems clear that transparent and predictable ‘credit’ for an effective compliance programme would serve to devote more resources to compliance efforts, increasing overall compliance, and consumer welfare.

And when despite all efforts, a government’s clear and simple rules lead to enforcement action, the availability of predictable, fair, and transparent investigation and appeals procedures are a core element in a company’s assessment of overall legal risk. Among the more important rights of defense are as follows:

(i) The ability to know, in good time, what are the allegations against you and evidence on the authority’s file that could exonerate.

(ii) The ability to access the evidence on which these allegations rely.

(iii) The ability to present at a hearing of decision-makers, based on a complete record.

(iv) The ability to appeal the final decision to an independent court that carries out an in-depth review.

Many countries, particularly developing agencies, do not have effective basic due process rights, yielding arbitrary decisions not based on the rule of law and sound economic evidence. Weak procedural due process also provides opportunities for governments to leverage competition law to achieve political objectives. These concerns are particularly serious in those jurisdictions where domestic entities that have economic or strategic importance may benefit from the outcome of an investigation. It is also important to note that while many countries have procedural rights on paper, these are not always applied in practice. Procedural fairness needs to extend beyond words on a page to ensure certainty and an outcome that addresses the concerns raised.

V. The EU as a model agency for new competition tools

EU competition policy is a model for many other competition authorities worldwide. Countries that have historically struggled with the fair process will almost certainly be inspired by new tools that decrease transparency and predictability in the EU or any other leading competition regimes. Such tools could be used to justify increasingly divergent outcomes abroad or even serve to legitimise arbitrary interventions.

A potential example of innovation in this area is the proposed new competition enforcement tool which the Commission launched in June 20203 (and which is currently going through public consultation). Under the proposed tool, the standard for Commission intervention could be lowered substantially as the Commission may no longer be required to establish dominance in order to impose behavioural or structural remedies3. The New Competition Tool is not limited and could, therefore, be generally applicable across all sectors of the economy and would allow the Commission to intervene in any given industry where it claims there are structural competition problems. Since any claimed deficiencies would result from the very market structure and not from any wrongdoings, companies would arguably not be able to predict or avoid government intervention and may instead have to live with a constant uncertainty surrounding the application of competition law. The current proposal seems to suggest that a remedy can be imposed without the finding of an infringement (and by an agency not tasked with industry or sector regulation). The fact that practices or behaviour under such a tool may only result in remedies and possibly not fines does not make such tools less problematic. As mentioned, the business implications of remedies and the uncertainty costs can be equally damaging financially and deter investment, development, and innovation.

As the Commission considers new and expanded powers to account for technological advances, it should be highly cautious of tools granting unclear and expansive discretion. While it may be tempting to simply reserve the unrestrained right to intervene and ‘fix’ market problems, the resulting lack of transparency seems almost certainly to lead to at least two damaging effects. First, law-abiding companies seeking to engage in societally beneficial transactions would be forced to weigh the potential business costs flowing from any unclear rules. As noted, this kind of regulatory drag on efficient allocation of resources is a real and typical consideration in many transactions. Second, government actors outside the EU would almost certainly reserve similar discretion in the application of their own competition laws. Many may feel empowered to use these new tools in arbitrary ways as a means of reciprocity for perceived unfairness to national champions in other cases. The combined weight of over 100 arbitrary systems could be crippling to global business.

Once clear tools are created, the Commission should continue to investigate how best to provide informal guidance on a case by case basis. The Commission could encourage companies to make more use of informal (confidential) meetings with the Commission in order to discuss the interpretation of concrete questions in connection with a certain horizontal cooperation project or otherwise. In this respect, it is critical that the Commission provides informal confidential guidance, formally committing that it will not use the information provided for any other purpose than the informal guidance.

Properly implemented, new competition tools could greatly benefit consumers and companies alike. But the importance of this framework flows from increases in efficiency, not from increases in violations. Indeed, in the creation of new and expanded powers, the most positive result would not be a rash of new enforcement, but instead the further development and evolution of our clear understanding of what constitutes effective competition under EU law.

Finally, if tools are created, they should not only be clear in the application (upfront) but also plainly focused on economic concerns. The recent worldwide trend towards protectionism in global trade has created clear and measurable negative impacts on global prosperity. Further embedding these protectionist tendencies into EU competition law has the potential to completely undermine the level playing field for which competition laws were created. This is not to say that national security and industrial policy are not important issues—they clearly are vital. But the co-mingling of diverse and inherently opaque principles into competition law would inject additional and potentially damaging uncertainty

## Adv—Mega Ships

### 2AC---Extinction OW

#### Extinction outweighs.

Toby Ord 20, Senior Research Fellow in Philosophy at Oxford University & world-renowned risk-assessment expert who’s advised the World Health Organization, the World Bank, the World Economic Forum, the US National Intelligence Council and the UK Prime Minister’s Office, 3-3-2020, “The Precipice: Existential Risk and the Future of Humanity,” Hachette Book Group & Bloomsbury Publishing, <https://www.google.com/books/edition/The_Precipice/3aSiDwAAQBAJ?hl=en&gbpv=0>,

UNDERSTANDING EXISTENTIAL RISK

Humanity’s future is ripe with possibility. We have achieved a rich understanding of the world we inhabit and a level of health and prosperity of which our ancestors could only dream. We have begun to explore the other worlds in the heavens above us, and to create virtual worlds completely beyond our ancestors’ comprehension. We know of almost no limits to what we might ultimately achieve.

Human extinction would foreclose our future. It would destroy our potential. It would eliminate all possibilities but one: a world ~~bereft~~ [lacking] of human flourishing. Extinction would bring about this failed world and lock it in forever—there would be no coming back.

The philosopher Nick Bostrom showed that extinction is not the only way this could happen: there are other catastrophic outcomes in which we lose not just the present, but all our potential for the future.

Consider a world in ruins: an immense catastrophe has triggered a global collapse of civilization, reducing humanity to a pre-agricultural state. During this catastrophe, the Earth’s environment was damaged so severely that it has become impossible for the survivors to ever reestablish civilization. Even if such a catastrophe did not cause our extinction, it would have a similar effect on our future. The vast realm of futures currently open to us would have collapsed to a narrow range of meager options. We would have a failed world with no way back.

Or consider a world in chains: in a future reminiscent of George Orwell’s Nineteen Eighty-Four, the entire world has become locked under the rule of an oppressive totalitarian regime, determined to perpetuate itself. Through powerful, technologically enabled indoctrination, surveillance and enforcement, it has become impossible for even a handful of dissidents to find each other, let alone stage an uprising. With everyone on Earth living under such rule, the regime is stable from threats, internal and external. If such a regime could be maintained indefinitely, then descent into this totalitarian future would also have much in common with extinction: just a narrow range of terrible futures remaining, and no way out.

[FIGURE 2.1 Omitted]

Following Bostrom, I shall call these “existential catastrophes,” defining them as follows: 3

An existential catastrophe is the destruction of humanity’s longterm potential.

An existential risk is a risk that threatens the destruction of humanity’s longterm potential.

These definitions capture the idea that the outcome of an existential catastrophe is both dismal and irrevocable. We will not just fail to fulfill our potential, but this very potential itself will be permanently lost. While I want to keep the official definitions succinct, there are several areas that warrant clarification.

First, I am understanding humanity’s longterm potential in terms of the set of all possible futures that remain open to us. 4 This is an expansive idea of possibility, including everything that humanity could eventually achieve, even if we have yet to invent the means of achieving it. 5 But it follows that while our choices can lock things in, closing off possibilities, they can’t open up new ones. So any reduction in humanity’s potential should be understood as permanent. The challenge of our time is to preserve our vast potential, and to protect it against the risk of future destruction. The ultimate purpose is to allow our descendants to fulfill our potential, realizing one of the best possible futures open to us.

While it may seem abstract at this scale, this is really a familiar idea that we encounter every day. Consider a child with high longterm potential: with futures open to her in which she leads a great life. It is important that her potential is preserved: that her best futures aren’t cut off due to accident, trauma or lack of education. It is important that her potential is protected: that we build in safeguards to make such a loss of potential extremely unlikely. And it is important that she ultimately fulfills her potential: that she ends up taking one of the best paths open to her. So too for humanity.

Existential risks threaten the destruction of humanity’s potential. This includes cases where this destruction is complete (such as extinction) and where it is nearly complete, such as a permanent collapse of civilization in which the possibility for some very minor types of flourishing remain, or where there remains some remote chance of recovery. 6 I leave the thresholds vague, but it should be understood that in any existential catastrophe the greater part of our potential is gone and very little remains.

Second, my focus on humanity in the definitions is not supposed to exclude considerations of the value of the environment, other animals, successors to Homo sapiens, or creatures elsewhere in the cosmos. It is not that I think only humans count. Instead, it is that humans are the only beings we know of that are responsive to moral reasons and moral argument—the beings who can examine the world and decide to do what is best. If we fail, that upward force, that capacity to push toward what is best or what is just, will vanish from the world.

Our potential is a matter of what humanity can achieve through the combined actions of each and every human. The value of our actions will stem in part from what we do to and for humans, but it will depend on the effects of our actions on non-humans too. If we somehow give rise to new kinds of moral agents in the future, the term “humanity” in my definition should be taken to include them.

My focus on humanity prevents threats to a single country or culture from counting as existential risks. There is a similar term that gets used this way—when people say that something is “an existential threat to this country.” Setting aside the fact that these claims are usually hyperbole, they are expressing a similar idea: that something threatens to permanently destroy the longterm potential of a country or culture.

Third, any notion of risk must involve some kind of probability. What kind is involved in existential risk? Understanding the probability in terms of objective long-run frequencies won’t work, as the existential catastrophes we are concerned with can only ever happen once, and will always be unprecedented until the moment it is too late. We can’t say the probability of an existential catastrophe is precisely zero just because it hasn’t happened yet.

Situations like these require an evidential sense of probability, which describes the appropriate degree of belief we should have on the basis of the available information. This is the familiar type of probability used in courtrooms, banks and betting shops. When I speak of the probability of an existential catastrophe, I will mean the credence humanity should have that it will occur, in light of our best evidence.9

There are many utterly terrible outcomes that do not count as existential catastrophes.

One way this could happen is if there were no single precipitous event, but a multitude of smaller failures. This is because I take on the usual sense of catastrophe as a single, decisive event, rather than any combination of events that is bad in sum. If we were to squander our future simply by continually treating each other badly, or by never getting around to doing anything great, this could be just as bad an outcome but wouldn’t have come about via a catastrophe.

Alternatively, there might be a single catastrophe, but one that leaves open some way for humanity to eventually recover. From our own vantage, looking out to the next few generations, this may appear equally bleak. But a thousand years hence it may be considered just one of several dark episodes in the human story. A true existential catastrophe must by its very nature be the decisive moment of human history—the point where we failed.

Even catastrophes large enough to bring about the global collapse of civilization may fall short of being existential catastrophes. While colloquially referred to as “the end of the world,” a global collapse of civilization need not be the end of the human story. It has the required severity, but may not be permanent or irrevocable.

In this book, I shall use the term civilization collapse quite literally, to refer to an outcome where humanity across the globe loses civilization (at least temporarily), being reduced to a pre-agricultural way of life. The term is often used loosely to refer merely to a massive breakdown of order, the loss of modern technology, or an end to our culture. But I am talking about a world without writing, cities, law, or any of the other trappings of civilization.

This would be a very severe disaster and extremely hard to trigger. For all the historical pressures on civilizations, never once has this happened— not even on the scale of a continent.10 The fact that Europe survived losing 25 to 50 percent of its population in the Black Death, while keeping civilization firmly intact, suggests that triggering the collapse of civilization would require more than 50 percent fatality in every region of the world.11

Even if civilization did collapse, it is likely that it could be reestablished. As we have seen, civilization has already been independently established at least seven times by isolated peoples.12 While one might think resource depletion could make this harder, it is more likely that it has become substantially easier. Most disasters short of human extinction would leave our domesticated animals and plants, as well as copious material resources in the ruins of our cities—it is much easier to re-forge iron from old railings than to smelt it from ore. Even expendable resources such as coal would be much easier to access, via abandoned reserves and mines, than they ever were in the eighteenth century. 13 Moreover, evidence that civilization is possible, and the tools and knowledge to help rebuild, would be scattered across the world.

There are, however, two close connections between the collapse of civilization and existential risk. First, a collapse would count as an existential catastrophe if it were unrecoverable. For example, it is conceivable that some form of extreme climate change or engineered plague might make the planet so inhospitable that humanity would be irrevocably reduced to scattered foragers.14 And second, a global collapse of civilization could increase the chance of extinction, by leaving us more vulnerable to subsequent catastrophe.

One way a collapse could lead to extinction is if the population of the largest remaining group fell below the minimum viable population—the level needed for a population to survive. There is no precise figure for this, as it is usually defined probabilistically and depends on many details of the situation: where the population is, what technology they have access to, the sort of catastrophe they have suffered. Estimates range from hundreds of people up to tens of thousands.15 If a catastrophe directly reduces human population to below these levels, it will be more useful to classify it as a direct extinction event, rather than an unrecoverable collapse. And I expect that this will be one of the more common pathways to extinction.

We rarely think seriously about risks to humanity’s entire potential. We encounter them mostly in action films, where our emotional reactions are dulled by their overuse as an easy way to heighten the drama.16 Or we see them in online lists of “ten ways the world could end,” aimed primarily to thrill and entertain. Since the end of the Cold War, we rarely encounter sober discussions by our leading thinkers on what extinction would mean for us, our cultures or humanity. 17 And so in casual contexts people are sometimes flippant about the prospect of human extinction.

But when a risk is made vivid and credible—when it is clear that billions of lives and all future generations are actually on the line—the importance of protecting humanity’s longterm potential is not, for most people, controversial. If we learned that a large asteroid was heading toward Earth, posing a greater than 10 percent chance of human extinction later this century, there would be little debate about whether to make serious efforts to build a deflection system, or to ignore the issue and run the risk. To the contrary, responding to the threat would immediately become one of the world’s top priorities. Thus our lack of concern about these threats is much more to do with not yet believing that there are such threats, than it is about seriously doubting the immensity of the stakes.

Yet it is important to spend a little while trying to understand more clearly the different sources of this importance. Such an understanding can buttress feeling and inspire action; it can bring to light new considerations; and it can aid in decisions about how to set our priorities.

#### Human existence is desirable---life is a prerequisite to generate value and ponder secondary questions of ethics

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Many, though certainly not all, people might believe that it would be wrong to bring about the end of the human species, and the reasons given for this belief are various. I begin by considering four reasons that could be given against the moral permissibility of human extinction. I will argue that only those reasons that impact the people who exist at the time that the extinction or the knowledge of the upcoming extinction occurs, can explain its wrongness. I use this conclusion to then consider in which cases human extinction would be morally permissible or impermissible, arguing that there is only a small class of cases in which it would not be wrong to cause the extinction of the human race or allow it to happen. 2.1. It would prevent the existence of very many happy people One reason of human extinction might be considered to be wrong lies in the value of human life itself. The thought here might be that it is a good thing for people to exist and enjoy happy lives and extinction would deprive more people of enjoying this good. The ‘good’ in this case could be understood in at least two ways. According to the first, one might believe that you benefit a person by bringing them into existence, or at least, that it is good for that person that they come to exist. The second view might hold that if humans were to go extinct, the utility foregone by the billions (or more) of people who could have lived but will now never get that opportunity, renders allowing human extinction to take place an incidence of wrongdoing. An example of this view can be found in two quotes from an Effective Altruism blog post by Peter Singer, Nick Beckstead and Matt Wage: One very bad thing about human extinction would be that billions of people would likely die painful deaths. But in our view, this is by far not the worst thing about human extinction. The worst thing about human extinction is that there would be no future generations. Since there could be so many generations in our future, the value of all those generations together greatly exceeds the value of the current generation. (Beckstead, Singer, and Wage 2013) The authors are making two claims. The first is that there is value in human life and also something valuable about creating future people which gives us a reason to do so; furthermore, it would be a very bad thing if we did not do so. The second is that, not only would it be a bad thing for there to be no future people, but it would actually be the worst thing about extinction. Since happy human lives have value, and the number of potential people who could ever exist is far greater than the number of people who exist at any one time, even if the extinction were brought about through the painful deaths of currently existing people, the former’s loss would be greater than the latter’s. Both claims are assuming that there is an intrinsic value in the existence of potential human life. The second claim makes the further assumption that the forgone value of the potential lives that could be lived is greater than the disvalue that would be accrued by people existing at the time of the extinction through suffering from painful and/or premature deaths. The best-known author of the post, Peter Singer is a prominent utilitarian, so it is not surprising that he would lament the potential lack of future human lives per se. However, it is not just utilitarians who share this view, even if implicitly. Indeed, other philosophers also seem to imply that they share the intuition that there is just something wrong with causing or failing to prevent the extinction of the human species such that we prevent more ‘people’ from having the ‘opportunity to exist’. Stephen Gardiner (2009) and Martin O’Neill (personal correspondence), both sympathetic to contract theory, for example, also find it intuitive that we should want more generations to have the opportunity to exist, assuming that they have worth-living lives, and I find it plausible to think that many other people (philosophers and non-philosophers alike) probably share this intuition. When we talk about future lives being ‘prevented’, we are saying that a possible person or a set of possible people who could potentially have existed will now never actually come to exist. To say that it is wrong to prevent people from existing could either mean that a possible person could reasonably reject a principle that permitted us not to create them, or that the foregone value of their lives provides a reason for rejecting any principle that permits extinction. To make the first claim we would have to argue that a possible person could reasonably reject any principle that prevented their existence on the grounds that it prevented them in particular from existing. However, this is implausible for two reasons. First, we can only wrong someone who did, does or will actually exist because wronging involves failing to take a person’s interests into account. When considering the permissibility of a principle allowing us not to create Person X, we cannot take X’s interest in being created into account because X will not exist if we follow the principle. By considering the standpoint of a person in our deliberations we consider the burdens they will have to bear as a result of the principle. In this case, there is no one who will bear any burdens since if the principle is followed (that is, if we do not create X), X will not exist to bear any burdens. So, only people who do/will actually exist can bear the brunt of a principle, and therefore occupy a standpoint that is owed justification. Second, existence is not an interest at all and a possible person is not disadvantaged by not being caused to exist. Rather than being an interest, it is a necessary requirement in order to have interests. Rivka Weinberg describes it as ‘neutral’ because causing a person to exist is to create a subject who can have interests; existence is not an interest itself.3 In order to be disadvantaged, there must be some detrimental effect on your interests. However, without existence, a person does not have any interests so they cannot be disadvantaged by being kept out of existence. But, as Weinberg points out, ‘never having interests itself could not be contrary to people’s interests since without interest bearers, there can be no ‘they’ for it to be bad for’ (Weinberg 2008, 13). So, a principle that results in some possible people never becoming actual does not impose any costs on those ‘people’ because nobody is disadvantaged by not coming into existence.4 It therefore seems that it cannot be wrong to fail to bring particular people into existence. This would mean that no one acts wrongly when they fail to create another person. Writ large, it would also not be wrong if everybody decided to exercise their prerogative not to create new people and potentially, by consequence, allow human extinction. One might respond here by saying that although it may be permissible for one person to fail to create a new person, it is not permissible if everyone chooses to do so because human lives have value and allowing human extinction would be to forgo a huge amount of value in the world. This takes us to the second way of understanding the potential wrongness of preventing people from existing — the foregone value of a life provides a reason for rejecting any principle that prevents it. One possible reply to this claim turns on the fact that many philosophers acknowledge that the only, or at least the best, way to think about the value of (individual or groups of) possible people’s lives is in impersonal terms (Parfit 1984; Reiman 2007; McMahan 2009). Jeff McMahan, for example, writes ‘at the time of one’s choice there is no one who exists or will exist independently of that choice for whose sake one could be acting in causing him or her to exist … it seems therefore that any reason to cause or not to cause an individual to exist … is best considered an impersonal rather than individual-affecting reason’ (McMahan 2009, 52). Another reply along similar lines would be to appeal to the value that is lost or at least foregone when we fail to bring into existence a next (or several next) generations of people with worth-living lives. Since ex hypothesi worth-living lives have positive value, it is better to create more such lives and worse to create fewer. Human extinction by definition is the creation of no future lives and would ‘deprive’ billions of ‘people’ of the opportunity to live worth-living lives. This might reduce the amount of value in the world at the time of the extinction (by killing already existing people), but it would also prevent a much vaster amount of value in the future (by failing to create more people). Both replies depend on the impersonal value of human life. However, recall that in contractualism impersonal values are not on their own grounds for reasonably rejecting principles. Scanlon himself says that although we have a strong reason not to destroy existing human lives, this reason ‘does not flow from the thought that it is a good thing for there to be more human life rather than less’ (104). In contractualism, something cannot be wrong unless there is an impact on a person. Thus, neither the impersonal value of creating a particular person nor the impersonal value of human life writ large could on its own provide a reason for rejecting a principle permitting human extinction. It seems therefore that the fact that extinction would deprive future people of the opportunity to live worth-living lives (either by failing to create either particular future people or future people in general) cannot provide us with a reason to consider human extinction to be wrong. Although the lost value of these ‘lives’ itself cannot be the reason explaining the wrongness of extinction, it is possible the knowledge of this loss might create a personal reason for some existing people. I will consider this possibility later on in section (d). But first I move to the second reason human extinction might be wrong per se. 2.2. It would mean the loss of the only known form of intelligent life and all civilization and intellectual progress would be lost A second reason we might think it would be wrong to cause human extinction is the loss that would occur of the only (known) form of rational life and the knowledge and civilization that that form of life has created. One thought here could be that just as some might consider it wrong to destroy an individual human heritage monument like the Sphinx, it would also be wrong if the advances made by humans over the past few millennia were lost or prevented from progressing. A related argument is made by those who feel that there is something special about humans’ capacity for rationality which is valuable in itself. Since humans are the only intelligent life that we know of, it would be a loss, in itself, to the world for that to end. I admit that I struggle to fully appreciate this thought. It seems to me that Henry Sidgwick was correct in thinking that these things are only important insofar as they are important to humans (Sidgwick 1874, I.IX.4).5 If there is no form of intelligent life in the future, who would there be to lament its loss since intelligent life is the only form of life capable of appreciating intelligence? Similarly, if there is no one with the rational capacity to appreciate historic monuments and civil progress, who would there be to be negatively affected or even notice the loss?6 However, even if there is nothing special about human rationality, just as some people try to prevent the extinction of nonhuman animal species, we might think that we ought also to prevent human extinction for the sake of biodiversity. The thought in this, as well as the earlier examples, must be that it would somehow be bad for the world if there were no more humans even though there would be no one for whom it is bad. This may be so but the only way to understand this reason is impersonally. Since we are concerned with wrongness rather than badness, we must ask whether something that impacts no one’s well-being, status or claims can be wrong. As we saw earlier, in the contractualist framework reasons must be personal rather than impersonal in order to provide grounds for reasonable rejection (Scanlon 1998, 218–223). Since the loss of civilization, intelligent life or biodiversity are per se impersonal reasons, there is no standpoint from which these reasons could be used to reasonably reject a principle that permitted extinction. Therefore, causing human extinction on the grounds of the loss of civilization, rational life or biodiversity would not be wrong. 2.3. Existing people would endure physical pain and/or painful and/or premature deaths Thinking about the ways in which human extinction might come about brings to the fore two more reasons it might be wrong. It could, for example, occur if all humans (or at least the critical number needed to be unable to replenish the population, leading to eventual extinction) underwent a sterilization procedure. Or perhaps it could come about due to anthropogenic climate change or a massive asteroid hitting the Earth and wiping out the species in the same way it did the dinosaurs millions of years ago. Each of these scenarios would involve significant physical and/or non-physical harms to existing people and their interests. Physically, people might suffer premature and possibly also painful deaths, for example. It is not hard to imagine examples in which the process of extinction could cause premature death. A nuclear winter that killed everyone or even just every woman under the age of 50 is a clear example of such a case. Obviously, some types of premature death themselves cannot be reasons to reject a principle. Every person dies eventually, sometimes earlier than the standard expected lifespan due to accidents or causes like spontaneously occurring incurable cancers. A cause such as disease is not a moral agent and therefore it cannot be wrong if it unavoidably kills a person prematurely. Scanlon says that the fact that a principle would reduce a person’s well-being gives that person a reason to reject the principle: ‘components of well-being figure prominently as grounds for reasonable rejection’ (Scanlon 1998, 214). However, it is not settled yet whether premature death is a setback to well-being. Some philosophers hold that death is a harm to the person who dies, whilst others argue that it is not.7 I will argue, however, that regardless of who is correct in that debate, being caused to die prematurely can be reason to reject a principle when it fails to show respect to the person as a rational agent. Scanlon says that recognizing others as rational beings with interests involves seeing reason to preserve life and prevent death: ‘appreciating the value of human life is primarily a matter of seeing human lives as something to be respected, where this involves seeing reasons not to destroy them, reasons to protect them, and reasons to want them to go well’ (Scanlon 1998, 104). The ‘respect for life’ in this case is a respect for the person living, not respect for human life in the abstract. This means that we can sometimes fail to protect human life without acting wrongfully if we still respect the person living. Scanlon gives the example of a person who faces a life of unending and extreme pain such that she wishes to end it by committing suicide. Scanlon does not think that the suicidal person shows a lack of respect for her own life by seeking to end it because the person whose life it is has no reason to want it to go on. This is important to note because it emphasizes the fact that the respect for human life is person-affecting. It is not wrong to murder because of the impersonal disvalue of death in general, but because taking someone’s life without their permission shows disrespect to that person. This supports its inclusion as a reason in the contractualist formula, regardless of what side ends up winning the ‘is death a harm?’ debate because even if death turns out not to harm the person who died, ending their life without their consent shows disrespect to that person. A person who could reject a principle permitting another to cause his or her premature death presumably does not wish to die at that time, or in that manner. Thus, if they are killed without their consent, their interests have not been taken into account, and they have a reason to reject the principle that allowed their premature death.8 This is as true in the case of death due to extinction as it is for death due to murder. However, physical pain may also be caused to existing people without killing them, but still resulting in human extinction. Imagine, for example, surgically removing everyone’s reproductive organs in order to prevent the creation of any future people. Another example could be a nuclear bomb that did not kill anyone, but did painfully render them infertile through illness or injury. These would be cases in which physical pain (through surgery or bombs) was inflicted on existing people and the extinction came about as a result of the painful incident rather than through death. Furthermore, one could imagine a situation in which a bomb (for example) killed enough people to cause extinction, but some people remained alive, but in terrible pain from injuries. It seems uncontroversial that the infliction of physical pain could be a reason to reject a principle. Although Scanlon says that an impact on well-being is not the only reason to reject principles, it plays a significant role, and indeed, most principles are likely to be rejected due to a negative impact on a person’s well-being, physical or otherwise. It may be queried here whether it is actually the involuntariness of the pain that is grounds for reasonable rejection rather than the physical pain itself because not all pain that a person suffers is involuntary. One can imagine acts that can cause physical pain that are not rejectable — base jumping or life-saving or improving surgery, for example. On the other hand, pushing someone off a cliff or cutting him with a scalpel against his will are clearly rejectable acts. The difference between the two cases is that in the former, the person having the pain inflicted has consented to that pain or risk of pain. My view is that they cannot be separated in these cases and it is involuntary physical pain that is the grounds for reasonable rejection. Thus, the fact that a principle would allow unwanted physical harm gives a person who would be subjected to that harm a reason to reject the principle. Of course the mere fact that a principle causes involuntary physical harm or premature death is not sufficient to declare that the principle is rejectable — there might be countervailing reasons. In the case of extinction, what countervailing reasons might be offered in favour of the involuntary physical pain/ death-inducing harm? One such reason that might be offered is that humans are a harm to the natural environment and that the world might be a better place if there were no humans in it. It could be that humans might rightfully be considered an all-things-considered hindrance to the world rather than a benefit to it given the fact that we have been largely responsible for the extinction of many species, pollution and, most recently, climate change which have all negatively affected the natural environment in ways we are only just beginning to understand. Thus, the fact that human extinction would improve the natural environment (or at least prevent it from degrading further), is a countervailing reason in favour of extinction to be weighed against the reasons held by humans who would experience physical pain or premature death. However, the good of the environment as described above is by definition not a personal reason. Just like the loss of rational life and civilization, therefore, it cannot be a reason on its own when determining what is wrong and countervail the strong personal reasons to avoid pain/death that is held by the people who would suffer from it.9 Every person existing at the time of the extinction would have a reason to reject that principle on the grounds of the physical pain they are being forced to endure against their will that could not be countervailed by impersonal considerations such as the negative impact humans may have on the earth. Therefore, a principle that permitted extinction to be accomplished in a way that caused involuntary physical pain or premature death could quite clearly be rejectable by existing people with no relevant countervailing reasons. This means that human extinction that came about in this way would be wrong. There are of course also additional reasons they could reject a similar principle which I now turn to address in the next section. 2.4. Existing people could endure non-physical harms I said earlier than the fact in itself that there would not be any future people is an impersonal reason and can therefore not be a reason to reject a principle permitting extinction. However, this impersonal reason could give rise to a personal reason that is admissible. So, the final important reason people might think that human extinction would be wrong is that there could be various deleterious psychological effects that would be endured by existing people having the knowledge that there would be no future generations. There are two main sources of this trauma, both arising from the knowledge that there will be no more people. The first relates to individual people and the undesired negative effect on well-being that would be experienced by those who would have wanted to have children. Whilst this is by no means universal, it is fair to say that a good proportion of people feel a strong pull towards reproduction and having their lineage continue in some way. Samuel Scheffler describes the pull towards reproduction as a ‘desire for a personalized relationship with the future’ (Scheffler 2012, 31). Reproducing is a widely held desire and the joys of parenthood are ones that many people wish to experience. For these people knowing that they would not have descendants (or that their descendants will endure painful and/or premature deaths) could create a sense of despair and pointlessness of life. Furthermore, the inability to reproduce and have your own children because of a principle/policy that prevents you (either through bans or physical interventions) would be a significant infringement of what we consider to be a basic right to control what happens to your body. For these reasons, knowing that you will have no descendants could cause significant psychological traumas or harms even if there were no associated physical harm. The second is a more general, higher level sense of hopelessness or despair that there will be no more humans and that your projects will end with you. Even those who did not feel a strong desire to procreate themselves might feel a sense of hopelessness that any projects or goals they have for the future would not be fulfilled. Many of the projects and goals we work towards during our lifetime are also at least partly future-oriented. Why bother continuing the search for a cure for cancer if either it will not be found within humans’ lifetime, and/or there will be no future people to benefit from it once it is found? Similar projects and goals that might lose their meaning when confronted with extinction include politics, artistic pursuits and even the type of philosophical work with which this paper is concerned. Even more extreme, through the words of the character Theo Faron, P.D. James says in his novel The Children of Men that ‘without the hope of posterity for our race if not for ourselves, without the assurance that we being dead yet live, all pleasures of the mind and senses sometimes seem to me no more than pathetic and crumbling defences shored up against our ruins’ (James 2006, 9). Even if James’ claim is a bit hyperbolic and all pleasures would not actually be lost, I agree with Scheffler in finding it not implausible that the knowledge that extinction was coming and that there would be no more people would have at least a general depressive effect on people’s motivation and confidence in the value of and joy in their activities (Scheffler 2012, 43). Both sources of psychological harm are personal reasons to reject a principle that permitted human extinction. Existing people could therefore reasonably reject the principle for either of these reasons. Psychological pain and the inability to pursue your personal projects, goals, and aims, are all acceptable reasons for rejecting principles in the contractualist framework. So too are infringements of rights and entitlements that we accept as important for people’s lives. These psychological reasons, then, are also valid reasons to reject principles that permitted or required human extinction.

### 2AC---Animals

#### Humans outweigh

Juan Carlos Marvizon 16, PhD, Member of the Brain Research Institute, UCLA, 12/6/16, “Not just intelligence: Why humans deserve to be treated better than animals,” https://speakingofresearch.com/2016/12/06/not-just-intelligence-why-humans-deserve-to-be-treated-better-than-animals/

However, modern neuroscience has in fact uncovered many differences between humans and the rest of the animals that makes us unique. These differences are not limited to a quantitative difference in intelligence but extend to many other mental and behavioral abilities that make us completely unique (Penn et al., 2008), a qualitatively different type of being. Below I provide a list of the most important of those abilities.

Theory of Mind is the ability to understand what other people are feeling and thinking [pp. 172-178 in (Blackmore, 2004); pp. 48-54 in (Gazzaniga, 2008)]. We do that by running inside our heads a model of what is happening in other person’s mind. Of course, the model is not always right, but nevertheless it is extremely valuable because it lets us predict the behavior of people around us. Theory of mind seems to require the right anterior insula, a part of the brain cortex that evolved very rapidly in apes. The function of the right anterior insula is to create hypothetical models of the internal state of our body in different circumstances (Craig, 2010, 2011). For example, when we imagine what it would feel like to stab our toe, is the right anterior insula doing that. Likewise, the right anterior insula can make a model of the internal state of the body of another person. Of course, theory of mind is much more than that and involves the cognitive abilities of many other parts of the brain. Research on theory of mind has revealed it to be uniquely human (Penn and Povinelli, 2007), although some studies claims to have found it in rudimentary form in chimpanzees (Call and Tomasello, 2008; Yamamoto et al., 2013). One negative aspect of theory of mind is that it often creates the delusion of attributing human consciousness to inanimate objects or animals. The same way we project our thoughts and feelings to a person that we see behaving in a way similar to us, we project human thoughts and feelings to an animal or an object we see doing something that resembles human behavior. This delusional form of theory of mind is responsible for the anthropomorphizing of animals that is so common in modern culture.

Episodic memory. There are two basic forms of memory: procedural and declarative [pp. 303-306 in (Gazzaniga, 2008)]. Procedural memory is present in both humans and animals and consists in the retention of perceptual, motor and cognitive skills that are then expressed non-consciously. For example, when we walk, swim, ski, listen to music, type on a keyboard or process the visual information we get from a television screen, we use procedural memory. Declarative memory stores information about facts and beliefs about the world, and can be further divided into semantic and episodic memory. Semantic memory is about facts in the world that stand by themselves, independently of our self, whereas episodic memory is remembering things that happened to us. That is, episodic memory retains events as they were experienced by ourselves in a particular place and time. Episodic memory appears to be uniquely human, because it involves subjective experiences, a concept of self and subjective time. This is important because it allows us to travel mentally in time through subjective experiences, while animals are locked in the present of their current motivational state.

Humans emotions. Mammals, birds and some other animals have a set of six basic emotions listed by Ekman: anger, fear, disgust, joy, sadness and surprise. However, we humans are able to feel many other emotions that regulate our social behavior and the way we view the world: guilt, shame, pride, honor, awe, interest, envy, nostalgia, hope, despair, contempt and many others. While emotions like love and loyalty may be present in mammals that live in hierarchical societies, emotions like guilt, shame and their counterparts pride and honor seem to be uniquely human. There is much controversy these days on whether dogs feel guilt and shame, there is evidence that they do not, but they may also have acquired this emotion as a way to interact with humans. What is clear is that many of the emotions that we value as human are not present in animals.

Empathy and compassion. Empathy is defined as the capacity to feel what another person is feeling from their own frame of reference. It is a well-established fact that many animals react to distress by other animals by showing signs of distress themselves. However, this does not seem to represent true empathy as defined above, but a genetically encoded stress response in anticipation of harm. Since empathy requires feeling what the other person is feeling from their own frame of reference, it seems to require theory of mind. Only if we stripe the requirement of adopting the other’s frame of reference we can say that animals have empathy. Empathy involves the newly evolved anterior insula in humans (Preis et al., 2013), bonobos and chimpanzees (Rilling et al., 2012). Compassion is currently thought to be different from empathy because it involves many other parts of the brain. It seems to be associated with complex cultural and cognitive elements. Therefore, it seems safe to assume that animals are not able to feel compassion.

Language and culture. Although animals do communicate with each other using sounds, signs and body language, human language is a qualitative leap from any form of animal communication in its unique ability to convey factual information and not just emotional states. In that, human language is linked to our ability to store huge amounts of semantic and episodic memory, as defined above. The human brain has a unique capacity to quickly learn spoken languages during a portal that closes around 5-6 years of age. Attempts to teach sign languages to apes has produced only limited success and can be attributed to a humanization of the brain of those animals, raised inside human culture. The effectiveness of spoken and written language to store information across many generations gave raise to human cultures. The working of the human brain cannot be understood without taking culture into account. Culture completely shapes the way we think, feel, perceive and behave. Although there are documented cases of transmission of learned information across generations in animals, producing what we could call an animal culture, no animal is as shaped by culture as we are.

Esthetic sense or the appreciation of beauty also seems to be uniquely human. Of course, animals can produce great beauty in the form of colorful bodies, songs and artful behavior. What seems to be lacking is their ability to appreciate and value that beauty beyond stereotypical mating and territorial behaviors. Even attempts to teach chimps to produce art by drawing have largely failed.

Ethics is the ability to appreciate fairness, justice and rights. It is at the very core of our ability to form stable societies and to cooperate to achieve common goals. It depends on theory of mind (which allows us to “put ourselves in somebody else’s shoes”); on social emotions like guilt, shame, pride and contempt; on empathy and compassion, and on cultural heritage. Lacking all those mental abilities, animals have no sense of ethics. Even though some studies have shown that monkeys have a primitive sense of fairness (particularly when it applies to their own interest), it is but a pale anticipation of our sense of justice. It simply goes to show how that ethics is rooted in our evolutionary history. The fact that animals cannot even remotely comprehend the concept of rights is a strong argument for why they should not have rights. What sense does it make to give animals something that they do not know that they lack?

Extended consciousness. They question of what is consciousness has been called by scientists and philosophers “the hard problem” due to the difficulty of answering it (Blackmore, 2004). Therefore, the related question of whether animals have consciousness, or what animals have it, remains similarly unanswered in the strict sense. However, based on their behavior, we commonly assume that animals like cats, dogs and horses are conscious and able to make some autonomous decisions. On the other hand, unless we invoke some mystical definition of consciousness, it is safe to assume that animals with small nervous systems, like jellyfish, worms, starfish, snails and clams have no consciousness whatsoever. They are like plants: living beings able to react to the environment as automatons. That leaves a lot of animals for which it is hard to guess whether they are conscious or not: insects, fish, octopi, lizards and small mammals like mice and rats. What has been becoming clear is that we humans possess a kind of consciousness that no other animal has: the ability to see ourselves as selves extending from the past to the future [pp. 309-321 (Gazzaniga, 2008)]. This special kind of consciousness has been called by neuroscientist Antonio Damasio “extended consciousness” [Chapter 7 in (Damasio, 1999)] and allow us a sort of “mental time travel” to relive events in the past and predict what may happen to us in the future (Suddendorf and Corballis, 2007). Extended consciousness is based on our ability to have episodic memory and theory of mind. Episodic memory configures remembered events around the image of the self, whereas theory of mind allows us to create a model of our own mind as it was during a past event or to hypothesize how it would be in a future event. I should also point out that a few animals (apes, dolphins and elephants) may turn out to have episodic memory, theory of mind and hence extended consciousness. However, this is still very much in doubt.

Suffering and happiness. It is a common mistake to confuse suffering with pain and happiness with joy. Pain is the representation of a bodily state and the emotion associated with it (Craig, 2003). Likewise, joy is an emotion associated with an excited but pleasant body state in an agreeable environment. Suffering and happiness are much deeper than that, and refer to the totality of a mental state, encompassing cognition, emotion and state of consciousness. Although suffering and happiness are normally associated with certain emotions, there is not always a correspondence with them. For example, one can be happy while feeling scared or sad, or suffer even in the presence of a passing joy. The error of philosophers like Peter Singer (Singer, 1991) and Tom Reagan (Reagan, 1985) is that they consider suffering as something that occurs independently of cognition and other mental abilities, when it does not. Arguably, happiness and suffering require some continuity in time, which would seem to require extended consciousness. Furthermore, conceptions of happiness extending to antiquity refer to lifelong attitudes like hedonism (the quest for personal pleasure) and eudemonia (working to acquire virtue or to achieve goals that transcend oneself), pointing to the fact that human happiness depends on cultural values. In view of all this, we need to wonder whether happiness and suffering can exist in beings that have no episodic memory, no extended consciousness, no sense of self, and no culture. Can happiness and suffering really be attributed to animals lacking these mental abilities? Or is this an illusion, an anthropomorphizing caused by the overreaching of our theory of mind? Without going to that extreme, it is quite clear that we humans have a capacity to be happy and to suffer that goes far beyond what animals can experience. So human suffering counts more than any suffering than an animal could have.

There are many more differences between human and animals. However, the ones that I have listed here are important because they give us our special feeling of humaneness. All of them are based on scientific facts about the human mind that are slowly being unraveled by neuroscience, not on religious beliefs or on ideology. However, what cannot be based on science is the value we attribute to those differences. Ultimately, this is a decision based on our ethical intuition. Still, for most people what determines how much consideration we should give to a being is its ability to be conscious; to feel empathy; to feel guilt and pride and shame and all other human emotions; to be happy as we are happy and to suffer like we suffer.

An important corollary of the ideas proposed here is to utterly refute the “marginal case” argument. Thus, even when a human brain is damaged by disease, accident or old age, most of the properties that I have listed here remain because they are deeply engrained in the way the human brain works. Theory of mind and extended consciousness appear early in human life and are the last things to go in a deteriorating brain. It takes coma to deprive us of them. A person may have a reduced intelligence or other cognitive disabilities, but s/he still has theory of mind, empathy, compassion, extended consciousness and all those human emotions. That is why when we encounter those people we recognize them as humans and we know we should treat them as humans. They are not animals and should never be treated as such. Intelligence is just a tiny part of what it means to be human.

### 2AC---Cosmogenesis

#### It's good

Zeeya Merali 17, Popular Science Contributor, interview with Anders Sandberg, Future of Humanity Institute at Oxford, 2/17/17, “What are the ethics of creating new life in a simulated universe?” https://www.popsci.com/creating-new-life-in-simulated-universe/

There may also be a case to make that creating intelligent observers would continually amplify the amount of good in the universe, even if we lose control of our creations. “One argument I would make is that intelligent life tends to try to take control of its environment to make things better for itself,” says Sandberg. “So you should actually expect that a universe that is overrun with intelligent observers would tend to become slightly better to live in than universes that don’t have any.”

It’s honestly a view that I hadn’t considered. Maybe we are morally obliged to try to bring more life into being. I thank Sandberg and say goodbye, feeling reassured. I hope that he is right, of course, because the stakes are, quite literally, astronomical.

#### Lab universes are impossible

Dr. Zeeya Merali 17, PhD in Theoretical Cosmology, Freelance Science Writer and Author of A Big Bang in a Little Room: The Quest to Create New Universes, “Creating a Universe in the Lab? The Idea Is No Joke”, Discover Magazine, 6-19, http://blogs.discovermagazine.com/crux/2017/06/19/build-a-universe-in-the-lab/#.XCTdaVxKjHw

At the other end of the philosophical spectrum, I met with Don Page, a physicist and evangelical Christian at the University of Alberta in Canada, noted for his early collaboration with Stephen Hawking on the nature of black holes. To Page, the salient point is that God created the Universe ex nihilo – from absolutely nothing. The kind of cosmogenesis envisioned by Linde, in contrast, would require physicists to cook up their cosmos in a highly technical laboratory, using a far more powerful cousin of the Large Hadron Collider near Geneva. It would also require a seed particle called a ‘monopole’ (which is hypothesized to exist by some models of physics, but has yet to be found).

The idea goes that if we could impart enough energy to a monopole, it will start to inflate. Rather than growing in size within our Universe, the expanding monopole would bend spacetime within the accelerator to create a tiny wormhole tunnel leading to a separate region of space. From within our lab we would see only the mouth of the wormhole; it would appear to us as a mini black hole, so small as to be utterly harmless. But if we could travel into that wormhole, we would pass through a gateway into a rapidly expanding baby universe that we had created. (A video illustrating this process provides some further details.)

We have no reason to believe that even the most advanced physics hackers could conjure a cosmos from nothing at all, Page argues. Linde’s concept of cosmogenesis, audacious as it might be, is still fundamentally technological. Page, therefore, sees little threat to his faith. On this first issue, then, cosmogenesis would not necessarily upset existing theological views.

But flipping the problem around, I started to wonder: what are the implications of humans even considering the possibility of one day making a universe that could become inhabited by intelligent life? As I discuss in my book A Big Bang in a Little Room (2017), current theory suggests that, once we have created a new universe, we would have little ability to control its evolution or the potential suffering of any of its residents. Wouldn’t that make us irresponsible and reckless deities? I posed the question to Eduardo Guendelman, a physicist at Ben Gurion University in Israel, who was one of the architects of the cosmogenesis model back in the 1980s. Today, Guendelman is engaged in research that could bring baby-universe-making within practical grasp. I was surprised to find that the moral issues did not cause him any discomfort. Guendelman likens scientists pondering their responsibility over making a baby universe to parents deciding whether or not to have children, knowing they will inevitably introduce them to a life filled with pain as well as joy.

Other physicists are more wary. Nobuyuki Sakai of Yamaguchi University in Japan, one of the theorists who proposed that a monopole could serve as the seed for a baby universe, admitted that cosmogenesis is a thorny issue that we should ‘worry’ about as a society in the future. But he absolved himself of any ethical concerns today. Although he is performing the calculations that could allow cosmogenesis, he notes that it will be decades before such an experiment might feasibly be realized. Ethical concerns can wait.

Many of the physicists I approached were reluctant to wade into such potential philosophical quandaries. So I turned to a philosopher, Anders Sandberg at the University of Oxford, who contemplates the moral implications of creating artificial sentient life in computer simulations. He argues that the proliferation of intelligent life, regardless of form, can be taken as something that has inherent value. In that case, cosmogenesis might actually be a moral obligation.

Looking back on my numerous conversations with scientists and philosophers on these issues, I’ve concluded that the editors at Nuclear Physics B did a disservice both to physics and to theology. Their little act of censorship served only to stifle an important discussion. The real danger lies in fostering an air of hostility between the two sides, leaving scientists afraid to speak honestly about the religious and ethical consequences of their work out of concerns of professional reprisal or ridicule.

We will not be creating baby universes anytime soon, but scientists in all areas of research must feel able to freely articulate the implications of their work without concern for causing offense. Cosmogenesis is an extreme example that tests the principle. Parallel ethical issues are at stake in the more near-term prospects of creating artificial intelligence or developing new kinds of weapons, for instance. As Sandberg put it, although it is understandable that scientists shy away from philosophy, afraid of being thought weird for veering beyond their comfort zone, the unwanted result is that many of them keep quiet on things that really matter.

### 2AC---AI

#### No superintelligence — too far off, technical complexities overwhelm.

Geist 15, MacArthur Nuclear Security Fellow at Stanford University's Center for International Security and Cooperation (CISAC). Previously a Stanton Nuclear Security Fellow at the RAND Corporation, he received his doctorate in history from the University of North Carolina in 2013. (Edward Moore, 8-9-2015, "Is artificial intelligence really an existential threat to humanity?", *Bulletin of the Atomic Scientists*, https://thebulletin.org/2015/08/is-artificial-intelligence-really-an-existential-threat-to-humanity/)

Convinced that sufficient “intelligence” can overcome almost any obstacle, Bostrom acknowledges few limits on what artificial intelligences might accomplish. Engineering realities rarely enter into Bostrom’s analysis, and those that do contradict the thrust of his argument. He admits that the theoretically optimal intelligence, a “perfect Bayesian agent that makes probabilistically optimal use of available information,” will forever remain “unattainable because it is too computationally demanding to be implemented in any physical computer.” Yet Bostrom’s postulated “superintelligences” seem uncomfortably close to this ideal. The author offers few hints of how machine superintelligences would circumvent the computational barriers that render the perfect Bayesian agent impossible, other than promises that the advantages of artificial components relative to human brains will somehow save the day. But over the course of 60 years of attempts to create thinking machines, AI researchers have come to the realization that there is far more to intelligence than simply deploying a faster mechanical alternative to neurons. In fact, the history of artificial intelligence suggests that Bostrom’s “superintelligence” is a practical impossibility.

#### No AI extinction — impossible, centuries away, solves extinction

Oren Etzioni, 16 - CEO of the Allen Institute for Artificial Intelligence and Professor of Computer Science at the University of Washington; "Most experts say AI isn’t as much of a threat as you might think," MIT Technology Review, 9-20-2016, https://www.technologyreview.com/s/602410/no-the-experts-dont-think-superintelligent-ai-is-a-threat-to-humanity/

To get a more accurate assessment of the opinion of leading researchers in the field, I turned to the Fellows of the American Association for Artificial Intelligence, a group of researchers who are recognized as having made significant, sustained contributions to the field.

In early March 2016, AAAI sent out an anonymous survey on my behalf, posing the following question to 193 fellows:

“In his book, Nick Bostrom has defined Superintelligence as ‘an intellect that is much smarter than the best human brains in practically every field, including scientific creativity, general wisdom and social skills.’ When do you think we will achieve Superintelligence?”

Over the next week or so, 80 fellows responded (a 41 percent response rate), and their responses are summarized below:

In essence, according to 92.5 percent of the respondents, superintelligence is beyond the foreseeable horizon. This interpretation is also supported by written comments shared by the fellows.

Even though the survey was anonymous, 44 fellows chose to identify themselves, including Geoff Hinton (deep-learning luminary), Ed Feigenbaum (Stanford, Turing Award winner), Rodney Brooks (leading roboticist), and Peter Norvig (Google).

The respondents also shared several comments, including the following:

“Way, way, way more than 25 years. Centuries most likely. But not never.”

“We’re competing with millions of years’ evolution of the human brain. We can write single-purpose programs that can compete with humans, and sometimes excel, but the world is not neatly compartmentalized into single-problem questions.”

“Nick Bostrom is a professional scare monger. His Institute’s role is to find existential threats to humanity. He sees them everywhere. I am tempted to refer to him as the ‘Donald Trump’ of AI.”

Surveys do, of course, have limited scientific value. They are notoriously sensitive to question phrasing, selection of respondents, etc. However, it is the one source of data that Bostrom himself turned to.

Another methodology would be to extrapolate from the current state of AI to the future. However, this is difficult because we do not have a quantitative measurement of the current state of human-level intelligence. We have achieved superintelligence in board games like chess and Go (see “Google’s AI Masters Go a Decade Earlier than Expected”), and yet our programs failed to score above 60 percent on eighth grade science tests, as the Allen Institute’s research has shown (see “The Best AI Program Still Flunks an Eighth Grade Science Test”), or above 48 percent in disambiguating simple sentences (see “Tougher Turing Test Exposes Chatbots’ Stupidity”).

There are many valid concerns about AI, from its impact on jobs to its uses in autonomous weapons systems and even to the potential risk of superintelligence. However, predictions that superintelligence is on the foreseeable horizon are not supported by the available data. Moreover, doom-and-gloom predictions often fail to consider the potential benefits of AI in preventing medical errors, reducing car accidents, and more.

Finally, it’s possible that AI systems could collaborate with people to create a symbiotic superintelligence. That would be very different from the pernicious and autonomous kind envisioned by Professor Bostrom.

### AT: Black Holes

#### There’s no chance that anything we do could possibly destroy the Universe

Dr. Tom Head 14, PhD from Edith Cowan University, M.A. in Humanities from California State University, Dominguez Hills, M.Th. Student in Practical Theology, University of South Africa, expected 2022, Author of Conversations with Carl Sagan, Author of World History 101, BA from Excelsior College, Author or Coauthor of 29 Nonfiction Books, Columnist, Scriptwriter, Research Paralegal, “Why We Can’t Accidentally Destroy the Universe”, Mysterious Universe, 9-15, https://mysteriousuniverse.org/2014/09/why-we-cant-accidentally-destroy-the-universe/

Stephen Hawking’s recent remarks regarding the possibility that our descendants might one day destroy the universe by disrupting the Higgs field with a larger-than-Earth supercollider has gotten people thinking: is there anything we could do now that would destroy the universe?

The answer to that question is, by all appearances, a pretty clear no. Here are two good reasons why:

1. The universe is really, really durable.

Last April, astronomers witnessed gamma-ray burst (GRB) 130427A and, short of being bigger than other gamma ray bursts they’d observed, it wasn’t particularly remarkable: just a star 20 to 30 times the Sun’s mass collapsing and exploding in a way we can’t fully understand, creating a black hole and outshining local objects from millions of light years away. This sort of thing happens fairly regularly all over the universe, and was presumably more common for most of the universe’s history.

Although these gamma-ray bursts occur on a scale and with a power that exponentially exceeds anything humanity can produce (and anything humanity is likely to produce for a very long time), they don’t appear to do any tangible harm to the structure of the universe itself.

2. We don’t have the technology to do anything the natural world isn’t already doing.

If we can’t endanger the universe with raw explosive power, can we can endanger it by tinkering with the natural order of things? Maybe, if we ever figure out how, but everything humanity has ever done so far has fallen well within the parameters of the natural order of things.

Even nuclear fission, the go-to example of humanity harnessing the power of the gods, is nothing new; it occurred naturally in 17 underground sites in West Africa two billion years ago, no Manhattan Project needed. And the Large Hadron Collider, wonderful though it is, just stimulates weak, observable versions of processes that naturally occur in local space on a regular basis. There is, in the words of Ecclesiastes, nothing new under the Sun. All we’re ultimately doing is rearranging our environment, much like other nestmaking animals do; we have yet to create anything that is, in a cosmic sense, out of the ordinary. And as the universe is unlikely to be destroyed by something that it ordinarily produces on its own, it should be safe from us for a long time to come.

## AT: BAUDRILLARD K

### 2AC---AT: K

**Baudrillard is racist, sexist, and ableist**

Robinson 13 (February 7, 2013, [Andrew Robinson](https://ceasefiremagazine.co.uk/author/andrew-robinson/), “An A to Z of Theory | Jean Baudrillard and Activism: A critique”)

There are serious limits to **Baudrillard’**s work, in terms of his hostility to ‘minority’ struggles. Many of **his formulations are inadvertently sexist and racist**. There are also times when **Baudrillard comes across as ableist** in his critiques of the therapeutic. There are also times when **Baudrillard attacks activism in strong terms: Hippies reproduce capitalist ideology; Feminists displaying images of porn are actually being seductive, against their will;  The left is keeping capitalism alive with its moral critiques and its quests for meaning. There are times when it is hard to tell if Baudrillard is a reactionary, attacking the concerns of progressives, or an ultra-left, criticising every rebellion as insufficiently extreme**. If one looks past such problems, however, there are important implications in Baudrillard’s work for emancipatory practice. Baudrillard’s work was clearly an influence on Negri’s early work. Ideas such as the reduction of the system to command, the spread of diffuse apparatuses of power and the panic of the system in the face of its own arbitrariness reappear in texts such as Time for Revolution. The idea of the ‘code’ or system functioning as a self-propelled irrational machine is also reminiscent of primitivists such [as Fredy Perlman](http://theanarchistlibrary.org/HTML/Fredy_Perlman__Against_His-story__Against_Leviathan.html). Baudrillard seems to see the regime of the code as the high-point of civilisation, in an almost anarcho-primitivist sense. Where he differs from such analyses is that he sees the core of civilisation not in technology or the domestication of desire or the ‘political principle’ of state power, but in the denial and suppression of symbolic exchange. Baudrillard is partly thinking through the issue of diffuse power. In capitalist and statist social regimes, power is immensely concentrated. He also gives a particular spin to the distinction between expressive and instrumental. We can link the idea of the ‘code’ to [preventionism](http://www.rosalux.de/fileadmin/rls_uploads/pdfs/Manuskripte/Manuskripte_88.pdf) and its impact on protest. As discussed above, Baudrillard’s idea of initiatory groups could also be applied to activist ‘neo-sects’. Baudrillard also offers answers to some of the big questions of today regarding psychological barriers to revolt. The loss of reality might explain why hope for liberation seems so hard to come by, and why revolutionary movements now seem to lack a clear vision of transformation. The [Immediatist Potlatch](http://hermetic.com/bey/radio_se.html) would be an example of gift-exchange as political action. Occupation of the remainders and waste-grounds of cities has been a constant aspect of dissident practice, from Traveller communities such as Dale Farm and shanty-towns in the global South, to reclaimed factories used as squats, to projects such as South Central Farm. Reversibility could also be thought of in terms of vendettas and cost-imposition. These return to the system the power it exercises, reversing it. Another useful way to extend Baudrillard’s work is to cross-read it with Open Marxist views of capitalism as a process which must constantly be reproduced to exist. Simulation is not a finished process. It has to be constantly repeated in order to be kept active. The process of deterrence (or counterinsurgency) is therefore an ongoing process.

#### Recuperating old French philosophy is a last grasp at theoretical radicality with no political significance

Graeber 08 (David, Professor of Anthropology at the London School of Economics, “THE SADNESS OF POST-WORKERISM or “ART AND IMMATERIAL LABOUR” CONFERENCE: A SORT OF REVIEW” pp. 4-5)

Instead of trying to take on the arguments point by point—as I said, this is only a sort of review—let me instead throw out some initial thoughts on what the presentations had in common. In other words, I am less interested in entering into the ring and batting around arguments for whether Foucault or Deleuze are better suited for helping us realize the radical potential in the current historical moment, as to ask such questions are being batted about by Italian revolutionaries, in an art museum, in the first place. Here I can make four initial observations, all of which, at the time, I found mildly surprising: 1) There was almost no discussion of contemporary art. Just about every piece of art discussed was within what might be called the classic avant garde tradition (Dada, Futurism, Duchamp, Abstract Expressionism...) Negri did take his history of art forms up through the ‘60s, and Bifo mentioned Banksy. But that was about it. 2) While all of the speakers could be considered Italian autonomists and they were ostensibly there to discuss Immaterial Labor, a concept that emerged from the Italian autonomist tradition, surprisingly few concepts specific to that tradition were deployed. Rather, the theoretical language drew almost exclusively on the familiar heroes of French ’68 thought: Michel Foucault, Jean Baudrillard, Deleuze and Guattari... At one point, the editor of Multitude, Eric Alliez, in introducing Negri made a point of saying that one of the great achievements of his work was to give a second life to such thinkers, a kind of renewed street cred, by making them seem once again relevant to revolutionary thought. 3) In each case, the presenters used those French thinkers as a tool to create a theory about historical stages—or some cases, imitated them by coming up with an analogous theory of stages of their own. For each, the key question was: what is the right term with which characterize the present? What makes our time unique? Is it that we have passed from a society of discipline, to one of security, or control? Or is it that regimes of conjunction been replaced by regimes of connection? Have we experienced a passage from formal to real subsumption? Or from modernity to postmodernity? Or have we passed postmodernity too, now, and entered an entirely new phase? 4) All of them were remarkably polite. Dramatically lacking was anything that might provoke discomfort in even the stodgiest Tate Britain curator, or even, really, any of their wealthiest patrons. This is worthy of note no one can seriously deny the speakers’ radical credentials. Most had proved themselves willing to take genuine personal risks at moments when there was any reason to believe some realistic prospect of revolution was afoot. There was no doubt that, had some portion of London’s proletariat risen up in arms during their stay, most if not all would have immediately reported to the barricades. But since they had not, their attacks or even criticisms were limited to other intellectuals: Badiou, Ranciere, Agamben. These observations may seem scattershot but I think taken together they are revealing. Why, for example, would one wish to argue that in the year 2008 we live in a unique historical moment, unlike anything that came before, and then act as if this moment can only really be described through concepts French thinkers developed in the 1960s and ‘70s—then illustrate one’s points almost exclusively with art created between 1916 and 1922? This does seem strangely arbitrary but I suspect there is a reason. We might ask: what does the moment of Futurism, Dada, Constructivism and the rest, and French ’68 thought, have in common? Actually quite a lot. Each corresponded to a moment of revolution: to adopt Immanuel Wallerstein’s terminology, the world revolution of 1917 in one case, and the world revolution of 1968 in the other. Each witnessed an explosion of creativity in which a longstanding European artistic or intellectual Grand Tradition effectively reached the limits of its radical possibilities. That is to say, they marked the last moment at which it was possible to plausibly claim that breaking all the rules—whether violating artistic conventions, or shattering philosophical assumptions—was itself, necessarily, a subversive political act as well. This is particularly easy to see in the case of the European avant garde. From Duchamp’s first readymade in 1914, Hugo Ball’s Dada manifesto and tone poems in 1916, to Malevich’s White on White in 1918, culminating in the whole phenomenon of Berlin dada from 1918 to 1922, one could see revolutionary artists perform, in rapid succession, just about every subversive gesture it was possible to make: from white canvases to automatic writing, theatrical performances designed to incite riots, sacrilegious photo montage, gallery shows in which the public was handed hammers and invited to destroy any piece they took a disfancy to, objects plucked off the street and sacralized as art. All that remained for the Surrealists was to connect a few remaining dots, and the heroic moment was over. One could still do political art, of course, and one could still defy convention. But it became effectively impossible to claim that by doing one you were necessarily doing the other, and increasingly difficult to even try to do both at the same time. It was possible, certainly, to continue in the Avant Garde tradition without claiming one’s work had political implications (as did anyone from Jackson Pollock to Andy Warhol), it was possible to do straight-out political art (like, say, Diego Rivera); one could even (like the Situationists) continue as a revolutionary in the Avant Garde tradition but stop making art, but that pretty much exhausted the remaining possibilities. What happened to Continental philosophy after May ’68 is quite similar. Assumptions were shattered, grand declarations abounded (the intellectual equivalent of Dada manifestos): the death of Man, of Truth, The Social, reason, dialectics, even Death itself. But the end result was roughly the same. Within a decade, the possible radical positions one could take within the Grand Tradition of post-Cartesian philosophy had been, essentially, exhausted. The heroic moment was over. What’s more, it became increasingly difficult to maintain the premise that heroic acts of epistemological subversion were revolutionary or even particularly subversive in any other sense. In fact their effects seemed if anything depoliticizing. Just as purely formal avant garde experiment proved perfectly well suited to grace the homes of conservative bankers, and Surrealist montage to become the language of the advertising industry, so did poststructural theory quickly prove the perfect philosophy for self-satisfied liberal academics with no political engagement at all. If nothing else this would explain the obsessive-compulsive quality of the constant return to such heroic moments. It is, ultimately, a subtle form of conservatism—or, perhaps one should say conservative radicalism, if such were possible—a nostalgia for the days when it was possible to put on a tin-foil suit, shout nonsense verse, and watch staid bourgeois audiences turn into outraged lynch mobs; to strike a blow against Cartesian Dualism and feel that by doing so, one has thereby struck a blow for oppressed people everywhere.

#### **Info isn’t always dissuasive - Bush could have escalated the war further absent significant anti-war activism**

Heaney 12, Assistant Professor of Organizational Studies and Political Science @ Umich (Michael, “The Policy, Political, and Social Effects of the Antiwar Movement after 9/11,” <https://mobilizingideas.wordpress.com/2012/07/02/the-policy-political-and-social-effects-of-the-antiwar-movement-after-911/>)

Of course, it is impossible to establish definitely the nonimpact of the antiwar movement on policy. Doing so requires the evaluation of counterfactual scenarios that cannot be tested empirically. For example, if there had been no antiwar movement at all – if nobody had protested the war policies of the Bush Administration – it is plausible to believe that the administration would have been emboldened to take more aggressive military actions, possibly invading Syria or Iran. Or, perhaps the Bush Administration would have had the confidence to pursue more ambitious conservative domestic policies. Personally, I am inclined to believe that the movement did have these types of restraining effects but, as a social scientist, it is impossible to demonstrate them convincingly. To claim that the policy and political effects of the antiwar movement were limited is not to say that the movement was unimportant. Indeed, the social effects of the movement may have been its most lasting contribution. The antiwar movement exposed millions of people to their first experiences with activism, which will likely shape the way that many of them think of, and participate in, politics for the remainder of their lives.[7]

The movement provided critical opportunities for activists to learn about new tactics and to implement them on unfamiliar terrain.[8] Alliances and conflicts within coalitions shaped the structure of the social networks of movement participants.[9] The movement provided activists with opportunities to explore their identities[10] and to create new organizations by hybridizing elements of intersecting social movements.[11] In many ways, we have only begun to see the long-term consequences of a generation shaped by the antiwar movement.

**The focus on representations and information masks the slow and brutal violence enacted by modern warfare—the critique replicates the Pentagon’s propaganda and shuts down any chance for progressive coalitions for change**

Krishna, Professor of Political Science at the University of Hawai’i at Manoa, 1993 [Sankaran, Alternatives, Summer, p. 397-401]

Postmodern Amnesias: Resurrecting the Dead in Iraq I have absolutely no idea what the Iraqi casualties are, and I tell you, if I have anything to say about it, we're never going to get into the body-count business. —General H. Norman Schwarzkopf24 Well, the numbers are in, if anybody cares. Between 100,000 and 200,000 Iraqi soldiers and civilians were killed in the Gulf War and an estimated 300,000 were injured. In contrast to this, fewer than four hundred Allied soldiers died, many of them due to "friendly fire."25 In two weeks, the Allied forces managed to kill almost four times as many Iraqis as all the US soldiers who died in Vietnam, which should indicate the magnitude of the violence. Coverage of the war was closely orchestrated by the Pentagon, and, eager to be in on the story, the news networks were complicitous in the selective coverage, giving up any liberal pretensions of being impartial observers.26 One of the obvious and distressing aspects of the war was the ineffectiveness of the antiwar movement in derailing the momentum during the months of build up, and the incredible degree of censorship of media coverage of the war by the Pentagon." In this context, some of the poststructuralist analyses of the war (examined here through Der Derian's chapter in AD; Shapiro's chapter on security policy in the video age in RP, and his article on the Gulf War published recently;28 and Chaloupka's sections on the impact of speed and technology on the modern warrior in KN) have been invaluable in their depiction of the alienation and complicity produced through a hyperreal and almost real-time media coverage. The objectification of the Iraqis; the role of electronic simulations in rendering the Iraqi people content-less; the annihilation of space by time and the obsoleteness of conventional spatiotemporal axes in describing and understanding what Der Derian describes as the first "cyberwar"; the intertextuality of the war itself, with both foe and friend often getting information from the same sources (CNN)—all these have been highlighted by critical international theorists. Yet overemphasizing the new forms of representations of the war in the media can become politically problematic. First, a focus on the newness of "cyberwar" detracts attention from the fact that in many ways the Gulf War was very much in the mold of previous conflicts. Far from indicating any shift from the material to the perceptual, this conflict was about territory, oil, and reasserting US hegemony. Second, one ought not to confuse the actual nature of the Gulf War with the Pentagon's close orchestration of its media coverage. In this regard, quotes such as the following leave this reviewer with a sense of disquiet: The consequence . . . is that in modern warfare, as the aim of battle shifts from territorial, economic, and material gains to immaterial, perceptual fields the spectacle of war is displaced by the war of spectacle. (AD: 191) For several reasons (technological, political, and theoretical), the warrior has ceased to hold any kind of possibility. Instances where the warrior seems to be present—Panama, Liberia, Grenada, Afghanistan, even the Persian Gulf—quickly present themselves as failures, spectacles, or exercises in nostalgia. (KN: 24) Contrasted with this supposed dematerialization of war, territory, and the warrior, and a supposedly new era of cyberwars of sign systems, a few enduring realities seem to need reiteration: The war in Iraq was over one of those stubborn geopolitical facts of the present era—oil. It was preceded by a Hannibal-esque build-up lasting more than six months (in contrast to all this talk about speed). The overwhelming percentage of the bombs used in Iraq were not "smart" bombs; in fact nearly 93 percent of the 88,500 tons of bombs used in that war were not precision-guided but "dumb" bombs. US bombs are estimated to have "missed" their targets about 70 percent of the time (needless to add, a "missed target" probably means higher civilian casualties). Far from being a "clean" war (as General Powell and others suggested during the conflict), the weapons systems used were deliberately designed to increase human casualties and suffering. Thus, the Multiple-Launch Rocket System; the Army Tactical Missile System; the "Adam" bombs designed to "spin out tiny darts with razor edges; phosphorous 1 or 2 square kilometers, destroying all human life through asphyxiation or through implosion of the lungs, leaving no chance for survival" and replicating tactical nuclear weapons in their destructiveness—all these and more were used on the traffic jam on the road connecting Kuwait to Iraq, where thousands of soldiers and civilians (including migrant laborers) were trapped and became a turkey-shoot for US "technology."29 By emphasizing the technology and speed in the Gulf War, endlessly analyzing the representation of the war itself, without a simultaneous exposition of the "ground realities," postmodernist analyses wind up, **unwittingly, echoing the Pentagon** and the White House in their claims that this was a "clean" war with smart bombs that take out only defense installations with minimal "collateral damage." One needs to reflesh the Gulf War dead through our postmortems instead of merely echoing, with Virilio and others, the "disappearance" of territory or the modern warrior with the new technologies; or the intertext connecting the war and television; or the displacement of the spectacle of war by the war of spectacle." Second, the emphasis on the speed with which the annihilation proceeded once the war began tends to obfuscate the long build-up to the conflict and US complicity in Iraqi foreign and defense policy in prior times. Third, as the details provided above show, if there was anything to highlight about the war, it was not so much its manner of representation as the incredible levels of annihilation that have been perfected. To summarize: I am not suggesting that postmodernist analysts of the war are in agreement with the Pentagon's claims regarding a "clean" war; I am suggesting that their preoccupation with representation, sign systems, and with the signifier over the signified, leaves one with little sense of the annihilation visited upon the people and land of Iraq. And, as the Vietnam War proved and Schwarzkopf well realized, without that physicalistic sense of violence, war can be more effectively sold to a jingoistic public. In this regard, Der Derian's point that the nature of antiwar protest movements has to change, has to recognize the fact that one can no longer wait for the body bags to come home, is one that merits attention. He notes, in a sharp attack on the left's anti-Gulf War movement: "Like old generals the anti-war movement fought the last war ... a disastrous war of position, constructing ideologically sound bunkers of facts and history while the 'New' World Order fought a highly successful war of maneuver ... with high speed visuals and a high-tech aesthetics of destruction." (AD: 176-77) While this point is, perhaps, debatable, Der Derian's further assertion, that a postmodern critique of the Gulf War mobilization would be somehow more effective, sounds less convincing. An alternative, late-modern tactic against total war was to war on totality itself, to delegitimize all sovereign truths based on class, nationalist, or internationalist metanarratives ... better strategically to play with apt critiques of the powerful new forces unleashed by cyberwar than to hold positions with antiquated tactics and nostalgic unities. (Al): 177-178; emphasis in original) The dichotomous choice presented in this excerpt is straightforward: one either indulges in total critique, delegitimizing all sovereign truths, or one is committed to "nostalgic," essentialist unities that have become obsolete and have been the grounds for all our oppressions. In offering this dichotomous choice, Der Derian replicates a move made by Chaloupka in his equally dismissive critique of the more mainstream nuclear opposition, the Nuclear Freeze movement of the early 1980s, that, according to him, was operating along obsolete lines, emphasizing "facts" and "realities" while a "postmodern" President Reagan easily outflanked them through an illusory Star Wars program. (See KN: chapter 4) Chaloupka centers this difference between his own supposedly total critique of all sovereign truths (which he describes as nuclear criticism in an echo of literary criticism) and the more partial (and issue-based) criticism of what he calls "nuclear opposition" or "antinuclearists" at the very outset of his book. (KN: xvi) Once again, the unhappy' choice forced upon the reader is to join Chaloupka in his total critique of all sovereign truths or be trapped in obsolete essentialisms. This leads to a disastrous politics, pitting groups that have the most in common (and need to unite on some basis to be effective) against each other. Both Chaloupka and Der Derian thus reserve their most trenchant critique for political groups that should, in any analysis, be regarded as the closest to them in terms of an oppositional politics and their desired futures. Instead of finding ways to live with these differences and to (if fleetingly) coalesce against the New Right, this fratricidal critique is politically suicidal. It obliterates the space for a political activism based on provisional and contingent coalitions, for uniting behind a common cause even as one recognizes that the coalition is compromised of groups that have very differing (and possibly unresolvable) views of reality. Moreover, it fails to consider the possibility that there may have been other, more compelling- reasons for the "failure" of the Nuclear Freeze movement or anti-Gulf War movement. Like many a worthwhile cause in our times, they failed to garner sufficient support to influence state policy. The response to that need not be a totalizing critique that delegitimizes all narratives. The blackmail inherent in the choice offered by Der Derian and Chaloupka, between total critique and "ineffective" partial critique, ought to be transparent. Among other things, it effectively militates against the construction of provisional or strategic essentialism in our attempts to create space for an activist politics. In the next section, I focus more widely on the genre of critical international theory and its impact on such an activist politics.

#### The state is both inevitable and good – its self-correcting mechanisms maintain global stability, facilitate international cooperation to resolve intractable problems, and raise global standards of living while constantly correcting for failure. Any other system risks global catastrophe and can’t be effectuated anyway given liberalism’s entrenched nature.

Deudney and Ikenberry, PhDs, 18

(Daniel, PoliSci@JohnsHopkins, G. John , InternationalAffairs@Princeton, <https://www.foreignaffairs.com/articles/world/2018-06-14/liberal-world>, 6-14)

In many respects, today's liberal democratic malaise is a byproduct of the liberal world order's success. After the Cold War, that order became a global system, expanding beyond its birthplace in the West. But as free markets spread, problems began to crop up: economic inequality grew, old political bargains between capital and labor broke down, and social supports eroded. The benefits of globalization and economic expansion were distributed disproportionately to elites. Oligarchic power bloomed. A modulated form of capitalism morphed into winnertake- all casino capitalism. Many new democracies turned out to lack the traditions and habits necessary to sustain democratic institutions. And large flows of immigrants triggered a xenophobic backlash. Together, these developments have called into question the legitimacy of liberal democratic life and created openings for opportunistic demagogues. Just as the causes of this malaise are clear, so is its solution: a return to the fundamentals of liberal democracy. Rather than deeply challenging the first principles of liberal democracy, the current problems call for reforms to better realize them. To reduce inequality, political leaders will need to return to the social democratic policies embodied in the New Deal, pass more progressive taxation, and invest in education and infrastructure. To foster a sense of liberal democratic identity, they will need to emphasize education as a catalyst for assimilation and promote national and public service. In other words, the remedy for the problems of liberal democracy is more liberal democracy; liberalism contains the seeds of its own salvation. Indeed, liberal democracies have repeatedly recovered from crises resulting from their own excesses. In the 1930s, overproduction and the integration of financial markets brought about an economic depression, which triggered the rise of fascism. But it also triggered the New Deal and social democracy, leading to a more stable form of capitalism. In the 1950s, the success of the Manhattan Project, combined with the emerging U.S.-Soviet rivalry, created the novel threat of a worldwide nuclear holocaust. That threat gave rise to arms control pacts and agreements concerning the governance of global spaces, deals forged by the United States in collaboration with the Soviet Union. In the 1970s, rising middle-class consumption led to oil shortages, economic stagnation, and environmental decay. In response, the advanced industrial democracies established oil coordination agreements, invested in clean energy, and struck numerous international environmental accords aimed at reducing pollutants. The problems that liberal democracies face today, while great, are certainly not more challenging than those that they have faced and overcome in these historically recent decades. Of course, there is no guarantee that liberal democracies will successfully rise to the occasion, but to count them out would fly in the face of repeated historical experiences. Today's dire predictions ignore these past successes. They suffer from a blinding presentism. Taking what is new and threatening as the master pattern is an understandable reflex in the face of change, but it is almost never a very good guide to the future. Large-scale human arrangements such as liberal democracy rarely change as rapidly or as radically as they seem

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to in the moment. If history is any guide, today's illiberal populists and authoritarians will evoke resistance and countermovements. THE RESILIENT ORDER After World War II, liberal democracies joined together to create an international order that reflected their shared interests. And as is the case with liberal democracy itself, the order that emerged to accompany it cannot be easily undone. For one thing, it is deeply embedded. Hundreds of millions, if not billions, of people have geared their activities and expectations to the order's institutions and incentives, from farmers to microchip makers. However unappealing aspects of it may be, replacing the liberal order with something significantly different would be extremely difficult. Despite the high expectations they generate, revolutionary moments often fail to make enduring changes. It is unrealistic today to think that a few years of nationalist demagoguery will dramatically undo liberalism. Growing interdependence makes the order especially difficult to overturn. Ever since its inception in the eighteenth century, liberalism has been deeply committed to the progressive improvement of the human condition through scientific discovery and technological advancements. This Enlightenment project began to bear practical fruits on a large scale in the nineteenth century, transforming virtually every aspect of human life. New techniques for production, communication, transportation, and destruction poured forth. The liberal system has been at the forefront not just of stoking those fires of innovation but also of addressing the negative consequences. Adam Smith's case for free trade, for example, was strengthened when it became easier to establish supply chains across global distances. And the age-old case for peace was vastly strengthened when weapons evolved from being simple and limited in their destruction to the city-busting missiles of the nuclear era. Liberal democratic capitalist societies have thrived and expanded because they have been particularly adept at stimulating and exploiting innovation and at coping with their spillover effects and negative externalities. In short, liberal modernity excels at both harvesting the fruits of modern advance and guarding against its dangers. This dynamic of constant change and ever-increasing interdependence is only accelerating. Human progress has caused grave harm to the planet and its atmosphere, yet climate change will also require unprecedented levels of international cooperation. With the rise of bioweapons and cyberwarfare, the capabilities to wreak mass destruction are getting cheaper and ever more accessible, making the international regulation of these technologies a vital national security imperative for all countries. At the same time, global capitalism has drawn more people and countries into cross-border webs of exchange, thus making virtually everyone dependent on the competent management of international finance and trade. In the age of global interdependence, even a realist must be an internationalist. The international order is also likely to persist because its survival does not depend on all of its members being liberal democracies. The return of isolationism, the rise of illiberal regimes such as China and Russia, and the general recession of liberal democracy in many parts of the world appear to bode ill for the liberal international order. But contrary to the conventional wisdom, many of its institutions are not uniquely liberal in character. Rather, they are Westphalian, in that they are designed merely to solve problems of sovereign states, whether they be democratic or authoritarian. And many of the key participants in these institutions are anything but liberal or democratic. Consider the Soviet Union's cooperative efforts during the Cold War. Back then, the liberal world order was primarily an arrangement among liberal democracies in Europe, North America, and East Asia. Even so, the Soviet Union often worked with the democracies to help build international institutions. Moscow's committed antiliberal stance did not stop it from partnering with Washington to create a raft of arms control agreements. Nor did it stop it from cooperating with Washington through the World Health Organization to spearhead a global campaign to eradicate smallpox, which succeeded in completely eliminating the disease by 1979. More recently, countries of all stripes have crafted global rules to guard against environmental destruction. The signatories to the Paris climate agreement, for example, include such autocracies as China, Iran, and Russia. Westphalian approaches have also thrived when it comes to governing the commons, such as the ocean, the atmosphere, outer space, and Antarctica. To name just one example, the 1987 Montreal Protocol, which has thwarted the destruction of the ozone layer, has been actively supported by democracies and dictatorships alike. Such agreements are not challenges to the sovereignty of the states that create them but collective measures to solve problems they cannot address on their own. Most institutions in the liberal order do not demand that their backers be liberal democracies; they only require that they be status quo powers and capable of fulfilling their commitments. They do not challenge the Westphalian system; they codify it. The UN, for example, enshrines the principle of state sovereignty and, through the permanent members of the Security Council, the notion of great-power decision-making. All of this makes the order more durable. Because much of international cooperation has nothing at all to do with liberalism or democracy, when politicians who are hostile to all things liberal are in power, they can still retain their international agendas and keep the order alive. The persistence of Westphalian institutions provides a lasting foundation on which distinctively liberal and democratic institutions can be erected in the future. Another reason to believe that the liberal order will endure involves the return of ideological rivalry. The last two and a half decades have been profoundly anomalous in that liberalism has had no credible competitor. During the rest of its existence, it faced competition that made it stronger. Throughout the nineteenth century, liberal democracies sought to outperform monarchical, hereditary, and aristocratic regimes. During the first half of the twentieth century, autocratic and fascist competitors created strong incentives for the liberal democracies to get their own houses in order and band together. And after World War II, they built the liberal order in part to contain the threat of the Soviet Union and international communism. The Chinese Communist Party appears increasingly likely to seek to offer an alternative to the components of the existing order that have to do with economic liberalism and human rights. If it ends up competing with the liberal democracies, they will again face pressure to champion their values. As during the Cold War, they will have incentives to undertake domestic reforms and strengthen their international alliances. The collapse of the Soviet Union, although a great milestone in the annals of the advance of liberal democracy, had the ironic effect of eliminating one of its main drivers of solidarity. The bad news of renewed ideological rivalry could be good news for the liberal international order.

**Hyperreality is wrong**

**Hobbs 07** – (Mitchell, Lecturer and PhD Candidate (Sociology and Anthropology), The University of Newcastle, Australia, ‘REFLECTIONS ON THE REALITY OF THE IRAQ WARS: THE DEMISE OF BAUDRILLARD’S SEARCH FOR TRUTH?,” Fall, 2007, <http://www.tasa.org.au/conferences/conferencepapers07/papers/379.pdf>)

As has been noted by Barry Smart (2000) (and others), Baudrillard’s theorising, which has its roots in neo-Marxism, eventually led him to the proposition that if current sociological critique was incapable of ascertaining truth because reality was being superseded by de-contextualised images (or, rather, signs), then a new system of social inquiry was needed, one capable of breaking out of the endless cycle of simulacra and the intellectual “inertia” brought about by the meta-physical dead end of capitalism. To this end, Baudrillard sought to employ a “fatal strategy” or “fatal theory”, where he could highlight the deceptions of “hyper-reality” by pushing them into a “more real than real situation”, to force them into a clear “over-existence which is incompatible with that of the real” (Baudrillard cited in Smart, 2000:464). Accordingly, by claiming that the Gulf War did not take place, Baudrillard was seeking to push our thinking of this event beyond the orthodox political economic approach, in order to draw attention to the “simulated” nature of the news media and to the antithetical consequences of this seemingly endless use and reproduction of images and simplistic narratives deprived of socio-historic contexts.¶ 2.2 BRIDGING THE REALITY GULF: FROM BAUDRILLARD TO KELLNER¶ Although Baudrillard’s work on “simulation” and “simulacra” is valuable in highlighting the relationship between the mass media and reality, and, in particular, the ways in which media content (images and narratives) come to be de-contextualised, his theses are per se insufficient for the analysis of the contemporary mass media. For instance, as media theorist and researcher Douglas Kellner (2003:31) notes, beyond the level of media spectacle, Baudrillard does not help readers understand events such as the Gulf War, because he reduces the actions of actors and complex political issues to categories of “simulation” and “hyper-reality”, in a sense “erasing their concrete determinants”.¶ Kellner, who like Baudrillard, has written extensively on media spectacles, including the Gulf Wars, sees Baudrillard’s theory as being “one-dimensional”, “privilege[ing] the form of media technology over its content, meaning and…use” (Kellner, 1989:73). In this regard, Baudrillard does not account for the political economic dimensions of the news media, nor the cultural practices involved with the production of news (Kellner, 1989:73-74). Thus, he suffers from the same technologically deterministic essentialism that undermined the media theories of Marshall McLuhan, albeit in a different form (Kellner, 1989:73-74). Although Kellner (2003:32) believes that Baudrillard’s pre-1990s works on “the consumer society, on the political economy of the sign, simulation and simulacra, and the implosion of [social] phenomenon” are useful and can be deployed within critical social theory, he prefers to read Baudrillard’s later, more controversial and obscure, work as “science fiction which anticipates the future by exaggerating present tendencies”.¶ In order to understand war and its relationship with the media in the contemporary era it is, then, necessary to move beyond Baudrillard’s spectacular theory of media spectacle. For although our culture is resplendent with images, signs and narratives, circulating in a seemingly endless dance of mimicry (or, rather, simulacra), there are observable social institutions and practices producing this semiotic interplay

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